

“CLEAN CLOTHES VS. CLEAN WATER”: CONSUMER ACTIVISM, GENDER,
AND THE FIGHT TO CLEAN UP THE GREAT LAKES, 1965-1974

Annette Mary Scherber

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Master's Thesis Committee

Philip V. Scarpino, Ph.D., Chair

Rebecca K. Shrum, Ph.D.

Nancy Marie Robertson, Ph.D.

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Annette Mary Scherber

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During the late 1960s and early 1970s, the polluted Great Lakes became a central focus of the North American environmental movement. A majority of this pollution stemmed from phosphate-based laundry detergent use, which had become the primary product households used to wash fabrics after World War II. The large volume of phosphorus in these detergents discharged into the lakes caused excess growths of algae to form in waterways, which turned green and smelly. As the algae died off, it reduced the oxygen in the water, making it less habitable for fish and other aquatic life, a process known as eutrophication. As primary consumers of laundry detergents during the time period, women, particularly white, middle-class housewives in the United States and Canada, became involved in state/provincial, national, and international discussions involving ecology, water pollution, and sewage treatment alongside scientists, politicians, and government officials. Their work as volunteers, activists, and lobbyists influencing the debate and ensuing policies on how best to abate this type of pollution, known as eutrophication, has often been ignored. This thesis recognizes the work women completed encouraging the enactment of key water quality regulations and popularizing the basic tenets of environmentally-conscious consumption practices during the environmental movement in the early 1970s.

Philip V. Scarpino, Ph.D., Chair

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INTRODUCTION

Mrs. Robert Kilkenny stood outside the entrance to her local Indianapolis grocery store on April 23, 1970, with a band of other housewives and college students. They represented no formal group, but had recently united to achieve one common goal: to encourage housewives to stop using common laundry detergents containing high amounts of phosphates, which polluted waterways. As morning shoppers busily hurried around them, Mrs. Kilkenny and her recruits passed out handbills listing the phosphate content in the laundry detergents that lined grocery store shelves. They hoped they could encourage other women to stop buying products, like phosphate detergents, that polluted the natural environment.¹ Women in Canada and the United States acted similarly as key actors in the environmental movement during the 1970s. They mobilized and flexed their power as consumers in hopes of improving the quality of North American waterways by encouraging the enactment of key legislation to abate phosphate pollution.

Women's actions contributed to the chorus of voices that encouraged federal legislators in Canada and the United States to consider enacting nationwide bans on the sale, importation, and use of phosphate detergents in order to abate pollution in North American waterways during the early 1970s. Canada enacted a nationwide ban in 1970 and consumers began to use new, non-phosphate detergents instead. However, the United States failed to enact a similar measure amidst concerns of officials in many federal government agencies, like the Food and Drug Administration, the Federal Water Quality Administration, and the National Institute of Environmental Health Sciences, that non-phosphate detergents were hazardous to health. Scientists at the National Institute of

¹Mary Ann Butters, "Citizens Seek Cleaner Soap," *Indianapolis Star*, April 24, 1970.

Environmental Health Sciences and the Children’s Cancer Research Foundation in Boston completed studies that suggested NTA (nitrilotriacetic acid), a chemical common in non-phosphate detergents, might break down into toxic substances in waterways. The three major laundry detergent companies, Proctor & Gamble, Lever Brothers, and Colgate-Palmolive, known collectively as the “Big Three,” had already invested millions in the development of NTA. The Big Three had no choice but to halt production of detergents containing NTA and come up with alternative formulas for non-phosphate detergents. To stall or derail the enactment of a nationwide phosphate ban, detergent industry lobbyists attacked the safety and cleaning effectiveness of other non-phosphate detergents in the media. These detergents, developed by smaller companies, used other compounds to replace phosphate, such as metasilicates and carbonates. The combined lack of governmental support for NTA and the rising concern amongst the public about the safety of new, non-phosphate detergents prevented the United States federal government from enacting a nation-wide ban on phosphate detergent, as Canada did. As concerns rose over the safety of non-phosphate detergents, politicians in the United States at both the federal and state level recommended consumers use phosphate detergents instead of new non-phosphate detergents on the market, despite the former’s ill effects on water quality. Conflict arose amongst politicians, environmentalists, and industrialists in states that had already enacted their own phosphate detergent bans over whether to repeal their bans or keep them in place.²

² William McGucken, *Lake Erie Rehabilitated: Controlling Cultural Eutrophication, 1960s-1970s* (Akron, Ohio: Univeristy of Akron Press, 2000), 101-152; Terence Kehoe, “Merchants of Pollution?: The Soap and Detergent Industry and the Fight to Restore Great Lakes Water Quality, 1965-1972,” *Environmental History Review* 16, no. 3 (Autumn 1992): 33-35.

In the midst of this conflict, women’s private laundry practices as well as their opinions on how to abate water pollution became increasingly sought after by the media, legislators, and environmentalists. This thesis considers how gender framed the conflict about how to abate phosphate-based detergent pollution, or what I call the “phosphate debate,” and the popularization of ecological consumption, or the conscious practice of buying products that cause the least impact on the environment, in North America during the 1970s.³ In particular, this work analyzes how gender influenced the phosphate debate in Indiana, which became the first state in the United States to ban phosphate detergents in 1971. After concerns rose nationwide over the safety and cleaning effectiveness of non-phosphate detergents, professional home economists in Indiana urged housewives to lobby for a repeal of the ban and recommend enhanced sewage treatment plants as an alternate method to banning phosphate detergents.⁴ Hoosier women on both sides of the

³ This thesis will refer to “ecological consumption” or the “ecological consumer.” Relatively recent marketing studies have defined ecological consumers, or green consumers as “individuals who seek to consume only products that cause the least – or do not exercise any – impact on the environment. . . . A green consumer is one who associates the act of purchasing or consuming products with the possibility of acting in accordance with environmental preservation. The green consumer knows that by refusing to purchase products that are harmful to the environment, she/he is contributing to environmental preservation. Therefore. . . green consumers avoid purchasing products that they perceive as risky to health, harm the environment during production, use or final disposal, consume much energy, have excessive packaging, and contain ingredients coming from threatened habitats or species.” These studies note that ecological consumption started in the late 1960s or early 1970s, the time frame this thesis focuses on. See J.A. Roberts, “Green Consumers in the 1990s: Profile and Implications for Advertising,” *Journal of Business Research* 36 No. 3 (1996): 217-232 and J. Hailes *The New Green Consumer Guide* (London: Simon and Schuster, 2007), cited in Gary Akehurst, Carolina Afonso, and Helena Martins Gonçalves “Re-examining Green Purchase Behaviour and the Green Consumer Profile: New Evidences” *Management Decision* 50, No. 5 (May 25, 2012): 972–988.

⁴ The term “housewife” will be used throughout the thesis, most often when newspaper articles or other primary sources referred to women as a “housewife” or as “housewives.” As such, the women in this thesis also may be referred to using their husband’s names, like “Mrs. Robert Kilkenny” at the beginning of this chapter, because that is how they were referred to in the primary source associated with them. Since the perceived role of the housewife has changed dramatically over centuries, in addition to the variety of diverse women who have identified as a “housewife” over time it is hard to find an appropriate definition for the term. More often than not, I believe housewife during the 1960s and early 1970s usually represented a white, middle-class, married woman who did not work full-time for pay outside the home. When women are referred to as “housewives” in general in advertising literature, media, or by detergent industry representatives, I refer to Jessamyn Neuhaus’s description of the cultural ideal of the 1960s housewife: “But while history shows complex and varied ways in which real women negotiated gender norms and

phosphate debate utilized their power as consumers to influence water quality policy. They became influential voices in this key issue of the burgeoning environmental movement in Canada and the United States centered on governmental regulation of the natural world, science, and technology.⁵

Postwar America and Environmentalism

Environmental historian Hal K. Rothman succinctly summarized the history of American environmental thought in the 20th century as a shift from “efficient use of resources” to a philosophy that stressed achieving “a better quality of life---not through the acquisition of material goods, but by the preservation of things that otherwise would be lost to progress.” The first phase of Rothman’s description, “efficient use of resources” is better known as the conservation movement. It began in the late 19th century in response to recent exponential industrial and urban growth in North America. The continent’s natural resources, including its seemingly endless supply of trees, pure water, and wild game, had built America’s success in the eyes of many. By the 1890s, North Americans began to see natural resources as limited, instead of an endless bounty mankind could plunder. In order to ensure future economic prosperity, government officials adopted wise-use practices. Governments increasingly employed experts to plan

identity, the cultural *ideal* of the housewife remained fixed and severely limited. Defined and imagined again and again-by household advisors, by cultural commentators, by home economics instructors, by women’s magazines, by television shows, by the popular press-as a middle to upper class, slim, pretty, and until the 1970s, white, the heterosexual and childbearing housewife figure gendered domesticity, family, home, and the work of the home as female in public discourse” in *Housework and Housewives in American Advertising: Married to the Mop* (New York: Palgrave Macmillan, 2013), 6.

⁵ On nationwide safety concerns and cleaning effectiveness, which will be discussed in Chapter 1, see McGucken, *Lake Erie Rehabilitated*, 143-157; on men’s presence in politics, science, and technology see Ruth Watts, *Women in Science: A Social and Cultural History* (New York: Routledge, 2007); Jill M. Bystydzienski and Sharon R Bird, eds, *Removing Barriers: Women in Academic Science, Technology, Engineering and Mathematics* (Bloomington, Indiana: Indiana University Press, 2006).

consumption of natural resources to ensure there would be enough to sustain the American economy for generations.⁶

Mrs. Kilkenny and her cohorts acted during Rothman's second phase after World War II. During the generally affluent postwar period, societal changes encouraged Americans to expand their views on what the natural world meant to humankind. Instead of viewing the natural world largely as a source for lumber, minerals, and other resources, Americans in the postwar period recognized that natural scenery, as well as clean air and water, played a pivotal role in enhancing quality of life. The factories established to manufacture weapons and military supplies churned out a plethora of consumer goods after the war and offered more employment opportunities, in effect boosting the economy. The new economy created larger incomes, increased standards of living and education, and fostered a large, consumer-oriented middle-class. Members of this group now had the money and leisure time to improve their health and wellbeing, which increasingly included outdoor recreation. Such steps included visiting lakes or state parks or moving away from polluted cities to the suburbs where clean air and water and open space were abundant. As a healthy natural world became an essential part of an ideal middle-class American lifestyle, natural resources began to take on more than an economic value. Living, working, and playing in unpolluted landscapes became equated to an enhanced quality of life.⁷

During the postwar period, Americans also became increasingly aware that the nation's new affluence polluted the land, water, and air surrounding them, which in turn

⁶ Hal K. Rothman, *Saving the Planet: The American Response to the Environment in the Twentieth Century* (Chicago: Ivan R. Dee, 2000), 4-7.

⁷ Rothman, *Saving the Planet*, 7-8; Samuel P. Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States 1955-1985* (Cambridge, UK: Cambridge University Press, 1987), 25-30.

adversely affected human health. The factories, new consumer goods, chemicals, and nuclear power that brought wealth and eminence clearly carried serious health concerns. Fallout from atomic testing tainted milk supplies, synthetic hormones used to fatten up cattle and chickens became linked to cancer in humans, widespread use of pesticides and herbicides harmed wildlife and humans alike. Automobiles, as well as factories churning out new consumer appliances, cleaners, and products coughed up choking smog into the air people breathed. Each new technology and consumer product that promised to make humans' lives easier, such as a pesticide that eradicated crop-threatening bugs or a new chemical that made household cleaning less laborious, impacted the environment in some unforeseen way. As these largely unanticipated consequences made their way into the press, consumers began to understand many of the products they bought negatively impacted the environment and human health.⁸

This awareness nurtured the philosophy of “popular ecology,” the understanding that every living thing is connected to and impacts the life of other living things, including humans. Popular ecology drove the shift between conservation and the environmental movement in the postwar era as Americans began to focus less on efficient use of resources and more on pollution and how it affected quality of life and health. During the 1960s, numerous publications and events brought the toxic effects of pollution to the attention of many Americans and Canadians and pushed environmentalist thought into the mainstream. Rachel Carson's exposé on pesticides in *Silent Spring* (1963), the

⁸ Thomas Jundt, *Greening the Red, White, and Blue* (Oxford, U.K.: Oxford University Press, 2014), 2-3, 53, 88-89; Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington D.C.: Island Press, 2005), 134-139; Andrew Hurley, *Environmental Inequalities: Class, Race, and Industrial Pollution in Gary, Indiana* (Chapel Hill, NC: University of North Carolina Press, 2009), 6-7.

documentary *The Air of Death* (1967), which revealed widespread air pollution in Canada and the United States, and the Santa Barbara oil spill of 1969 helped Canadians and Americans understand how their consumption habits and industries polluted the environment, which in turn endangered humankind's wellbeing. Encouraged by the burgeoning counter-cultural movement of the 1960s that critiqued a traditional, industrialized, consumption-based society, many middle-class North Americans began lobbying for initiatives to clean up the natural environment. Their ideas and efforts spread, gradually forming a grassroots environmental movement in the United States and Canada. During the 1960s and 1970s, an unprecedented number of Canadians and Americans advocated for clean air, water, and land for aesthetic, health, and quality of life reasons as volunteers, citizens, and activists. Many supported legislation to abate pollution and supported candidates at all levels of government publicly committed to enacting such regulations.⁹

Women were at the forefront of the environmental movement because many environmental issues affected consumption, health, and the home. Historian Thomas Jundt explained in his work on the origins of environmentalism and consumer activism in the postwar period, *Greening the Red, White, and Blue*, "As traditional family caregivers, women often were the first to be directly confronted with distressing realities of how damage to the environment might affect loved ones." Women managed shopping, childcare, and health in most postwar households, and therefore acutely understood the

⁹ See Hays, *Beauty, Health, and Permanence*, 25-30; Gottlieb, *Forcing the Spring*, 31-43; Kirkpatrick Sale, *The Green Revolution: The American Environmental Movement, 1962-1992* (New York: Hill and Wang, 1993); Rothman, *Saving the Planet*, 108-157; Ryan O'Connor, *The First Green Wave: Pollution Probe and the Origins of Environmental Activism in Ontario* (Vancouver, BC: University of British Columbia Press, 2015); Collin M. Coates, "Canadian Countercultures and their Environments, 1960s-1970s," in *Canadian Countercultures and the Environment* (Calgary: University of Calgary, 2016).

implications of tainted foodstuffs, smoggy air, and undrinkable, contaminated water. As mothers during the Baby Boom, issues that affected children's health and well-being took on added importance. Women organized and started protesting early, demanding experts set safe levels for contaminants and nuclear fallout in food, air, and consumer products during the 1950s and 1960s. As women, they filled a void male politicians and officials found difficult to articulate in the Cold War era. Jundt summarized, "Women protesting for the safety of family in the face of environmental peril...were able to speak with uniquely powerful and effective moral voice against government and industry officials without being dismissed." Thus women, especially white, middle-class women, first got involved in environmental grassroots activism as concerned parents or caretakers who wanted to ensure there would be enough clean water, air, and food for their children in the present and for the foreseeable future.¹⁰

The Polluted Great Lakes

Alongside the other publications and events listed above, water pollution became a fixture of the environmental movement during the 1960s and 1970s and emerged as an issue that particularly concerned women. Though many bodies of water suffered from pollution in North America, the Great Lakes became the poster child for the issue in the press: four lakes were international waters shared between the United States and Canada and the entire set served as the largest group of fresh water lakes on Earth. Newspapers and popular magazines in the United States and Canada, including *New York Times*, *Life*, and *Maclean's* published articles depicting and explaining the causes of pollution of the Great Lakes. Barry Commoner even dedicated a chapter in his 1971 bestseller *The*

¹⁰ Jundt, *Greening the Red, White, and Blue*, 98-99.

Closing Circle, which championed an ecologically sustainable economy, to explain the causes of pollution in Lake Erie. Commoner opened his chapter with the powerful statement, “The most blatant example of the environmental crisis in the United States in Lake Erie.”¹¹

Through these publications, the public discovered that a major source of Great Lakes pollution stemmed from an excessive influx of nutrients, like phosphorus, carbon, and nitrogen from industrial, agricultural, and human wastes. Once these nutrients entered lakes, they acted as a fertilizer for aquatic plants, such as algae. These nutrients caused algae to grow out of control, making the water green and smelly. The new abundance of algae depleted the amount of oxygen in the water, making it less habitable for fish and other life. This process is called “eutrophication,” jargon primarily only limnologists (fresh water scientists) knew until the late 1960s when public concern rose about the green, stinky water appearing in the Great Lakes, especially Lake Erie, due to eutrophication. Though eutrophication and the growth of algae can occur naturally in waterways over time, human activity in the Great Lakes Basin dramatically accelerated a process that should have taken thousands of years, into a phenomenon that occurred over a few decades.¹²

¹¹ Philip Scarpino, “Addressing Cross-border Pollution of the Great Lakes after World War Two: The Canada-Ontario Agreement and the Great Lakes Water Quality Agreement,” in Michael Behiels and Michael Stuart, eds. *Transnationalism in Canada-United States History into the Twenty-first Century* (Ithaca, NY: McGill-Queen’s University Press, 2010), 115-128; Alfred Einsteadt, “Great Lakes: The Shocking case of our inland seas dying from blighted man-made filth” *Life* 65 No. 8 (23 August, 1968): 36-47; Courtney Tower, “The People vs. Pollution,” *Maclean’s* 83 no. 1 (1970), 2; Sherwood Davidson Kohn, “Warning: The Green Slime is Here” *New York Times* 22 March 1970; Barry Commoner, *The Closing Circle: Nature, Man, and Technology* (New York: Alfred A. Knopf, 1971), 94-111.

¹² Kehoe, “Merchants of Pollution?” 24; “Nutrient Pollution-Eutrophication,” National Oceanic and Atmospheric Administration, revised July 6, 2017, accessed https://oceanservice.noaa.gov/education/kits/estuaries/media/supp_estuar09b_eutro.html.

Limnologists use the term “cultural eutrophication” when human actions speed up the eutrophication process. In part, scientists, politicians, and environmentalists blamed the Great Lakes pollution on phosphate detergent use. Phosphate detergents came on the market after World War II and set the laundry products market ablaze. Before phosphate detergents, people used soap, made from animal fats or other oils, to clean textiles. Unfortunately, soap had the tendency to redeposit unfavorable scum on fabric in the cleaning process. The first products marketed as detergents, in reality just synthetic soaps derived from petroleum instead of animal fat, were developed in the 1930s and cleaned rather poorly. When fats were rationed during World War II, researchers spent time enhancing synthetic detergents to clean weaponry and armaments. They discovered that adding phosphate to formulas stopped dirt and oil from redepositing scum on textiles, making them far superior cleaners to soap.¹³

By the 1960s, most North American consumers had left behind soap when laundry day came around and turned to phosphate detergents. After the war, detergent companies marketed phosphate-based detergents as superior cleaners to soap. The use of these products, in combination with new automatic washing machines that gained popularity during the postwar era, became mainstays in middle-class households. Phosphate detergents and washing machines eased the physical toll of laundry day marked by scrubbing, rinsing, and hand washing, in addition to cleaning fabrics more thoroughly and efficiently. By the 1960s the unintended and unanticipated environmental consequences of these seemingly innocuous household products began to surface as

¹³ Kehoe, “Merchants of Pollution?” 25-26, Inge Vibeke Sanmiya, “Consumer and Producer Elimination of Synthetic Laundry Detergents in Canada, 1947-1992,” (Master’s Thesis, University of Western Ontario, 1997), 1-2, 13-15.

eutrophication of the Great Lakes became mainstream news.¹⁴ This thesis interprets how the public, particularly women as the major consumers of household cleaning products, navigated this issue and participated in a broader discussion involving scientists, detergent industry representatives, politicians, and government officials on how to best regulate eutrophication.

Literature Review

Several historians have written about cultural eutrophication, or phosphate pollution of the Great Lakes during the late 1960s and 1970s. Most analyze how American or Canadian governments attempted to combat the pollution through legislation and in what ways this legislation affected proceeding water quality regulation. In *Cleaning Up the Great Lakes: From Cooperation to Confrontation*, Terence Kehoe analyzes pollution of the Great Lakes from the 1950s to 1970s, including cultural eutrophication, to illustrate the transition of environmental regulation from the local to federal level in the United States. Kehoe concludes that public interest groups and citizen activism in the 1960s encouraged this transition from “cooperative pragmatism,” in which municipal and state officials allowed the pollution of bodies of water for industrial purposes, to an era characterized by increased national water quality regulation. While Kehoe’s study covers only the United States, William McGucken’s later work *Lake Erie Rehabilitated: Controlling Cultural Eutrophication, 1960s-1990s* broadens the story of phosphate pollution. He picks up where Kehoe left off by extending the story of phosphate pollution of Lake Erie into the 1990s. McGucken also includes the Canadian perspective and Canada’s legislative actions to combat the pollution, which Kehoe

¹⁴Sanmiya, “Consumer and Producer Elimination of Synthetic Laundry Detergents in Canada, 1947-1992,” 15-25.

unfortunately leaves out. Overall, his work highlights how concern over cultural eutrophication led to continued monitoring of the Great Lakes into the present day. McGucken's work offers a good synthesis of the scientific writings and myriad of reports produced to aid both the Canadian and American governments on how to best combat cultural eutrophication.¹⁵

Although Kehoe and McGucken provide key insight into governmental regulation of the natural environment in their studies, their perspectives also obscure how women influenced the enactment of the policies and how gender shaped the public debate on how to best abate the pollution. Kehoe and McGucken largely share what happened in government committee meetings, state, provincial, and federal legislatures, and department of natural resources offices. Their narratives feature mostly male legislators, scientists, and government employees. The authors disregard that phosphate pollution and the subsequent legislation that banned phosphate detergents in Canada and several states and cities in the United States affected all consumers of detergents in those locales because they do not extend their studies into places that used detergents, such as homes, factories, or businesses. Additionally, they overlook the key role that gender plays in this narrative, since laundry and detergents in 1970 still fell into the realm of women's work and goods women bought in most households.¹⁶ While their studies offer necessary

¹⁵ Terence Kehoe, *Cleaning Up the Great Lakes: From Cooperation to Confrontation* (DeKalb, Illinois: Northern Illinois University Press, 1997); William McGucken, *Lake Erie Rehabilitated: Controlling Cultural Eutrophication, 1960s-1990s*. (Akron, OH: University of Akron Press, 2000). I tend to favor McGucken's narrative for reference and background information throughout my thesis, since I too include the Canadian perspective. For a more thorough explanation of the scope of my work, see paragraphs under "Summary of Research" heading in this chapter.

¹⁶Ibid. In the United States, Connecticut, Florida, Indiana, Maine, Michigan, and New York banned phosphate detergents in 1971. Chicago, Akron, Detroit, and Erie County in New York banned these detergents in 1970. Many other states and municipalities considered legislation to ban phosphate detergents, as did the United States Congress. Though a federal ban ultimately failed, during the time when it was being considered and publicized to the public through media outlets, all American consumers of

insight into governmental regulation of water quality, they neglect the perspectives of consumers and caretakers (mainly women) who bought and used phosphate detergents or pushed for environmentally friendly alternatives. An in-depth study of women's influence in the phosphate debate will reveal the complex decisions women had to make regarding health, hygiene, and water pollution.

Historian Jennifer Read's article "'Let Us Heed the Voice of Youth': Laundry, Detergents, Phosphates and the Emergence of the Environmental Movement in Ontario," showcases the rich possibilities of including actors other than government officials and scientists in the phosphate debate by interpreting how university students in Canada reacted to news of cultural eutrophication. She analyzes Pollution Probe, a University of Toronto student group that encouraged public debate over the best way to regulate phosphate pollution in Canada. Read interprets the emergence of Pollution Probe during the phosphate detergent debate as a marker for increased environmental concern in the Canadian public because she found such groups absent during the earlier efforts to regulate pollution of the Great Lakes. Her work suggests the necessity of incorporating the perspectives of those outside of the government to achieve a more complete picture of the phosphate detergent debate in the environmental movement.¹⁷

Historian Terriane K.Schulte's dissertation "Grassroots at the Water's Edge: The League of Women Voters and the Struggle to Save Lake Erie, 1956-1970," specifically highlights the importance of incorporating women's actions and perspectives into the

detergents were forced to consider which detergent they wanted to buy. On laundry as primarily women's work see Neuhaus, *Married to the Mop*, 1-19.

¹⁷ Jennifer Read, "'Let Us Heed the Voice of Youth,': Laundry Detergents, Phosphates, and the Emergence of the Environmental Movement in Ontario," *Journal of Canadian Historical Association* 7 No. 1 (1996): 227-250.

history of Great Lakes water pollution and regulation. Schulte's work demonstrates the central role the League of Women Voters played in the fight to save Lake Erie from the 1950s through 1970s. League members developed and held public education programs, engaged in grassroots activism, and lobbied water resources officials to build local support for cleaning up Lake Erie. Schulte argues these women's actions cultivated a base of informed citizens that later environmental activists could rely on for support. League members' careful research regarding water pollution and sewage treatment, public awareness programs, and intense lobbying campaigns at all levels of government also helped pave the way for second-wave feminists, who championed women's increased involvement in the public sphere. While not generally feminists themselves, the League members Schulte studies showed women could be active in politics, science, and technology, fields historically open only to men.¹⁸

Schulte and other historians have recently demonstrated women, especially white, middle-class women, played an extremely active role in the environmental movement as volunteers, lobbyists, and organizers.¹⁹ Many started advocating for the environment in new ecology-focused groups, well-known conservation organizations, or women's

¹⁸ Terriane K. Schulte, "Grassroots at the Water's Edge: The League of Women Voters and the Struggle to Save Lake Erie, 1956-1970," (PhD. dissertation, State University of New York at Buffalo, 2006).

¹⁹ I group volunteers, lobbyists and organizers as "environmental activists," whom I define as "people who take some public action in legislative, judicial, political or media arenas to cause prevention or remediation or known or suspected" environmental hazards, which I adopted from Phil Brown and Faith Ferguson's definition of toxic waste activists, a branch of environmental activism in "'Making a Big Stink': Women's Work, Women's Relationships, and Toxic Waste Activism," *Gender and Society* 9 No. 2 (April 1995): 147. For examples of gender and the history of the environmental movement, see Adam Rome, "'Give Earth a Chance': The Environmental Movement and the Sixties," *Journal of American History* 90 No. 2 (2003): 525-554; "Gender and Place: Women and Environmentalism," in Gottlieb, *Forcing the Spring*, 275-304; Maril Hazlett, "'Woman vs. Man vs. Bugs': Gender and Popular Ecology in Early Reactions to Silent Spring," *Environmental History*, 9 No. 4 (October 2004):701-729. See also, Gerda Lerner, "The Lady and the Mill Girl: Changes in the Status of Women in the Age of Jackson," *Midcontinent American Studies Journal* (1969): 5-16, which highlights the historical ability of white, middle class women to devote their time to various causes of their choice, pages 11-12.

groups. Women's particular perspectives as mothers and caretakers encouraged many to battle pollution, particularly toxic waste pollution that threatened their homes, backyards, and broader communities where their children played, lived, and went to school. In the present day, women (mostly white) occupy more than half of the leadership positions in environmental conservation and preservation organizations in the United States and comprise fifty percent of these institutions' volunteers.²⁰ Despite their enormous presence, women have largely been slighted from environmental history. Prior to the 1990s, most environmental historians focused on men prominent in wilderness protection, such as John Muir, or government organizations, like the United States Forest Service or National Park Service.²¹ Since the field lacked the interpretation of women's unique relationships to the natural environment, men's perspectives (especially those of elite, white men) erroneously appeared as the norm.

Environmental historian Carolyn Merchant's groundbreaking book *The Death of Nature* (1980) highlighted the importance of incorporating gender analysis in both environmental history and the history of science. Merchant challenged the predominate view of the development of rational, mechanistic science during the Enlightenment as a sign of progress. Through analysis of art and writings of philosophers and scientists from the sixteenth through eighteenth centuries, Merchant suggested the scientific methods developed during the Enlightenment achieved man's domination over nature, as well as the oppression of women in Western culture. Previously, Europeans' viewed nature as an

²⁰ Dorceta E. Taylor, "The State of Diversity in Environmental Organizations," University of Michigan, School of Natural Resources and Environment, prepared for Green 2.0, July 2014, 4-5, accessed http://orgs.law.harvard.edu/els/files/2014/02/FullReport_Green2.0_FINALReducedSize.pdf.

²¹ See Richard White's 1985 historiography of the field, which surveyed important work produced since the 1960s, "American Environmental History: The Development of a New Historical Field," *The Pacific Historical Review* 54 No. 3 (1985): 297-335.

organic, nurturing female entity. In contrast, studies produced during the Scientific Revolution demonstrated matter was inert. Therefore, nature (and the women who represented it) became passive beings that could be controlled and manipulated by man through technology and machines. These new metaphors solidified science as a man's tool to conquer the natural world, as well as women. Merchant's gender focus not only highlighted a new perspective of the Scientific Revolution, but also brought attention to the gender blindness inherent in environmental history and the history of science.²²

Though the ideology of the environmental movement is most apparent when analyzing gender and the phosphate debate, two other movements at the time were clearly influential: the consumer rights movement and second wave feminism. Housewives who supported using non-phosphate detergents to improve North American waterways, as well as housewives who advocated against their use adapted feminist ideology. This thesis will demonstrate that through their work lobbying, participating in politics, and engaging in fields normally reserved for men, such as science and technology, housewives expanded their influence outside the home. Additionally, their publicized preferences for specific laundry products to demonstrate support of a cause showed these

²²Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (New York: Harper & Row Publishers, Inc, 1980). Merchant and other historians called for increased gender analysis in environmental history, see Carolyn Merchant, "Gender and Environmental History," *Journal of American History* 76 (1990): 1117-1121; Melissa Leach and Cathy Green, "Gender and Environmental History: From Representation of Women and Nature to Gender Analysis of Ecology and Politics," *Environment and History*, 3 (1997): 343-370. For broader works on American women's relationship to their natural surroundings see, for example Vera Norwood, *Made From this Earth: American Women and Nature* (Chapel Hill: University of North Carolina Press, 1993), Melody Hessing, ed., *This Elusive Land: Women and the Canadian Environment* (Vancouver: University of British Columbia Press, 2004). Susan Schrepfer, *Nature's Altars: Mountains, Gender, and American Environmentalism* (Lawrence, Kansas: University Press of Kansas, 2005), Nancy C. Unger, *Beyond Nature's Housekeepers: American Women in Environmental History* (Oxford: Oxford University Press, 2012), Carolyn Merchant, *Earthcare* (New York: Routledge, Taylor & Francis Group, 2014). On gender and the history of science see for example Watts, Ruth, *Women in Science: A Social and Cultural History* (New York: Routledge, 2007); Bystydzienski and Bird, eds, *Removing Barriers*.

women saw consumer activism as a tool they could use to make a difference in their communities and nation.

After World War II, many areas of the world witnessed the rise of organized consumer movements, which Philip Kotler, a marketing consultant and scholar, aptly defines as “an organized movement of citizens and government to strengthen the rights and powers of buyers in relation to sellers.” As the postwar market exploded with unprecedented numbers of never-before-seen consumer goods, retail operations and consumers changed. Goods increasingly originated far away from the ultimate place of purchase, self-service supermarkets and discount stores replaced local groceries. Flashy, aggressive advertising across multiple media added another complicated layer to consumption. Postwar consumer activists agitated for more reliable sources of information to help them sort through this new market and the enormous amounts of goods it offered so they could make the best choices for their households.²³ Organizations like the Consumers Union (United States) and the Consumers Association of Canada became popular and served as experts on product safety and quality, providing literature to help consumers compare similar products. President Kennedy’s proclamation of a

²³ Anna Sadovnikova, Andrey Mikhailichenko, and Stanley J. Shapiro, “Consumer Protection in Postwar Canada: Role and Contributions of the Consumers’ Association of Canada to the Public Policy Process,” *Journal of Consumer Affairs* 48 No. 2 (Summer 2014): 380. For a history of the evolution of the terms “consume” and “consumer,” see Donica Belisle, “Toward a Canadian Consumer History,” *Labour* 52 (Fall 2003) 183-184. Belisle notes that by 1460 “consume” began to be used to indicate “the acquisition, use, and destruction of material goods.” By the early 20th century, “‘consume’ signified an entire sphere of economic activity: the binary opposite of ‘produce,’ consume represented the demand side of free market capitalism.” As for “consumer,” during the mid 18th century, “consumer” began to describe someone “who uses up an article produced.” Consumer became a common term in the early 20th century for “anyone who purchases goods or pays for services; a customer, purchaser.” And by 1965, the term “consumer” was so well-known, English language writers used the word “consumerist” to describe a person who “is involved in the protection of consumers’ interests; an advocate of consumerism.” I adhere to Lawrence Glickman’s definition of consumer activism, “the attempt to mobilize consumers for political purposes” found in his article “The Strike in the Temple of Consumption: Consumer Activism and Twentieth Century American Political Culture,” *Journal of American History* 88, No. 1 (June 2001): 102.

Consumer's Bill of Rights in 1962 stressed the important role consumers played in the economy and popularized the movement. By the 1960s and early 1970s, polls consistently showed strong public support for consumer protection in the United States. Consumer groups fought for increased legislation dedicated to protecting the consumer from industry, including enacting more stringent safety standards for goods, providing more accurate information about goods through increased product testing, and reforming social ills (such as sexism) promoted by the advertising industry.²⁴

According to consumer activism historian Lawrence Glickman, the consumer movement, which questioned uniformed consumption practices, gave impetus to many of the countercultural movements of the 1960s, including the environmental movement. Thomas Jundt has specifically tied the history of consumerism and environmentalism in *Greening the Red, White and Blue* from the dropping of the first atomic bomb to the first Earth Day in 1970. According to Jundt, consumers began to employ what we now consider ecologically-friendly shopping habits as early as the late 1940s to protest partnerships between the federal government and big businesses that resulted in neglect of the environment. American citizens asserted their own agency as consumers and bought products that did not harm the environment or human health. Jundt demonstrates that shopping became a way for citizens concerned about pollution to aggravate for political change in the postwar era.²⁵

²⁴ Matthew Hilton, "Social Activism in the Age of Consumption: The Organized Consumer Movement," *Social History* 32 No. 2 (May 2007): 132; Robert R. Kerton, "Canadian Consumer Movement," in *Watchdogs and Whistleblowers: A Reference Guide to Consumer Activism*, Robert N. Mayer, ed, (Santa Barbara, CA: Greenwood, an imprint of ABC-CLIO, Inc, 2015), 57-59.

²⁵ Lawrence Glickman, *Buying Power: A History of Consumer Activism in America* (Chicago: University of Chicago Press, 2009), 282-284; Jundt, *Greening the Red, White and Blue*, 1-5.

Though less influential than the consumers movement, an analysis of the phosphate debate also demonstrates intersections between environmentalism and feminism during the late 1960s and early 1970s. In the postwar era, feminist activists revived the feminist movement's agenda by focusing on initiatives beyond suffrage and political equality that dominated the feminist movement of the early 20th century. Instead, second-wave feminists worked to overcome inequalities for women in the workplace, reproduction, healthcare, and roles in marriage and child care. Feminist scholars, activists, and writers urged women to reject their commonly idealized role as housewives and find influence outside the home through paid work or volunteering.²⁶

I doubt many of the women depicted in this thesis would have identified as second-wave feminists in the 1960s and 1970s. The women in my thesis had likely at least heard of or read Betty Friedan's influential book *The Feminine Mystique* (1963), since as white, middle-class housewives, they were the main subject of the work. Friedan, a writer and feminist activist, urged American housewives to reject the prevailing belief that women's sole purpose and source of happiness came from being a wife and mother and encouraged housewives find ways to enrich their lives beyond the home. Friedan's words resonated and inspired many housewives living in suburbia, who felt bored and frustrated with their lives that revolved around housework and driving kids to and from school. Though Friedan's ideas can be traced to earlier left-wing activists, they reinvigorated feminist ideology for a larger audience who were unfamiliar with its

²⁶ For more information on the second-wave feminist movement in the United States and Canada, particularly on the involvement of white, middle-class women, see Stephanie Coontz, *A Strange Stirring: The Feminine Mystique and American Women at the Dawn of the 1960s* (New York: Basic Books Perseus Books Group, 2012); Glenna Matthews, *Just a Housewife* (Oxford: Oxford University Press, 1989), 127-226; Gail Cuthbert Brandt, Naomi Black, Paula Bourne, and Magda Fahrni, *Canadian Women: A History* (Toronto: Harcourt Brace Canada, 1996), 127, 156, 171-189.

concepts. However, historian Gwen Jordan notes that many white, middle-class housewives, especially those in more conservative areas, like the Midwest, “recognized their life choices were limited by their gender, but most denied that they felt the malaise of the housewife that Friedan described.” Gwen suspected women who fit Friedan’s target audience did not feel moved by her message because they had been “professional volunteers, serving their communities through established organizations...and by founding new institutions, including health centers, art and education centers, and women’s shelters.”²⁷ Many of the women who characterize this study and were active in organizations like the League of Women Voters, fit this mold. They recognized that their work participating in the phosphate debate influenced water quality policy and industry initiatives.

It is clear that the heightened discussions surrounding the role of women in society during the period influenced the women’s actions and the gendered debate surrounding phosphate pollution. As housewife Betty Ann Ottinger wrote in her book *What Every Woman Should Know—And Do – About Pollution* in 1970, “the environmental issue is one that the American woman can really sink her teeth into. In our expanded role in American society, we women are now a significant factor in almost every decision that affects environmental quality, although politicians and businessmen have been much too slow to recognize this.” Ottinger emphasized that women, as a “major political force,” could enact change and abate pollution as consumers, instead of waiting years for male legislators to come to a solution.²⁸ Though women, like Ottinger,

²⁷Coontz, *A Strange Stirring*; Gwen Jordan, “How *The Feminine Mystique* Played in Peoria: Who is Betty Friedan?” *History of Women in the Americas* 3 (September 2015): 30-35.

²⁸ Betty Ann Ottinger, *What Every Woman Should Know—And Do—About Pollution: A Guide to Good Global Housekeeping* (EP Press, 1970), 11-12.

did not identify as feminists or use their talents and time to push forward the feminist movement's agenda, they had clearly formulated a feminist ideology in order influence policy. Therefore, the ensuing chapters will enlighten aspects not only of the environmental movement, but also its intersections with feminism and the consumer movement during the 1970s.

Summary of Research

My research spans nearly a decade, from 1965-1974. In 1965, the International Joint Commission (IJC), a governing body that prevents and resolves disputes over waters shared between Canada and the United States, published its first report that pinned eutrophication of the Great Lakes on phosphate detergent use in the United States and Canada. This report, plus additional ones published in 1968 and 1970, raised consumers' awareness of the ill effects their laundering practices had on North American lakes. The IJC recommended reducing the amount of phosphate detergent entering the lakes through sewage treatment and developing non-phosphate detergents. Non-phosphate detergents would improve the issue immediately until better sewage treatment plants could be developed, financed, and built to filter out phosphates and other nutrients that made it down the drain, through sewer systems and finally untreated into lakes or rivers.²⁹ These reports inspired women's actions against phosphate detergent use and the creation of non-phosphate detergents.

The shifting focus of the environmental movement in the early 1970s justifies 1974 as an end date. During the late 1960s and early 1970s, the movement thrived on

²⁹ Scarpino, "Addressing Cross-border Pollution of the Great Lakes after World War Two," 117-120; McGucken, *Lake Erie Rehabilitated*, 98-99

public concern about air and water pollution. This exciting period contained the first Earth Day in 1970, which demonstrated widespread grassroots public participation against pollution. It also featured the enactment of landmark environmental legislation in Canada, such as the Canada Water Act (1970) and the creation of Environment Canada through the Department of the Environment Act (1971). In the United States, major amendments in 1970 to the Clean Air Act (1963), the Clean Water Act (1972) and the National Environmental Policy Act (1969) also became law. However, in October 1973, members of the Organization of Arab Petroleum Exporting Countries issued an oil embargo, resulting in an oil shortage in both the United States and Canada. As a result, the North American environmental movement shifted from its focus on air and water pollution to energy.³⁰ As public attention changed, media coverage as well as concern from environmental groups over phosphate detergent and improving the quality of the Great Lakes decreased dramatically.

My thesis covers women's consumption patterns and activism during the environmental movement, particularly through buying either phosphate or non-phosphate detergent, in both the United States and Canada during this time frame. Though a truly comparative history between the two nations could not be achieved due to constraints regarding time and funding inherent in a master's level project, it is important to include both the Canadian and American perspectives. Historian Philip Scarpino endorses including both American and Canadian perspectives in his narrative on Great Lakes pollution because environmental issues usually spread across political boundaries. His study of the actions the United States and Canada took to reduce phosphate pollution

³⁰ Hays, *Beauty, Health and Permanence*, 54-56.

offers insight not only into the relationship between the two nations, but also exemplifies how comparative histories can provide new perspectives on how governments and peoples in each nation view, relate to, and manage their natural environments. Though both Canadians and Americans contributed to the pollution problem, the United States emitted a larger share of pollutants into the Great Lakes than Canada did. In reality, Canada could not bring about a dramatic change in Great Lakes water quality acting alone.³¹

The first chapter of my work will demonstrate that Canadian women initiated the practice of ecological consumption to clean up the Great Lakes, which, in turn, encouraged many American women to begin a similar practice. I hope that including the Canadian and American perspectives will provide a fuller, more nuanced story regarding the connections between environmental activism, gender, and consumption than one that confined its narrative to either just Canada or the United States. I also hope the work, on the whole, supports the need for additional comparative studies of the environmental movement in Canada and the United States, especially in regard to the topic my thesis covers. The second chapter of my thesis will serve as a case study centered on the actions of Hoosier women. Indiana acts as an interesting case study because it was the first state to ban phosphate detergents in the United States in 1971.³² When many other states (and the United States federal government) still grappled with whether or not to institute a

³¹ Scarpino, "Addressing Cross-border Pollution of the Great Lakes after World War Two." For a broader article on integrated Canadian and American environmental histories, see James Feldman and Lynne Heasley, "Re-centering North American Environmental History: Pedagogy and Scholarship in the Great Lakes Region," *Environmental History* 12 No. 4 (October 2007): 951-958. The authors suggest using the Great Lakes as a focal point in North American environmental histories, which environmental historians have neglected precisely because of its transnational boundaries, to produce richer scholarship on trade, industry, transportation, agriculture and policy.

³² Kehoe, *Cleaning Up the Great Lakes*, 145.

phosphate ban, Indiana followed Canada's action and enacted its own ban. The state later became a battleground amongst consumers, environmentalists, the detergent industry, and politicians over whether to keep or repeal the ban. Additionally, northern Indiana borders Lake Michigan, placing it within the Great Lakes Basin. Indiana's proximity to the Great Lakes made its statewide policy on combating eutrophication highly influential.

The primary sources in my thesis consist of mainly Canadian and American media and magazine articles covering phosphate detergent pollution and women's actions lobbying for non-phosphate detergent use, as well as advertisements for these new non-phosphate detergents. Most articles and advertisements come from a range of Canadian and American newspapers and magazines, including those with large circulations, like the *Toronto Star* and the *New York Times*, *Maclean's* and *Time*, and popular women's magazines, like *Chatelaine* and *Women's Wear Daily*. Since I focus heavily on Indiana, my thesis will also include articles and advertisements from major Indiana newspapers, including the *Indianapolis Star* and *Indianapolis News*, as well as other smaller papers like the *Muncie Star* or *Fort Wayne Gazette*. I also use sources from smaller Canadian towns to provide some balance, such as the *Lethbridge Herald*.

I also rely heavily on two major archival collections; the Charles Wise Papers and the Governor Otis R. Bowen Papers. Charles Wise was a scientist, politician, and Ball State University instructor who served in the Indiana House of Representatives in 1967 and the Indiana Senate in 1969, 1971, and 1972. He helped with the passage of the Indiana phosphate ban. His papers contain reports on phosphate detergents, as well as lobbying literature from various Hoosier groups in support of the phosphate ban and those trying to repeal it. The Governor Otis R. Bowen papers (Governor of Indiana from

1973 to 1981) contain a collection of over one-hundred letters from Indiana citizens regarding the ban on phosphates, which I analyze in chapter three to provide insight into how Indiana citizens, particularly women, reacted to the ban.

Chapter one, as mentioned above, provides an overview of actions in Canada, as well as the United States at the federal level to combat eutrophication. In particular, the chapter considers the role the media and non-phosphate detergent advertisements played raising awareness in Canada and the United States about eutrophication and phosphate detergent pollution. I will demonstrate how environmentally conscious housewives in Canada, followed by American housewives, began promoting the use of new non-phosphate detergents as a method to highlight their support for increased water quality regulation and improve the natural environment.

Chapter two contains my case study of the phosphate detergent ban in Indiana, the first state to ban phosphate detergents in the United States, enacted in 1971. Since new non-phosphate detergents came under fire after some studies from various United States governmental agencies showed they cleaned less effectively, corroded laundry machines, and were potential health hazards, the chapter will highlight women's burgeoning role amidst a debate between primarily male environmentalists, politicians, scientists, and industry representatives over whether to repeal the ban or keep it. As women sifted through often conflicting information regarding non-phosphate detergents and water quality, their opinions, as well as their private laundry practices, became increasingly sought after in the public realm. Women's actions attending conferences and public hearings, as well as joining or forming their own lobbyist groups to influence this debate centered on environmental regulation, technology, health, and hygiene take center stage.

Chapter three compares and analyzes letters to the editor featured in the *Indianapolis Star*, as well as letters Hoosier men and women wrote to Indiana Governor Bowen in 1973 and 1974 about the phosphate ban. The analysis interprets how men and women framed their arguments in support or against the phosphate ban to better understand how gender framed the phosphate debate amongst Hoosiers.

Chapter four transforms the narrative from the above chapters and translates it into four exhibit panels centered around the big idea, “During the 1970s, housewives learned to question the environmental impact of postwar goods and popularized changing consumption practices to abate pollution and influence environmental policy.” This chapter will grapple with the best methods to use local activist histories by adopting the philosophy of the Anthropocene, a highly-debated term proposed to describe a geological epoch characterized by the environmental impact of human activities.³³

³³ Paul Dukes, *Minutes to Midnight: History and the Anthropocene Era from 1763* (Anthem Press, 2011), ix, 3. Most historians describe the Anthropocene as beginning towards the end of the 18th century, citing the invention of the steam engine as a starting date and data indicates the start of increasing concentrations of greenhouse gases in the atmosphere. This concept was created by Paul J. Crutzen and Eugene F. Stoermer in 2000. For more information on the Anthropocene, turn to chapter 3.

CHAPTER ONE: NON-PHOSPHATE DETERGENTS AND CONSUMERS IN NORTH AMERICA

In 1970, two Canadian housewives spoke out against the detergent industry and its “immoral” advertising techniques at a public hearing attended by officials from the United States and Canada on pollution of the Great Lakes. Recently, scientists, environmentalists, and the media had pinpointed phosphate detergent as a key pollutant of North America lakes, especially the Great Lakes. Some recommended eliminating phosphates from detergents altogether, which the detergent industry claimed would reduce detergents’ overall cleaning effectiveness. Detergent industry representatives had spoken throughout the day and assured commission members that housewives would never give up phosphate detergents to clean up waterways; their desire for whiter than white clothes remained stronger than unpolluted lakes and streams. In contrast, the *Toronto Daily Star* reported that Mrs. Betty Tracy and Mrs. Elizabeth Futer, of London, Ontario “failed to follow the detergent makers’ script of a model housewife.” Tracy declared, “I resent the implication by the detergent manufacturers that housewives are responsible for the pollution,” and accused detergent manufacturers of misleading consumers to believing it was “morally right to have white clothes.” Futer described phosphate detergents as a “poison,” and assured commissioners she was more concerned about securing clean water for her children and grandchildren than a dazzlingly bright wash.³⁴ This chapter considers how environmentally conscious housewives in Canada and the United States promoted ecological consumption, particularly the use of non-phosphate detergent, to abate pollution and show support for water quality regulation.

³⁴ Pat McNenly, “Detergent ads ‘immoral,’ women say,” *Toronto Daily Star*, January 24, 1970.

Mrs. Betty Tracy and Mrs. Elizabeth Futer were part of a growing number of citizens in Canada and the United States concerned about the increasingly polluted state of North American lakes, particularly the Great Lakes, during the 1960s and 1970s. The Great Lakes comprise a group of five freshwater lakes situated between the United States and Canada. These lakes, present in their current configurations since the end of the last ice age, are the largest contiguous body of freshwater lakes in the world. Human activity drastically changed the Great Lakes and the surrounding land during the first half of the 19th century. Canal construction throughout the 1820s and 1830s, as well as railroad development in the 1850s in the area promoted commerce and trade. These transportation systems brought more settlers, who cut down much of the surrounding forests and drained swamps for farmland. Industry boomed and populations rose, especially on the United States side of the lakes. Iron from the Lake Superior region was shipped to port cities bordering Lake Erie, like Cleveland and Detroit, to produce steel. As a metropolitan, industrial belt developed along the southern shores of lakes Michigan, Erie, and Ontario, wastes from factories and homes, as well as sediment runoff from surrounding farm fields drained into the Great Lakes.³⁵

Early 20th century urban reformers focused on passing local water quality laws to combat rising rates of waterborne diseases, such as typhoid. Instead of limiting and treating waste effluent, sanitary engineers persuaded public officials to purify drinking water supplies through filtration systems because the practice was more cost effective. In 1912, the International Joint Commission (IJC), a governing body that prevents and resolves disputes over waters shared between Canada and the United States, conducted its

³⁵ McGucken, *Lake Erie Rehabilitated*, 36-40; Kehoe, *Cleaning Up the Great Lakes*, 18-20.

first study regarding Great Lakes pollution. Though the board's final report in 1918 suggested that all sewage discharged into the waters receive treatment, the report did not emphasize preserving water quality, but favored maintaining a level of water purity that ensured safe drinking water. Once typhoid fever cases subsided after cities began treating drinking water, pollution in the Great Lakes received less attention. Policies that stressed purifying water supplies over treating effluent remained the norm and few new regulations to combat growing pollution occurred during the interwar years since waterborne diseases remained under control.³⁶

The World War II industrial boom, thriving postwar economy, and expanding population during the 1940s and 1950s increased pollution in the Great Lakes. Though eighty-six percent of the Canadian and American populations living around the Great Lakes were served by primary sewage treatment, it was not enough to keep most pollutants out. Primary sewage treatment included physical manipulation of wastes, such as screening pollutants or holding sewage in a basin and waiting for pollutants to settle to the bottom. The screened or settled pollutants were removed and remaining liquid discharged into waterways. Unfortunately, this leftover liquid still contained other pollutants, such as phosphorus or nitrogen. These nutrients discharged into water, increased algae growth, and caused increasingly green, slimy, eutrophied lakes.³⁷

Scientists began to understand that the Great Lakes were becoming eutrophic in the late 1950s. Limnologists use three terms to describe the amount of nutrients contained in a lake, "oligotrophic," (small accumulation of nutrients), "mesotrophic," (intermediate amount), and "eutrophic," (a large supply). The excess of nutrients that characterize

³⁶ Ibid, 21-23.

³⁷ Ibid, 26; McGucken, *Lake Erie Rehabilitated*, 41.

eutrophic bodies of water encourage prolific algae growth. Thus, eutrophication not only makes waterways increasingly green and smelly, but also depletes oxygen supplies in the water after the algae die off, creating an inhabitable environment for fish. As the algae-filled, eutrophic Great Lakes became an eyesore, the United States asked the IJC to research methods to abate and control pollution in the Lower Great Lakes. Officials in Ontario, the only province in Canada that borders the Great Lakes, refused to participate due to the financial strain pollution abatement would place singlehandedly on the province. After administration changes in Ontario's government in 1963, Canada and the United States approved an IJC study on pollution in the Lower Great Lakes in 1964. Subsequently, the IJC published three reports in 1965, 1968, and 1970, which contained scientific evidence that pinned much of the eutrophication on increased use of phosphate detergents, a new consumer product that flooded the market after World War II.³⁸ The IJC recommended reducing the amount of phosphate detergent entering the lakes through sewage treatment and developing non-phosphate detergents. Non-phosphate detergents would improve the issue while better sewage treatment plants could be developed, financed, and built to filter out other sources of phosphate from fertilizers, as well as human and industrial wastes.³⁹

The publication of the IJC's reports spurred a number of articles in widely read newspapers and magazines that exposed Great Lakes pollution, especially in Lake Erie, the most heavily polluted lake. Though eutrophication afflicted other lakes, the Great Lakes became the poster child for the cause as the largest group of fresh water lakes in

³⁸ Scarpino, "Addressing Cross-border Pollution of the Great Lakes after World War Two" in *Transnationalism in Canada-United States History into the Twenty First Century*, 117-120.

³⁹ McGucken, *Lake Erie Rehabilitated*, 98-99.

the world. In 1965, *Newsweek* featured an article titled “Great Lakes: The Dead Sea.” The article explained that the lakes, particularly Lake Erie suffered from eutrophication. It emphasized the importance of abating this pollution, and preventing the “death” of the lakes as eutrophic waters become increasingly swampy. In the meantime, the article asserted eutrophication led to the collapse of commercial fishing, closed beaches, and the proliferation of the “stink of algae and dead fish.” The article stated apocalyptically, “Parts of Lake Michigan, in Green Bay and off South Chicago, are also dying. But experts say Lake Erie may be only twenty years from suffocation.” A few years later, *Life* featured an article titled “Great Lakes: The Shocking Case of Our Inland Seas Dying From Blighted Man-Made Filth” in 1968. The fourteen-page spread, filled with colorful photographs of green waters topped with detergent foam residue, shorelines piled high with litter, and blossoming algae blooms, vividly revealed the depth of pollution in the Great Lakes Basin to the public. The *Life* article made it clear human activities, from industry to using phosphate detergents, fed the current eutrophication problem.⁴⁰

Media coverage of the Great Lakes exploded in 1970 as the public began to understand that phosphate detergents were explicitly tied to the pollution. In the opening issue of the year, the Canadian news magazine *Maclean's* featured several articles dedicated to pollution of the Great Lakes. One article quoted Dr. David Chant, a professor at the University of Toronto, who emphatically stated “Lake Erie is in large part dead and Lake Ontario is dying of wastes from the United States and from Canada.” In February, CBC news in Canada aired a twelve-minute exposé on phosphate detergents

⁴⁰ “Great Lakes: The Dead Sea,” *Newsweek*, April 12, 1965, 33-34; Alfred Einstaedt, “Great Lakes: The Shocking case of our inland seas dying from blighted man-made filth,” *Life* 65, No. 8 (August 23, 1968): 36-47.

as a key pollutant of the Great Lakes. In March, the *New York Times* cried out “Warning: The Green Slime is Here,” in a bold, black headline across a two-page spread reporting on the “gloppy” and “green latex paint” type substances found staining the Potomac River and the Great Lakes. The journalist described these contaminants in the water “growing and expanding like the mucid mutations of late-night horror movies.” Phosphate detergents, according to the newspaper, from American sinks, dishwashers, and washing machines fed this rapidly growing green monster. In the fall, *Time* and *Consumer Reports* likewise published sweeping, frightening reports on the Great Lakes, declaring Lake Erie and Lake Ontario dead, or nearly there, largely because of detergent use.⁴¹

Barry Commoner’s bestselling book *The Closing Circle* (1971) brought more attention to Great Lakes pollution. Commoner, a biologist, explained pollution and degradation representing the four elements earth, air, fire, and water. He chose Lake Erie to illustrate water pollution and cited increased amounts of algae as “one of the symptoms of the sickness of Lake Erie” that “give the lake the literal appearance and consistency of pea soup.” He closed his chapter “we have grossly, irreversibly changed the biological character of the lake and have greatly reduced, now and the foreseeable future, its value to man. Clearly we cannot continue this course much longer.”⁴²

⁴¹ “Pollution: Dishing the dirt on phosphates,” February 8, 1970, accessed CBC Digital archives <http://www.cbc.ca/archives/entry/pollution-dishing-the-dirt-on-phosphates>; Courtney Tower, “The People vs. Pollution,” *Maclean’s* 83 No. 1 (1970), 2; Sherwood Davidson Kohn, “Warning: The Green Slime is Here” *New York Times*, March 22, 1970; “Dirty Detergents,” *Time*, 94 No. 26, December 26, 1970; “Dead Lakes: Another Washday Miracle: Phosphates,” *Consumer Reports* 35 No. 9 (1970): 528. B. Furness, “Great Detergent Controversy,” *McCall’s* 98 (November 1970):20.

⁴² Barry Commoner, *The Closing Circle: Nature, Man and Technology* (New York: Alfred A. Knopf, 1971), 103, 111; Carolyn Merchant, *The Columbia Guide to American Environmental History* (New York City, NY: Columbia University Press, 2012), 204.

Phosphate detergents received such a bad connotation as a pollutant in the media and literature that Arthur Godfrey, a television and radio personality, refused to continue his job as spokesman for Axion, a laundry product containing high amounts of phosphates. The producer of Axion, Colgate-Palmolive, had assured Godfrey, an environmentalist, the detergent was not a water pollutant. When Godfrey discovered Axion contained phosphates, Godfrey refused to continue his role as the product's spokesman unless he could tell consumers the product polluted water in the commercials. Godfrey asked, "How can I preach ecology and sell this stuff?"⁴³

As the public became increasingly aware that its laundering activities affected water quality, detergent companies became defensive. Throughout the late 1960s and into 1970, most detergent manufacturers deemphasized phosphate detergent's role as a pollutant. Though several independent scientists and research groups had already developed formulas for non-phosphate detergents, the major players in the detergent industry known in the United States as the "Big Three"--Colgate-Palmolive, Lever Brothers, and Proctor & Gamble--repeatedly stated they could not introduce such formulas because these new detergents would not satisfy the scrupulous American housewife. A representative of the American detergent industry told the *New York Times*, "If phosphates were removed from detergents, housewives would no longer have available even one of the many heavy-duty detergent products that they have been accustomed to using." Charles Buelman, Vice President of the Soap and Detergent Association, a lobbying group comprised of membership from over ninety percent of all detergent manufacturers in 1970, told *Time* frankly, "if detergents were

⁴³ "Godfrey May Cease Ads for Pollutant," *New York Times*, February 5, 1970.

banned...housewives would revolt.” Responses in Canada were incredibly similar. In February 1970, Alan Rae, co-chairman for the Canadian Detergent Industry Committee for Water Quality, a body that represented companies that manufactured eighty percent of the detergents in Canada, testified before the IJC. He urged the commission not to recommend Canadian and American governments force industry to find a total replacement for phosphates in detergents by 1972, as the Commission had previously encouraged. Such an “unwise” suggestion would entail “considerable penalty to the ultimate consumer. This is either in terms of poorer cleaning performance or a higher price for the finished product, or both.”⁴⁴

In the 1970s, women remained the primary launderers in many households, and thus considered the major consumers of these polluting phosphate detergents. During the 1920s, the housewife’s economic role transformed from producer to consumer as many of the products women had once made themselves (soap, foodstuffs) became available for purchase on the market. Though these products claimed to make women’s lives easier, historical time use studies indicate that in 1965 working-age mothers spent about thirty-two hours per week on housework, including cleaning, cooking, and laundry, while fathers spent only four hours per week.⁴⁵ This gendered conception of housework put women squarely in the midst of the brewing phosphate detergent debate. In the media, housewives were condemned for holding on to a “Madison Avenue fantasy,” that

⁴⁴ Paul Delaney, “Detergents Held Pollution Factor,” *New York Times*, December 15, 1969; “Dirty Detergents,” *Time* 94 No. 26 (December 26, 1970): 29; Alan Rae, “Presentation-International Joint Commission,” February 2, 1970, Indiana State Library Rare Books and Manuscripts Collection, Matthew Welsh Papers L608, International Joint Commission Exhibit Documents, 1970, folder 2, box 75.

⁴⁵ Pew Research Center “Americans’ Time at Paid Work, Housework, Child Care, 1965-2011,” March 14, 2013, accessed <http://www.pewsocialtrends.org/2013/03/14/chapter-5-americans-time-at-paid-work-housework-child-care-1965-to-2011/> In comparison, in 2011, men spent about 9 hours per week on housework, while women spend 15 hours per week.

demanded “maximum cleanliness,” and extreme abhorrence of any trace of bacteria or odor. A *McCall's* magazine article in 1970 described the housewife caught in the center of the detergent controversy “clutching a box of detergent and a wash load of dirty clothes as she considers the warning that she soon may have to choose between clean waters and clean laundry.”⁴⁶

Women, particularly housewives, became the scapegoat for Great Lakes pollution because they attempted to achieve the highly promoted middle-class norm of sparkling clean, whiter than white, antiseptically clean laundry. Historian Suellen Hoy traces America’s “pursuit of cleanliness” in her book *Chasing Dirt*. According to Hoy, Americans began their quest for cleanliness attempting to combat cholera epidemics in the 19th century, as cities began to remove rubbish and waste from streets to combat the disease. By the end of the 19th century, cities across the nation built sewer systems to prevent the spread of disease. Greater acceptance of germ theory grew public education movements on the importance of regular bathing and tooth-brushing. According to Hoy, almost everyone had become convinced of daily hygiene practices by the 1930s. Such ideal standards of cleanliness would not be achieved until the postwar era, when rising incomes allowed middle-class Americans to purchase a burgeoning array of new appliances and personal hygiene products designed to help women achieve the “cleanest clean possible” in their homes to fight germs and keep their families as healthy and presentable as possible. Aggressive advertising techniques and popular TV shows made extensive housework a middle-class norm. Though new household technologies promised to reduce women’s labor, they actually increased it. Instead of completing certain

⁴⁶“Madison Avenue fantasy” quote from “Dead Lakes,” *Consumer Reports*, 529; Furness, “Great Detergent Controversy,” 20.

household tasks like laundry, ironing, and vacuuming as needed, middle-class families expected housewives to do these chores daily. Completing such work supposedly showed housewives cared about their families and kept up appearances of middle-class affluence.⁴⁷

Jessamyn Neuhaus, a historian of popular culture, has specifically traced the evolution of laundry detergent advertisements and the cultural ideal of the housewife in *Housework and Housewives in American Advertising: Married to the Mop*. Early soap and detergent advertisements at the beginning of the 20th century featured housewives eagerly embracing these products as a way to decrease the amount of scrubbing needed to get clothes clean, but also to achieve superior homemaking and family care. In the 1950s, advertising agencies began to illustrate the housewife's love affair with specific brands of detergent, like Tide. Companies depicted detergents as magical tools mothers needed to take good care of their family's health and hygiene. Detergent advertisements claimed their products would get clothes so clean, they would appear "whiter than white." A popular 1950s advertisement for Tide detergent showed a white, brunette housewife hugging a box of Tide detergent, a look of pure bliss across her face. Above the image, the advertisement stated "Tide's Got What Women Want!" During the 1960s and 1970s, as feminist ideology revived, increasing numbers of women found the prevalent image of the simple (often white, middle-class) housewife smitten with detergent demeaning. When the public began debating Great Lakes pollution in the early 1970s, advertisements had long linked housewives to laundry detergent and promoted the idea that women

⁴⁷ Suellen Hoy, *Chasing Dirt: the American Pursuit of Cleanliness* (Oxford, U.K.: Oxford University Press, 1995). 59-60, 123, 151-173.

would never be able to give up the product if they wanted to achieve the same scrupulous standard of cleanliness in their homes.⁴⁸

As the media and detergent industry tried to blame women for water pollution, women's magazines in the United States and Canada began to respond. *Women's Wear Daily* covered Betty Furness's address at a research seminar on consumerism in New York City in February 1970. Furness, the former special assistant to President Lyndon B. Johnson on consumer affairs, pointedly accused the detergent industry of the pollution, instead of housewives. She told detergent industry representatives, "You gave us detergents, but didn't tell us they were polluting rivers and streams." She emphasized the detergent industry bore the responsibility of disclosing to consumers if their products contributed to water pollution. *Chatelaine*, a popular Canadian women's magazine, asked its readers in April 1970, "Does a desire for a whiter-than-white wash increase the pollution of our lakes and streams? Must detergents continue to destroy our waters? What is the role of homemakers in halting water spoilage?" The article described phosphates as the "villains" behind pollution and explained how phosphate detergents caused eutrophication. The article hoped that a hunt for a non-phosphate detergent that was safe, effective, practical, and did not harm the environment in any way would soon end. Instead of just waiting complacently for industry to develop such a product, *Chatelaine* encouraged its readers to choose the brands of detergent with the lowest phosphate content and read all instructions on the detergent package to ensure that they were not using more detergent than what was needed.⁴⁹

⁴⁸ Neuhaus, *Married to the Mop*, 19-48.

⁴⁹ Peter G. Ainslie, "Rap Industry for Keeping Consumers 'in the Dark,' *Women's Wear Daily* 120 no. 34 (February 18, 1970): 1, 5; Una Abrahamson, "Of Consuming Interest: Can We have Clean Homes and Lakes?" *Chatelaine* 43 no. 4 (April 1970): 26, 28.

Canadian housewives comprised a large constituency of a broader class of citizens concerned with water pollution and phosphate detergents. Ryan O'Connor observes that Canada's environmental activist community exploded during this time. Only a handful of environmental organizations existed in 1969, but by 1971 ecology-focused organizations could be found in nearly all major and minor cities. The 1967 TV documentary *The Air of Death*, produced by the Canadian Broadcasting Corporation (CBC), drew attention to the adverse effects of air pollution on the environment and human health in Canada and dispelled widely held beliefs that air pollution plagued only cities in the United States. This documentary reached an unprecedented number of viewers and introduced many Canadians to environmentalism.⁵⁰

One of the major Canadian environmental activist organizations that still exists today, Pollution Probe, started in response to this film. Students at the University of Toronto established Pollution Probe just after the airing of the documentary. The film brought attention to the ill effects of industrial fluoride pollution emitted from phosphate manufacturing plants on cattle and agriculture, as well as human health. The documentary urged the Canadian government to enact regulatory legislation to curb air pollution in the nation. High profile investigations into industry resulted in efforts to discredit the documentary's filmmakers, Larry Gosnell and his colleagues at CBC. Students working at the University of Toronto's newspaper, *The Varsity*, worried that these efforts overshadowed the film's overarching message about air pollution. They formed a student action committee, named Pollution Probe, in February 1969 in the Zoology department.

⁵⁰ *The Air of Death* was produced by Larry Gosnell of CBC, a filmmaker who received his start at the National Film Board, before starting to work for the CBC in 1965. Ryan O'Connor, *The First Green Wave: Pollution Probe and the Origins of Environmental Activism in Ontario* (Vancouver, BC: UBC Press, 2015), 1-14.

The group secured the support of Dr. David Chant, as well as approval from the broader Zoology department that provided the infrastructure, funding, and office space necessary to become a credible environmental activist organization. Though started by students, the group attracted a broader membership from Toronto citizens outside of the university.⁵¹

Pollution Probe solidified its national renown speaking out against phosphate detergents. As phosphate detergents gained attention in the media, Pollution Probe decided to take action, rather than wait for the detergent industry or the government to come up with a solution. A group of student members spent the Christmas of 1969 in a lab at the university, under the direction of Dr. Phil Jones, to analyze the phosphate content of twenty-five popular laundry detergents. Their tests revealed detergents contained anywhere from 10.5% to 52.5% phosphate. Industry and government scientists later verified their findings.⁵² Two members, Peter Middleton and Brian Kelly, appeared on CBC on February 8, 1970, to explain eutrophication and share their findings. Brian Kelly noted concerned citizens, like housewives, inspired their study. He told host Peter Reilly, “We found that a great number of people, especially housewives, are very concerned with pollution from detergents. They don’t want to contribute, but they don’t know what to do about it. So we hope to provide them with the basic data and information so that they can make their individual effort towards halting the pollution.” Peter Middleton urged consumers to pick out the detergents on the list with the lowest phosphate content or switch to soap, which contained no phosphate. He said, “The figures are out now-the consumer can make an intelligent choice.” He also said he hoped

⁵¹ Ibid, 13-34.

⁵² Ibid, 59-61.

consumers would support nationwide legislation that would ban phosphates as soon as possible.⁵³

The group's television appearance certainly had an impact. Pollution Probe received over seven thousand requests for a copy of the phosphate content list by the end of March 1970. Magazines and newspapers also reprinted the list so readers could easily analyze how their favorite detergent compared and could make appropriate adjustments. Several Canadian grocery stores, including Loblaw's, Dominion, and Steinberg also began putting up the list in their detergent aisles so customers could have access to it while actually shopping. By April 1970, the group had about fifteen hundred members in Toronto, as well as four full-time coordinators, a secretary, and an office manager. Its activities also appeared weekly in popular Canadian newspapers, like the *Globe and Mail* and the *Toronto Star*. They encouraged the growth of affiliated Pollution Probe agencies in other cities across Canada to spread the workload and the message that everybody had the ability to improve the environment. Fifty affiliate groups formed across the nation, from Halifax to Regina.⁵⁴

Though Pollution Probe became a popular group well covered in the Canadian media, housewives started other, smaller groups to push for regulation of phosphate detergents in Canada to improve water quality. Pollution Probe itself acknowledged the importance of housewives to grassroots environmental activism. For example, the group's published book, which stood as the organization's "statement of deep concern about pollution," hinted at housewives' importance. In the chapter titled "Action

⁵³ "Pollution: Dishing the dirt on phosphates," February 8, 1970 accessed CBC Digital Archives <http://www.cbc.ca/archives/entry/pollution-dishing-the-dirt-on-phosphates>.

⁵⁴ O'Connor, *The First Green Wave*, 59, 65-66.

Programs,” dedicated to help readers form their own environmental action groups, the author noted that activist organizations needed an information center and secretary to serve as a point of contact for community leaders, politicians, industry representatives, and interested citizens. The author recommended that if an office with a paid staff was not available, “often an efficient housewife can make her home the centre office.”

Pollution Probe’s testimony for the IJC on February 2, 1970, in Hamilton, Ontario, also stressed the importance of consumers, like housewives. The group urged the Commission to recommend that Canadian and American governments immediately ban the sale, use, and manufacture of phosphate detergents. The only way this could happen included “consumer pressure on the detergent industry to replace phosphates,” and secondly “public pressure on governments for speedy legislation banning phosphate detergents.”

They noted,

we believe that, contrary to what detergent manufacturers think, many consumers are concerned with the problem and want to do something....We think that many housewives have not swallowed the detergent advertising to the extent that the companies believe and if it will help save our lakes from being ‘greener than green,’ that they will be satisfied with just plain white than ‘whiter than white,’ and switch to a detergent with the lowest amount of phosphate.⁵⁵

Women formed or joined other smaller pollution-focused groups across Canada and demonstrated their disgust with phosphate detergents. They envisioned they could tackle water pollution by convincing one woman at a time to stop using polluting laundry products. In Montreal, a women’s group called STOP (Save Tomorrow-Oppose

⁵⁵Quotes from Pollution Probe’s book can be found here: Donald A. Chant, ed, *Pollution Probe* (Toronto: New Press, 1970), 189. Quoted testimony to IJC here: Pollution Probe, “A Brief to the International Joint Commission Hearing, Hamilton Education Center,” February 2, 1970, Indiana State Library Rare Books and Manuscripts Collection, Matthew Welsh Papers L608, International Joint Commission Exhibit Documents, 1970, folder 2, box 75; General information on Pollution Probe: “The People vs. the politicians,” *Maclean’s* 83 No.1 (1970): 2.

Pollution), formed to advocate all housewives use soap and washing soda instead of phosphate detergents. Women in their Edmonton branch mailed back one hundred free samples of a high-phosphate detergent Arctic Power that salesmen dropped off at households in their community, to demonstrate their disgust with the detergent industry.⁵⁶ A few weeks later, ten members went shopping at a local supermarket. After each picked out their groceries, including a box of phosphate detergent, they went through the checkout line. However, after the cashier rang up the phosphate detergent box, each member declared she would not pay for her order until the box was replaced with a low-phosphate detergent. Each left the store without paying to show the grocery store manager the need to stock low-phosphate detergents.⁵⁷

A group called Pollution Control-Southern Alberta began to reach out to detergent companies to ask for technical information and express concern about phosphates. They also distributed literature in their communities urging other housewives to purchase low-phosphate detergents, ask their grocers to stop stocking detergents featuring high percentages of phosphate, and convince their friends to act as well. The group later joined forces with the Lethbridge Consumers' Association and began a pickup campaign to collect sample boxes of high phosphate detergents distributed to homes, as the women in Edmonton had done. They planned to send the packages of detergent back to the company to demonstrate their "disapproval of this method of advertising and of forcing

⁵⁶ Throughout the phosphate detergent debate, a detergent containing a large amount of phosphates were known as "high-phosphate detergents," and detergents containing smaller amounts called "low-phosphate detergents." Before regulations, some laundry products contained as much around 50% phosphates; after Canada passed its law banning all detergents containing more than 8.7% phosphate, low-phosphate products generally were considered to have around 8.7% phosphate or less in both Canada and the US.

⁵⁷ "Help Fight Pollution," *Medicine Hat News*, April 1, 1970; "Anti-Pollutionists Confront Edmonton Supermarket," *Lethbridge Herald*, April 25, 1970.

the public to pollute.” The group collected over two hundred and sixty twenty-ounce boxes of the detergent, each of which contained a half-pound of phosphate.⁵⁸

Many women also took up letter writing to demonstrate their desire for phosphate detergent regulation. Individuals began writing to JJ Greene, the minister of the Department of Energy, Mines, and Resources (the federal department in charge of water quality), demanding a nationwide ban on phosphate detergents. From January to April 1970, the department received over two thousand letters. In Manitoba, the New Democratic Women’s group wrote to Greene and asked him to introduce an anti-phosphate law. Other women wrote to scientists who were working on developing phosphate-free detergents. Jerry Flynn, a graduate student at the University of Toronto developing a non-phosphate detergent, told *Maclean’s* that hundreds of Canadian housewives wrote to him once they heard about his detergent. He said these housewives wrote that they “don’t want to pollute the environment. They’re concerned for their kids. They say they resent stupid advertising that makes them appear bird brains demanding the last bit of whiteness. And they resent being forced to pollute.”⁵⁹

The women’s section in many Canadian newspapers, as well as *Chatelaine*, a major Canadian women’s magazine, encouraged women to partake in such activities. In their May 1970 issue, *Chatelaine* featured an article titled “10 Things You Can Do About Pollution.” The article opened with the inspirational statement,

There is something we can do about pollution. We know now our air, water, and land are being ravaged-but helpless to stop the crime we are not. Here are ten actions you, as an ordinary citizen, can take. None of

⁵⁸ Quote from: “Group Urges Turn-Back on Sample of Detergent,” *Lethbridge Herald*, April 30, 1970; “Women Mail PM Trudeau Phosphate Detergent Boxes,” *Lethbridge Herald*, April 15, 1970; “Detergents: Whiter Than White,” *Lethbridge Herald*, April 2, 1970; “Phosphate Control Wanted,” *Winnipeg Free Press*, April 2, 1970; “260 Samples of Detergent,” *Lethbridge Herald*, May 14, 1970.

⁵⁹ McGucken, *Lake Erie Rehabilitated*, 102; “Cleaner than White,” *Maclean’s* 83 No. 1 (1970): 5.

them is heroic-most are fairly simple. Taken together, and by many of us, they can cut a powerful swat through the mess we've created around us.

The article's top suggestion was buying cleaning agents containing low amounts of phosphate. The article noted that this practice was becoming more widespread among Canadian consumers. Since the release of Pollution Probe's phosphate detergent content list, the sale of Wisk, a low-phosphate detergent that only contained around ten-and-a-half percent phosphate had increased ten percent in Toronto. The article also encouraged women to "form or join a pressure group to educate, act, and influence government action." It reprinted a list of do's and don'ts Pollution Probe created for aspiring ecological pressure groups to guide women who wanted to form their own group, as well as a list of ten groups women could join across Canada, from the Society for Pollution and Environmental Control (SPEC) in British Columbia to STOP in Quebec.⁶⁰

Women's sections of Canadian newspapers published similar articles. On December 6, 1969, the *Toronto Daily Star* featured an article in the women's section that encouraged women not only use detergents containing the least amount of phosphate, but also keep up to date on the phosphate content in all housework products they used. Jean Sharp, the women's editor for the Canadian Press wrote an article titled "Your Own War on Pollution," that appeared in the women's section of the *Ottawa Journal*. She wrote, "If you are interested there are things you can do about pollution, about the quality of your world." She first suggested using soap or low-phosphate detergent instead of a high-phosphate brand. She also encouraged women to write letters and pressure members of Parliament. Even the small *Hamiota Echo* featured an article in the "Hazel's Hints," for homemakers column. The article encouraged housewives "next washday, let's look at the

⁶⁰ Constance Mungali, "10 Things You Can Do About Pollution," *Chatelaine* 43 No.5 (May 1970): 16, 18.

label of our favorite laundry detergent and open our eyes to the problem of phosphate pollution in our Manitoba lakes and rivers.” It recommended using a low-phosphate detergent or soap instead of a high-phosphate detergent, contacting cabinet ministers in charge of pollution control or writing personally to presidents of large detergent firms to express disgust with polluting detergents. The article concluded, “Your voice, repeated many times, will influence the reduction of phosphate use in detergents.”⁶¹

Greene took note of women’s enthusiasm and support for anti-phosphate legislation. Greene reportedly wanted to be known as the “Minister who put the state back into the kitchen and the laundry,” and began to fight for a nationwide phosphate ban. His department had already introduced the Canada Water Bill when the issue of phosphate pollution exploded on the public scene. The bill established joint methods at the federal and provincial levels to improve water quality and manage waterways in the nation. Greene and his staff met with the major players in the detergent industry (Proctor and Gamble, Lever Brothers, and Colgate-Palmolive) in November 1969 as the House of Commons debated the bill. Though Greene hoped to secure industry’s cooperation, detergent companies denied phosphate was a pollutant. Yet, because of major consensus amongst the scientific community that indicated otherwise, Greene introduced the amendment to the Canada Water Bill while the Standing Committee on Natural Resources and Public Works in the House of Commons considered the bill. The amendment stated, “No person shall manufacture for use or sale in Canada any cleaning agent or water conditioner that contains a prescribed maximum concentration of that

⁶¹ “Phosphate substitute sought,” *Toronto Daily Star*, December 6, 1969; Jean Sharp, “Your Own War on Pollution,” *Ottawa Journal*, March 4, 1970; “Hazel’s Hints...Beware of Detergents,” *Hamiota Echo*, June 4, 1970.

nutrient in that cleaning agent or water conditioner.” The amendment gave the Governor General in Council the power to limit any nutrient’s concentration, such as phosphorus, and allowed the government to inspect manufacturers and importers of cleaning products to ensure compliance.⁶²

The water bill, including Greene’s amendment, received its third and final reading in the House of Commons in early June 1970. Member Grace MacInnis emphasized the instrumental role of the Canadian citizen, particularly housewives, in securing the creation of the amendment during debates. She emphasized widespread public support of the amendment as a reason to enact it. She said,

It was only after such organizations as Pollution Probe, SPEC, and STOP became active and got the facts across to the Canadian people by publishing the phosphate content in detergents that people of this country, and particularly housewives, realized there was a great deal at stake in keeping the waterways of Canada clean....It was then that they realized also there was something very definite they could do. As hon. members opposite and members on this side of the House know, letters, telegrams, petitions, and protests of all sorts began to flood into the Parliament Buildings in Ottawa....In my view it should be made abundantly clear that it was only following the intervention of organized and informed public opinion that a provision was placed in the bill to control and eventually eliminate phosphates in detergents in this country.⁶³

MacInnis also highlighted the influential role of women as a whole. She noted a great number of Canadian women had

taken to using soap flakes and even to making their own soap in order to prove themselves and the rest of the country that this is a possibility. Faced with the choice of having these perhaps more effective detergents or having soap flakes, faced with the choice of that or being accomplices to ruining and killing the lakes and waterways of this country, I am proud to say that the women of this country have overwhelmingly opted in favor of

⁶² Victor Mackie, “Green Kitchen ‘Invader,’” *Winnipeg Free Press*, February 20, 1970; McGucken, *Lake Erie Rehabilitated*, 103-105, 115-118.

⁶³ Canada. House of Commons Debates, 1970 (Queen’s Printer for Canada, Ottawa), 1145 accessed http://parl.canadiana.ca/view/oop.debates_HOC2802_07/1?r=0&s=1.

keeping the condition of our waterways and our environment from deteriorating.

The bill passed the reading and received approval and royal assent by the end of June. In July, the Governor General in Council issued phosphate regulations. As of August 1, 1970, the maximum allowed concentration of phosphorus in laundry detergents was 8.7%.⁶⁴

While the Canadian Parliament debated and enacted a nationwide ban on phosphate detergents, the United States federal government considered taking similar actions. United States Secretary of the Interior Stewart L. Udall announced the creation of the Joint Government Task Force on Eutrophication in August 1967. The group, composed of federal government and detergent industry representatives, began to research methods to control eutrophication of North American lakes, including replacing phosphates in detergents. In November 1969, Assistant Secretary of Interior Carl L. Klein announced that the task force concluded that the reduction or elimination of phosphates from detergents was desirable, but impossible because the department did not have adequate evaluative materials to determine “eutrophicationability” of substitutes for phosphates. Representative Henry Reuss, a Democrat from Wisconsin, had already introduced a bill in the summer of 1969 to amend the Federal Water Pollution Control Act to make the importation or manufacture of phosphate detergents illegal after June 30, 1971. Reuss, chairman of the House’s Conservation and Natural Resources Subcommittee of the Committee on Government Operations, arranged for the

⁶⁴ McGucken, *Lake Erie Rehabilitated*, 116.

subcommittee to hold a two-day hearing on “how the detergent industry can help to reduce the phosphate pollution” in December 1969.⁶⁵

At the hearing, congressmen spent considerable time debating with detergent industry representatives over how the housewife might react to the potential elimination of phosphates in detergents. Miss Anne Lyng, the director of Home Economics for Proctor & Gamble (and the only woman asked to provide input), surmised that the housewife “would be extremely unhappy” noting “it would be a great disservice to her.” Lyng explained that without phosphates, water in a load of laundry could not be softened and therefore could not sequester dirt and keep it from redepositing on clothes. She told one Congressman, “I’m sorry to say that if your shirts were washed with this type of product, they wouldn’t look very good. I don’t think your wife would be very happy with the appearance of her laundry if she used a light duty liquid detergent.” Dr. Richard B. Wearn, technical director of Colgate-Palmolive, hypothesized that the government could not even enact an effective education program to train housewives to change their laundering habits to fit non-phosphate detergents. He said, ““We find that if you tell her [the housewife] too much, not only does she resent it, but she doesn’t follow your instructions. So many surveys have brought this home to us through the years. She has to find her way of using that product to attain her level, her standard of cleanliness, in the home.” Several government officials and detergent industry representatives seemed to have done no research into how housewives or other consumers could react, other than soliciting their own wives’ opinions. Dr. David Stephan, Assistant Commissioner for

⁶⁵ US Congress, House of Representatives, Committee on Government Operations, *Phosphates in detergents and the eutrophication of America's waters*, Hearings, Ninety-first Congress, first session, Dec. 15 and 16, 1969, 1-3.

Research and Development of the Federal Water Pollution Control Administration, admitted that since he was not a housewife, he did not know why consumers chose the laundry products they chose or how much phosphate they would deem adequate. He said, “I assume they---like my wife---evaluate these products one against others as they use them.”⁶⁶

Reuss, however protested that the detergent industry was hiding behind these excuses. He noted at the public hearing that if the government left it to the detergent industry to find a substitute “obviously, our lakes will all be dead before they do it. They have a built-in conflict of interest; and as long as they can report to you [the government] once a year ‘Sorry boss, we haven’t found any substitute for phosphate yet...’ there is going to be no progress.” Reuss predicted if the detergent industry printed the amounts of phosphate on detergent labels, the concerned housewife might purchase the detergent with the lower phosphate content to help abate water pollution. He referenced a table as an example, published that morning in the *New York Times* that listed the levels of phosphates in popular detergents. The table, compiled by Limnetics, Inc, a Milwaukee scientific consulting firm, indicated that supermarkets in Milwaukee sold laundry products containing 43.7% all the way down to 1.4% phosphate. Armed with this table, housewives could choose to buy products that had lower percentages of phosphate. Charles Buelman, Vice President of the Soap and Detergent Association, denied this assumption and predicted housewives would simply use the percentage to guide how much detergent they used; the lower the content the more detergent they would pour in the laundry machine to compensate. He said, “it is our complete conviction that the

⁶⁶ Ibid, 89, 73-74, 54.

average housewife seeing a higher percent content will automatically equate this to better cleaning. Therefore, you might just do the reverse, by advertising the phosphate content on the package and the housewife would buy the detergent with the highest phosphate content instead.”⁶⁷

The committee heard from a few other individuals who had much more optimistic views of the average housewife’s attitudes toward changing her laundering habits. Dr. Bregman, President of Water Research and Applications, Incorporated based in Washington, D.C. said,

We have heard a lot of talk about the American housewife and that she is going to insist on high-phosphate detergents. I do not think she will. I say, let us give the American housewife the choice; let us let her decide whether she wants to buy a high-phosphate detergent or a somewhat lower phosphate detergent...I think you will see that the American housewife will tend toward the product that causes less eutrophication and saves her lakes.

He insisted the government require detergent manufacturers to label the percentage of phosphate content in their boxes to allow the housewife the ability to compare and contrast different brands. Dr. P.H. Jones, Association Professor of Civil Engineering at the University of Toronto and Associate Director of the Great Lakes Institute, who had developed his own non-phosphate detergent seemed to agree. He testified “the shirt I have on has been washed for about the last three months in this material. My wife claims it is perfectly all right.”⁶⁸

After the hearings, the committee published a report in late 1970 urging the elimination of phosphates from detergents in the United States by 1972. It stated “the continuing phosphate damage to our lakes and streams requires immediate reduction, and

⁶⁷ Ibid, 43, 82.

⁶⁸ Ibid, 190, 199.

early elimination, of phosphates from detergents, even if such action results in slightly less effective and more expensive washing products. Phosphorus free detergents are within the capability of present-day technology.” The committee also seemed to have a lot of faith in housewives’ willingness to change their laundering process to improve waterways. They created a booklet titled *Advice to Consumers on Laundry Detergents*, published in 1971. The booklet described phosphates’ role in eutrophication and urged consumers to “avoid the use of phosphate detergents” by selecting the detergents with the lowest phosphate content or soap as well as least amount possible to get a satisfactory wash. The Federal Water Quality Administration began educating the public about “the polluttional effects of detergents” and printed and distributed lists of the phosphate content in forty-eight detergents to “serve as a general standard for the housewife.” Meanwhile, legislators in Congress considered two different bills that would phase out phosphates in detergents. It seemed clear that the United States would follow in Canada’s footsteps and ban phosphates.⁶⁹

Some American women began to switch to the brand of detergent with the lowest phosphate percentages they could find. Canadian women inspired many housewives in the United States to act, as American women across the nation began to read about Canadian women’s actions in newspapers and magazines. *Women’s Wear Daily* reported on the Montreal-based women’s group STOP and noted the organization now contained over a thousand adult and student members in at least six districts in the city. The group formed to crackdown on phosphate detergents and encourage other women to use low-

⁶⁹ McGucken, *Lake Erie Rehabilitated*, 119-135, 139-140; U.S. Congress, Senate, Committee on Commerce, *Advice to Consumers on Laundry Detergents: A Report to the Senate Committee on Commerce by Honorable William M. Spong Jr.* 92nd Congress, 1st sess., 1971. S. Rep. 71-116, 1.

phosphate detergents. *The Daily News* in Hamilton, Ohio, also reported that STOP members were “urging all fellow homemakers to revise their laundry procedures,” and switch to a low phosphate detergent. The article contained several tips to help housewives adapt to low phosphate detergents or a combination of soap and washing soda. In a Texas newspaper, an article declared “Canadian Homemakers Becoming Activists,” and described Canadian women “scrapping their supplies of laundry detergents and switching to a combination of soap and washing soda--all in the name of water pollution.” The article described women’s groups practically springing up overnight to raise awareness about phosphate’s polluting qualities and lobby legislators to enact a ban. The *Gastonia Gazette* in North Carolina featured an article on local women’s growing concern for phosphate pollution. Mrs. Bullwinkle told the reporter “Recently, I read in a newspaper where Canadian women were all upset about pollution and formed an organization. They started hanging signs on supermarket doors telling women not to use detergents but to use soap and washing soda for the family wash.” To find out more, Mrs. Bullwinkle did some research and found a *Conservation News* article about Canada’s plans to ban phosphates. She started throwing out her high-phosphate detergents and began using soap and washing soda right away.⁷⁰

American women began to form their own organizations and produced literature to advise other housewives on environmentally-friendly laundry practices. For example, a group of prominent Washington, D.C. housewives formed a group called Concern, Inc. in

⁷⁰ “That Old Welt Schmutz: Countries The World Over Move to Stem Pollution,” *Women’s Wear Daily* 121 no. 1 (July 1, 1970): 40; “Revolution Bubbling in The Laundry! Help Combat Pollution, In Your Own Backyard,” *The Daily News*, April 22, 1970; Barbara Williams, “Canada Homemakers Becoming Activists,” *Comanche Chief*, May 29, 1970; Dot Allred, “No More Detergents, Just Soap and Water,” *Gastonia Gazette*, April 9, 1970.

1970. The founders, Cynthia Helms and Nan Ignatius, used the connections their husbands offered to get word out and spread their influence. Helms was married to Russell E. Train, who served on President Nixon's Council on Environmental Quality and Ignatius's husband was Paul Ignatius, President of the *Washington Post*. Helms, wrote in her autobiography that she and Ignatius decided to create the organization after talking together at a party in the winter of 1969. They both had recently begun to worry about "the toxic content of everyday items used in the home by housewives. We were among many others growing increasingly concerned about the impact of pollution, sprawl, and chemical poisoning on the environment." She noted, "We realized that American housewives had great, untapped economic power and believed that many women, like ourselves wanted to take action in some fashion. We decided we ought to try and harness the pocketbook power of the housewives, who in fact, truly made the decisions about most consumer purchases in most American families." As word spread across Washington that Helms and Ignatius were starting a group, they both began to receive phone calls from women interested in helping. The two chose a staff of "knowledgeable women who had already done some research on pesticides, conservation, and consumer habits" and incorporated as a non-profit.⁷¹

Concern reached a broad audience of women through their "Ecotips," consumer guide cards they mailed to interested women. These purse-sized cards recommended products women could buy that would cause minimal harm to the environment, including detergents containing the lowest phosphate content available on the American market,

⁷¹ Quotes from Peter Viviane, "Cynthia Helms: Her Concern is CONCERN," *Boston Globe*, August 16, 1970. Cynthia Helms, *An Intriguing Life: A Memoir of War, Washington, and Marriage to an American Spymaster* (Lanham, Maryland: Rowman & Littlefield, 2013), 103-104.

such as Trend (1.4% phosphate), as opposed to Axion (43.7% phosphate). Big players in the detergent industry, such as Proctor & Gamble and the Soap and Detergent Association, even reached out to the group. Mrs. Richard Helms, Vice President of organization, noted the group's goal was to let manufacturers know that "women prefer to buy the product that is ecologically good." The cards also encouraged women against using pesticides containing harmful chemicals, to buy foods in simple packaging to avoid excess waste, and purchase drinks in returnable bottles. The founders of Concern also urged women receiving the Ecotips to talk to grocery store managers about stocking ecologically-friendly products and writing to presidents of companies "protesting or applauding their policies regarding pollution and the environment." The group's activities were well publicized. Major publications like *Women's Wear Daily*, the *New York Times*, and the *Boston Globe* featured stories on the group, as well as the Associated Press. By the middle of July 1970, the organization reported they had mailed out over nine thousand cards to women across the country.⁷²

New York housewife Betty Ottinger wrote another source women could consult besides the Ecotips, a book titled *What Every Woman Should Know—And Do—About Pollution*. Ottinger had a master's degree in social work and was married to Representative Richard L. Ottinger, a Democrat from New York. She was also a housewife and mother of four children ranging in ages from six to thirteen. Her book sought to show that

⁷² Quotes and phosphate percentages from: "Concern, Inc.: An Ecology Crusade Waged in Supermarket," *New York Times*, July 10, 1970. See also, "Ecotips," *Women's Wear Daily* 120 no. 115 (June 15, 1970), 12; Viviane, "Cynthia Helms: Her Concern is CONCERN,"; Peggy Simpson (AP) "Prominent Washington Women Lead War on Pollution," 1970; "Phosphates in Detergents," *New York Times*, December 15, 1969; "Ecotps," *Boston Globe*, June 21, 1970.

the environmental issue is one that the American woman can really sink her teeth into. In our expanded role in American society, we women are now a significant factor in almost every decision that affects environmental quality, although politicians and businessmen have been much too slow to recognize this.

Ottinger stressed that women should pool their consumption practices instead of waiting for mainly male legislators to enact change on the political level. As consumers, women could bring pollution under control by simply not buying the products that caused the pollution. Ottinger urged women to consult her book to prepare “an environmental budget and stick with it, just as we live within our financial budgets.”⁷³

An understanding of ecology was essential to creating an environmental budget, which Ottinger defined as “the study of the way we run our global household. She stressed there was a limit to every resource, including air and water. As consumers, she noted women needed to assess how their purchasing choices affected the natural environment and ensure that they did so minimally. In addition to recommending women boycott plastic containers, refuse to use disposable plates and silverware, and bike or walk instead of driving a car, the book also suggested women use soap instead of phosphate detergent. If a woman felt she had to have phosphates, she should use the detergent with the lowest phosphate content possible. The book even included a chart that showed the phosphate content of several popular detergents. She also urged women to contact local, state, and federal officials regularly about water pollution programs to ensure progress was made and support tax increases for water pollution abatement. She emphasized, “In the long run, it’s going to be we, the consumers, who will pay for cleaning up our waters. We met the astronomical costs of fighting for democracy in the

⁷³ Quotes from Ottinger, *What Every Woman Should Know—And Do—About Pollution*, 11-12. See also, Angela Taylor, “To Betty Ottinger, Ecology is a Fighting Word,” *New York Times*, December 20, 1970.

Second World War. There is not reason why we can't meet the costs of fighting the pollution battle for survival."⁷⁴

Another group of connected housewives began an organization called Consumer Action Now in New York City in 1971. They put up posters that listed the phosphate content of popular detergents on the walls of supermarkets on New York City's east side. Mrs. William Goldman (the wife of the famous author and screenwriter) of the group said, "Everybody wants to do something about pollution, but they don't know where to start. We thought this was as good a way as any." Robert Redford's wife, Lola Redford, a member of the group, told *New York Times* reporters, "Our purpose is to change the public's attitude from consume to conserve." The group also published a consumer education newspaper titled CAN, printed of course, on recycled paper. The newsletter boasted over a thousand subscribers, included a directory of organic food providers and recycling centers, and explained commonly used words in the ecology movement, like eutrophication.⁷⁵

These women's high status and connections were not lost on the public. A male grocery store employee who saw the Consumer Action Now women posting the phosphate content posters commented to a reporter, "Hell, these women don't even look like they wash their own clothes." However, it seemed they were creating materials that middle-class women, and potentially some working-class women could easily obtain to learn how to incorporate ecological consumption into their daily lives. Anyone could write to Concern, Inc and request the Ecotips be mailed to them for free. Even though a subscription for a Consumer Action Now newsletter required payment, the group did

⁷⁴ Ottinger, *What Every Woman Should Know—And Do—About Pollution*, 16-17, 40-45, 48.

⁷⁵ Judy Klemesrud, "Deciding to 'Stay and Fight' Pollution," *New York Times*, March 11, 1971.

offer a student discount and would mail across the country. Ottinger's book cost only \$1.95 and could be bought from conservation groups like the Sierra Club or Friends of the Earth; proceeds from book sales were donated to these organizations.⁷⁶

Newspapers around the nation, even in smaller towns, reported that women far less connected than Lola Redford or Betty Ottinger were taking similar actions.

Environmental activism reached an all-time high in the United States in 1970. The first Earth Day, a government-supported, nationwide event that included teach-ins, marches, and demonstrations at thousands of universities, parks, churches, and streets around the country to raise the public's attention to environmental issues, including pollution, occurred on April 22, 1970.⁷⁷ Senator Gaylord Nelson of Wisconsin conceived Earth Day as a national teach-in day, modeled after anti-war teach-ins held in 1969. According to historian Adam Rome, Earth Day inspired numerous citizens to become environmental activists, united those that already existed, and helped popularize the environmental movement for the American public.⁷⁸

Some middle-class women formed their own ecology-focused groups.⁷⁹ In Buffalo, New York, housewives established "Housewives to End Pollution" in April 1970. The group aimed to make more information available to housewives on phosphate pollution. They posted signs in stores listing the percentages of phosphates and started to

⁷⁶ Quote from: Klemesrud, "Deciding to 'Stay and Fight' Pollution." See also, Taylor, "To Betty Ottinger, Ecology is a Fighting Word;" "Concern, Inc.: An Ecology Crusade Waged in Supermarket."

⁷⁷ For a brief history of Earth Day, see Adam Rome, "The Genius of Earth Day," *Environmental History* 15 (April 2010): 194-205.

⁷⁸ Adam Rome, *The Genius of Earth Day: How A 1970 Teach In Unexpectedly Made the First Green Generation* (New York: Hill and Wang, 2013), 9-10 argues that Earth Day had no precedents within the environmental movement. Other historians interpret Earth Day as a culmination of environmental legislation, publications, and events in the 1960s, see Gottlieb, *Forcing the Spring*, 36; Hays, *Beauty, Health, and Permanence*, 52-53.

⁷⁹ In chapter two, which is a case study of women's actions regarding phosphate pollution in Indiana, will provide more insight into the activities of middle class women.

educate the public about eutrophication through their own personal research into the subject. The group advocated the United States federal government lower the amount of phosphorus in detergent immediately, mandate uniform labeling on detergent boxes to express the amount of phosphorus contained in them, and establish standards to measure the safety of each detergent (for the environment and human health) before they appeared on the market for sale. In Madison, Wisconsin, a group of housewives formed a similar group called “Housewives to End Local Pollution.” They set up an “ecology shelf” at area supermarkets that displayed information for consumers about environmentally friendly products. The shelf included a list of detergents ranked according to phosphate content. They also coordinated recycling efforts in two neighborhoods. Members made weekly pick-ups of recyclables from the homes and took them to the Coca Cola Company’s recycling center.⁸⁰

Many middle-class women across the United States worked within established women’s clubs, such as the American Association of University Women (AAUW), to speak out against phosphate pollution. In Camarillo, California, members of the AAUW completed two years of research on pollution and compiled a booklet for concerned individuals containing practical suggestions regarding recycling and reuse, pesticides, and conserving electricity, among other topics. The booklet also encouraged readers to use phosphate-free or low-phosphate detergents. It also asked readers to write to congressmen and detergent manufacturers about the issue. Copies could be obtained by calling the Association’s members in Camarillo. In Minnesota, the Fergus Falls Branch of the AAUW provided a list of detergents with phosphate percentages created by

⁸⁰ Quotes from “Homemakers Organizing to Change Consumer Attitudes,” *The Capitol Times*, March 22, 1971. See also, McGucken, *Lake Erie Rehabilitated*, 129-130.

Limnetics, Inc. and offered to provide information and advice on which laundry products were best and caused the least pollution.⁸¹

Women in the League of Women Voters were also particularly active.⁸² In Racine, Wisconsin, members of the League of Women Voters started boycotting high phosphate detergents. The entire League of Women Voters of Wisconsin started a program to provide a list of the phosphate percentages in detergents at grocery stores and local libraries across the state. Member Mrs. Marvin Bocaner, of Wisconsin Rapids wrote “It is hoped that this will be a guide for women who are concerned about the quality of our area waterways and lakes.” League of Women Voters members in Mason City, Iowa, also began researching phosphate content in detergents in hopes of educating the public in 1970. Mrs. Arthur Brady of the Arlington-Heights Mount Prospect Area League of Women Voters in Illinois spoke about water pollution after a local children’s program on pollution. She emphasized that individuals, not just industry caused pollution. She urged consumers to switch to a detergent containing as little phosphate as possible and asked them to write to their legislators about water pollution.⁸³

Extensive media coverage of phosphate detergents and women’s decision to switch to soap or low-phosphate detergents coincided (unsurprisingly) with the manufacture of the first non-phosphate detergents in 1970 in Canada and the United States. When Pollution Probe first created and published its list of phosphate levels in

⁸¹ “Environment Must Be Cleaned: Waste Attacked in Booklet,” *The Press Courier* [Camarillo, California], April 8, 1971; “Detergents and Phosphates,” *Fergus Falls Daily Journal*, April 22, 1970

⁸² For more information on the activities of the League of Women Voters and water pollution abatement of the Great Lakes, see Schulte, “Grassroots at the Water’s Edge,” 1-276.

⁸³ “Majority at Racine Hearing on Detergents Want Sales Banned Here,” *Racine Journal Times*, September 23, 1970; Mrs. Marvin Bocaner, “Women urged to avoid phosphates pollution,” *The Daily Tribune* [Wisconsin Rapids], September 14, 1970; “It may all come out in the wash, but flowing downstream it turns pollutant,” *Mason City Globe Gazette*, July 3, 1970; “Clean Drinking Water Turned to Murky Glob,” *The Herald* [Arlington Heights, Illinois], February 5, 1970.

common detergents, it included a Swedish detergent called Tend that contained only eight percent phosphate. Even though the detergent was not available for sale in Canada, the group included it in the list to show it was possible to produce a heavy-duty laundry detergent with little phosphate; something the detergent industry vehemently denied it could do. Independent scientists had been working in universities and research centers for years developing their own phosphate-free formulas. For example, Dr. P.H. Jones at the University of Toronto had spent the last four years developing a detergent that used the chemical nitrotrilacetic acid (NTA) instead of phosphate. He attested that his detergent was as good as Tide; his wife had been using it since October 1969 with good results.⁸⁴

Detergent companies in Canada and the United States marketed non-phosphate detergents beginning in May of 1970. A Calgary-based chemical company called Peerless Industrial Chemicals Ltd began selling a phosphate-free detergent in Edmonton, Alberta, that contained NTA instead of phosphate in the middle of May. Shoppers could find it at Safeway and Woodward's stores. Sears announced it planned to offer a phosphate-free detergent, catchingly called "Sears Non-Polluting Laundry Detergent," for sale in May 1970. Other companies began to catch on. Two other non-phosphate detergents came out in the late summer of 1970, Ecolo-G from the Ecology Corporation of America, and Sunlight, from Lever Detergents Limited. Numerous other non-phosphate detergents appeared throughout 1971. Their names often promoted their new, environmentally-friendly status like Valley Dew, Nature & Concern, Stream Fresh, the Un-Polluter, and Phosph-Free. Eighty different brands of phosphate-free detergent were manufactured for

⁸⁴ "Pollution: Dishing the dirt on phosphates," February 8, 1970 accessed CBC Digital archives <http://www.cbc.ca/archives/entry/pollution-dishing-the-dirt-on-phosphates>; US Congress, House of Representatives, *Phosphates in detergents and the eutrophication of America's waters*, 199.

consumer use in the United States and Canada in 1971. Members of the “Big Three” North American detergent companies (Proctor & Gamble, Lever Brothers, and Colgate-Palmolive) also announced they were creating detergents with lower phosphate content and trying to develop non-phosphate products.⁸⁵

Most of the print advertisements for these new non-phosphate detergents used text and imagery to connect use of their products to cleaner, unpolluted water. A Golden Products advertisement in the *New York Times* announced the death of Lake Erie due to phosphate pollution, and predicted the eventual deaths of the other four Great Lakes, unless consumers started purchasing Golden Products detergent. The advertisement featured an outline of the Great Lakes with Lake Erie shaded in black and the rest in gray to emphasize its claims. “It’s not too late to save our waters. If we still care,” the advertisement implored. An advertisement for Miracle White Non-Polluting Detergent emphasized that “to clean clothes people pour billions of tons of polluting phosphates into their streams and rivers,” but with Miracle White one could “wash without regret,” because it did not contain phosphates. The full-page color advertisement featured a box of laundry detergent, half-submerged in a clear streambed. It even depicted a fish swimming in front of the box that displayed an image of a clean, babbling brook. Lastly, an advertisement for the Un-Polluter in the *New York Times* in 1971 proclaimed in large text “Now! The power to clean without polluting” across the top. Below, an image of a box of The Un-Polluter detergent sat in the middle of a rushing, swirling river atop a bed

⁸⁵ “New Laundry Detergent On Market,” *Lethbridge Herald*, May 6, 1970; John P. McGrath, “Ecologic Battle Front: Chains vs. Soapers in the Battle of Detergents,” *Women’s Wear Daily* 121 No. 82 (October 23, 1970): 17; Isadore Barmash, “Sears and Dayton Dip: Retail Earnings Facing Pressure,” *New York Times*, May 19, 1970; “Softer Soap? Recommendations to Phase Out Phosphates,” *Newsweek* 76 (August 24, 1970), 52; McGucken, *Lake Erie Rehabilitated*, 132-133, 139

of rocks. Towering pine trees and flying birds lined the shore of a river in the backdrop. The clever placement of the Un-Polluter detergent in the river implied to the viewer that the Un-Polluter not only helped the environment, but was seemingly an integral part of the natural landscape.⁸⁶

Others tried to link their products to burgeoning environmental activism present in the United States and Canada. A Blue Borateem advertisement appeared in the *Toronto Daily Star* featuring big, bold text that read “Fight pollution. Still get the whitest wash.” Below a picture of a box of Blue Borateem, the advertisement’s narrative tied the product to Pollution Probe and its activist agenda. The narrative opened “‘Every time a washing machine is loaded with a high-phosphate detergent, our world dies a little.’ Fighting words, these from the University of Toronto’s Pollution Probe.” A similar advertisement for Purex’s Instant Fels detergent appeared in the *Boston Globe*. The advertisement started with big black lettering that read “You can fight water pollution. (Pass it on)” indicating that all one needed to do to be an environmental activist was to use the detergent and encourage friends to do the same. Text below described phosphates and pollution. It noted,

All of us---citizens, Government, private industry---must work on all levels to fight pollution because it is everywhere, mounting day by day, building to impossible levels. What we are saying is that when each of us discovers a way to cut down on pollution, then we should give serious thought to adopting it;

of course, by using a low phosphate or phosphate free detergent like Instant Fels.⁸⁷

⁸⁶ First quote: Advertisement: “Display Ad 37, Golden Products,” *New York Times*, January 14, 1972; second quote from advertisement: “Miracle White Non-Polluting Detergent,” *Parents’ Magazine & Better Family Living* 46 No. 10 (October 1971): 117; third quote from advertisement: The Un-Polluter, *New York Times*, May 26, 1971.

⁸⁷ Advertisement: Blue Borateem, *Toronto Daily Star*, April 14, 1970; Advertisement: Instant Fels, *Boston Daily Globe*, July 21, 1970.

Advertisements also used text and imagery to suggest it was women, particularly housewives, who shouldered the responsibility of cleaning up waterways through buying and using non-phosphate detergent. In the 1970s, women still bore the role as primary launderers in the household, and thus seen as major consumers of these polluting phosphate detergents. During this time, marketing campaigns displayed white, middle-class women as the primary purchaser of household goods. Even during the height of second-wave feminism in the 1970s, advertisements stuck to the image of the white, middle-class housewife. Non-phosphate detergent marketing campaigns often featured images and testimonies of white, middle-class women in their advertisements and implied that these were the women whose approval and support was needed to achieve market acceptability of non-phosphate detergents. For example, an advertisement for 20 Mule Team Laundry Detergent featured a photo of a stereotypical housewife, with her hair curled and pulled up, donning a housecoat. She held up a box of the detergent next to the imposed text “Fight pollution. But fight clean.” An advertisement for Sears Non-Polluting Laundry Detergent featured a drawing of a white housewife standing triumphantly over a box of detergent, holding freshly laundered clothes over her head. Bold, black text behind her read “The Clean-Up Committee.” Smaller text below stated “Detergent phosphates are stagnating America’s water supply. Now you can do something about it with Sears new phosphate-free detergent.” The first advertisement for the Un-Polluter in the *New York Times* featured an article declaring that thousands of housewives in the area were buying and using their non-phosphate detergent. The article featured reviews from local housewives praising the detergent’s cleaning ability and

gushing about their new power to do their “bit to help the pollution problem,” with this new product.⁸⁸

The proliferation of new non-phosphate detergents raised a debate amongst scientists, government officials, and environmentalists. What replaced phosphate in many of new detergents? Were these substitutes safe, for both the environment and human health? Nitrilotriacetic acid (NTA) stood as the most promising replacement for phosphates in 1970; the Big Three had invested millions into the chemical and had begun incorporating it into its products. If NTA completely replaced phosphate, about two billion pounds of it would be discharged into North American waterways every year.⁸⁹

In early 1970, the US federal government encouraged the Big Three to start replacing phosphate with NTA in order to abate pollution. During the affluent post-war era when public trust in business executives remained high, industry and local, state, and federal governments in the United States often cooperated to shape policy, including environmental regulation. The counter-cultural movement of the 1960s encouraged the public to question the collaboration between industry and the government. Citizen groups monitored policy formation to ensure it favored the public’s interest, instead of industry. Many Congressmen began to critique the old system of government and industry partnership, known as corporatism. How could industry be expected to pay millions to create an adequate substitute for phosphates, especially one that prevented eutrophication and kept Americans healthy, if the government offered no incentive?⁹⁰

⁸⁸ Neuhaus, *Married to the Mop*, 1-13; Advertisement: 20 Mule Team Laundry Detergent, *Boston Globe*, October 21, 1971; Advertisement: Sears Non-Polluting Laundry Detergent,” *Boston Globe*, January 10, 1971; Advertisement: The Un-Polluter, *The New York Times*, May 26, 1971.

⁸⁹ McGucken, *Lake Erie Rehabilitated*, 143.

⁹⁰ Kehoe, “Merchants of Pollution,” *Environmental History Review*, 22-24.

Though the Big Three attested that NTA could safely replace phosphate, several government officials worried about the health consequences of the presence of NTA in sewage. In March 1970, Allen Hirsch of the Federal Water Pollution Control Administration wrote to the office of the surgeon general to express his concern that NTA might combine with toxic heavy metals in wastewater from plumbing systems and sewage pumps and form chelates. A chelate is a compound containing a chemical, like NTA bonded to a metal, like lead. When NTA subsequently degraded, it released such toxic heavy metals into water, resulting in implications for humans, fish, and plant life. Throughout 1970, government officials consulted with detergent industry officials while the NIEHS (National Institute of Environmental Health Sciences) conducted tests regarding teratogenicity of NTA, which indicated NTA chelates resulted in birth defects when administered to rats and mice; doses were sometimes lethal. In contrast, government officials discovered that tests conducted by the detergent industry, as well as various Canadian studies completed by Canadian federal government, indicated the introduction of NTA into detergents posed little risk. As a precaution, in December 1970, the United States Surgeon General, Jesse L. Seinfeld and EPA Administrator William Ruckelshaus announced in a press conference that NTA should no longer be used in detergents due to potential adverse effects to human health.⁹¹

The Big Three met the decision glumly since the announcement meant they had had to absorb their millions of dollars of investments in NTA, as well as finance research into a new substitute. As major players in the detergent industry scrambled to come up with an alternative, representatives attacked smaller brands of non-phosphate detergents.

⁹¹ McGucken, *Lake Erie Rehabilitated*, 143-151.

These detergents, which replaced phosphates with metasilicates and carbonates, had taken a larger share of the market after the NTA announcement. In order to stall the enactment of a phosphate ban, the Big Three questioned the cleaning ability and safety of these new products. On March 8, 1971, the FDA seized about two thousand cases of two non-phosphate detergents, Ecolo-G and Bohack's No-Phosphates. FDA laboratory tests showed that when these two detergents were applied to rabbits' shaved skin for twenty-four hours, they produced open sores that remained for eight days. When each detergent was applied to the rabbits' eyes for five minutes it caused severe irritation and permanent partial loss of sight. Detergents with high alkalinity could form a gel when they make contact with human tissue. This made them difficult to flush out if they accidentally got in the eyes or were swallowed. The FDA expanded its study of detergents to include thirty-nine non-phosphate, low-phosphate, and high-phosphate content detergents to compare all three types. Though detergents in all categories were found to contain caustic chemicals, detergents without phosphates were more likely to be caustic than those with phosphate. To aid the consumer, the FDA required sixteen of these detergents to carry a label warning "Danger—may cause burns—harmful if swallowed—eye irritant." It also gave directions if the detergent did get in the eye or was swallowed, such as flushing the eye with water for fifteen minutes or drinking large quantities of water or milk.⁹²

However, the death of a little girl in Connecticut in August 1971 reframed the phosphate debate in the United States and prevented the enactment of a federal ban. Newspapers reported that one day, a busy housewife ran out of laundry detergent and borrowed a cup from her neighbor. Unaware that it was a non-phosphate detergent, she

⁹² Ibid, 151-161.

got distracted and set the cup down. Her fifteen-month-old daughter found the cup and put some of the non-phosphate detergent in her mouth. The detergent ended up severely burning the girl's windpipe and she died six days later from suffocation. Though between two-thousand and three-thousand children died each year in the United States swallowing detergent or other household cleaners, this episode received considerable publicity and caused many consumers to question the safety of non-phosphate detergents. Detergent industry representatives intensified their lobbying efforts in Washington to encourage the Nixon Administration a federal ban was unnecessary and dangerous, as well as encourage a reversal on the decision against use of NTA. Meanwhile, the EPA still had to figure out how to solve eutrophication and clear up any public misconceptions about non-phosphate detergents to consumers.⁹³

On September 15, 1971, US Surgeon General Jesse L. Steinfeld organized a press conference to address the safety of non-phosphate detergents and whether the detergent industry could resume using NTA to replace phosphorus, since a variety of industry and university scientists had replicated the NIEHS studies, which indicated the chemical posed a much smaller risk than originally suspected. Other officials from the FDA, the EPA, and Council for Environmental Quality spoke as well. All indicated that detergent manufacturers should still not use NTA and indicated that the "health hazards of increasing use of highly caustic substitutes for phosphates in laundry detergents is a cause for serious concern." The most publicized and controversial portion of the press

⁹³Steinmann, "The Washday Question," *Life* 70 No. 19 (May 21, 1971), 37; Richard D. Lyons, "The Price of Whiter than White," *New York Times*, September 19, 1971; An article by Jack Anderson, titled "Most every detergent hazardous to housewives" appeared in newspapers across the country, like *Red Bluff Daily News* [Red Bluff, CA], December 11, 1971, *Byron Daily Eagle* [Byron, Texas] December 13, 1971; *Olathe Daily News* [Olathe Kansas] December 17, 1971 that detailed the little girl's death; McGucken, *Lake Erie Rehabilitated*, 162-170.

conference regarded housewives' domestic use of non-phosphate detergent. A reporter asked Steinfeld, "What would you say if a housewife had her choice, knowing her concern about the environment, the safety of her children and the uncertainty in regard to NTA; what would your advice to the housewife be?" Steinfeld told the reporter "My advice to the housewife at this time would be to use the phosphate detergent. It is safe for human health."⁹⁴

This statement effectively reversed the United State government's earlier advice to consumers and commitment to banning phosphate detergent. The officials also "strongly urged" states and municipalities to reconsider banning phosphate detergents. Historian William McGucken noted the announcement "surprised and displeased in one way or another, all concerned non-administration parties." Journalists and some US congressmen, namely Representative Henry Reuss accused the Nixon administration of capitulating to the detergent industry. Politicians and environmentalists in support of the reduction or elimination of phosphates in detergents thought the federal government's reversed stance on phosphates damaged credibility of the environmental movement. Housewives had responded well to incorporating non-phosphate detergents into their laundry routines; this new ambiguous government policy on phosphates might discourage consumers from supporting other environmental policies. Consumers, scientists, detergent industry representatives, and government officials at all levels were quickly embroiled in a debate. Which was more harmful: non-phosphate detergents or the polluting phosphate ones?⁹⁵ The next chapter considers women's roles, particularly

⁹⁴ McGucken, *Lake Erie Rehabilitated*, 170-173.

⁹⁵ McGucken, *Lake Erie Rehabilitated*, 175; McGucken, "Merchants of Pollution?" *Environmental History Review*, 36-38.

Hoosier women's roles, in this debate as their state became one of the first to ban phosphate detergents, despite the federal government's warning.

CHAPTER TWO: THE HOOSER PHOSPHATE DEBATE

Betty Lou James, president of the Indiana Home Economics Association, stood before a standing room only crowd of two hundred people packed into Fort Wayne, Indiana's city council chambers on February 7, 1973. The Indiana Senate Environment and Ecology Committee had organized a special hearing to listen to public opinions on the state's recent law that banned phosphate detergents to improve water quality. James testified she now found the condition of her laundry deplorable. She believed the new non-phosphate detergents available for sale simply did not clean as well as the old phosphate detergents. James was not alone; home economists across the state warned that these new non-phosphate detergents posed serious health risks and set back hygiene standards the average American family had grown accustomed to. James emphasized that her stance did not make her or other home economists apathetic to ecology. She stated pointedly, "I'm not anti-fish, but pro-people and pro-family."⁹⁶ This chapter investigates how white, middle-class Hoosier housewives, like James, influenced the debate between primarily male politicians and professionals over whether Indiana's ban on phosphate detergents should be repealed or retained. As women sifted through conflicting information regarding non-phosphate detergents and water quality, their opinions, as well as their private laundry practices, became highly publicized in gendered conversations grappling with environmental regulation, technology, and health.

Focusing on Indiana's phosphate regulation enables a deeper analysis of the complex roles women played shaping the debate over whether to lift the statewide phosphate ban. Indiana is an ideal state to study because it was the first state to enact a

⁹⁶ "Good Response at Detergent Hearings," *Valparaiso Vidette Messenger*, February 8, 1973.

phosphate detergent ban. Additionally, Indiana borders the Great Lakes, so Hoosiers had a vested interest in enacting the ban and the debate over water quality in the Great Lakes. Hoosier environmentalists viewed the ban as a piece of “landmark” legislation other states, and eventually the nation, would copy. Thus, the Hoosier phosphate experiment and the arguments surrounding it had the potential to impact nationwide water quality regulation. Though the Indiana General Assembly passed the phosphate ban in 1971 before the ban could be implemented, concerns broke nationwide over the health, safety and cleaning effectiveness of the new non-phosphate detergents consumers would soon be forced to use. Though the ban was eventually enforced January 1, 1973, Hoosiers, especially Hoosier women, debated vigorously whether to retain or repeal it between 1973 and 1974.⁹⁷

White middle-class housewives influenced the debate since they remained the primary individuals associated with laundry in advertisements and the media. This chapter will demonstrate that such women vocally supported the phosphate ban because they believed the law would clean up state waters and ensure there would be enough for their children and grandchildren. Others believed the law made Indiana a leader in environmental regulation. Many women on the other end of the spectrum also supported repealing the phosphate ban. Some felt the new non-phosphate detergents were unsafe or dangerous. A few simply wanted their old detergents back. And many more stood in the middle, unsure which side to choose, but felt pressure from lobbying groups, politicians, and the media to take a stance.

⁹⁷“Indiana Is First State to Enact Curb on Phosphate Detergents,” *New York Times*, April 11, 1971; “Indiana Detergent Curb Near,” *New York Times*, December 20, 1972. For more information on concerns nationwide on health and safety of non-phosphate detergents, see Chapter 1.

Interpreting the phosphate ban in Indiana demonstrates how the American environmental movement both blurred and sharpened traditional gender roles. For example, many women participated in the movement as activists or volunteers and thus fulfilled a major goal of the women's movement: to extend women's influence and purpose beyond the home. On the other hand, connotations linking ecology and the home also restricted women's involvement. Environmental historian Carolyn Merchant explained the connections between the household, women, and ecology in 1981: "The word ecology derives from the Greek word, 'oikos' meaning the house. Ecology then is the science of the household---the Earth's household. The connection between the Earth and the house has historically been mediated by women." Housewives in the 1970s commonly drew on the connections they saw between the household and ecology to defend women's roles in the environmental movement. For example, Betty Ann Ottinger, author of the popular book *What Every Woman Should Know—And Do—About Pollution* even described ecology in 1970 as the "study of the way we run our global household." She recommended that her readers "prepare an environmental budget and stick with it, just as we lived within our financial budgets." Ottinger believed every housewife could unite and abate pollution by limiting the amount of pollution her household emitted.⁹⁸

Merchant noted that though that the environmental and feminist movements of the 1960s and 1970s were "liberatory and democratic in their outlook and reformist or revolutionary in their politics...they also have their dangers for reinforcing traditional forms of oppression." Women were encouraged to enter discussions regarding pollution and environmental regulation precisely because they were caretakers, and not researchers,

⁹⁸ Carolyn Merchant, "Earthcare," *Environment* 23, No. 3 (June 1981): 6-13; Ottinger, *What Every Woman Should Know—And Do—About Pollution*, 12, 16.

ecologists, or scientists. Historians have often analyzed public reception of Rachel Carson's popular book *Silent Spring* (1962) to demonstrate this phenomenon in the environmental movement. Carson, a marine biologist, published *Silent Spring* to expose the dangers of widespread and indiscriminate synthetic pesticide use. According to historian Maril Hazlett, Carson served as a role model for white middle-class housewives and inspired them to participate in the environmental movement and the sciences. Since female readers of *Silent Spring* focused on domestic use of pesticides and chemicals, their influence became limited to how environmental issues affected the home. Male gender roles also polarized in a similar fashion. Some male scientists dismissed *Silent Spring* as the "hysterical" or "emotional" rantings of a subpar female scientist incapable of serious scholarship. Other men, often outdoorsmen, supported Carson's work and developed a new concept of masculinity concerned with matters of the home and how it affected the environment.⁹⁹

Since the Hoosier phosphate debate focused on two heavily gendered things, detergent and laundry, I will demonstrate in this chapter that it distinctly reflected these dynamics. Hoosier women clearly used the phosphate debate to participate in public discussions involving science, technology, and ecology. Since many of these women identified as housewives, their informed conclusions on what the state should do were at times belittled or obscured, especially in the media. On the other hand, men's reactions to the phosphate debate indicate they either worked to distance themselves from the phosphate debate to conserve a traditional, masculine image or took new interest in

⁹⁹ Merchant, "Earthcare," 6; Norwood, *Made From this Earth*, 171; Hazlett, "'Woman vs. Man vs. Bugs' *Environmental History*: 701-729

household concerns to forge an ecological masculinity. It is increasingly apparent both of these masculine outlooks functioned by keeping the traditional gender status quo intact.

Before the state legislature enacted a statewide ban on phosphate detergent, Hoosier women participated in discussions surrounding eutrophication, phosphate detergents, and housewives' new role as consumers concerned about how their purchases affected the environment. For example, on April 24, 1970, the *Indianapolis Star* reported that dozens of women and university students united temporarily to encourage housewives to stop using high-phosphate laundry detergents. The participants stood outside several Indianapolis grocery stores and passed out handbills to morning shoppers that listed the phosphate content in the laundry detergents for sale. It was only after a trip to Toronto that Mrs. Robert Kilkenny, the organizer of the group, decided to advocate for home use of low and non-phosphate detergents. Mrs. Kilkenny, described as a "young housewife and mother," told the *Star*, "Canadian women have proven that if they really want to do something about this problem, they really can. The housewives there aren't buying these detergents anymore."¹⁰⁰

These actions by Hoosier women coincided with the first Earth Day celebration. The official event occurred on April 22, 1970, though some cities and towns extended their celebrations for several days beforehand or afterward. Senator Gaylord Nelson of Wisconsin conceived Earth Day as a national teach-in day, modeled after anti-war teach-ins in 1969. Lectures, marches, and demonstrations at thousands of universities, parks, churches, and streets around the country were held to raise the public's attention about environmental issues, including air and water pollution.¹⁰¹ Grassroots activism at its

¹⁰⁰ Butters, "Citizen Seek Cleaner Soap," *The Indianapolis Star*, April 24, 1970.

¹⁰¹ For the history and impact of Earth Day, see Rome, *The Genius of Earth Day*.

finest, citizens across the nation organized and participated in Earth Day in their hometowns to show they cared about the environment. Though universities appear to have served as a base for Earth Day in Indiana, all sessions were open and attended by the broader public. Governor Whitcomb endorsed Earth Day participation in Indiana, as did Indianapolis Mayor Lugar. In Indianapolis, Butler University, Marian College, Indiana Central College, and Indiana University-Purdue University at Indianapolis all sponsored seminars about various ecological topics, including the medical, legal, and engineering aspects of pollution, as well as pesticides, conservation, and population control. Students also organized cleanup operations. Butler students instituted operation SMUT (Students March Upon Trash) to beautify their campus. At Ball State University, students piled up tens of thousands of aluminum cans outside the university's arts building to advertise the need for pollution control. At Purdue, students developed a month of lectures and clean-up projects focused on pollution. Fifty students picked up trash in an empty lot on the southern edge of campus and planted the newly clean ground with tulip trees. DePauw University students even organized bus tours to show riders examples of pollution and conservation in Putnam County.¹⁰²

Earth Day activities popularized grassroots environmental activism, while coverage of larger women's ecology groups in Indiana newspapers showed how women in particular could unite as consumers to abate pollution.¹⁰³ Newspapers indicate various

¹⁰² "City Programs for Earth Day are Extensive," *Indianapolis News*, April 21, 1970; "Monument to Civilization," *Indianapolis News*, April 22, 1970; "Purdue professors and students warn of environmental problems," *Campus Copy* 22 No. 9 (May 1970): 3; "Indiana Earth Day Has Many Features," *Decatur Daily Democrat*, April 23, 1970.

¹⁰³ On Consumer Action Now and Concern, Inc see chapter 1; "Concern, Inc Fights Pollution with Pocketbook Power Tips," *Indianapolis Star*, August 9, 1970; "Pollution Concerns the American Woman," *The Call-Leader* [Elwood, Indiana], January 18, 1972; "Five Prestigious Founders: 'Concern' Champions Pollution Fight," *The Republic* [Columbus, Indiana], January 14, 1972; "Housewives Eager to Help in Fight Against Pollution," *Linton Daily Citizen*, January 13, 1972; "CIA Chief's Wife Acts to Save

women's clubs in Indiana started dedicating their meetings to discussing water pollution and phosphate detergents. The Eden Homemakers Club, in Eden, Indiana, reviewed "Ecotips" from Concern, Inc., titled "What you buy reflects your concern for the environment" in 1971. One tip encouraged women to demand low-phosphate and non-phosphate detergents at grocery stores. Others asked women to buy drinks in returnable bottles only and food that was simply packaged to avoid unnecessary waste, as well as use glass containers instead of those made from PVC. A women's club in Zionsville attended a similar program titled "The Environmental Problem Demands Immediate Action by Us All." Participants discovered twenty-five different ways they could help the environment, including using less water, starting a compost pile instead of burning leaves, refusing to buy products with unnecessary packaging, and using cloth napkins. The women also received a list of popular detergents detailing the phosphate content each contained to encourage them to buy the detergent with the smallest amount of phosphate. Women's clubs in Greenfield and Franklin also held similar programs. Larger groups also engaged in the conversation. For example, the Indiana chapter of the American Association of University Women hosted conservationist Thomas Dustin at their yearly convention. In part, Dustin discussed phosphate pollution and the need for a statewide ban. The League of Women Voters of Indianapolis published articles in their *League Bulletin* suggesting concerned women could reduce water pollution by using a low-phosphate detergent. They reprinted the *New York Times* list of phosphate content in common detergents.¹⁰⁴

Environment," *Indianapolis Star*, August 15, 1971; "Ecological Challenges," *Logansport Tribune and Press*, December 16, 1971.

¹⁰⁴First quote from: "Eden Homemakers Club," *The Daily Reporter*, April 17, 1971; Second quote from Dorothy R. Lykins, "New Division to Be Promoting Creative Efforts Among Clubs," *Indianapolis Star*,

Women's actions began to capture journalists' attention. Myrta Pulliam, granddaughter of the *Indianapolis Star* publisher Eugene C. Pulliam, wrote an article for the *Indianapolis Star* featuring Jane Kilpatrick, a local environmentalist and homemaker in Indianapolis. Kilpatrick said, "I save and return glass containers. I use detergents without phosphates. I stay away from cleaning agents that pollute. I only use white toilet paper. I don't use any other paper products, and I don't use the garbage disposal." Kilpatrick worked as a lobbyist as well. She co-chaired the Environmental Coalition of Metropolitan Indianapolis, a group suing the Indiana Air Pollution Control Board for failing to establish rules to control sulphur oxides, a harmful gas local industries emitted. Kilpatrick and other women were preparing to testify before a hearing at the statehouse on sulphur oxide regulation. She emphasized the importance of public testimony: "Industry is pressuring the board on one side. The only hope is for the public to give equal pressure on the other side."¹⁰⁵

The article also featured a long list of local groups dedicated to fighting pollution. While several groups were older conservation organizations such as the National Audubon Society and the Izaak Walton League, others were newly formed ecology groups inspired by the modern environmental movement. The article listed the Environmental Coalition of Metropolitan Indianapolis, Butler Environmental Action, Committee for the Reduction of All Pollutants, Southeast-side Anti-Pollution Organization, and Turtle Creek Environmental Action. Since the article appeared in the

November 1, 1970; "Pots and Pins HD Club," *The Daily Reporter* [Greenfield, Indiana], December 8, 1970; "Women's Study Club Reviews Water Pollution," *The Daily Journal*, December 20, 1971; Charlotte Sellers, "AAUW Speaker Scores Legislation" *The Republic*, April 26, 1971; "Stronger than Dirt (Or Life)," *League Bulletin* vol. 38 No. 10 (June 1970): 8, Eaton's Berkshire Typewriter Paper, Box 119, Richard G. Lugar Collection, University of Indianapolis Digital Mayoral Archives.

¹⁰⁵ Myra Pullman, "Women Ready for House Environment Hearing," *Indianapolis Star*, February 8, 1971.

“Concerning Women” section of the *Indianapolis Star*, it is clear pollution was seen as a problem of interest to women and one they could alleviate through grassroots activism.

One such ecology group Indianapolis women established and ran was the Northside Environmental Action Committee. The group formed in 1970 and had twenty regular members by 1971 dedicated to educating others about how consumers could help the environment. Member Mrs. Sue Cerola explained to the *Indianapolis Star*, “We set our goals to become as informed as we can about the environment, which is a big job, to spread the word, and to encourage legislation.” Members adapted environmentally-friendly habits in their daily lives, including recycling, organic gardening, avoiding over-packaged items, and conserving water. The group also advocated women act publically and politically. President Mrs. Betsy Harvey told the *Star*, “You have to educate yourself and write your legislators and keep track of what’s going on in the community.” Members gave testimony at hearings, wrote letters to politicians, and sponsored public programs. In 1971, members organized several glass drives throughout Indianapolis and collected over six tons of glass. Vice President Mrs. Peter Von Stein emphasized their program’s success indicated strong community interest in recycling and hoped it would encourage the city to take over glass collection.¹⁰⁶

Others may not have been as optimistic as the Northside Environmental Action members. Six weeks after the featured article on Jane Kilpatrick appeared, Myrta Pulliam wrote another article for the “Concerning Women” section of *The Indianapolis Star* titled “Ecology-Conscious Woman is Crusader Against Waste.” It depicted a day in the life of

¹⁰⁶ Quotes from: Myrta Pulliam, “Northside Group Doing Its Bit In Battle to Save Environment,” *Indianapolis Star*, October 31, 1971. See also “5 1/3 tons for Ecology,” *Indianapolis Star*, October 31, 1971.

“Sue,” a “mythologically perfect homemaker,” who “thinks constantly of saving, reusing, and conserving.” Sue had transformed her life to save the environment. She avoided throwaway paper products, used as little water as possible during her morning routine, washed her family’s clothes with a non-phosphate detergent, carpooled to the grocery store with neighbors, and bagged her groceries in reusable shopping bags, among many other practices. In addition, Sue also had time to lobby for the environment on the political front. She wrote to state legislators and United States congressmen, participated in several environmental groups and worked with them “constantly to reverse the destruction of the environment.” The article concluded that Sue’s life “is no more complicated nor any more time-consuming than any other homemaker’s.”¹⁰⁷

Pulliam may have been skeptical of Sue’s actions. Her description of Sue as “mythological” and “perfect,” are both inherently unattainable qualities. She may have doubted if these consumption choices made much of a difference improving air and water quality or of every woman’s ability to enact these changes. Her grandfather, Eugene C. Pulliam, editor of the *Star* who later expressed his views against the phosphate ban in several editorials, may have influenced her writings.¹⁰⁸ Regardless, the inclusion of such an article suggests that Hoosier women were aware that the types of goods they bought, the amount of water and energy used in their homes, and how they got rid of waste affected their natural surroundings to some degree. Pulliam’s attention to Sue’s political and community involvement also demonstrates women were starting to recognize their power to fight pollution.

¹⁰⁷ Myrta Pulliam, “Ecology-Conscious Woman Is Crusader Against Waste,” *Indianapolis Star*, March 28, 1971.

¹⁰⁸ Eugene Pulliam’s editorials and responses written by citizens will be discussed later in the chapter.

Female activists had apparently been fairly engaged on the phosphate front before Pulliam reported on them. The *Indianapolis Star* featured a “Citizen Smith” comic by Dave Gerard in November 1970. The comic was exclusive to the newspaper and depicted an average man’s daily obstacles and frustrations. The comic portrayed Smith standing outside a grocery store passing out “Bob’s Green Sheet,” to customers, which “Takes the Guesswork Out of Shopping.” Smith yelled, “Here you are! All the late listings on low phosphate detergents and nutritional breakfast foods!” The comic was perhaps even funnier because gender roles appeared reversed. Instead of a woman handing out the sheets to fellow female shoppers, a man handed out the literature to a male shopper. Regardless, the fact that Gerard dedicated a weekly comic to this activity suggests Indianapolis women handed out information on phosphate detergents frequently enough that the *Indianapolis Star’s* general readership understood the reference enough to find the sketch comedic.¹⁰⁹

Women concerned about eutrophication had frequented enough Indiana Marsh supermarkets that the store decided to help them fight phosphate pollution. A newspaper in Columbus, Indiana, reported in December 1970 that Marsh was “aware of the plight of the housewife who every washday probably thinks about the time when she will have to choose between clean water and clean laundry.” Marsh announced that it was launching a new program to mark the quantity of phosphate in every detergent it sold in its seventy supermarkets. The laundry detergent aisle would feature signs that noted the ounces of phosphate each detergent used per load of wash. Marsh worked with the Ball State University chemistry department, the Limnetics Laboratory of Milwaukee, and the

¹⁰⁹ David Gerard, “Citizen Smith: Here You are! All the late listings on low phosphate detergents and nutritional breakfast foods!” *Indianapolis Star*, November 13, 1970.

University of Toronto to establish phosphate quantities. Don E. Marsh, president of the company said, "It is our hope that concerned consumers will find the information useful. We are not trying to tell the consumer which detergent should be bought. Rather, we are only providing them with the information so that they can make an intelligent decision."¹¹⁰

Several Hoosier men wrote encouragingly of women's new consumer choices and seemingly had no problem with placing the burden of improving water quality on their shoulders. Dr. Philip Singer, assistant professor of engineering at Notre Dame, who studied the effects of replacing phosphate in detergents, noted that women bore the responsibility for popularizing natural, more environmentally friendly detergents. He said, "What is on the market depends on what the public demands...If housewives ask for and use more natural products and less synthetic products we would not have the same problem about degrading the quality of the water." Dr. Singer made it clear, "The people--the housewives--are making the choice." Dr. W.G. Brandstadt encouraged housewives to get their hands on a list showing the phosphate content of detergents in order to buy one with the lowest phosphate content to combat water pollution. Dick D. Heller Jr. dedicated his weekly editorial in the *Decatur Daily Democrat* to "Pollution in Decatur," and reprinted a list of phosphate content in detergents created by *Conservation News* for housewives to peruse.¹¹¹ For these men, water pollution was a problem women could clean up.

¹¹⁰ First quote from: George Thomas, "Grocery Chain Acts in Pollution Controversy," *The Republic* [Columbus, Indiana], December 12, 1970; Second quote from: "Phosphate Quantity To Be Told," *Indianapolis Star*, December 8, 1970.

¹¹¹ Quote from: "Attention Housewives: Is Whiter Than White Really Necessary?" *The Call-Leader*, January 6, 1971; Dr. W.G. Brandstadt, "Housewife Can Help Fight," *The Republic*, May 20, 1970; Dick D. Heller Jr., "Pollution in Decatur," *Decatur Daily Democrat*, July 21, 1970.

Surprisingly, state legislators acted on their constituents' burgeoning desire for environmentally friendly consumerism. Historian James Madison has emphasized the Hoosier tendency to shy away from change in *Hoosiers: A New History of Indiana*. Instead of taking revolutionary stances, Madison writes Hoosiers prefer to “stick their heads in the sand and hope contentious issues simply go away.” According to Madison, Hoosiers' cautious nature and preference for small government also meant pollution often went unabated.¹¹² Yet, in the early 1970s Hoosier statesmen took a daring stance in the fight against eutrophication and became the first state in the nation to enact a ban on phosphate detergent. Representative B. Patrick Bauer (D-South Bend) took up the charge and introduced HB 1551 during Indiana's 1971 legislative session, a bill proposing to make it unlawful to “use, sell or otherwise dispose of” detergents containing more than 12 percent phosphate in the state on and after January 1, 1972, and any detergents containing more than 3 percent phosphate on and after January 1, 1973. The bill passed in both houses of the state legislature, with very little opposition. Governor Edgar Whitcomb signed it into law on April 9, 1971.¹¹³

What inspired the Hoosier legislature to take the lead fighting eutrophication? Strong constituent action in support of environmental regulation during the early 1970s may have encouraged state legislators to take a bolder stance on environmental issues than Indiana usually asserted. Hoosier William Ruckelshaus, the first administrator of the EPA, even admitted in an oral history interview for the EPA that a shift in public opinion toward favoring environmental regulation in the 1970s was crucial to enacting legislation.

¹¹² James H. Madison, *Hoosiers: A New History of Indiana* (Bloomington: Indiana University Press, 2014), xi, 337.

¹¹³ State of Indiana. *Indiana Code*. Public Law No. 174, 689-690; O’Ryan Rickard, “First State to Ban Nearly All Phosphate Detergents,” *Vidette Messenger*, April 10, 1971.

He noted, “There was no public support for the environment in Indiana in the late 1950s and early 1960s.” He continued, in Indiana and the rest of the nation, “Public support only began to explode in the late 1960s...I do think you’ve *got* to have public support for environmental protection or it won’t happen. That’s what shifted between the early 1960s and the time the EPA was formed.” Ruckelshaus himself, former Deputy Attorney General of Indiana from 1960-1965 and member of the Indiana House of Representatives from 1965-1967, may have nudged his former colleagues in Indiana politics toward the ban. Eutrophication had become one of the first issues Ruckelshaus and the EPA faced and getting state legislation passed could help encourage congressmen to pass a nationwide plan to control the pollution.¹¹⁴

While Ruckelshaus’s influence and swelling Hoosier support for environmentalism may have inspired Indiana statesmen to act, it is also possible that the phosphate ban was not as revolutionary as it appears. When the ban passed in 1971, Hoosier statesmen likely perceived that the ban required a small lifestyle change on behalf of Hoosier citizens. After all, consumers just needed to buy one of the new non-phosphate laundry detergents now on the market. Compared to other changes some consumers made in the 1960s and 1970s to assert a lesser impact on the environment, like giving up driving a car or growing one’s own produce, buying a different laundry detergent took considerably less time, effort, and commitment. As historian Philip Scarpino has pointed out in his research on the efforts to prevent ozone-depletion, garnering support for pollution abatement generally occurs if two elements are true. First

¹¹⁴ Quote from: US Environmental Protection Agency, William D. Ruckelshaus: Oral History Interview, accessed <https://archive.epa.gov/epa/aboutepa/william-d-ruckelshaus-oral-history-interview.html>; McGucken, *Lake Erie Rehabilitated*, 149.

citizens must easily understand how they cause the pollution at hand and comprehend how the consequences of that pollution will negatively affect their own lives. Secondly, a “relatively ‘simple’ technical fix that did not require people to affect any significant change in values and expectations or to accept alterations in lifestyle or standard of living” must be at hand. This formula rings true in the fight against eutrophication. Media sources distilled eutrophication into an easy to understand message that connected consumers to pollution: increased use of phosphate-based laundry detergents pollutes waterways, which humans need to survive. To stop the pollution, consumers simply needed to replace the phosphate-based detergent with a non-phosphate brand. In reality, then, since the phosphate ban required small lifestyle changes, it could be seen as a part of the traditional conservative stance Hoosiers generally take toward environmental issues, as historian James Madison defined.¹¹⁵

Without in-depth interviews with the Hoosier statesmen who passed the phosphate ban, it is hard to tell what exactly motivated them to enact the phosphate ban. The likely answer involves a combination of the above factors. However, regardless of whether Hoosier legislators intended the ban to be ground-breaking or conservative, Hoosier citizens clearly saw it as something revolutionary. The ban made front-page news across the state, as the enactment made Indiana the first state to ban phosphate detergents. The *Terre Haute Tribune* even proclaimed the ban in big, bold text across the top of the front page of the April 10, 1971, edition. The *Indianapolis Star* also christened the ban as

¹¹⁵ Quote see: Philip Scarpino, “Anthropocene World/Anthropocene Waters: A Historical Examination of Ideas and Agency,” in *Rivers of the Anthropocene*, Jason M. Kelly, Philip Scarpino, Helen Barry, James Syvitski, and Michel Meybeck, eds., (Oakland, CA: University of California Press, 2018), 104. The rest is my own analysis and interpretation of why Indiana became the first state in the nation to ban phosphate detergent.

a “landmark” piece of legislation that other states might copy. State senator Charles D. Wise (R-Muncie) noted in a statement before an Indiana Senate committee in 1971 after the ban was passed,

Environmentalists everywhere are proud of the pioneer stand taken by Indiana against phosphate detergent pollution of our nation’s water....Other states are coming in line with their restrictions and bans of phosphate detergents. New York comes in June. Others are in process. Canada has a schedule and is desiring cooperation from the States. The eyes of the world are watching Indiana on this matter. The industry knows this just as do environmentalists everywhere. That is why this law has become so symbolic. The whole issue comes together right here in Indiana.¹¹⁶

As Wise’s dramatic statements might hint, the ban caused considerable controversy after it passed. Before the law had a chance to be implemented, industry began to challenge it. Proctor & Gamble, Lever Brothers, Colgate-Palmolive, and the Soap and Detergent Association, unhappy that a large share of their products soon could not be sold in the state, filed two suits against the law in federal court in June 1971 to seek a permanent injunction against the ban. Detergent industry representatives warned that the law could force consumers to use detergents that were not given enough time to be thoroughly tested. At the end of August, a three-judge panel ruled in favor of the state’s phosphate law. Judge John P. Stevens emphasized that the court’s decision rested on whether the Indiana legislature had the right to experiment with banning phosphates to try to improve the health of lakes and streams. He noted the panel “should not be asked to

¹¹⁶ First quote see: Richard E. Cady, “State Law is First in US on Phosphate Detergents,” *Indianapolis Star*, April 10, 1971. Front page news, see for example, Rickard, “First State to Ban Nearly All Phosphate Detergents,” *Vidette Messenger* 10 April 1971, *Brazil Daily Times*, April 10, 1971; *Terre Haute Tribune*, April 10, 1971. Second quote see: Charles D. Wise, “Statement of Charles D. Wise on Phosphate Detergent Pollution,” 1971, MSS.230, Legislative Documents, Box 2, Folder 64, Ball State University Archives and Special Collections.

speak for millions of housewives ‘who are going to have to suffer the consequences,’” implying female consumers held the ultimate authority over the law’s validity.¹¹⁷

The state was not off the hook yet. Just weeks later, Surgeon General Jesse L. Steinfeld held a press conference over non-phosphate detergents. Some studies conducted at the National Institute of Environmental Health Sciences (NIEHS) found that non-phosphate detergents could be caustic and hazardous to health. A new study Samuel Epstein completed at the Children’s Cancer Research Foundation in Boston suggested one phosphate substitute used in many non-phosphate detergents, NTA, could break down in the water supply into cancer causing substances, despite the fact that Canadian studies suggested otherwise. Representatives from the “Big Three” detergent companies and government scientists also began to question the safety and cleaning effectiveness of other new, highly alkaline non-phosphate detergents formulated with carbonates and metasilicates. Meanwhile, the Soap and Detergent Association lobbied the Nixon Administration intensely, urging officials not to ban phosphates from detergents completely. At the press conference, Steinfeld encouraged housewives to stop using non-phosphate detergents because they were “highly caustic and clearly constitute a health hazard which phosphates do not.” Officials also urged states and municipalities to reconsider any laws banning phosphate detergents.¹¹⁸

Steinfeld’s statements raised alarm in Indiana about the upcoming statewide phosphate ban. Some Hoosiers began to question whether the ban remained a safe way to fight pollution. Republican Governor Whitcomb assured the media he would consider

¹¹⁷ “U.S. Judges Rule in Favor of State’s Phosphate Law,” *Indianapolis Star*, September 1, 1971.

¹¹⁸ McGucken, *Lake Erie Rehabilitated*, 160-173. For a more in-depth discussion of Steinfeld’s press conference, NTA, and non-phosphate detergents, please see Chapter 1 of this work.

suspending the statewide ban “if there were sufficient evidence to make it clear” that the law would not be in the public’s best interest. Democrat Representative B. Patrick Bauer, primary author of the ban, chastised Governor Whitcomb’s decision in a public letter. He wrote, “If NTA is dangerous then it should be banned. Its danger does not make phosphates less harmful or environmentally destructive.”¹¹⁹

As non-phosphate detergents spurred debates amongst federal and state lawmakers, newspaper articles painted consumers, particularly housewives, as confused victims caught between the conflicting claims of environmentalists, industry representatives, and health officials. The *Indianapolis Star* featured an article with an anecdote describing a middle-aged housewife standing in front of a large display of detergents at her local supermarket “puzzled over phosphate contents, phosphate substitutes.” The article mused, “What should she use, for the sake of her environment, for the sake of her children, even for the sake of her wash?” Another journalist depicted a “harassed housewife, up to her elbows in suds [who] no longer knows what to believe about detergents.” An Associated Press article reprinted in the *Anderson Herald Bulletin* declared, “New Decision on Phosphates in Laundry Detergents Leaves Housewife in Dilemma,” and observed the housewife was unsure, “caught in between concern for the environment and protecting her family’s health.”¹²⁰

State officials in Indiana floundered, unsure whether to keep the phosphate ban in the books or repeal it before implementation. When the 1972 session of the Indiana

¹¹⁹ “Detergent Makers May Not Face Problems With Phosphates Ban,” *Brazil Daily Times*, September 17, 1971; “No Comment from Whitcomb on New Phosphate Question,” *Logansport Pharos Tribune and Press*, September 24, 1971.

¹²⁰ First quote: “Logical Recycling Attitude is Urged,” *Indianapolis Star*, February 13, 1972; Second quote: “Practically All Detergents Seen of Some Hazard,” *Indianapolis Star*, December 20, 1971; Third quote: “New Decision on Phosphates in Laundry Detergents Leaves Housewife in Dilemma,” *Anderson Herald Bulletin*, October 7, 1971.

General Assembly opened in January, two bills to repeal the phosphate law were introduced. Many Hoosier legislators remained unsure whether non-phosphate detergents or the polluting phosphate ones constituted a greater danger. Additionally, the powerful Soap and Detergent Association sent representatives to lobby for repeal of the ban, which would make retaining it even more difficult. Though the Association fought anti-phosphate legislation in states across the nation, the group particularly targeted Indiana because it was the first state to pass such a law. The Association hoped the precedent of defeating the first anti-phosphate law would prevent other states from trying to enact similar legislation. Major detergent companies, like Proctor & Gamble, Lever Brothers, and Colgate-Palmolive opposed phosphate bans because it required them to spend large chunks of their budgets developing and manufacturing new phosphate-free formulas. This strong lobbying pressure amidst nation-wide health scares over non-phosphate detergents threatened to end Indiana's experiment banning phosphate detergents.¹²¹

However, a dramatic presentation by Senator Charles Wise, a Republican representing Muncie, on February 9, 1972, ensured the ban's implementation. Wise took a leaf out of women's books and went shopping at two supermarkets in Muncie to analyze the phosphate content in available detergents. He brought the boxes of detergents he found into the Indiana Senate and placed them on the speaker's podium, dividing the boxes into three categories: non-phosphate detergents, low-phosphate detergents (8.7% phosphate or less), and high-phosphate detergents. All of the high-phosphate detergents came from the same company, Proctor & Gamble. Therefore, it appeared that the Hoosier

¹²¹ Robert P. Mahoney, "Doctors Favor Phosphates Curb," *Indianapolis Star*, January 6, 1972; Lobbyists: 11/10/71-4/3/72," Indiana Oversize Serial Collection, Indiana State Library, ISLI 328.38 L698; David Bird, "Environment Bills Stalled By Legislative Lobbyists," *New York Times*, August 23, 1971.

housewife would have a number of other non-phosphate brands to choose from to find the one suited to her family's needs. Wise urged his fellow senators not to succumb to industry pressure and keep their state ban in place so Indiana could inspire other states with similar pending legislation. After Wise's testimony, the Senate passed a measure to ban phosphate detergent containing more than 8.7% phosphate retroactively to January 1, 1972, and banned all laundry detergent containing phosphate by January 1, 1973. A week later, the House concurred with Wise's amendment and Governor Whitcomb granted his approval. Senator David Rogers, a Republican from Bloomington, noted that the amendment's passage meant that others "will be able to tell the Hoosier by his tattle-tale gray shirt and we can be proud of it."¹²²

As the ban's implementation loomed near, the media homed-in on how Indiana women felt about the changing state of their local laundry detergent aisle. Some women supported the ban, others remained skeptical. Reporters at the *Anderson Daily Bulletin* of Anderson, Indiana, interviewed homemakers they encountered at local laundromats to discover their opinions. They found that, on the whole, women were willing to give up their phosphate detergents to improve the water quality of lakes and rivers. Nora Jackson, of St. Charles decided, "I feel our rivers are dirty enough. I don't mind sacrificing whiteness, there's always bleach." Marjorie Shell, of Frankton said, "I'm not worried about losing my detergent. All we have to do is look at the White River and see it's necessary. I usually use a non-polluting detergent anyway." However, the *Daily Reporter* in Greenfield, Indiana, noted that local housewives appeared to be divided on the issue

¹²²Quote from Bill DuBois, "Senator Wise Saves Anti-Phosphate Law," *Muncie Star*, February 10, 1972 "Environment," *Indianapolis Star*, February 13, 1972; "Detergent Bill Amending Attempted," *Indianapolis News*, February 9, 1972.

and many had been buying up stocks of their favorite phosphate detergent. Mrs. Arthur Estes, of Ingalls, worried the new non-phosphate detergents would not work well. She observed the ban would mean “a lot of dirty people.” Mrs. J.R. Tongate of Greenfield searched the aisles hopelessly for her favorite detergent Oxydol and ultimately lamented, “I can’t find it.”¹²³

A week after the ban started, an article in the *Pharos Tribune* of Logansport, Indiana, narrated an experience “repeated hundreds of times as Loganland housewives begin the great clean clothes vs. clean water battle.” The article described women “staring at strange-looking boxes with strange-sounding names, trying to find another laundry detergent.” The reporter spoke with local shoppers, nearly all of whom emphasized their frustration with the ban. Several women did not understand why Indiana had to be the first state to enact a ban. Mrs. Joe Kiesling told a journalist she had tried non-phosphate detergent, but did not like it. She said, “I go along with trying to do what you can to clean up the environment, but I don’t understand why they had to do it in Indiana. They’ll have to do it everywhere (for it to have any effect).” Mrs. Barbara Hall mused, “I suppose the environmentalists are doing the right thing, but why aren’t the other states doing it too? Why Indiana alone? I think it’s a good idea, but it’s going to take years to see if it will work.”¹²⁴

Some women who opposed the ban even threatened to break the law if legislators did not reverse the ban. Mrs. Viola Frodge, a Carmel woman with twenty-seven years

¹²³ Connie Staton, “Housewives Apparent Apathy Over New Non-Phosphate Law May Result in Troublesome, Inadequate Laundry Products,” *Anderson Daily Bulletin*, December 18, 1972; “Grocers Say Most Unaware of Law,” *The Daily Reporter*, December 30, 1972.

¹²⁴ Levenda Smith, “Women Prefer Clean Clothes to Clean Water,” *Pharos Tribune and Press*, January 7, 1973.

under her belt as a housewife, wrote to the *Indianapolis Star* five days after the ban began and admitted she was now ashamed of her laundry because non-phosphate detergents did not work. She emphasized that she if she could find her favorite phosphate detergent anywhere, she would continue to use it. A woman, who referred to herself as the “Yorktown housewife” in a *Muncie Evening Press* editorial was more forthright. She wrote, “I, for one, plan to go across the state line when my supply [of phosphate detergents] runs low. I stockpiled 25 pounds before the ban...Call me a bootlegger, or whatever, but I do not plan to have a dirty wash.” A Citizen Smith comic in the *Indianapolis Star* poked fun at these housewives’ forays into crime. The comic pictured a two-way highway packed bumper to bumper with cars. A large banner stretching over the entire highway read “STATE LINE Welcome.” The foreground of the comic focuses on Citizen Smith driving a convertible and his wife riding alongside, both looking across at the line of traffic moving in the opposite direction on the other side of the highway. Text below read, “Everybody in that lane is going over to get cheaper cigarettes and everybody in this lane is going across the line for phosphate detergents!”¹²⁵

Women like Mrs. Frodge had the support of various lobbyist groups. The Soap and Detergent Association and major detergent companies still remained staunchly against the ban, as well as representatives from other industries, like food processors who worried the new detergents would not properly clean their equipment. Many Hoosier women became activists in favor of repealing the phosphate ban through local homemaking groups run by home economists. As experts in household products, home

¹²⁵ Bootleg Soap Possible in Western Indiana,” *Rushville Republican*, January 2, 1973; Viola Frodge, “Blames Ban for Tattle-Tale Gray,” *Indianapolis Star*, January 5, 1973; A Yorktown Housewife, “Achieves Nothing,” *Muncie Evening Press*, January 10, 1973; Dave Gerard, “Citizen Smith,” *Indianapolis Star*, February 6, 1973.

economists convinced many undecided housewives to support repeal of the ban. The home economics profession emerged in the late 19th century as an increasing number of American households began to consume more goods than they produced. The field began as an educational reform movement to teach housewives how to be thrifty consumers and use technology to complete housework more efficiently. Home economics found its place as a field of study in many universities, particularly land grant institutions, and often became seen as an “appropriate” profession for women interested in science and technology. After graduating, home economists served as professional mediators between American housewives and male businessmen, scientists, engineers, and government officials to teach the latter what housewives wanted and needed. Others worked directly with housewives through the home economics extension service, created by the Smith-Lever Act of 1914. This was part of the larger Cooperative Extension Service, established through a partnership between the United States Department of Agriculture and land grant universities. Cooperative Extension Service’s goal was to bring the university to rural people and teach them the latest agricultural techniques. It employed home economists (called “home demonstration agents”) to teach local housewives best homemaking practices, including how to use new household technologies, manage home finances, or nutrition.¹²⁶

In Indiana, home demonstration agents first became active during World War I to teach women about liberty gardens, home canning, and how to conserve foodstuffs, like meat and wheat, for the war effort. At the war’s end, the federal government withdrew

¹²⁶ Carolyn M Goldstein, *Creating Consumers: Home Economists in Twentieth Century America* (Chapel Hill: University of North Carolina Press, 2012), 1-10; Angie Kirk, *Divided Paths, Common Ground: The Story of Mary Matthews and Lella Gaddis, Pioneering Purdue Women Who Introduced Science into the Home* (West Lafayette, Indiana: Purdue University Press, 2011), 2-5.

funds for home demonstration agents, but several acts between 1928-1945 continued the home demonstration program. By the 1950s, eighty-two of the ninety-two counties in Indiana had a dedicated home demonstration agent to aid local housewives, the bulk of which filled the position prior to World War II. In 1962, there were 3,000 home demonstration clubs in the state, which collectively boasted a membership of 67,000 women.¹²⁷

Home economists at Purdue University expressed initial concern about a phosphate ban in late 1970 amidst rumblings that the 1971 session of the Indiana General Assembly would institute a ban. *The Indianapolis Star* reported that many professors in the Purdue home economics department were “not yet willing to support a ban on the detergents, since they consider them only to be a part of the overall problem.” Hoosier home economists did not express ambivalence towards environmental issues, however. Sessions at their Annual Homemakers Conference at Purdue like “The Status of Women and Pollution,” and “Perspective on Pollution” in 1971 and “Poplin, Polyester, and Pollution” in 1972, indicate members wanted to consider how the environmental movement might affect the home economics field. Like home economists in the rest of the nation, Hoosier home economists understood that phosphates in detergents contributed to eutrophication, but thought that the government needed to consider other input sources of phosphates from agriculture and industry, instead of dumping the entire clean-up burden on consumers. Home economists advocated enhancing sewage treatment instead of banning phosphate detergents. In contrast, the International Joint Commission, the body that issued the first reports citing a need to clean up the Great Lakes,

¹²⁷ Goldstein, *Creating Consumers*, 10; David Orrin Thompson Sr., *A History, Fifty Years of Cooperative Extension Service in Indiana* (West Lafayette, IN: N.P., 1962), 53-68.

recommended implementing both a phosphate ban and advanced sewage treatment to combat eutrophication. Unfortunately, sewage treatment plants took time and lots of money to build. In late 1972, President Nixon impounded the money allocated in the recently passed Clean Water Act to fund sewage treatment plants across the nation, making construction of these plants even more expensive.¹²⁸

The Indiana Home Economics Association passed a resolution against the ban at one of its regular meetings in April 1972. The resolution put faith in the detergent industry to develop a “safe and acceptable substitute,” and advocated governments install “better waste treatment.” It affirmed the existence of eutrophication, but asserted it could “only be partially attributed to laundry detergent breakdown.” The association observed the detergent industry was trying to develop a non-phosphate detergent that was nontoxic, economical, harmless to human skin, textiles, and laundry equipment, and would “disperse and suspend dirt.” The association believed non-phosphate detergents currently on the market were caustic, corrosive to equipment, and less effective cleaners. Until a good quality substitute was created, all fifteen hundred members of the association would “make every effort to reverse the legislative action against the use of phosphate detergents in our state of Indiana, and encourage better sewage treatment.”¹²⁹

¹²⁸First quote from “Pollution Due to Phosphates?” *Indianapolis Star*, December 13, 1970; Quotes on homemakers conferences from: Annual Homemakers Conference 1971, 1972, 1973 binders, Health and Human Services Extension Administration, Addition 1, Box 1, Virginia Kelly Karnes Archives and Special Collections Research Center, Purdue University, West Lafayette, Indiana (please note this collection was unprocessed at the time the author had access); “Resolution of the American Home Economics Association: Use of Phosphate Detergents,” Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 55, Ball State University Archives and Special Collections, Muncie, Indiana. See also “Fuel Added to Phosphate Detergent Fight in the State,” *Linton Daily Citizen*, January 11, 1974. Nixon impounded the money because he viewed the Clean Water Act as a danger to his budget.

¹²⁹ Indiana Home Economics Association. “Encourages Reversal of Phosphate Ban,” Governor Bowen Papers, 44-Z-1, Folder 17 Indiana State Archives, Indianapolis, IN.

Dr. Virginia Peart, an equipment specialist in the Purdue Home Economics department, wrote a brochure, titled “To Jump or Not to Jump On the Phosphate Bandwagon?” to send to housewives through the cooperative extension service in Indiana. The brochure’s cover empathized with many women’s new consciousness that the products they bought impacted the natural world: “All of us living outside of caves have heard of the phosphate detergent problem and are beginning to feel guilty when we wash our clothes.” The pamphlet observed the prevalence of non-phosphate detergents on the market had “encouraged homemakers to jump on the bandwagon to save the environment.” Peart cautioned women not to make the decision to switch to non-phosphate detergents too hastily:

The leap from being aware of the problem to rejecting the detergents with phosphates is a big one. The problems land squarely in the lap of the homemaker. No matter how concerned the homemaker is with the environment she is also concerned with the family laundry.

Peart told housewives to consider how using non-phosphates might affect the health and well-being of their families. For example, the brochure emphasized phosphate’s role preventing the spread of diseases by cleaning textiles effectively. Though it gave housewives some helpful washing tips for getting through Indiana’s imminent phosphate ban, the packet encouraged housewives to support construction of enhanced waste treatment plants so phosphate detergents could be used again.¹³⁰

Home economists at Ball State University also began a campaign against the ban. In December 1972, right before the new ban on phosphate detergents started, Ball State home economists publicized the results of their own tests that compared phosphate and

¹³⁰ Purdue University Extension Service, “To Jump or Not Jump on the Phosphate Bandwagon,” Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 55, Ball State University Archives and Special Collections, Muncie, Indiana.

non-phosphate detergents. Assistant professor Ellen Lacey told the *Anderson Daily Bulletin* that tests were conducted “under home conditions, using the same water temperature, the same load, and the same materials on the phosphate and non-phosphate washes.” Lacey reported that clothes washed with phosphate detergents were whiter, brighter, and softer than those washed with non-phosphate detergents. Lacey noted that the potential toxicity of chemicals in many non-phosphate detergents, like NTA, which might lead to burns, ulcerations, and blockage of the windpipe if swallowed, concerned her and her colleagues. They also did not support the phosphate ban because non-phosphate detergents could reduce the flame-resistant finish in children’s pajamas at a faster rate than phosphate detergents could. Besides the health and safety concerns, Lacey believed that non-phosphate detergents also corroded automatic washing machines and clogged drainpipes.¹³¹

In addition to conducting their own tests, the department’s Phosphate Study Committee, comprised of professors Ellen Lacey, Dianne Hollar, and Jean Wittig, mailed out a packet to about three-thousand Ball State home economics alumni about the phosphate ban. The opening letter stated that the committee members felt “home economists have a responsibility to be informed about the issue and to be active in disseminating information to Indiana homemakers.” It stressed that the packet would relay research to the reader to prove that non-phosphate detergents were caustic and

¹³¹ “New Washday Products Proven Unsatisfactory: Anti-phosphate legislation creates dilemma for housewives,” *Anderson Daily Bulletin*, December 8, 1972.

toxic, corroded laundry equipment, and had less effective cleaning power than phosphate detergents.¹³²

The cover page of the packet illuminates the contents and tone of the following narrative the committee wrote. The words “Are We Concerned?” emblazoned the packet’s cover, which was titled “The Phosphate Facts.” Though the committee mailed the packet to past students of the program, they chose not to furnish any results from the studies they conducted. The department preferred to provide a series of quotes (the phosphate facts referenced) drawn from mostly male scientists and engineers, and studies from the Soap and Detergent Association, washing machine manufacturers, and other like companies, as well as articles that appeared in popular magazines, to support their thesis that housewives should reject non-phosphate detergents. For example, their section titled “What Effects Do Non-Phosphate Detergents Have on Clothes?” referenced reports from the American Home Appliance Manufacturers, Speed Queen Research (another laundry equipment manufacturer), Celanese Research Company (affiliated with a chemical manufacturing company), Consumer Bulletin, and FMC Company Research (a chemical company) instead of citing the department’s studies.¹³³ This may not seem so out of the ordinary: home economists had formed strong partnerships with industry and home goods manufacturers for years in order to provide insight into what housewives wanted and needed. Many home economists even found jobs in industry after graduating with their degrees.¹³⁴

¹³² To Alumnae from Phosphate Study Committee, December 22, 1972, Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 55, Ball State University Archives and Special Collections, Muncie, Indiana.

¹³³ “Are We Concerned,” Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 55, Ball State University Archives and Special Collections, Muncie, Indiana.

¹³⁴ Goldstein, *Creating Consumers*, 242-265.

The committee also assembled the packet to encourage housewives to “study the enclosed material,” and voice their concern to “local state legislators by writing or calling them.” The committee even enclosed the names and addresses of all the Indiana state legislators for housewives’ convenience.¹³⁵ Therefore, the packet appears to represent the information the committee felt would be persuasive not only to housewives, but also to the mostly male Hoosier lawmakers housewives would contact regarding the ban. Quotes from male scientists and industry representatives would be easy for housewives to pluck from the packet and place right into their letters or read off during a phone call with a representative. Also, the committee members may have accepted that male legislators would take the viewpoints of male scientists and industry representatives more seriously in an age when women’s professional roles in science and technology were still tenuous.

The Ball State Home Economics Phosphate Study Committee also created a news film that aired on various Indiana television stations in February 1973, ensuring their message reached beyond Ball State home economics alums. Alarm from the state’s leading environmentalists who supported the phosphate ban, such as Thomas Dustin of the Izaak Walton League, attest to the immense political influence home economists wielded over the Hoosier housewife, a major stakeholder in the phosphate debate. After learning about the news film, Dustin wrote to Mr. Tracey Norris, Director of University Relations at Ball State. He requested Mr. Norris send him “a copy of the film at once” for his own viewing, because he worried if it was anything like the packet the committee sent out, “little confidence in its informational value can be established.” He emphasized, “this film is overt propaganda, calculated to generate opposition to non-phosphates.”

¹³⁵ “Are We Concerned,” Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 55, Ball State University Archives and Special Collections, Muncie, Indiana.

Since the film was released as Indiana legislators debated whether or not to repeal the phosphate ban, Dustin declared “time is of the essence...we do not intend to debate this with you while the effects on the legislative process produce a repeal of Indiana’s phosphate control law.”¹³⁶

The information the Ball State Phosphate Study Committee presented stood in sharp contrast to rhetoric environmentalists had preached for the preceding three years to link consumption with abating water pollution. Housewives faced conflicting information proffered by ecology groups, home economists, and detergent industry representatives about their laundry practices, a topic rarely discussed outside of homemaking groups before. Newspaper reports described housewives caught in the middle of a “great Clean Clothes vs. Clean Water battle.”¹³⁷ Every consumer appeared obligated to sort through data regarding water quality, pollution, and sewage treatment plants. Buying detergent had gone from a nearly mindless task to one that required thought, analysis, and foresight. Since women remained the major launderers and consumers of laundry products in most households, their laundry practices and opinions became an influential piece in the phosphate debate for the media, politicians, and environmentalists.

Politicians and the media took unprecedented steps to ascertain housewives’ opinions about the phosphate ban. The *Indianapolis Star*, the *Indianapolis News*, the *Muncie Evening Press*, the *Kokomo Tribune* and the WOWO radio station in Fort Wayne all conducted either written or telephone surveys with Indiana women to uncover how

¹³⁶ Thomas E. Dustin, Executive Secretary, Indiana Division, Izaak Walton League of America, Inc to Mr. Tracy Norris, Director, University Relations, Ball State University, February 24, 1973, Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 55, Ball State University Archives and Special Collections, Muncie, Indiana.

¹³⁷ “Women Prefer Clean Clothes to Clean Water,” *The Logansport Press*, January 7, 1973.

many were in support of the ban and against it. Indiana politicians seemed keen to understand women's opinions as well. The Indiana Republican State Central Committee sent out the results of the WOWO survey to Republicans in the Senate. Governor Bowen even expressed his desire to hear women's opinions in a letter to Mrs. Freda Reardon, who had written to the Governor expressing her support for the phosphate ban. Bowen replied, "I am waiting to find out from a good many of women who are at the present time experimenting with the non-phosphate detergents to see how they actually work." An *Indianapolis Star* Citizen Smith comic also implied the importance of women's opinions on the ban. In the comic, a man wearing a graying shirt walks out his front door, presumably on the way to work. His wife stands in the doorway, yelling after him "Don't let them kid you about your tattle-tale gray shirt! Throw out your chest and tell 'em your wife doesn't use phosphate!"¹³⁸

The Indiana Izaak Walton League, a conservation organization commonly quoted in the media in support of the phosphate ban, even geared its lobbying techniques toward Indiana housewives. The league created its own mailing packet to send to Ball State University home economics alumni to supposedly provide "a more balanced and objective discussion." The league hoped alumni who were "fair, reasonable, and well-educated" would enjoy hearing the other side of the debate, "even if it means reconsideration of original conclusions." It included statements and data compiled by the

¹³⁸ First quote from: Governor Otis Bowen to Mrs. Freda Reardon, January 2, 1973, Governor Bowen Papers, 44-Z-1, folder 17, Indiana State Archives, Indianapolis IN; Second quote from: David Gerard, "Citizen Smith," *Indianapolis Star*, March 31, 1973; "Straw Vote," *Indianapolis Star*, March 18, 1973. Survey sources see: "Phosphate Forum," *Muncie Evening Press*, January 8, 1973; "Housewives Report on Use of Non-Phosphates," *Kokomo Tribune*, March 1, 1973; "Survey on Laundry Detergents." Democratic Politics Bayh Notices, Box 079, Mayor Richard Lugar Collection. University of Indianapolis Digital Mayoral Archives; John A. Garrett to Republican Speaker, April 19, 1973." Democratic Politics Bayh Notices, Box 079, Mayor Richard Lugar Collection. University of Indianapolis Digital Mayoral Archives.

EPA, the FDA, and other government agencies, as well as a copied portion of the US Senate Committee on Government Operations report “Phosphates in Detergents and the Eutrophication of America’s Waters.” It also enclosed a brochure created by Lever Brothers to help housewives use non-phosphate detergents effectively. The league hoped readers would reject Ball State home economists’ claims that non-phosphate detergents were unsafe, ineffective cleaners and decide that sewage treatment alone was not appropriate. The packet encouraged readers to call or write to their state legislators, “urging support for Indiana’s landmark phosphate detergent control law,” after analyzing the evidence presented.¹³⁹

The league also helped enlist the endorsements of two established, well-respected women’s organizations, the Indiana League of Women Voters and the Indiana division of the American Association of University Women. The league hoped that these organizations’ support for the phosphate ban would prove “market acceptability and effectiveness” of non-phosphate detergents to worried female consumers. In 1973, the Indiana Division of the American Association of University Women declared its support for the phosphate ban. The association wrote to Senator Marlin McDaniel, Chairman of the Senate Committee of the Environment,

We are all housewives and consider the arguments for whiter laundry can be answered by other means than phosphate detergents. We are interested in keeping our streams and lakes clean. We are proud of the Indiana legislature for having had the foresight to pass an enlightened law that set a precedent to other states.

¹³⁹ Izaak Walton League, “The Phosphorus Issue,” February 16, 1973, Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 55, Ball State University Archives and Special Collections, Muncie, Indiana.

The Indiana division also joined four other chapters in the Great Lakes region on a project to monitor the Great Lakes Basin Commission, an interstate/provincial agency created in 1955 to promote the development and conservation of natural resources in the Great Lakes Basin, “to see that protections are provided.” The association told McDaniel “We watch with interest what Indiana streams contribute in way of pollutants.”¹⁴⁰

Though the ban stayed in place throughout 1973, it was up for debate again during the 1974 legislative session. In 1974, another major women’s political force, the Indiana League of Women Voters, joined the fight in favor of the phosphate ban. On January 24, 1974, the league officially endorsed the ban and urged the Indiana General Assembly to continue it. State Environmental Quality Chairman for the League, Becky Meier told the assembly, “We have not heard any complaints from our members who feel the absence of phosphates has injured the quality or whiteness of their laundry.” Barbara E. Zimmer, the state president, noted that the league had refrained from taking a stance in 1973 because the group wanted to take time to gather all pertinent information relevant to the topic to make an appropriate decision: “It is the practice of the league to examine issues on the basis of the facts, and there have been new facts during our experience with the ban. We now feel that the General Assembly should keep the ban on phosphates in laundry detergents.”¹⁴¹

League of Women Voters groups in the Great Lakes Basin had been particularly active fighting Great Lakes pollution, especially Lake Erie, since the 1950s. Historian

¹⁴⁰ Quotes from: Mrs. L.W. Bieker, Indiana Division, AAUW to Senator Marlin McDaniel, January 25, 1974, Charles Wise Papers, MSS.230, Phosphate Task Force of Indiana Senate Environmental Committee, Box 2, Folder 61, Ball State University Archives and Special Collections, Muncie, Indiana. See also Izzak Walton League to Indiana State Senators, January 26, 1974, Charles Wise Papers, MSS.230, Phosphate Documents, Box 2, Folder 57, Ball State University Archives and Special Collections, Muncie, Indiana.

¹⁴¹ “Phosphate Ban OK’d by Women Voters’ League,” *Indianapolis Star*, January 25, 1974.

Terriane K. Schulte has observed that league members centered their efforts on educating the public about industrial and municipal pollution, building grassroots activism, and lobbying local officials to enact stricter water regulation standards. Traditionally, the league engaged in extensive, careful research on every topic before starting their educational and lobbying campaigns. Schulte concludes that the league became instrumental in building public support for increased water quality regulation in the Great Lakes region throughout the 1950s and 1960s, essentially “pav[ing] the way for a base of informed citizens that later environmental activists could build on” during the 1970s.¹⁴²

Though Schulte attests that league chapters in the Great Lakes Basin became increasingly disillusioned in the 1970s after dealing with inaction at all levels of government, the Indiana league became particularly active in water pollution during this time, and utilized many of the techniques and processes Schulte identified. In 1971, the Indianapolis chapter established its own Environmental Quality committee and began to research and initiate campaigns regarding recycling, air pollution, and water pollution. The league evaluated Indianapolis waste treatment plants and interviewed water pollution experts, like Oral Hert of the Indiana State Board of Health, and Carl Doyme, manager of an Indianapolis sewage plant.¹⁴³ It created a handout for all members, “Why the League of Women Voters Supports the Phosphate Ban,” in 1974 that neatly summarized its research and findings. The handout rejected home economists’ plan to build better sewage treatment plants in place of banning phosphate detergent and cited state tests of several

¹⁴² Schulte, “Grassroots at the Water’s Edge,” 1-276.

¹⁴³ Indianapolis League of Women Voters, *Annual Report 1971*, “Environmental Quality Committee,” 22, League of Women Voters of Indianapolis Records, 1915-1986, M 0611 Indiana Historical Society, Box 4, Folder 3.

Indiana lakes and streams that demonstrated phosphorus levels in raw sewage had decreased by 60% since the ban. It also referenced the EPA's findings that detergents were responsible for over 59% of phosphorus discharged into waterways. It explained that even though sewage treatment plants could remove 80-98% of all phosphorus from municipal sewage, the only sewage plants equipped to do the job in Indiana currently did not exist in any city larger than Fort Wayne. The costs of building these plants would be handed off to citizens, especially in light of President Nixon's impoundment of funds for sewage treatment construction. To dispel worries about the ineffective cleaning power of non-phosphate detergents, the League noted *Consumer Reports* recently rated many non-phosphate detergents as "good to very good." As for the negative health effects of non-phosphate detergents, the League cited FDA tests, which found that "many non-phosphate detergents are less irritating to the skin, eyes, and other parts of the body than are phosphate detergents." The League's handout provided its members with the knowledge and evidence to persuade state legislatures and other concerned citizens to support the phosphate ban.¹⁴⁴

Even before the League took an official stance, concerned members across the state took action. The Indianapolis League of Women Voters June 1972 bulletin emphasized that enforcement of the upcoming phosphate ban "will depend largely upon citizen monitoring." The bulletin encouraged members to "be watchdogs while we do our weekly shopping: inform grocers that you are aware of the deadline, and report violators to the State Board of Health." In the February 1973 bulletin, Marilyn Olsen, chair of the

¹⁴⁴ Indianapolis League of Women Voters, "Why the League of Women Voters Supports the Phosphate Ban," League of Women Voters of Indianapolis Records, 1915-1986, M 0611 Indiana Historical Society, Box 20, Folder 9.

Environmental Quality Committee, urged local league members to write to their own representatives, as well as Robert Bales, the Public Health and Environmental Affairs Committee Chairman, to express their views on the potential repeal of the phosphate bill. After the league took an official stance against the ban in 1974, the state branch noted other local chapters were taking action. State meeting materials from 1974 stated “concern with water quality has involved local Leagues in financing decisions, technical questions, and support for local efforts for construction, modernization, and updating of sewage treatment plants.” Anderson League members testified before the Stream Pollution Control Board. Other members across the state attended public meetings, went on go-see tours of polluted waterways and treatment plants, and made statements to the media. At the 1974 state convention for the League of Women Voters in Indiana, twenty different leagues across the state reported taking action against repealing the phosphate ban.¹⁴⁵

In the Indiana League of Women Voters annual report for 1973-1974, Action Chairperson Becky Meier of the state Environmental Quality committee noted that the Indiana League of Women Voters work “along with a number of other groups and individuals” helped ensure the retention of the ban. Meier described the opposition supported by the detergent industry as “extremely well-organized, well-financed, and

¹⁴⁵ First quote from: Indianapolis League of Women Voters, “Environmental Quality,” *Indianapolis League of Women Voters Bulletin* Vol. 40 No. 10 (June 1972): 5, League of Women Voters of Indianapolis Records, 1915-1986, M 0611 Indiana Historical Society, Box 7, Folder 11; Second quote from: Indianapolis League of Women Voters, “Environmental Quality,” *Indianapolis League of Women Voters Bulletin* Vol. 42 No. 2 (February 1973): 11, League of Women Voters of Indianapolis Records, 1915-1986, M 0611, Indiana Historical Society, Box 7, Folder 12. Third quote from: League of Women Voters of Indiana, “Positions on Legislative Issues, 1974-1975 of the Indiana League of Women Voters,” League of Women Voters of Indiana Records Addition, CA. 1920-2003, M 0152, Indiana Historical Society, Box 3, Folder 15. Those 20 leagues were Crown Point, Greater Lafayette, Greencastle, Hamilton County, Hammond, Highland, Indianapolis, Logansport, Michigan City, Muncie, New Castle, Porter County, Richmond, Southwest Indiana, and South Bend.

very determined.” She further noted, “According to one senator, the fact that we had not taken a position in the previous session, but had taken a position on the basis of the evidence of phosphate reduction was very impressive. We were widely quoted, our press release was picked up and reused.” League members must have made an impression on state senators. State Senator Marlin McDaniel (R-Richmond) asked Becky Meier to serve as chairwoman on water pollution for the Senate Environment and Ecology Committee Citizen Task Force. The task force organized to research and analyze environmental issues and recommend appropriate legislative actions to the Senate Environment and Ecology Committee members. McDaniel created the task force “to provide the public with a means of representing its interests before the committee and the General Assembly.”¹⁴⁶

Though many Hoosier women participated politically through formal organizations like the state home economics association or the League of Women Voters, others found new platforms to express their opinions either in support or against the phosphate ban. State senators on the Indiana Senate’s Environment and Ecology committee held hearings in Indianapolis, Fort Wayne, and Bloomington to hear citizen opinions about the phosphate ban in February 1973. Housewives representing both sides of the debate turned up at the hearings to let legislators know their views. Many hauled in their freshly washed laundry as evidence to show how well the non-phosphate detergents worked. Mrs. Robert C. Glazier of Mooresville brought her five-year-old son to the

¹⁴⁶ First quote from: League of Women Voters of Indiana, “Part G: Environmental Quality,” *Indiana Annual Report, 1973-1974*, 10, Indiana Historical Society, League of Women Voters of Indiana Records Addition, CA 1920-1930, M 1052, Box 3, Folder 15. Second quote from: Indiana League of Women Voters, *Interim Legislative Bulletin*, September 1973, 11, Indiana Historical Society, League of Women Voters of Indiana Records, 1908-2004, M 0612 Box 80, Folder 16.

Bloomington hearing, along with some of her family wash, which had been laundered for several years using non-phosphate detergent. Glazier told the committee, “The propaganda from the companies that non-phosphates do not work is just not true. There has been no residue, no deterioration of the fabric, and the washing machine has worked without trouble.” Mrs. Eugene E. Levitt, an Indianapolis mother of five, testified that non-phosphate detergents caused no issues for her at the Indianapolis hearing. She encouraged legislators to keep the ban because it had “raised the prestige of the state. We are a leader.” On the other hand, Mrs. Barbara Reed, a coin laundry operator from DeMotte emphasized her customers had been complaining about non-phosphate detergents. She testified, “My customers definitely want their phosphate soaps back--- non-phosphates aren’t as effective.”¹⁴⁷

Other women organized or signed petitions and lobbying literature to send to the Indiana General Assembly. Mrs. Nancy Chapman, a Fort Wayne housewife, collected 1,500 signatures from area women in support of retaining the ban. A group called the Citizens’ Committee for Clean Water and Clean Laundry partnered with the FMC group, a manufacturer of phosphates, to organize a mass mailing campaign. FMC provided the funds, while the women in the committee mailed postcards urging the repeal of the phosphate ban to Indiana legislators and Hoosier citizens. Lorene Skunk, a trained home economist who headed the committee, and her colleagues got 15,478 women to sign the cards.¹⁴⁸

¹⁴⁷ First quote: Bruce C. Smith, “Housewives Praise Non-phosphates at Hearing,” *Indianapolis Star*, February 6, 1973; Second and third quotes: Virginia Graham, “Phosphate Ban to Remain, Special Uses Exempted,” *Indianapolis Star*, March 7, 1973.

¹⁴⁸ Dale Burgess, “Phosphate Repeal Vote Defeated,” *Brazil Daily Times*, March 26, 1973; “Garton Questions Threat,” *The Republic*, February 6, 1974

Legislators and journalists noticed women's increasing political activity, due in part to the phosphate ban. The frenzy surrounding the ban got tied to another "woman's issue" the Indiana General Assembly was debating, the Equal Rights Amendment. Congress passed the proposed amendment to the United States Constitution, which would guarantee equal legal rights for women, in 1972. It was subsequently released to the states for ratification. In 1973, state legislators began to debate whether to ratify the amendment, in addition to whether to retain the phosphate ban. During the 1973 session, *Indianapolis Star* journalist Richard Cady declared that "women raising thunder about equal rights and phosphate detergents have stolen the show from the traditional high-powered lobbies in the 1973 General Assembly." *The Indianapolis News* even advertised the upcoming release of poll results that would help uncover "which weighs more heavily on the minds of women in Indianapolis...legislation concerning the Equal Rights Amendment or the state's ban on the use of phosphate detergents?" The print advertisement depicted the faces of three pensive women beneath a hanging balancing scale. The dish on the right side held the words "Phosphate Ban," while the dish on the left featured the words "Equal Rights Amendment."¹⁴⁹ Apparently, women could only focus on ERA *or* phosphates.

Newspapers often branded the phosphate ban and the ERA as "emotional" issues. One article even described women's testimony at phosphate ban hearings as "emotionally involved." Representative Leo Voisard (D-Muncie), noted that such "emotional" issues

¹⁴⁹ Richard E. Cady, "Crusading Women Get Lobby Spot," *Indianapolis Star*, March 18, 1973; Advertisement: "Indianapolis News Poll," *Indianapolis Star*, January 29, 1973; For information on the ERA in Indiana see Eloise E. Scroggins, "Organization on Their Own Terms: Women and the Equal Rights Amendment in Indiana," (Master's Thesis, Indiana University, 2003). Indiana became the last state to ratify the Equal Rights Amendment, on January 18, 1977. The Equal Rights Amendment never received the requisite number of ratifying states to make it an amendment to the Constitution.

like the ERA and phosphate ban “are matters on which ‘most people’ often have pre-conceived notions regardless of the facts.”¹⁵⁰ Such articles diminished and devalued the amount of research women’s groups, like the League of Women’s Voters or Indiana Home Economics Association undertook to reach thoughtful conclusions on what they deemed the best course of action. Individual women’s efforts to learn about phosphate detergent, water pollution, and sewage treatment via newspapers and journals, activist groups, as well as their own experiments in the laundry room became overlooked.

The connections between the ERA and the phosphate ban in the media demonstrates how gendered the phosphate debate had become. Clearly, the media and some Hoosiers began to see the phosphate debate as not just as an environmental issue, but a woman’s issue. The phosphate ban’s particularly gendered status clearly affected how predominately male state legislators approached researching and debating the issue. Hortense Meyer, a United Press International writer, even accused the 1974 legislators of avoiding “final decisions on two major issues they perceived as potential sources of conflict among women---the equal rights amendment and phosphate laundry detergents.” In 1974, the Indiana statehouse was a man’s world: only three women served in the Indiana House of Representatives and three in the Indiana Senate.¹⁵¹ Mostly male legislators likely found themselves out of their comfort zone as debating the phosphate

¹⁵⁰ Sharon Stangenes, “Legislators Do Appreciate Opinions From Voters,” January 19, 1973, *Muncie Star*.

¹⁵¹ Quote from: Hortense Myers, “Major Issues Avoided in 1974 Legislature,” *Republic*, February 21, 1974. On historical membership of women in the Indiana House and Senate see, Nicholas Flores, “A Woman’s Place: Women of the Indiana General Assembly, Past and Present,” May 31, 2010, accessed <https://www.in.gov/history/files/Nicholas%20Flores%20IGA%20paper.pdf>. The women who were members were: Julia Carson (D-Indianapolis, House), Donnabelle Mahoney (D-Hammond, House), Marilyn Shultz (D-Bloomington, House), Angeline Paterson Allstatt (D-Indianapolis, Senate), Joan M. Gubbins (D-Indianapolis, Senate), and Marie Theresa Louck (D-Indianapolis, Senate).

ban involved discussions centered on laundry and housework, activities they likely had little hands on experience with.

Several male statesmen appeared to have stuck to traditional gender roles and deferred to their wives' expertise on such a domestic matter. State representative Floyd Coleman (R-Waterloo) did not bother to "hire an expensive research outfit to run a survey on detergents." Instead he had his daughter Dianne Coleman, a teacher, have her fifth-grade students at East Auburn Elementary School in Auburn, Indiana, conduct tests on stained clothes with phosphate and non-phosphate detergent. State representative Ray Richardson (R-Greenfield) told the *Indianapolis Star* in February 1973 he supported the phosphate ban because his wife had used non-phosphate detergents for two years and his "socks were clean." Other male legislators accepted their new role influencing the domestic sphere and refused to appear submissive to their wives' beliefs on the ban. Representative William Long (R-Lafayette) told United Press International reporters, "My chief lobbyist (wife) also is for the phosphates, but in my household I think the husband should be the head of the household." Similarly, senator Eldon Lundquist (R-Elkhart) made sure to prove to media reporters "he is head of his household despite a difference of opinion about phosphate detergents" with his wife. He said, "My wife wants me to vote no," yet as she sat in the spectator's gallery of the state house, Lundquist defiantly voted to repeal the ban. An *Indianapolis Star* comic poked fun at male lawmakers' trouble negotiating between their work and private lives. Two legislators were depicted leaving the State Legislature. One confided to the other "My wife said,

‘You vote for that non-phosphate soap bill and you can take over the dish-washing at our house!’”¹⁵²

Men outside politics began to consider what their role was in this gendered debate. An article appeared in *Popular Science* in January 1972 titled, “The Detergent Mess...What to Tell Your Wife.” The opening line read, “The froth over detergents has bubbled over the lid of the washing machine and now threatens to engulf the man of the house.” Now that the laundry room has shed its prior status as “the exclusive domain of the housewife” the article warned its male readers, “if you’re not to lose your status as a science know-it-all, you’d better have some answers ready for your lady.” The rest explained the basic relationship between soap, detergent, and eutrophication. It even included a section on “How to Choose and Use a Detergent.”¹⁵³

Back in Indiana, several male columnists broached phosphate detergent pollution in their weekly musings. Dick Heller Jr. dedicated a number of his editorials in the *Decatur Daily Democrat* to phosphate detergent pollution. Throughout the early 1970s, he explained the differences between soap and detergent, the role phosphate detergent played in eutrophication, and well as how local waterways, like the St. Mary’s River in Decatur, fed into Lake Erie and thus contributed to Great Lakes pollution. Though Heller embraced his role as an educator on all matters water pollution, he left it up to his female readers to take action. He wrote, “every housewife can help greatly” by buying one of the types of low-phosphate detergents and soaps his editorial listed. On the other hand, Peter

¹⁵² First quote from: “Legislator’s Daughter Makes Detergent Study,” *Rushville Republican*, January 17, 1973; Second quote from: “Vote on Easing Phosphate Ban,” *Indianapolis Star*, February 6, 1973; Third quote from: “House Votes to Rescind Ban on Laundry Phosphates,” *Pharos Tribune and Press*, February 9, 1973; Fourth quote from: “Zero ban on phosphates is retained,” *The Daily Journal*, May 22, 1973; Fifth quote from: Dave Gerard, “Citizen Smith,” *Indianapolis Star*, April 10, 1973.

¹⁵³ Simon Dresner, “The Detergent Mess...What to Tell Your Wife,” *Popular Science* 200 No. 1 (January 1972): 14, 16.

Weaver of the *Anderson Sunday Herald* ceded his authority on phosphate detergents to his female assistant, Martha Williams. Weaver wrote, “one problem with these government pronouncements is the fact that they’re usually made by men who have never been near a washing machine.” He enlisted Williams, who completed laundry weekly for a family of five, to do all the research for an article on phosphates. She interviewed home economists, chemists, and environmentalists and tested out a number of phosphate and non-phosphate detergents in her home wash. Somehow though, Weaver still got a sole byline.¹⁵⁴

Between 1973 and 1974 the phosphate debate in Indiana had evolved. Instead of remaining just an environmental issue, the phosphate ban morphed into a women’s issue as well. Hoosier women became major stakeholders in the debate, as activists in support of the ban or in favor of repealing it. White, middle-class housewives’ opinions on the ban became a gauge of how successful (or unsuccessful) the ban was for politicians and activists. Since women remained the primary figures associated with laundry, they emerged as an important authority on how the ban might affect not only the environment, but also hygiene and health. Hoosier men also participated in the phosphate debate, though their actions reflect how gendered the issue had become as men grappled with aligning their masculinity with a topic so focused on stereotypically feminine activities and places, like laundry, the home, and family health. The next chapter analyzes two

¹⁵⁴First quote from: Dick D. Heller Jr. “Editorial: Pollution in Decatur,” *Decatur Daily Democrat*, July 21, 1970; Second quote from: Peter Weaver, “Soap Claims, Counterclaims Are All These Warnings True?” *Anderson Sunday Herald*, May 21, 1972; see also Dick D. Heller Jr. “Editorial: Detergents,” *Decatur Daily Democrat*, March 25, 1970; Dick D. Heller Jr., “Editorial: Pressure on Soapmakers,” *Decatur Daily Democrat*, April 25, 1970; Dick D. Heller Jr. “Editorial: Sewage Disposal,” *Decatur Daily Democrat*, November 19, 1971; Dick D. Heller Jr. “Editorial: Soap and Water,” *Decatur Daily Democrat*, February 16, 1973,

collections of letters to uncover the ways gender affected how Hoosier men and women articulated, argued about, and conceptualized the phosphate ban.

CHAPTER THREE: ACTIVIST LETTER WRITING DURING THE HOOSIER PHOSPHATE DEBATE

On December 29, 1972, a few days before the Indiana phosphate ban was scheduled to go into effect, *Indianapolis Star* editor Eugene C. Pulliam urged the Indiana General Assembly to reconsider the ban. He wrote that Indiana, the first state to ban phosphate detergents, “got out in front of a parade that isn’t going to happen.” Pulliam suggested the General Assembly enacted the ban “in response to great pressures from conservationists and the EPA, who claimed that phosphates were causing ponds and lakes and slow-moving streams to ‘die.’” Now that the EPA had changed its position on the safety of non-phosphate detergents, Pulliam hoped the Indiana General Assembly would consider financing the construction of more advanced sewer treatment systems to prevent phosphates from entering waterways instead of relying on the ban. Until the ban was repealed, he observed “the home laundry will suffer.”¹⁵⁵

Pulliam’s letter inspired Hoosiers to respond. Over the next couple months, letters on the phosphate ban filled the *Indianapolis Star*’s opinion section. Letter writing had become an effective activist measure for men and women on both sides of the phosphate debate. Many wrote letters to the editors of local newspapers in order to express their opinions on the ban to the broader Hoosier public. In total, the *Indianapolis Star* published thirty-seven letters on the topic between January and April 1973 as lawmakers in the Indiana General Assembly debated whether or not to repeal the ban. Others wrote letters to Indiana politicians and policy makers to convince them to throw their support behind the ban or for repeal. An extant collection of such letters from 1973 to 1974 to

¹⁵⁵ Eugene C. Pulliam, “As to Coming Clean,” *Indianapolis Star*, December 29, 1972.

Governor Otis R. Bowen, newly elected as the 44th Governor of Indiana, serve as a prime example of such a collection. He began receiving letters on the phosphate ban in January 1973 during his first month in office. He received a total of 140 letters from Hoosiers throughout 1973 and 1974, as state lawmakers debated whether or not to repeal the ban.¹⁵⁶

These two collections of letters---those written to the *Star* and those written to Governor Bowen---provide necessary insight into how Hoosiers debated the phosphate issue. Historian Miriam Dobson explains that letters to authority figures, like letters written to newspaper editors or politicians,

can act as a forum for ‘self analysis and self exploration’...yet here the letter-writer is reflecting not only on their place in the community or family, but also their role in the wider world. Through the act of writing, the author establishes their status as a citizen, inscribing themselves into the political system he or she inhabits.¹⁵⁷

Thus, we can use these two collections of letters to understand how Hoosier men and women situated themselves in the phosphate debate. Since Hoosier women received a flood of conflicting information from activist groups, industry, the media, and government officials on phosphate pollution, these letters become key to understanding how they processed that material and came to a decision on what side to support. The types of arguments women and men used in their letters indicate how they felt the phosphate ban affected their lives---and other Hoosiers like them. We can further use the letters to uncover how gender might have played a role in the ways men and women

¹⁵⁶All letters can be found at the Indiana State Archives (ISA), in the Governor Bowen papers, in the following record locations: 44-Z-1, 44-X-7, 44-P-6, 44-N-4, and 45-A-1 in folders marked “phosphate.”

¹⁵⁷ Miriam Dobson, “Letters,” in *Reading Primary Sources: The Interpretation of Texts from the Nineteenth and Twentieth Century History*, Miriam Dobson and Benjamin Ziemann, eds, (New York: Routledge, Taylor & Francis Group, 2009), 64.

thought about the phosphate debate and pollution. Thus, the following questions to consider emerge: Did female writers use different arguments than male writers? Did both sexes use similar language and evidence to persuade other readers to support their side? How did the perceived audience for the letters---Pulliam, the *Indianapolis Star* readership, or Governor Bowen---appear to influence the arguments writers used?

To analyze each collection of letters, I created a separate spreadsheet for both and tallied the types of arguments and evidence writers brought up in their letters to track any patterns amongst different demographics of letter-writers. For example, I noted whether the writer was in support of the ban, in support of the repeal, or undecided. Additionally, I made sure to mark the gender of each writer in order to compare and contrast the differences between male and female writers in each collection. While each letter remains unique, it became clear that writers often brought up similar arguments to make their points. Men and women often used different strategies and favored different sources of evidence, including citing data from scientific studies, discussing their own laundry, or referencing their status as a caretaker. These strategies also varied amongst letters written for the *Indianapolis Star* and those for Governor Bowen.

Though the letters to the editor constitute a fairly small collection, as a group they give insight into how Hoosier men and women debated in a public forum and how the media shaped their arguments. Since the *Indianapolis Star* had dominated the Indiana newspaper industry for decades in 1973, boasting the largest circulation of state newspapers since 1947, the letters published likely only represent a small portion of those the newspaper actually received. Since the entire collection of letters received is no longer extant, this collection cannot be used to represent the Hoosier public's beliefs on

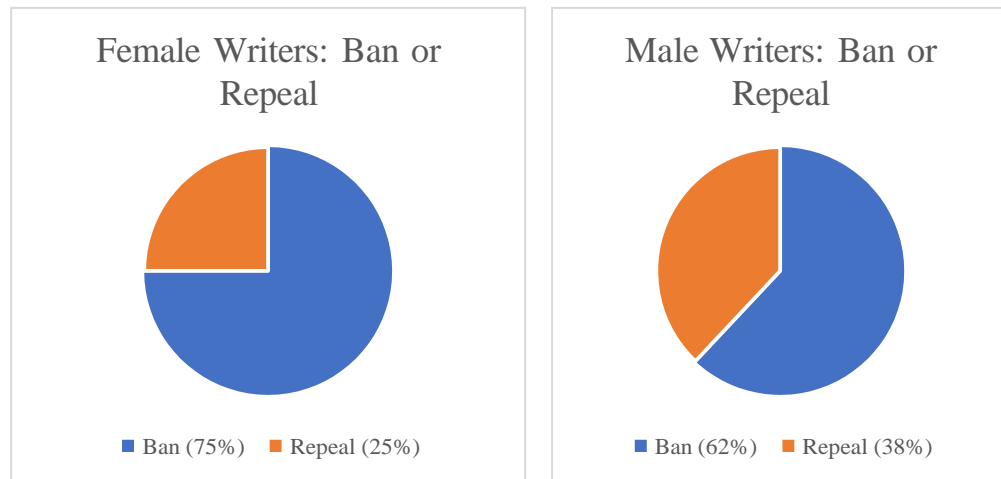
the phosphate ban as the whole. Pulliam and other *Star* staff selected the most eloquent, even most controversial letters and curated the extended argument to generate greater response from readership. However, the collection can be used to further analyze, beyond newspaper articles and detergent advertisements, what roles the media played shaping a clearly gendered, phosphate debate.¹⁵⁸

Out of the thirty-seven total published letters written in response to Pulliam’s editorial, twenty-six (70 percent) supported the ban and eleven (30 percent) favored repeal. Statistics regarding the sex of the author makes it clear that the phosphate debate had become a woman’s issue, in addition to an environmental issue. Though both men and women expressed their opinions, out of the thirty-three that were written by solely a man or woman, 70 percent were written by women (N=20) and 30 percent by men (N=13).

Total Letters	Female Writers	Male Writers	Other
37	20	13	4

¹⁵⁸On the history of the *Indianapolis Star*, see Beth Murphy, “Indianapolis Star,” in David J. Bodenhamer and Robert G. Barrows, eds, *The Encyclopedia of Indianapolis* (Indianapolis: Indiana University Press, 1994), 807-808.

Amongst women writers, 75 percent (N=20) supported the ban and 25 percent supported repeal. For male writers, 62 percent (N=13) supported the ban and 38% supported repeal.¹⁵⁹



These statistics indicate how gendered the phosphate debate had become, even just after the ban began in 1973. It is impossible to tell whether the *Star* actually received three times as many letters on the phosphate ban from women than men. More women may have felt motivated to express their opinions on the matter because it involved the traditionally female realm of the home and housework, resulting in a greater proportion of women's letters. Another possibility remains that the *Star* purposefully published more women's letters than men's. As demonstrated throughout the previous chapter, the media at the time had begun to frame the phosphate debate as a woman's concern. Without an extant collection of all the letters Pulliam received at the time on the phosphate debate,

¹⁵⁹15 women were published in favor of the ban, 5 wrote in favor of repeal; 8 male writers wrote in favor of the ban, 5 in favor of repeal. Two letters were signed by a heterosexual couple, so the sex of who drafted it (or if both of them did) is unknown. Proctor & Gamble submitted a letter in favor of repeal. The sex of one author could not be identified due to a gender-neutral name.

the answer is hard to grasp. Likely, both factors remained in play, thus influencing the much larger share of female authors than male.¹⁶⁰

The letters also seem to suggest (probably erroneously) that a clear majority men and women supported the phosphate ban. Though no polls of men's beliefs exist, many polls Indiana newspapers conducted reported that at least a slight majority of women supported a repeal of the phosphate ban.¹⁶¹ What might cause this swelling of support toward the phosphate ban amongst letter-writers? Since these letters to the editor appeared in January and February of 1973 right after Indiana implemented the ban, activist groups favoring repeal of the ban had just begun to form. On the other hand, new environmental and older conservation organizations had spent the past two years supporting the use of non-phosphate detergent and working to ensure the ban became law in the first place. They had the volunteers and background knowledge necessary to write many letters to the editor (and had been teaching other Hoosier citizens how to write effective letters in support of the ban), while repeal-oriented activists had just started to organize and did not yet have such a strong base of support. Secondly, since Pulliam wrote in opposition to the ban, likely more individuals that supported the ban would be motivated to write against his letter. Those who agreed with Pulliam's stance to repeal the phosphate ban would not feel moved to write until a sufficient number of letters in

¹⁶⁰ The next four paragraphs reflect my own analysis and interpretation of data about the Letters to the Editor published in the *Indianapolis Star* on the phosphate ban.

¹⁶¹ For example, the following four polls indicate large support amongst women for repealing the phosphate ban, ranging from 51 percent to 70 percent of respondents favoring repeal: "Straw Vote," *Indianapolis Star*, March 18, 1973 (581 readers in favor of repeal, 322 in favor of keeping the ban); "Phosphate Forum," *Muncie Evening Press*, January 8, 1973, January 10, 1973, January 11, 1973, January 15, 1973, January 18, 1973 (73 readers in favor of repeal, 32 readers in favor of the ban); "Housewives Report on Use of Non-Phosphates," *Kokomo Tribune*, March 1, 1973 (27 out of 50 favor repeal); "Survey on Laundry Detergents." Democratic Politics Bayh Notices, Box 079, Mayor Richard Lugar Collection. University of Indianapolis Digital Mayoral Archives (Out of 1,000 respondents, 51 percent favored repeal, 42 percent favored keeping the ban, 6 percent were undecided).

support of the ban appeared. Also, the *Star* may have favored publishing more letters in support of the ban to appear more objective.

Though the letters might not accurately reflect the fraction of Hoosiers in support of the ban and those in favor of repeal, the text of the letters provide insight into how women viewed the debate. Instead of aligning their views with options provided in a survey or poll, women had the opportunity to express their particular thoughts on the phosphate ban and how it affected their daily lives and roles as caretakers in their letters. For example, many women clearly felt connected to the ban because they held responsibility over housework and cleaning up after family members, which in the early 1970s men had little to no experience completing. Women who wrote letters to the editor often stressed their position as a housewife, mother, or caretaker to establish credibility of their argument that the ban on phosphate detergent should stand. American women have employed such a maternalist strategy for decades to participate in political debates they were otherwise discouraged from shaping. They argued it was proper for mothers to advocate for various policies, such as sanitation and pollution control, that would improve the lives of their children and communities. Since this strategy was relatively non-threatening to professional, male political leaders, it allowed them to participate in politics.¹⁶²

Hoosier women saw the phosphate detergent debate as an issue they could easily comment on because it affected home laundry practice, as well as family health and hygiene. Of the fifteen women writers who wrote letters to the editor in favor of the ban,

¹⁶² See the following: Robyn Muncy, *Creating a Female Dominion in American Reform, 1890-1935* (New York: Oxford University Press, 1991); Molly Ladd-Taylor, "Toward Defining Maternalism in U.S. History," *Journal of Women's History* 5, no. 2 (Fall 1993): 110-113.

53 percent stressed that housewives needed to buy and use non-phosphate detergents to ensure clean waters for their offspring. Mrs. Herbert Backer urged her fellow housewives to “put things first,” support the ban, and use non-phosphate detergents for the future generation’s sake. She asked readers emphatically, “Do you want your children to have a sparkling clean T-shirt or a sparkling clean world?” In her opinion, housewives should sacrifice their bright white washes today to give their children a cleaner world tomorrow. Mrs. Norma J. Washburn used her position as a mother of three children to encourage people to realize “that polluted water is a problem and if we don’t start trying to solve it our children may not have enough pure water for their needs in years to come.” Mrs. Donald E. Nelson, a housewife tasked with cleaning her husband’s “dirty, old railroad duds” and her daughter’s clothes, wrote that non-phosphate detergents worked just great. She wrote that housewives needed to stop hugging “those big detergent boxes close” because someday good, clean water for all their children would be scarce and pricey.¹⁶³

For these women, consumers who were also caretakers had an obligation to use their purchasing power to buy goods that kept water clean and unpolluted. Two of the five women who wrote in favor of repeal also mentioned their status as a housewife to show they had the experience to effectively judge if these new non-phosphate detergents worked. For example, Mrs. Viola Frodge noted that she had been a housewife for twenty-seven years; until now her detergents had always worked. Now “thanks to our legislators I am forced to buy detergents that do a very, very poor job.”¹⁶⁴ In total, half of all women

¹⁶³ Mrs. Herbert Backer, “Clean Shirt or Clean World, Which? Mrs. Becker Inquires,” *Indianapolis Star*, January 11, 1973; Mrs. Norma J. Washburn, “Hooray For Ban!” *Indianapolis Star*, January 26, 1973; Mrs. Donald E. Nelson, “Mrs. Nelson Backs Ban on Phosphates,” *Indianapolis Star*, February 7, 1973.

¹⁶⁴ Mrs. Viola Frodge, “Blames Ban For Tattle-Tale Gray,” *Indianapolis Star*, January 5, 1973.

writers drew on their experience as a housewife or caretaker to gain authority in the debate over the phosphate ban in the *Indianapolis Star*.

While many women expressed their position as a housewife to enhance their credibility, what types of evidence did they use to try to convince readers to support one side or the other? Though newspaper articles, government documents, and activist literature at the time proffered lots of data on phosphate pollution, only three female writers out of the total twenty (15 percent) cited scientific data or facts they discovered during research to support their opinions. All three of these writers wrote in favor of the phosphate ban. Jeri Von Stein, President of the Northside Environmental Action Committee of Indianapolis, questioned Pulliam's claim that only one-third of phosphates in waterways came from detergents, noting that other sources cited a range between 40-70%. Von Stein mentioned that few communities could afford to install advanced waste treatment systems for many years, so banning phosphates, a major pollutant would "have a significant near-term impact on water quality." Teresa Stucki likewise quoted the US House of Representatives Report No. 91-1004, which stated that 60 percent of phosphate in municipal sewage came from detergents. Stucki observed "certainly this is enough phosphate to warrant a ban."¹⁶⁵

Instead, 60 percent of all the women writers (N=20) preferred to use their laundry as evidence, as opposed to data gathered in reports.¹⁶⁶ Women in favor of the ban wrote that non-phosphate detergents cleaned just as well as phosphate brands. Mrs. Merton

¹⁶⁵ Jeri Von Stein, "Jeri Von Stein Says Phosphate Ban is Environmental Must," *Indianapolis Star*, January 8, 1973; Teresa Stucki, "Teresa Stucki Says Don't Life Ban on Sale, Use of Phosphates," *Indianapolis Star*, January 9, 1973. The report Stucki cites in her letter is United States House of Representatives Report titled "Phosphates in Detergents and the Eutrophication of America's Waters," April 14, 1970.

¹⁶⁶ 8 of 15 women in favor of the ban discussed their laundry, 4 of 5 women in favor of the repeal.

Good said, “for almost two years I have used only non-phosphate detergents... The clothes are just as white, just as soft, and just as bright as when I was using detergents with phosphates.” Mrs. Esther A. Phillips even described her process using ½ cup non-phosphate detergent and ½ cup washing soda to help other women discover “there is no struggle in having clean clothes with a no-phosphate cleaning agent.” On the other hand, the five women writers demanding a repeal of the ban all discussed how their laundry was not as clean once they switched to non-phosphate detergents. Mrs. Paul E. Haehl wrote, “I have used a different one [non-phosphate detergent] every week, my clothes are not getting clean (the last left my clothes smelling as though I sprayed them with insecticide).” All five of the women who wrote in favor of repeal worried about the ramifications of giving their families unclean clothes to wear. Mrs. David Chalfant wrote, “These products will not clean clothes, let alone take care of stains that get into baby and children’s clothes.”¹⁶⁷

Male letter-writers used different types of evidence than female letter-writers did. Six male writers (forty-six percent) all thirteen male writers, compared to 15 percent of the women writers, cited scientific sources to prove to their readers the Indiana ban should stand. None referred to their personal experiences (or their wives’ or mothers’ experiences) doing laundry or mentioned how clean or dirty their clothes had become. George T. Angelone cited information from George T. Odum’s “Fundamentals of Ecology” from 1971 to suggest banning phosphate was favorable to depending on sewage treatment alone. Paul N. Eilers, writing in favor of repeal, declared that studies showed

¹⁶⁷ Mrs Merton Good, “Sees No Difference,” *Indianapolis Star*, January 26, 1973; Esther A. Phillips, “Esther Phillips Gives Recipe for Washing,” *Indianapolis Star*, February 18, 1973; Mrs. Paul E. Haehl, “Mrs. Haehl Stands on Soapbox,” *Indianapolis Star*, March 6, 1973. Mrs. David Chalfant, “Dirty Deal,” *Indianapolis Star*, January 15, 1973.

that 87 percent of all phosphates in water did not come from laundry detergents.¹⁶⁸ The trend for men to avoid discussing their home laundry is not shocking, since most men in the 1970s did little housework compared to women.¹⁶⁹ It is significant that male writers did not at least reference whether they noticed a difference in their clothes since the ban.

No male writers identified themselves specifically as a father or caretaker like the female writers did, though four did mention children. These men never discussed their own offspring, but talked about children in a more abstract way, instead. For example, Jack Essenburg urged readers to support the ban if “you want clean water to drink, for you and your children.” Donald Smith expressed his fear that the public was unaware of the dangers facing them and “their children” regarding pollution including phosphate detergent pollution.¹⁷⁰

Overall, the writers of these letters exemplified typical gender roles. Male writers tended to use data and facts to back up their arguments and thus appeared distant from the home and every day laundry practice. In contrast, women writers tended to emphasize their connections to the home, both as caretakers and how the phosphate ban specifically affected their home laundry practice.¹⁷¹

¹⁶⁸ George T. Angelone, “Article on Phosphate Ban Errs, A Crawfordsville Resident Says,” *Indianapolis Star*, April 18, 1973; Paul N. Eilers, “Save the Possums Crowd Brings Energy Crisis, Paul Eilers Charges,” *Indianapolis Star* March 20, 1973.

¹⁶⁹ Pew Research Center “Americans’ Time at Paid Work, Housework, Child Care, 1965-2011,” March 14, 2013, accessed <http://www.pewsocialtrends.org/2013/03/14/chapter-5-americans-time-at-paid-work-housework-child-care-1965-to-2011/>. According to this study, men spent 4 hours per week on housework in 1965 and women spent 32 hours per week. In 1975, men spent about 6 hours per week on housework and women about 24.

¹⁷⁰ Jack Essenburg, “Detergent Manufacturers Trying to Scare People, Says Essenburg” *Indianapolis Star*, March 10, 1973; Donald E. Smith, “‘Now’ Too Late To Curb Pollution, So We’re Doomed, Smith Proclaims,” *Indianapolis Star*, March 9, 1973.

¹⁷¹ This paragraph and then next five reflect my own analysis and interpretation of data about the Letters to the Editor published in the *Indianapolis Star* and letters written to Governor Bowen on the phosphate ban.

Letters to Editor Data Summary

Strategy	Women (N=20)	Men (N=13)
Maternalism/Paternalism	50%	0%
Use Laundry as Evidence	60%	0%
Cite Data/Facts	15%	46%

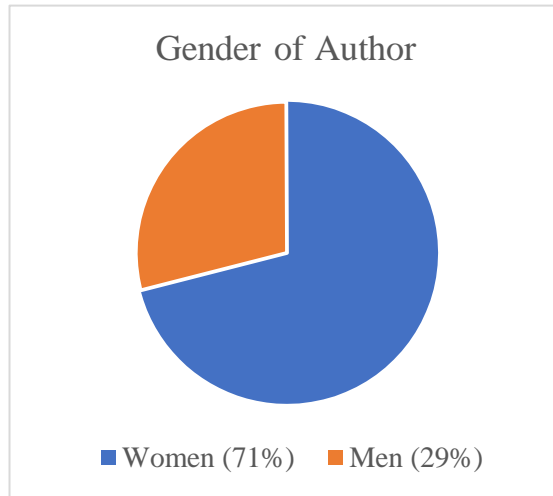
Since the letters to the editor constitute such a small collection that has also been curated by newspaper staff, it is important to compare them to a larger collection of letters that can stand as a whole. When Eugene Pulliam started publishing these letters in the *Indianapolis Star*, Governor Bowen had already been receiving letters from women, men, married couples, anonymous individuals, and organizations about the phosphate ban. Most wrote to encourage or dissuade the Governor from using his veto power if the Indiana General Assembly repealed the phosphate ban. Bowen received 139 letters from late December 1972 before his term started to February 1974 on the phosphate ban. Out of those letters, women wrote eighty-seven, men wrote thirty-five, and seventeen were written by unidentified individuals, married couples, or organizations.¹⁷²

Total Letters	Female Writers	Male Writers	Other
139	87	35	17

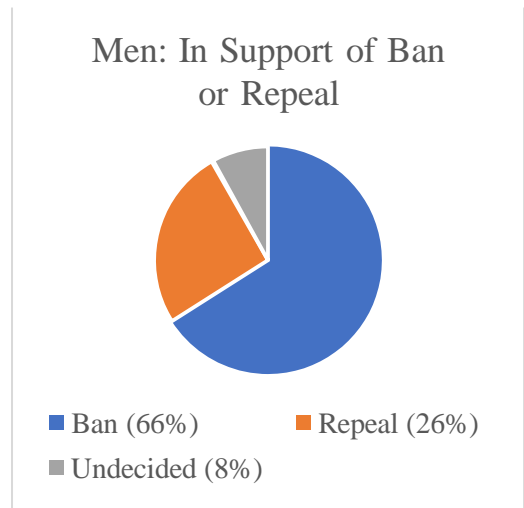
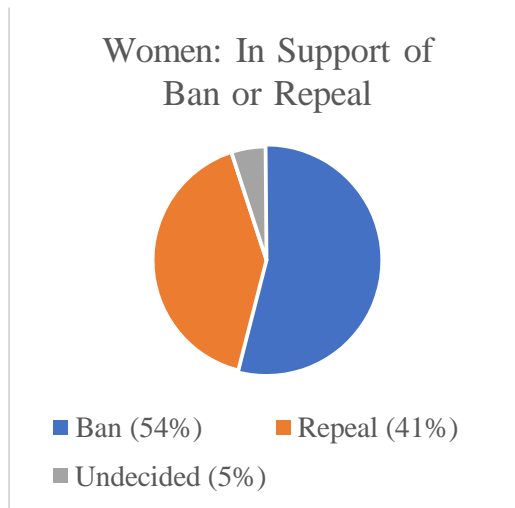
Out of the 122 that could be identified as written by a man or woman, women wrote 71 percent (N=87) of the letters and men wrote 29 percent (N=35). Like the letters to the

¹⁷² All letters can be found at the Indiana State Archives (ISA), in the Governor Bowen papers, in the following record locations: 44-Z-1, 44-X-7, 44-P-6, 44-N-4, and 45-A-1 in folders marked "phosphate."

editor, these statistics demonstrate how gendered the phosphate debate had become. Since it so intimately related to matters of the home, housekeeping, and caretaking, tasks women most often took responsibility for, the phosphate debate had evolved into an environmental issue women felt moved to comment on and influence.



In all, 54 percent of women writers wrote in favor of the ban, 41 percent favored repeal, and 5 percent wrote letters asking for information only and did not pose favor towards any side (N=87). For male writers, 66 percent favored the ban, 26 percent repeal, and 8 percent wrote letters with a vague stance or inquiring for information only (N=35).



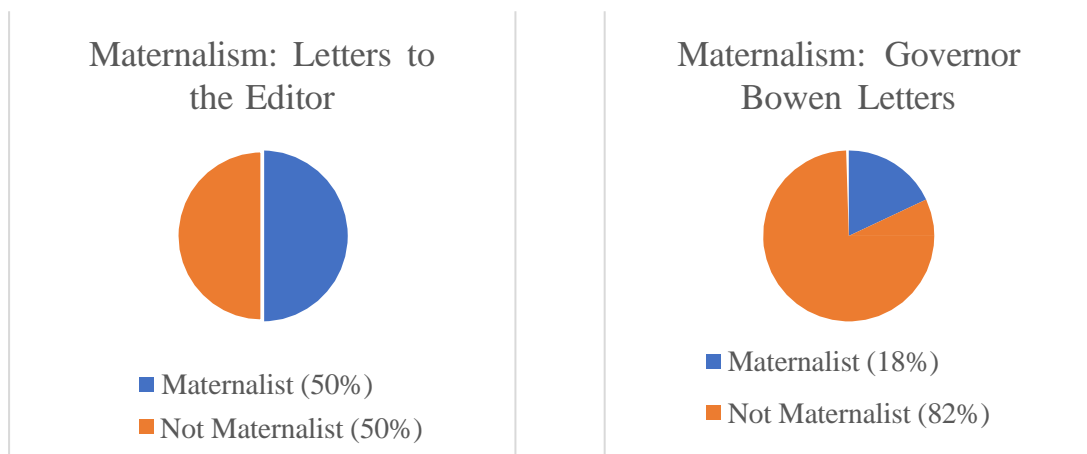
These statistics are closer to the results from surveys that appeared in numerous newspapers, but not exactly the same: instead of a slight majority of women in support of repealing the ban, a slight majority favored keeping it. Without being able to review the all questions asked in the surveys, it is hard to ascertain why these statistics differ. Since Indiana state representatives and senators threatened to repeal the ban, it remains plausible that more women (and men) in support of retaining the phosphate ban felt moved to write in order to protect the existing legislation by asking the Governor to use his veto power. Additionally, environmental activist groups in support of the phosphate ban had solidified their approach and platform in support of the ban for a few years already. Hoosiers in support of the ban had the resources and support from these groups who taught them how to craft their letters and who to send them to. Conversely, groups against the ban had just begun to organize and fewer Hoosiers in support of repeal had the resources at hand to support effective letter writing. Though they eventually had the resources of the detergent industry at hand, in early 1973, the Soap and Detergent Association had just sent lobbyists to Indianapolis. It would take time for citizen groups to organize and lobbyists to generate materials and distribute them amongst the public.

The gendered debate also reflects why men seemingly overwhelmingly supported the phosphate ban. Many repeal factions, both citizen-groups organized by home economists, as well as detergent industry marketing campaigns, focused on the housewife. Literature in support of repeal, as demonstrated in Chapter 2, was written to persuade women or the person in each household in charge of laundry, that non-phosphate detergents posed health and hygiene risks. Since most men in the early 1970s did not retain responsibility over laundry, housework, and childcare, these arguments

against the phosphate ban may have appeared less persuasive. In reality, unless a man was Hoosier lawmaker or state official, lobbyists in the phosphate debate focused their efforts and campaigns on Hoosier housewives.

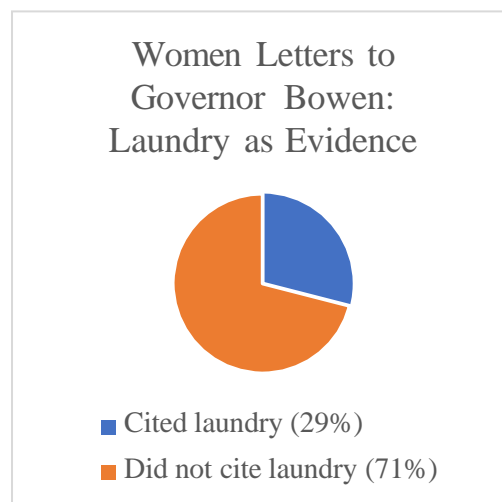
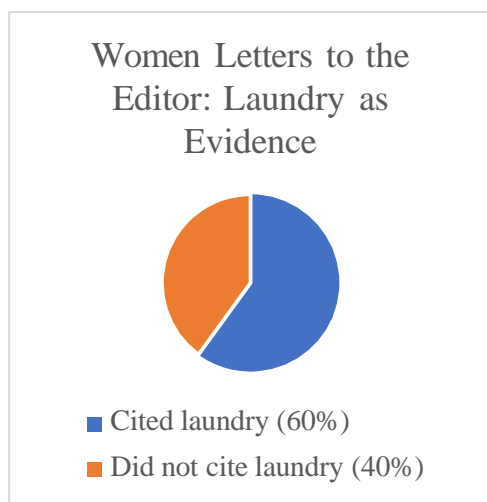
Though the basic statistics regarding gender of the author and whether they supported the ban or repeal are similar to the letter to the editor collection, the arguments men and women used differ. The starkest differences between this collection of letters and the *Indianapolis Star* letters discussed above involved the employment of maternalist strategy, use of one's own laundry as evidence, and the use of data or facts within the letter. Through these differences, we can begin see how the *Indianapolis Star* might have curated the public debate that unfolded in the Opinion pages of the newspaper in 1973 and 1974, especially regarding gender.

One of the biggest differences among the writers involved the use of maternalist strategy to establish credibility. Far fewer women used a maternalist strategy to give credit to their arguments compared to women writers for the *Indianapolis Star*. Only sixteen (18 percent) of all the female writers (N=87) invoked their status as a mother or caretaker to wage support for their argument.



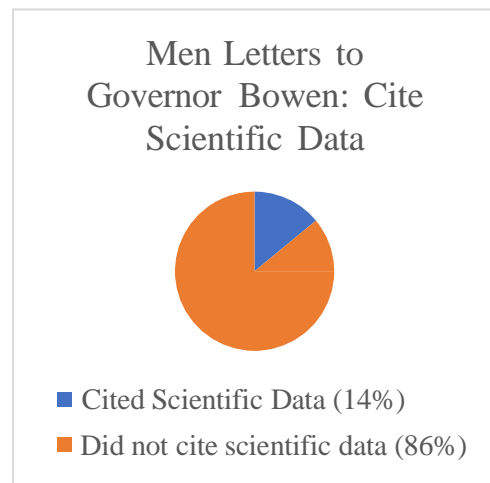
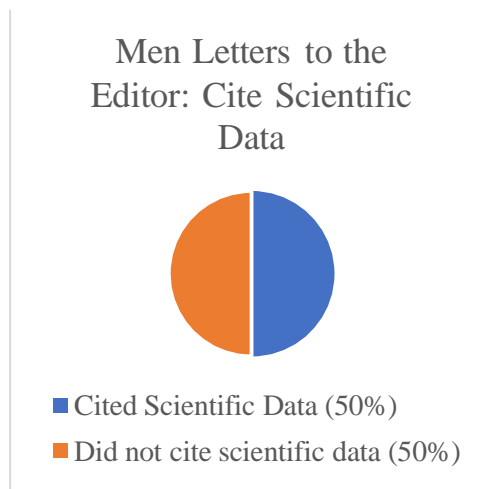
Most women who wrote in favor of the ban stressed the need for clean water for everyone. Of the 18 percent of women who mentioned their role as a caretaker or housewife, just about half referred to their children in the abstract way men did in their letters to the *Indianapolis Star* or only mentioned their role as a mother or caretaker at the closing of their letters. For example, Mary Youngstafel wrote that “to repeal the ban would be an injustice to our children and grandchildren.” Mrs. Robert Bean emphasized Hoosiers’ obligation to the “future generation” to keep Indiana’s waterways clean and keep the ban in place.¹⁷³ The statistics on paternalism remained about the same, though. Only one male writer (N=25) mentioned his children and status as a father in his letter to Governor Bowen.

Additionally, far fewer women decided to discuss the details of their own laundry with Governor Bowen. Only twenty-five female writers (29 percent) mentioned how their laundry fared, about on par with the twenty-one (24 percent) who used scientific data or facts to bolster their opinions (N=87).



¹⁷³ Mary Youngstafel to Governor Bowen, January 25, 1974, ISA, 44-P-6, folder 28; Mrs. Robert Bean to Governor Bowen, n.d., ISA, 44-Z-1, folder 17.

In contrast, 6 male writers (17 percent) who divulged the state of their laundry to Governor Bowen (N=35), compared to 0 percent of male letter to the editor writers (N=13). Dale Bohnenkamper wrote, “I would like for you to try to get phosphate soaps back on the market...Our clothes aren’t as clean anymore.” Other men expressed sympathy for women laundresses, albeit in sexist manners: James Jackson told Governor Bowen “I really believe you should support the housewives of the state and help them get their soaps back. Ask your secretary what it’s like trying to get white whites with what is left on the market.” Men also mentioned scientific data less frequently than women. Only five male writers (14 percent) highlighted scientific data or facts (N=35). This also stands in sharp contrast to the six male writers (46 percent) who cited data or facts in their letters to the editor (N=13). In all, like the women writers, men who wrote letters to the editor were just as likely (or unlikely) to cite scientific facts as they were to use their laundry as evidence to persuade readers to support their particular stance on the phosphate ban.¹⁷⁴



¹⁷⁴ Dale Bohnenkamper to Governor Bowen, April 3, 1973, ISA, 44-Z-1, folder 18; James Jackson to Governor Bowen, n.d. ISA, 44-Z-1, folder 17.

If men and women did not mention scientific data, the state of their laundry or their status as a caretaker in their letters to Governor Bowen, what primarily did they write about? Most women (and a good proportion of men) used rhetoric drawn from the environmental movement that stressed the need for clean water in the present and the future. For example, thirty-two women writers (68 percent) who wrote in favor of the ban (N=47) and 10 (43 percent) of the male writers (N=23) in favor of the ban framed clean water as a right and a necessity for future generations. Though many women letter to the editor writers used such a strategy, they often discussed their own children to emphasize the rhetoric. In contrast, many women who wrote to Governor Bowen left out specific references to their own children or dependents. For example, twenty-seven (83 percent) of those women writers wrote like Barbara Roberts, who told Governor Bowen, “The right to clean waters and air should be a clear cut unquestioned right and the present ban on phosphates is such a good, cheap step in the right direction.” Marilyn Levy similarly wrote, “I believe that Indiana’s streams and lakes should be protected against this gross and unnecessary injustice to our natural waterways.” Other women considered how phosphates affected animals, as well as humans. Waltema Frederick wrote she was in support of the ban because phosphates were “bad for fish and other wildlife.” Their letters, devoid of the maternalism present in women’s letters to the editor in support of the ban, mirrored the letters many men wrote in favor of phosphate control. For example, Wayne Dowling urged Governor Bowen to do all he could to “keep our waters clean for wildlife and people.”¹⁷⁵

¹⁷⁵ Barbara Roberts to Governor Bowen, January 30, 1974, ISA, 44-P-6, folder 28; Marilyn Levy to Governor Bowen, January 24, 1974, ISA, 44-P-6 folder 28; Waltema Frederick to Governor Bowen, Feb 23, 1973, ISA, 44-Z-1, folder 17; Wayne Dowling to Governor Bowen, Feb 7, 1973, ISA, 44-Z-1, folder 17.

Women who wrote in support of repealing the phosphate ban most often brought up concerns about health and hygiene. For twenty five (69 percent) of these women (N=36), worries about a decline in the cleaning power of detergent served as a primary argument in letters to Governor Bowen. Mrs. Robert Hallis noted that phosphate detergents cleaned much better than non-phosphates and that she “liked a clean wash.” The caution labels on the non-phosphate detergents concerned her as well. She stressed that she did not want to wash with a caustic product. Stella Davis summed it up best and wrote that if the law was repealed it would make her and the customers at her laundromat “healthier, cleaner, and happier.” It also seems women may have tailored their arguments to appeal to Governor Bowen, who was an M.D. Mrs. Betty M. Batz wrote a four-page letter describing all her family’s skin and eye symptoms after using a non-phosphate detergent that read much like a transcript from a doctor’s office visit. Mrs. Laura F. Close wrote “I am writing to you since you are a doctor and know the laundry detergent we are forced to use now causes skin rash and is dangerous to our eyes and also dangerous if we breathe it.” While the women who wrote letters to the editor wrote about grayer, grimier washes, women who wrote to Governor Bowen made sure to stress how these detergents adversely affected their family’s bodies to convince him, as a doctor, that the ban be repealed.¹⁷⁶

¹⁷⁶ Mrs. Robert Hallis to Governor Bowen, January 27, 1974, ISA, 44-P-6, folder 28; Stella Davis to Governor Bowen, January 13, 1973, ISA, 44-Z-1, folder 17; Mrs. Betty M. Batz to Governor Bowen, January 13, 1973, ISA, 44-Z-1, folder 17; Mrs. Laura F. Close to Governor Bowen, January 17, 1974, ISA, 44-P-6 folder 28.

Overall Data Compared between Letters to Editor and Letters to Governor Bowen

Letters to Editor (N=26)	Letters to Governor Bowen (N=112)
Maternalism/Paternalism: 46% women, 0% men	Maternalism/Paternalism: 21% women, 3% men
Discuss Own Laundry: 60% women, 0% men	Discuss Own Laundry: 29% women, 17% men
Cite Data: 15% women, 46% men	Cite Data: 24% women, 14% men

These results indicate a stronger adherence to gender roles amongst letter to the editor writers. For example, women used maternalist politics and described how the phosphate ban affected their home laundry practice at much higher rates than they did in the letters to Governor Bowen. Men never mentioned their laundry, clothes, or children in their letters to the editor, and stuck mainly to using scientific facts and data to prove their claims. In the letters to Governor Bowen, men rarely relied on scientific sources and did so at lower rates than female writers did. Furthermore, a few men did not shy away from discussing how the ban affected their clothing with the Governor.¹⁷⁷

Why would such stark differences exist, especially amongst the women writers? It is possible Pulliam specifically favored publishing letters in the *Star* that utilized strategies in line with traditional gender roles. For example, he may have favored maternalist letters because he believed the women most adequate to comment on the issue were housewives and mothers. He may have suspected *Indianapolis Star* readers

¹⁷⁷ This paragraph and the two following reflect my own analysis and interpretation of data about the Letters to the Editor published in the *Indianapolis Star* on the phosphate ban.

may have wanted to hear from housewives the most, since they had emerged as key voices in the debate. On the other hand, it is possible women themselves turned to maternalist strategy because they anticipated their letters would be read and debated amongst a broad readership and thought the strategy might contain more resonance. Since the phosphate debate had become so gendered and women's opinions on the matter so valued, female writers may have envisioned themselves writing particularly to other women readers. The maternalist strategies they used, as well as referring to their laundry practice, may have seemed like an easy way to relate to other women and convince them to take a certain side in the issue. The fact that one woman writer, Esther A. Phillips, dedicated her entire letter to giving specific instructions on how to clean clothes with a "no-phosphate cleaning agent," by combining non-phosphate detergent with washing soda, suggests this could be true.¹⁷⁸ A few other female writers used the collective "we" when referring to women or housewives in their letters, suggesting women readers had become their primary audience. For example, L. Shannon wrote, "Gals, it's time to organize. Let's write our state representatives and senators" to repeal the phosphate ban.¹⁷⁹ If so, it becomes clear why maternalist strategies and references to home laundry practice became relatively absent in comparison in the letters to Governor Bowen: he was not a woman and likely did not do his own laundry, therefore the use of these strategies would not be as persuasive to him as he could not empathize with those experiences.

In all, these two collections of letters help us understand how Hoosier men and women understood the phosphate ban and how gender colored their perceptions of it. More collections of letters to the editor in various Indiana newspapers exist. The *Muncie*

¹⁷⁸ Esther A. Phillips, "Esther Phillips Gives Recipe for Washing," *Indianapolis Star*, February 18, 1973.

¹⁷⁹ L. Shannon, "On Phosphates," *Indianapolis Star*, February 10, 1973.

Evening Press even held a “Phosphate Forum,” in January 1973 that involved a survey and invited women to write letters expressing their concerns about the phosphate ban.¹⁸⁰ Though the space of this thesis limited an advanced analysis of all the letters to the editor (or any other extant collections of letters to Hoosier politicians), they remain a trove of sources about how Hoosiers discussed the phosphate ban in public spaces. As for the two collections analyzed here, the media seems to have influenced a stricter hold on gender roles amongst its writers than in private. Both collections primarily suggest that the phosphate debate had become a woman’s issue that Hoosier women felt they had the expertise and authority to comment on and influence. Mrs. Paul E. Haehl expressed her disbelief in men’s ability to comment adequately on the debate in *Indianapolis Star*, “I hope you men who are trying to pass this law, go to work with ‘ring around your collar.’ I say women, ‘Lets scream loud and clear for our soap back on the shelves.’”¹⁸¹

Despite the efforts of home economists and their female supporters, the phosphate ban in Indiana remained intact. Both the 1973 and 1974 legislative sessions voted to keep the ban. In 1974, the Indiana Stream Pollution Control Board published a report indicating a 60 percent reduction of phosphorus in raw sewage since the ban became effective. In 1975, the state biologist testified before the General Assembly that the phosphate ban worked. He cited a State Board of Health study of twenty-seven Indiana lakes and that found phosphorus levels had been lowered significantly in twenty-five of them. At the same time, environmentalists across the nation shifted from air and water

¹⁸⁰ See *Muncie Evening Press*, “Phosphate Forum,” January 8, 10, 11, 15, and 18, 1973.

¹⁸¹ Mrs. Paul E. Haehl, “Mrs. Haehl Stands on Soapbox,” *Indianapolis Star*, March 6, 1973.

pollution to advocating alternative energy sources after the OPEC oil embargo of 1973.¹⁸² Though the nation began to turn its attention to energy instead of water pollution, nutrient pollution still remains an issue today. How should environmental historians interpret these stories to the public in light of current discussions regarding water pollution and climate change? The next chapter will examine how the history in these first two chapters could be interpreted to the broader public.

¹⁸² Dennis Hoffman, "Phosphate Level Cut; Detergent Law Cited," *Indianapolis Star*, December 19, 1973; Dennis Hoffman, "Phosphate Ban Saving Lakes: Health Board," *Indianapolis Star*, February 19, 1975; Rothman, *Saving the Planet*, 158-160.

CHAPTER FOUR: PUBLIC INTERPRETATION OF THE PHOSPHATE DEBATE

The Indiana State Museum, whose mission is “to celebrate, explore and steward all that is authentically wondrous about Indiana,” sits in downtown Indianapolis amidst the White River State Park.¹⁸³ The museum interprets cultural history, natural history, and art history. On the first floor of the museum, visitors can explore Indiana’s natural history, from the Ice Age to present-day. The second floor covers Hoosier cultural history from Indiana’s territorial beginnings to the modern era. Rotating exhibits occupy the third floor.¹⁸⁴ At a glance, the dedication of each floor to a certain type of collection is a logical and easy way for visitors to locate exhibits that interest them. What other implications follow such a strict separation between natural history and cultural history interpretation? Does it imply that nature and culture have no relationship? The first-floor is filled with specimens that have impacted how humans lived in the Hoosier state, including bears and game, as well as representations of Indiana’s waterways and forests. On the other hand, the second-floor features consumer products that have certainly altered the landscape, like cars, tractors, and clothing. Yet the two collections are treated separately, instead of asking visitors to consider how the two fields relate. How can museums combine cultural history and natural history so visitors can understand how humans impact the land?

This chapter discusses how museums could similarly combine the humanities and sciences through exhibition, instead of abiding by common divisions between cultural and natural history. First, I will give a brief update on the Great Lakes and eutrophication from 1975 to the present day. Eutrophication is type of pollution caused by an excess of

¹⁸³ Indiana State Museum, “About,” accessed <https://www.indianamuseum.org/about>.

¹⁸⁴ Indiana State Museum, “Core Galleries,” accessed <https://www.indianamuseum.org/core>.

nutrients, like phosphorus or nitrogen. The excess nutrients trigger explosive growths of algae that deplete water of oxygen necessary for life.¹⁸⁵ Next, I will consider why and how museums should interpret things as seemingly ubiquitous as phosphate detergent and laundry within the context of gender and environmental activism. I draw the conclusion that uniting scientific and historical interpretation will enable museums to create exhibits that help visitors draw connections between nature, culture, and environmental regulation. The chapter will discuss recent literature regarding the intersections between exhibit planning and interpretation, the Anthropocene, and material culture. It will close describing the development of a four-panel exhibit on the Indiana environmental movement and the phosphate debate created for the Indiana Recycling Coalition, an Indianapolis-based nonprofit.

Eutrophication and the Great Lakes Today

Despite the success of several statewide and municipal bans on phosphate laundry detergent by the mid-1970s, the United States federal government decided not to impose a nationwide ban on phosphate detergent. Instead, the federal government chose to support the construction of enhanced sewage treatment plants to extract phosphorus from influent before discharging into waterways. Canada opted to follow the IJC's recommended course of action. Canada supported enhanced sewage treatment plants in addition to banning phosphate detergents containing more than 2.2% phosphorus after 1972. In 1972, the United States and Canada signed the Great Lakes Water Quality Agreement, which provided the framework for the construction of sewage treatment

¹⁸⁵ For a summary of eutrophication, see the US Department of Commerce National Oceanic and Atmospheric Administration webpage on "Nutrient Pollution-Eutrophication," https://oceanservice.noaa.gov/education/kits/estuaries/media/supp_estuar09b_eutro.html.

plants along Lake Erie and Lake Ontario to reduce phosphorus discharge between 1972 and 1978. During this time, the United States federal government remained staunchly against imposing a phosphate ban, even amidst numerous appeals to enact a ban from the EPA and the IJC.¹⁸⁶

Between 1976 and 1977, a special task force composed of scientists and engineers from Canada and the United States specializing in eutrophication and Great Lakes pollution reviewed the Great Lakes Water Quality Agreement, as required by the agreement's conditions. The task force calculated target phosphorus loadings, or the amount of phosphorus allowed to enter a lake in a given period of time, for each Great Lake. The group concluded that as long as these loadings were not exceeded, eutrophication could be controlled. For example, the task force calculated Lake Erie could handle a phosphorus loading of 11,000 metric tons per annum. The 1978 Great Lakes Water Quality Agreement confirmed Canada and the United States would work together reach these phosphorus loadings.¹⁸⁷

In 1980, the United States finally agreed to let American detergent manufacturers use NTA to replace phosphate in laundry detergent, as Canada had allowed since the 1970s. The EPA reviewed current literature on NTA and concluded that NTA posed a low risk to human health and was not expected to increase eutrophication problems. In 1982, Proctor & Gamble tested new, phosphate-free formulas containing NTA for the popular detergents Tide, Gain, and Oxydol in New York and Indiana. By 1987, six of the eight states bordering the Great Lakes Basin, except for Ohio and Pennsylvania, had

¹⁸⁶ McGucken, *Lake Erie Rehabilitated*, 179-180, 208-209.

¹⁸⁷ *Ibid*, 210, 219-220.

enacted phosphate bans, with limits between 0.5% to 2.2% phosphate concentration allowed. Pennsylvania later passed a law in 1989 and Ohio in 1990.¹⁸⁸

Though signs of improvement had emerged as early as the 1970s, clear progress became evident in the late 1980s. According to the IJC, in 1987 Lakes Erie and Ontario (the two lakes most afflicted with eutrophication problems) had reduced phosphorus levels. The IJC announced that cultural eutrophication (eutrophication instigated by human actions) of the 1960s and 1970s was under control. In 1993 and 1994, both the IJC and EPA even described Lake Erie's improvements, the lake worst affected, as "dramatic." Despite numerous quantitative data, the biggest sign of improvement was an increased number of people using the lake once again for recreational purposes.¹⁸⁹

However, eutrophication has resurfaced. According to the IJC, Lake Erie experienced its largest algal bloom in history in 2011. In 2012, Canada and the United States updated the 1987 Great Lakes Water Quality Agreement. The Lake Erie Ecosystem Priority to Reduce Phosphorus Loads and Algal Blooms became one of the organization's four major goals. As the shallowest, warmest Great Lake it is most susceptible to eutrophication, especially under the increasingly warmer climate. The IJC wrote in its 2014 report *A Balanced Diet for Lake Erie: Reducing Phosphorus Loadings and Harmful Algal Blooms* that "While Lake Erie's health suffers from multiple stressors, the rising proportion of dissolved reactive phosphorus is seen as the primary cause of this decline." The IJC notes that the factors leading to this eutrophication are different than those in the 1960s and 1970s: "Of particular concern is runoff of dissolved reactive

¹⁸⁸ Ibid, 239-246, 256-259; William R. Yingling, Jr. "Governor signs law banning phosphates," *Doylestown Intelligencer* [Doylestown, PA], July 13, 1989.

¹⁸⁹ Ibid, 260-263.

phosphorus, the portion of total phosphorus that is most readily available to support algae growth and thus a primary cause of renewed algal blooms.”¹⁹⁰

The primary cause of eutrophication has shifted from a point source to a nonpoint source since the 1970s. A point source of pollution is easier to control because the contaminant is discharged into waterways from municipal sewage treatment plants and factory pipes. This type of contaminant tends to be continuous and varies little, and thus can be easily identified, monitored, and regulated at the source. Phosphate detergent is an example of a point source because it arrived in waterways from homes and factories via sewer systems at a relatively constant level. Nonpoint source pollution is the opposite: such pollutants are harder to control because they are intermittent, arise from multiple activities, and come from diverse places. This can include materials entering waterways through overland flow, underground seepage, or through the atmosphere. These qualities of nonpoint source pollutants make them difficult to measure and regulate.¹⁹¹ The culprits of eutrophication today are largely from nonpoint sources and include agricultural runoff from fertilizer application and manure; urban runoff from construction sites, storm-water and sewage overflow, lawns, and pet waste; and phosphorus entering lakes via the atmosphere from snowfall, rain, or wind-blown particles. Rising worldwide temperatures, also known as climate change, makes eutrophication even worse since the warmer weather provides the perfect conditions for algae growth. According to the IJC, climate

¹⁹⁰ International Joint Commission, “Great Lakes Water Quality,” 2017, accessed http://www.ijc.org/en_/Great_Lakes_Quality; International Joint Commission, *A Balanced Diet for Lake Erie: Reducing Phosphorus Loadings and Harmful Algal Blooms*, February 2014, Report of the Lake Erie Ecosystem Priority, accessed <http://www.ijc.org/files/publications/2014%20IJC%20LEEP%20REPORT.pdf>.

¹⁹¹ SR Carpenter, NF Caraco, DL Correll, RW Howarth, AM Sharpley, “Nonpoint Pollution of Surface Waters with Phosphorus and Nitrogen,” *Issues in Ecology* 9. No. 3 (Summer 1998): 1-3, accessed <https://cfpub.epa.gov/watertrain/pdf/issue3.pdf>.

change could “exacerbate the magnitude, duration, and frequency” of nutrient pollution in Lake Erie. For example, climate change brings more intense storms to the Lake Erie Basin, which leads to higher agricultural and urban runoff.¹⁹²

Other waterways besides Lake Erie are still afflicted with eutrophication. The EPA’s website still declares nutrient pollution, like cultural eutrophication, “one of America’s most widespread, costly, and challenging environmental problems.” The EPA notes that certain detergents and soaps used in the home can contribute, in addition to a myriad of other sources and products, such as agricultural runoff from fertilizer and manure, storm-water runoff, and pet waste. One action Americans can still take to combat eutrophication is choosing to use phosphate-free cleaning products and detergents. By 2013, approximately twenty-six other states followed Indiana’s precedent and enacted some sort of phosphate restriction on laundry detergents and cleaning agents. Indiana still implements a phosphate ban: only detergents containing 0.5% phosphate or less are allowed. As more states enacted phosphate bans, detergent manufacturers found it more cost-effective to voluntarily eliminate phosphorus from their formulas instead of maintaining duplicate stocks of detergents around the nation that contained the legal amount of phosphate allowed in each state. By 1994, phosphorus had been largely eliminated from laundry detergents, though the United States still enforces no nationwide ban. Only in 2010 did major companies begin eliminating phosphate from dishwashing detergents. Though statewide bans exist, phosphate cleaning agents are still available

¹⁹² International Joint Commission, “Great Lakes Water Quality,” 2017, accessed http://www.ijc.org/en_/Great_Lakes_Quality; International Joint Commission, *A Balanced Diet for Lake Erie: Reducing Phosphorus Loadings and Harmful Algal Blooms*, February 2014, Report of the Lake Erie Ecosystem Priority, 3-5, accessed <http://www.ijc.org/files/publications/2014%20IJC%20LEEP%20REPORT.pdf>.

depending on each law. For example, exemptions can often be granted for industry, commercial laundries, and factories.¹⁹³

Public History, Exhibition, and Environmental Interpretation

Survey data indicates that women's work during the 1970s debating phosphate detergent pollution certainly remains relevant today. Recent polls show that environmental issues, like water pollution, remain on Americans' minds. A Gallup poll conducted in March 2016 questioned Americans how much they worried about the environment, from a scale of "worry a great deal," to "not at all." Forty-two percent of those polled admitted they "personally worry about the quality of the environment" a "great deal" and 31 percent said they worried about it "a fair amount." Furthermore, water pollution earned the title as the environmental problem the most Americans worried about, compared with other issues, like air pollution. Fifty-six percent stated they worried a great deal about pollution of lakes, rivers, and reservoirs and 25 percent worried "a fair amount" about it.¹⁹⁴

Despite these promising poll results, concern for the environment has become increasingly divided since the 1970s. In the 1970s, pollution abatement and environmental legislation received bipartisan support. While Republicans and Democrats usually suggested different ideas about how to actually carry out pollution abatement

¹⁹³ Environmental Protection Agency. "Nutrient Pollution: The Problem," accessed <https://www.epa.gov/nutrientpollution/problem>; Worldwide Cleaning Industry Association. ISSA State Phosphate Survey (Lincolnwood, Illinois: January 2013), accessed https://www.issa.com/data/moxiestorage/regulatory_education/regulatory-reference-library/phosphate_survey2013.pdf; David W. Litke, "Review of Phosphorus Control Measures in the United States and Their Effects on Water Quality," (U.S. Geological Survey: Denver, Colorado, 1999), 5, accessed <https://pubs.usgs.gov/wri/wri994007/pdf/wri99-4007.pdf>; "Goodbye Phosphates," *Chemical & Engineering News* Vol 89, No. 4 (January 24, 2011), accessed <https://pubs.acs.org/cen/coverstory/89/8904cover.html>.

¹⁹⁴ Gallup, "In Depth Topics A-Z: Environment," accessed <http://www.gallup.com/poll/1615/environment.aspx>.

plans, politicians on both sides of the aisle supported such initiatives because constituents of each party expressed concern. Today, Democrats are far more likely to express care for the environment than Republicans. Comparing survey results of Republicans and Democrats beliefs about pollution from the years 1970 and 2017 highlights how pollution has shifted from a bipartisan to relatively partisan issue. For example, according to a 1970 survey in the *Harris Survey Yearbook of Public Opinion*, 44 percent and 25 percent of Republicans found water pollution “very serious problem” or a “somewhat serious problem” respectively. Comparatively, 46 percent of Democrats found the issue a “very serious problem” and 25 percent a “somewhat serious” problem. This bipartisan support encouraged President Nixon, by no means an environmentalist, to sign a number of landmark pieces of legislation, such as the Clean Air Act of 1970 and the National Environmental Policy Act, in addition to establishing the Environmental Protection Agency. In contrast, a 2017 Gallup poll shows support for environmental issues today is much more politically divided. While 66 percent of Democrats surveyed cared “a great deal” about global warming, only 18 percent of Republicans surveyed responded they also cared “a great deal.” As for water pollution, a whopping 69 percent of Democrats “worried a great deal” about pollution of rivers, lakes, and reservoirs, while only 38 percent of Republicans reported feeling the same way. Additionally, 75 percent of Democrats “worried a great deal,” about pollution of drinking water, while only 47 percent of Republicans noted they “worried a great deal” about it.¹⁹⁵ The comparison of

¹⁹⁵ *The Harris Survey Yearbook of Public Opinion*, (New York: Louis Harris and Associates, 1970), 54; Jim Norman, “Democrats Drive Rise in Concern About Global Warming,” March 17, 2017, http://news.gallup.com/poll/206513/democrats-drive-rise-concern-global-warming.aspx?g_source=CATEGORY_CLIMATE_CHANGE&g_medium=topic&g_campaign=tile; John Aiken, *Nixon: A Life* (Washington, D.C.: Regnery Publishing, 2015), 469-471. The other piece of major piece of legislation during the Nixon Administration was the Clean Water Act of 1972,

these poll results highlight how strongly cultural attitudes, like a political party platform, influence how Americans' view the natural world.

In this case, why do so many Western museums still insist upon separating interpretation of nature and culture? This idea traces back to an ancient Judeo-Christian belief, expounded upon in the book of Genesis, that God placed humans above and separate from the natural world. According to this viewpoint, humans were given special proclivities, such as language, reason, and consciousness, that differentiated them from flora and fauna. European Christians (and later, immigrants who brought the framework with them to North America) promoted the belief that God created nature distinctly to serve and be manipulated by humankind, as opposed to human beings existing as another mammal alongside other creatures in an interdependent natural world. During the Enlightenment, this chasm between nature and culture deepened. Scholars advocated God and humanity (i.e. culture) remain distinct from science. This way, scholars believed they could achieve rational and logical scientific studies designed to help humankind control the natural world. Thus, as the sciences professionalized and compartmentalized into smaller and smaller areas of study, the field became even more separated from the humanities in scholarship.¹⁹⁶

which President Nixon vetoed, however Congress captured enough votes to override his veto—which also demonstrates how bipartisan environmental legislation was during the early 1970s.

¹⁹⁶ On the separation of nature and culture as a result of Judeo-Christian beliefs see Donald Worster, “The Living Earth: History, Darwinian Evolution, and the Grasslands,” in *A Companion to American Environmental History*, Douglas Cazaux Sackman, ed., (Malden, MA: Wiley-Blackwell, 2010), 54. See also Arthur O. Lovejoy, *The Great Chain of Being* (Cambridge, MA: Harvard University Press, 1936), in which Lovejoy argue that Western thought was shaped by a theoretical framework called “The Chain of Being” Christians developed from the Greeks, which divided nature into a hierarchy with God at the top, humans above animals and plants. During the Enlightenment, this divide between nature and culture deepened, as scientists strove to take God and religion out of rational scientific studies; Philip Scarpino, “A Historian’s Perspective on Rivers of the Anthropocene,” in *The Global Water System in the Anthropocene: Challenges for Science and Governance*, Anik Bhaduri, Janos Bogardi, Jan Leentvaar, and Sina Marx, eds., (New York, NY: Springer, 2014), 161-172; Gilbert F. LaFreniere, *The Decline of Nature: Environmental History and the Western World View* (Corvallis, OR: Oak Savanna Publishing, 2008).

Private collectors, the originators of the modern Western museum, passed on this Euro-American practice of separating nature and culture through their collecting practices. They created galleries or cabinets of curiosities in their homes to show-off the artifacts that interested them to guests. Often, collectors focused on certain subjects, like artwork or specimens. Collectors eventually turned over many of their pieces to museums, which became increasingly popular in the 19th century. Since nature and culture had remained distinct for hundreds of years, curators also separated artwork, cultural artifacts, and natural history specimens into different galleries as a way to gain authority over subjects and condense them into easily understandable topics for the public to grasp. Art historian Carol Duncan explained “Museums place history, nature, and traditional societies under glass, in artificially constructed dioramas and tableaux, thus sanitizing, insulating, plasticizing, and preserving them as attractions and simple lesson aids.”¹⁹⁷

Museums have the interpretive power to break free from these rigid divisions between nature and culture, however. Museums have long-served as public institutions that individuals seek out to learn about topics of interest to them. John Falk and Lynn Dierking, scholars on learning, note people visit museums for educational purposes because museums feature a “free-choice learning” atmosphere. This type of learning is “non-linear, personally motivated, and involves considerable choice on the part of the learner as to what to learn, as well as where and when to participate in learning.” Basically, people enjoy going to museums to learn because they can spend as much or as

¹⁹⁷ Edward P. Alexander and Mary Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums* (New York, NY: Altamira Press, 2008), 5-12. Quote from *Museums in Motion*, page 12.

little time on each exhibit, program, or event the museum offers. They can pick and choose which panel to read, which piece of art to ponder, or which interactive to engage with. People pick museums over other venues for learning because they see museums as “tried-and-true sources of understandable information, places one can trust to provide reliable, authentic and comprehensible presentations of art, history, natural history, and science objects and ideas.”¹⁹⁸

These ideas align with historians Roy Rosenzweig and David Thelen’s comprehensive study that questioned how Americans interact with history in their daily lives. *The Presence of the Past: Popular Uses of History in American Life* analyzed a series of phone interviews conducted in 1994 and 1995 with 1,453 Americans to uncover why Americans choose to explore the past and what format they prefer to use to learn about history. Their study uncovered that most Americans viewed museums as the most trustworthy source of historical information, followed closely by conversations with relatives or someone who had a first-hand account of a specific historical event. Nonfiction books fared low on the trustworthiness scale, only outperforming movies or television programs about the past. *The Presence of the Past* also revealed that individuals commonly revisited the past to understand the person they had become in the present day, as well as to consider who they wanted to become in the future. Their work confirmed previous studies that humans learn by integrating and connecting their past experiences with the present.¹⁹⁹

¹⁹⁸ John Howard Falk and Lynn Diane Dierking, *Learning from Museums: Visitor Experiences and the Making of Meaning* (Lanham, MD: Rowman & Littlefield, 2000), 2, 13.

¹⁹⁹ Cherstin M. Lyon, Elizabeth Nix, and Rebecca K. Shrum, *Introduction to Public History: Interpreting the Past, Engaging Audiences* (New York: Rowman and Littlefield, 2017), 2-5; see also Roy Rosenzweig and David Thelen, *The Presence of the Past: Popular Uses of History in American Life* (New York: Columbia University Press, 1998).

Museums and exhibits thus are great venues to help Americans understand and contemplate environmental issues because they generally view museums as trustworthy sources of information. Historian Christopher Clarke notes, “Like other pressing questions of the day, the environment is a subject on the minds of many museum visitors and a prism through which an increasing number of Americans have begun to view their own experience and to observe and assess the world around them.” Clarke concludes that museums can use the material culture they collect to help Americans understand the relationship between culture and nature. For example, each object humans have created represents a special relationship to the natural world “because each one has its own unique combination of environmental consequences arising from its creation, use and disposal.” Therefore, that object links any person who owned or used it in a “complex web of environmental interactions.” Clarke explains that some of the best artifacts museums could analyze in exhibits are everyday objects that most consumers do not give much thought, but use frequently in their lives. He asks museums to use their interpretive power to encourage people to question and examine what relationships everyday objects represent between people and the environment, as well as the unintended environmental consequences they bring. Such exhibits help visitors understand how “decisions we make about what to consume and when and how we throw it away constitute daily reiterations of our relationship to the environment.”²⁰⁰

Clarke’s thesis that the goods humans create and use in their daily lives mirror their relationship to the environment reflects basic tenets behind a new term called the

²⁰⁰ Christopher Clarke “Museums, the Environment, and Public History,” in *Public History and Environment*, Martin V. Melosi and Philip V. Scarpino, eds, (Malabar, FL: Krieger Publishing Co, 2004), 127-128, 130-132.

Anthropocene. Some scientists and scholars have proposed to use the Anthropocene to describe the present geological epoch. They believe the word best describes the epoch, which is characterized by human activities that trigger global environmental change so profound that they will be recorded first in sediment and eventually in the Earth's rock layers or strata.. In 1968, Paul Crutzen received his PhD from the Meteorology Institution in Stockholm, Sweden. His dissertation linked human activity with depletion of an ozone layer in the stratosphere that sheltered the Earth's inhabitants from the Sun's harmful ultraviolet rays. Crutzen emphasized that increased use of new technologies, like artificial fertilizers and the presence of high-flying supersonic aircraft, unintentionally impacted the stratosphere adversely. According to environmental historian Philip Scarpino, Crutzen's additional work in the 1980s and 1990s on ozone depletion, along with several other scientists in the same field, "helped focus scientific attention on the powerful and significant impact of human activities on earth systems." Crutzen's Nobel prize-winning work led to the elimination of CFCs (chlorofluorocarbons, a compound commonly used as a propellant in aerosol containers, air conditioners, and refrigerators after World War II) and other similar compounds that depleted the ozone. At a conference in 2000, Crutzen announced in a session that scientists should no longer use the Holocene to describe the current geological epoch. Instead they should use the word "Anthropocene" because the climate had changed so much in the past one hundred years primarily due to human actions. Populations exploded, landscapes became increasingly urbanized, and

energy use relied on burning fossil fuels, which led to rise in atmospheric carbon dioxide.²⁰¹

In 2000, Crutzen joined up with Eugene Stoermer, a biologist who had first used the term “Anthropocene” in the 1980s in several of his articles. The two wrote an article to define the Anthropocene. The pair argued that the Holocene no longer adequately described the current geological era.²⁰² Crutzen and Stoermer wrote, “The expansion of mankind, both in numbers and per capita exploitation of Earth’s resources has been astounding...it seems to us more than appropriate to emphasize the central role of mankind in geology and ecology by proposing to use the term ‘anthropocene’ for the current geological epoch.”²⁰³ The term caught on, especially amongst scholars whose research focuses on how human activity majorly impacts the global environment. Today, scientists and scholars debate whether or not to accept the Anthropocene as the present geological epoch and, if accepted, determine when this era began. Crutzen and Stoermer date the Anthropocene to the invention of the internal combustion engine in 1784. Others date it as early as the advent of human agriculture or as late as the dropping of the first atomic bomb.²⁰⁴

These potential starting dates of the Anthropocene highlight an important aspect of the theory: consequences of human agency define the epoch, as opposed to the other epochs which are governed by natural events. Philip Scarpino explains that in the

²⁰¹ Philip Scarpino, “Anthropocene World/Anthropocene Waters: A historical Examination of Ideas and Agency,” in *Rivers of the Anthropocene*, Jason M. Kelly, Philip Scarpino, Helen Berry, James Syvitski, and Michel Meybeck, eds, (Oakland, California: University of California Press, 2018), 105.

²⁰² Finn Anne Jorgensen and Dolly Jorgensen, “The Anthropocene as a History of Technology,” review of *Welcome to the Anthropocene: The Earth in Our Hands*, Deutches Museum, Munich *Technology and Culture* vol. 57 no. 1 (January 2016): 231

²⁰³ Paul J. Crutzen and Eugene F. Stoermer, “The ‘Anthropocene,’” *IGBP Newsletter* vol. 41 (2000): 17.

²⁰⁴ Jorgensen and Jorgensen, “The Anthropocene as a History of Technology,” 232.

Anthropocene “the boundaries between natural and human history blur; understanding the present-day environment requires paying as much attention to human agency over time as it does to the evolutionary trajectory of natural process.” Under the Anthropocene, the Earth becomes a human artifact: human actions drive the Earth’s climate and the environment more than any natural activity.²⁰⁵

Since the Anthropocene theory emphasizes the link between the history of human technology and the present state of the natural world, it proves to be a foundation history museums can build on in their exhibits. The Deutsches Museum in Munchen, Germany, created the first major exhibit tackling the Anthropocene in the special exhibit *Willkommen im Anthropozan—Welcome to the Anthropocene*, displayed from 2014-2016. The exhibit tied together the history of science and technology and the Anthropocene. The exhibit was arranged across six themes: Urbanization, Mobility, Humans and Machines, Nature, Food, and Evolution. Upon entering the exhibit, visitors were faced with a wall filled with material culture representative of technology, like light bulbs, engines, telegraphs, and computers. Historians Finn Arne Jorgensen and Dolly Jorgensen note this feature conjures “an image of an interconnected world, yet one in which technology serves to disconnect human lives from the cycles of the natural world” to reinterpret material culture under the Anthropocene’s framework. After passing through the wall, visitors could explore how technology, both objects and new processes, is related to each one of the listed themes and environmental change. The exhibit helped visitors realize that humans have become the primary agents that shape the natural world through the technologies they have developed and come to rely on.²⁰⁶

²⁰⁵ Scarpino, “Anthropocene World/Anthropocene Waters,” in *Rivers of the Anthropocene*, 101-118.

²⁰⁶ Jorgensen and Jorgensen, “The Anthropocene as a History of Technology,” 232-234.

Like engines and telegraphs, phosphate detergent is another piece of material culture that reflects the Anthropocene and global environmental change. Phosphate detergent came onto the market as a new textile cleaner after World War II and it did its job so well it largely replaced its predecessor, soap, in many households soon after. Not until the 1970s did people begin to understand that this effective cleaner came with unintended and unanticipated environmental consequences. Since so many people in Canada and the United States began using phosphate detergents after World War II, that influx of phosphorus discharged into waterways negatively impacted the health of many lakes, including the Great Lakes. After only a few decades of widespread phosphate detergent use, this phosphorus discharged into waterways encouraged algae growth, leading to lower oxygen levels in the water, which in turn made the water green, smelly, and less habitable for fish. These changes the Great Lakes (and others) underwent as they became increasingly eutrophic, such as large algae blooms appearing and dying off, will show up in the lakes' sediment and rock layers millions of years from now. As such, human action (widespread use of phosphate detergents) physically changed the composition of the lakes in a dramatic way that will be traceable in the fossil record.²⁰⁷

While the history behind phosphate detergents might not be as flashy or well-known as the objects featured in *Willkommen im Anthropozan*, the ubiquity of detergent can be a way to drive home the Anthropocene's philosophy that the Earth has really become an artifact that humans shape. For example, while it is relatively known that the automobile has drastically affected the environment in multiple ways from highway construction to

²⁰⁷ For a broader discussion of the history of development of phosphate detergent and its environmental consequences see Introduction and Chapter 1 of this work; For the concept of using everyday objects to interpret environmental history, see Clarke, "Museums, the Environment, and Public History," in *Public History and Environment*, 127-132.

engine exhaust, showing visitors how other, seemingly small and innocuous objects, like detergent, impact the Earth can really emphasize humankind's footprint on the planet.

While such interpretation can be striking, it can also be a bit overwhelming when visitors start to consider all the artifacts they use in their daily lives and think about the consequences of the mass-production and use of those objects. During the "Historical Interpretation in a Time of Global Climate Change," session at the National Council on Public History's Annual Conference in Baltimore in 2016, panelists and participants emphasized repeatedly that exhibitions and programming involving climate change and pollution should not drive museum patrons to feel dread and hopelessness. Such exhibits should help visitors recognize humanity's role in the current state of the planet, but also inspire them to act.²⁰⁸ Historian David Glassberg stressed in the *Public Historian's* special issue on Public History and Environmental Sustainability in 2014 that historians play a key part in helping the public comprehend the increasingly different world they live in, which is often warmer, wetter, and more extreme. He wrote,

Everyone now lives in the age of the 'Anthropocene,' a time when humans profoundly influence the physical and biological process that form the earth's temperature and weather...an increased public understanding of anthropogenic climate change brings with it the potential for a return to history, an acceptance that human and natural history are now one and the same.²⁰⁹

Historian Leah Glaser wrote in one of her articles for the *Public Historian's* special sustainability issue that historical context and interpretation in exhibitions about climate change, pollution, and the Anthropocene can "offer hope by emphasizing change and

²⁰⁸ Personal notes, National Council on Public History 2016 Annual Meeting, Baltimore, MD, March 16, 2016.

²⁰⁹ David Glassberg, "Place, Memory, and Climate Change," *The Public Historian* vol. 36 no. 3 (2014): 20. See also, Leah S. Glaser, "Let's Sustain This: A Review" *The Public Historian* vol. 36 no. 3 (2014).

resiliency rather than technological or environmental determinism. These new stories can emphasize how humans can shape the understanding of our past and inform our future individual and collective decisions.”²¹⁰ The stories I told in the previous chapters about the work of female environmental activists in Canada and the United States illustrate a way humans have historically fought for the environment by agitating for stronger regulations and changing their consumption habits to improve water quality. Stories of such grassroots activism can help visitors process the Anthropocene, the current state of the planet, and how they can participate in regulating pollution.

Framing interpretation through a type of storytelling format called dialogic history can help educate museum visitors about the current environmental crisis and help them feel empowered to enact change. According to historians Cherstin M. Lyon, Elizabeth Nix, and Rebecca K. Shrum, dialogic history encourages visitors to enter into a “conversation between the documents and objects and people who lived in the past and even with the historians or exhibit designers posing questions,” so the visitor can participate actively. This style reflects the “problem-posing model of education,” which posits the theory that Americans want to participate in intellectual debates, ask questions, and weigh evidence and experience to come up with a solution. It is opposed to the banking model of learning, in which curators simply relay facts that learners passively accept and memorize in order to understand a historical topic. People associate the banking format with the formal classroom, and thus often find history taught in this way

²¹⁰ Glaser, “Let’s Sustain This,” *The Public Historian*, 131.

boring and useless. Problem-posing learning lets people take an active role and construct history.²¹¹

If the story of the phosphate debate is told in a dialogic history format, visitors would be asked to consider the pros and cons of using phosphate detergent in the 1970s. They might be pushed to think, if I was a consumer in 1970, would I have continued to use phosphate detergent or would I have supported the phosphate ban in Indiana? The participation in the dialogic history exhibit about the phosphate debate develops the analytical skills needed to consider how their own actions affect the environment today.

The Exhibit

How do we wrap up all those concepts—postwar technology, material culture, and dialogic history, all framed by the philosophy of the Anthropocene—into one, cohesive exhibit? One thing to keep in mind when developing a public history project—whether or not it is an exhibit—is audience. Lyon, Nix, and Shrum emphasize that one of the basic differences between public and academic history is audience. They write, “Public historians think differently about audience than they would when sharing their research in academic circles. The general public does not think about their own pasts or their relationship with the past in the same way historians think about history.” Lyon, Nix, and Shrum conclude that “for public historians to engage their audiences in meaningful experiences, they must make history relevant to their lives.”²¹² Museum specialist Beverly Serrell also highlights this key idea in *Exhibit Labels*. She emphasizes that exhibits need to answer the fundamental question “so what?” for visitors. According

²¹¹ Lyon, Nix, and Shrum, *Introduction to Public History*, 7-8; see also Paulo Freire’s work *Pedagogy of the Oppressed* (New York: Seabury Press, 1968), where Freire first established the theory of problem-posing model of education.

²¹² *Ibid*, 4-5.

to Serrell, exhibits that fail to do this “lack soul.” She emphasizes, “There should be more to exhibit elements than having visitors like them and enjoy themselves...especially in exhibitions that claim to be educational, visitors should be able to understand what an element is about, grasp its context in the whole exhibition...and find it personally meaningful and useful.”²¹³

The audience for my exhibit was the attendees of the Indiana Recycling Coalition’s 2017 conference in Indianapolis. It seemed logical to reach out to a local environmental non-profit to partner with when I began planning my exhibit, since many of the women in my research were part of environmental advocacy groups. The Indiana Recycling Coalition (IRC) quickly became a top contender. It’s mission, “to support waste reduction, reuse, composting, and recycling activities in Indiana,” mimicked the goals many of the women in my research focused on.²¹⁴ Furthermore, the IRC had an entirely female staff at the time, which indicated they might be interested in exploring the historical relationships between gender and environmentalism. After reaching out to the Indiana Recycling Coalition, we agreed their annual conference would be a great place to display the exhibit. The conference helps attendees learn about “developments and innovations in waste reduction, reuse, composting and recycling.” I displayed the exhibit panels over two days as part of the conference’s trade show, June 13-14, 2017. “Stakeholders in recycling,” including recycling and environmental non-profit members, as well as business owners, engineers, scientists, and interested members of the public attended the conference.²¹⁵

²¹³ Beverly Serrell, *Exhibit Labels: An Interpretive Approach* (New York: Rowman and Littlefield, 2015), 13.

²¹⁴ Indiana Recycling Coalition, “Our Mission,” accessed <http://indianarecycling.org/>.

²¹⁵ Indiana Recycling Coalition, “2017 Conference,” accessed <http://indianarecycling.org/2017-conference/>.

The work of these “stakeholders in recycling” reflects the goals of women I studied. Both the attendees and the women in my research advocated consumers learn how to reduce the impact they had on the environment and supported governmental policy that abated pollution. Since most conference attendees are focused on recycling, not water pollution, I designed my exhibit to focus not just on women’s involvement abating phosphate pollution, but also on their other initiatives trying to improve the environment through reducing waste, buying products with simple packaging, and recycling. Overall, the exhibit should illuminate the ties between women and the environment, as well as the history behind environmental nonprofits that many of the attendees work for presently.

Serrell recommends creating a “big idea,” to guide exhibit development before designing panels or writing any content. A big idea is “a sentence—a statement—of what the exhibition is about.” She defines it further as “one complete, non-compound, active sentence that identifies a subject, an action (the verb), and a consequence (so what?).” The big idea summarizes what the exhibit is about and why the audience will find it important or take interest in it. Serrell further clarifies that a big idea is not a topic, like swamps. Instead, a big idea states clearly “*what about*” swamps. For example, Serrell offers an example of a big idea about swamps that contains a subject, action, and consequence: “A healthy swamp—an example of a threatened ecosystem—provides many surprising benefits to humans.”²¹⁶ According to Serrell, developing and sticking to a strong big idea is a primary precursor to building a cohesive exhibit. Like a thesis statement, the big idea offers a unified vision for the exhibit that helps exhibit designers

²¹⁶ Serrell, *Exhibit Labels*, 7-9.

decide what content makes the exhibit and what does not. Every addition to the exhibit, whether an interactive, panel, or artifact label, must support the big idea. Big ideas may never make it on a panel. Instead, they serve as a tool to keep the entire exhibit team on track. Keeping the big idea in mind when developing an exhibit creates a focused exhibit that visitors can easily understand and relate to.²¹⁷

Serrell describes big idea development as a messy process entailing a lot of time and debate, editing and re-editing. Formulating my big idea conforms to this description. To begin, I started with a thesis statement I developed for an early draft of portions of chapter 1 and chapter 2 of this thesis and began the process of modifying it.

As I struggled to develop the big idea from the thesis statement, I wrote down topics I wanted to include within the big idea. Lacking other members of an exhibit team to build ideas with, I had trouble formulating a concrete statement to sum up everything I wanted to incorporate. I returned to Serrell for guidance. One of the case studies she included in her chapter on big idea development struck a chord. In the case study, Serrell describes a natural history museum developing a large exhibit about dogs, centered on the big idea, “What is it about dogs that strongly connects them with humans?” The exhibit covered a range of topics to answer the question, including breeding, dog’s physical and mental characteristics, their social role, canine communication, wolves, and other subjects. Evaluation after the exhibit opened showed visitors still wanted more information. Serrell notes that what visitors really wanted was to see their dog—or dogs they knew—reflected in the exhibit. Instead of covering such a range of topics, the exhibit should have let visitors compare their dog’s traits to the ones depicted in the

²¹⁷ Ibid, 10-13.

exhibit. This hones in on the “so what” of each big idea that lets visitors answer, “How is this going to relate to *me*?”²¹⁸

I began to think about which parts of the historical narrative I had written would relate to my audience on a personal and professional level, as well as the wider public. After reviewing the topics I had written out, I determined that one of the most common experiences expressed in the story I told was shopping. Almost every American has purchased something: in fact, many purchase something—whether a good or service—daily. Virtually every American has the experience of weighing the pros and cons of purchasing some type of good. For most purchases, this debate takes a few seconds to a few minutes; a long, drawn out analysis may only occur with a few large purchases, like when considering what car or home to buy. However, what happens when that decision must be made about something once believed to be harmless and inconsequential, like laundry detergent? More specifically, attendees of the Indiana Recycling Coalition’s conference consider what people purchase and how they get rid of products and waste daily. The driving point behind the conference is to teach attendees new ways to reduce waste after consuming goods.

Thus, as I started to draft my big idea, I tried to highlight women’s experiences as consumers and the informed decisions they made about water quality, detergent, and sewage treatment. Over the course of several weeks, I returned off and on to my edit my big idea, circling words that did not convey exactly the meaning I envisioned and replaced them with something I deemed more appropriate. Over time, I finally settled on the following big idea.

²¹⁸ Ibid, 14-15.

During the 1970s, housewives learned to question the environmental impact of postwar goods and popularized changing consumption practices to abate pollution and influence environmental policy.

From the big idea, I developed several sub-themes to tie the exhibit together.

These sub-themes expressed across four panels support the message conveyed in the big idea. According to *Interpretive Planning and Museums*, themes are “statements that express a central idea, about a topic or concept.” They further elaborate, “themes are compelling stories that help focus a museum’s interpretive efforts.”²¹⁹ Creating a history exhibit around themes instead of simply relaying the story in a chronological order allows visitors to easily engage in free-learning. Linear, chronological exhibits are hard to skip around and explore in a piecemeal fashion, as most visitors are want to do. According to historian Michael Frisch, if an exhibit is instead organized around interlocking themes, visitors can “browse the exhibit in a sequence of their own choice” and can “experience multiple points of encounter and reference.”²²⁰

I broke up my big idea into these four themes, each of which will have one exhibit panel dedicated to it.

1) Technology and Environmental Consequences: During the postwar period, women began to realize consumer products designed to make life easier have unwelcome impacts on the environment.

2) Gender and Environmentalism: As concerned consumers, women in particular became grassroots activists in the environmental movement.

3) Informed Choices: Hoosier women sifted through conflicting data and made difficult decisions regarding consumption, pollution, and water treatment to influence water quality policy.

²¹⁹ Marcela Wells, Barbara H. Butler, and Judith Koke, *Interpretive Planning for Museums: Integrating Visitor Perspectives in Decision Making* (New York: Routledge, Taylor & Francis, 2016), 89-90.

²²⁰ Michael Frisch, “Brooklyn’s History Museum: The Urban History Exhibit as an Agent of Change,” in *Ideas and Images: Developing Interpretive History Exhibits*, Kenneth L. Ames, Barbara Franco, and L. Thomas Frye, eds. (Walnut Creek, CA: AltaMira Press, 1997), 259.

4) Act Now: Hoosier women showed citizen participation is key to enact necessary environmental regulation; follow in their footsteps.

Beverly Serrell's *Exhibit Labels* provided the guidelines for design and typography of each panel. As Serrell recommends, a serif font was used throughout the panels. I used the fonts Palatino for text, and deferred to Minion Pro for captions. I also used dark font over light backgrounds, since Serrell notes that most readers prefer reading with this design scheme. Additionally, the Americans with Disabilities Act recommends using as much contrast as possible in design to enhance readability. The font size used also conforms to Serrell's recommendations. The smallest font size (used for image courtesy lines) used was 20-point-type, while descriptive captions utilized 24-point type. Serrell suggests captions should be printed between size 20-24 point type. All other text is between 30-34 point type, other than the large introductory titles at the top of each panel, titles, and theme statements. This is in line with Serrell's note that any type above 36 point type might become hard to read because "the type needs to 'fit' comfortably onto a person's retina."²²¹

The first panel operates under the sub-theme "Technology and Environmental Consequences," and serves to help the viewer contemplate how technology and consumer products often have unintended consequences on the environment. This idea is primarily illustrated through the environmental impacts of phosphate laundry detergent. Label text explains how phosphate detergents, a new consumer product in the postwar era, accelerated eutrophication which led to a sharp decline in water quality of many lakes in the United States and Canada. A small sample box of All low-phosphate detergent from

²²¹ Serrell, *Exhibit Labels*, 266-286.

1972 sits on a shelf affixed to the panel to provide some material culture from the time. This strategy provides an example of how museums can use material culture to encourage visitors to think about environmental issues and how their daily lives impact the natural world, as Clarke recommends. The last section of the panel encourages viewers to compare two photos of women doing laundry, one using soap and a washing tub, the others with automatic washing machines and detergents at their disposal. Through comparison, viewers can think about the impact these products had changing the way work was done.

My Detergent Did That?

In the late 1960s, many North American lakes began to look like the jar of polluted water shown to the right: green and slimy. Scientists increasingly blamed this pollution on one new consumer product: **laundry detergent**.

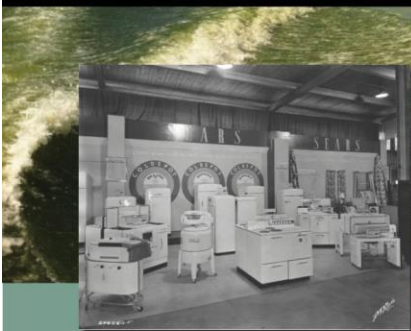
Background photo courtesy NOAA Great Lakes Environmental Research Laboratory.



Jar of blue-green algae from Wolfske Bay, Lake Menomin, Wisconsin. Photo courtesy NOAA Great Lakes Environmental Research Laboratory.

New Products Become New Pollutants

Industry boomed during and after World War II, boosting the economy. More Americans could afford to purchase new products, like automatic washing machines. Laundry detergents soon replaced soap, the product most often used to clean clothes before the war. Unlike soap, these detergents did not corrode washing machines and got rid of stubborn dirt. By the 1960s, Americans realized these amazing products carried environmental consequences.



Display of new appliances, including stoves, refrigerators, and washing machines, at the Sears and Roebuck Home Show in Indianapolis, 1940. Photo courtesy Bass Photo Co. Collection, Indiana Historical Society.

Every product, no matter how small, impacts the environment.

What made laundry detergents dangerous?

These detergents contained the nutrient phosphorus. Phosphate detergents poured in the washing machine went through sewers and drained into lakes. The phosphates caused lake algae to grow out of control. The abundance of algae depleted the water's oxygen, making it green, stinky, and less habitable for aquatic life. Human use of phosphate detergent dramatically sped up this natural process called **eutrophication**, in which a lake slowly becomes more nutrient-dense as it ages.

As major consumers of household goods, women in particular began to urge companies to manufacture products with a smaller environmental impact by the late 1960s. One such product included detergents containing less phosphorus.

This sample box of detergent from 1972 contains only 8.7% phosphate, less than many other brands at the time. Companies created low-phosphate detergents like these to meet consumer demand.

Women's Work, 1945 vs. 1953 How did technology change how work was done?

World War II Brought Detergents

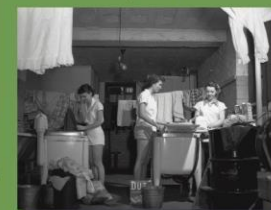
Soap is made out of animal fat. During World War II, fats were rationed for the war effort. Scientists had to develop an alternative product to clean weapons and created phosphate detergents. After the war, women used phosphate detergents because they cleaned clothes better and faster.



Above: Mary Karns scrubbing laundry in a galvanized tub, Indianapolis, 1945. Photo courtesy The Indiana Album: Barbara Akins and Karen Howes Collection.

Below: Indiana State University students using washing machines, 1953. Can you spot three boxes of detergent?

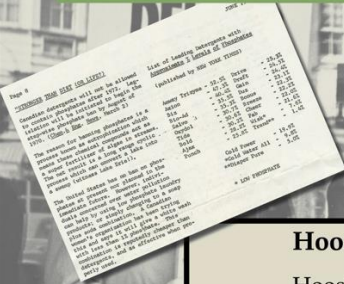
Photo courtesy of Indiana State University Special Collections-University Archives.



The second panel highlights the ways Hoosier women became involved in environmental activism as consumers. Since my primary audience became attendees of the IRC conference and worked with recycling and other environmental initiatives, I chose to focus on women who I thought my audience would relate to. The panel showcases the Northside Environmental Action Committee because one of their major accomplishments was establishing a glass recycling program in Indianapolis. I hoped this history would strike a chord with some of the Indiana Recycling Coalition conference attendees. The panel also emphasizes how women became involved raising awareness about phosphate detergent pollution. It discusses how women started standing outside grocery stores and handed out lists of phosphate content in detergents to educate consumers. A page from the League of Women Voters bulletin is reprinted on the panel that contains one of these lists. Lastly, the panel invites viewers to investigate a book, *What Every Woman Should Know—And Do—About Pollution* that a housewife wrote for other women to use to help them become more environmentally conscious homemakers. This gives visitors an opportunity to engage with a primary source and discover the many areas of environmental management, in addition to recycling and phosphate detergent, that women were interested in.

Background photo courtesy Cleveland Press Collection, Special Collections, Cleveland State University Library.

This page from the the League of Women Voters of Indianapolis *League Bulletin* informed members about the pollution phosphate detergents caused, June 1970. Photo courtesy University of Indianapolis Archives and Special Collections.



Women to the Rescue

Housewives in Canada and the United States realized many products they used at home caused pollution in the 1970s. Many, including Hoosier women, stopped buying such goods to start abating pollution immediately, while the government debated management strategies.

Hoosier Women Popularize Recycling

Hoosier women influenced environmental policy through women's groups, such as the League of Women Voters. Others formed or joined their own ecology groups, like the Northside Environmental Action Committee, started by Indianapolis housewives in 1971.

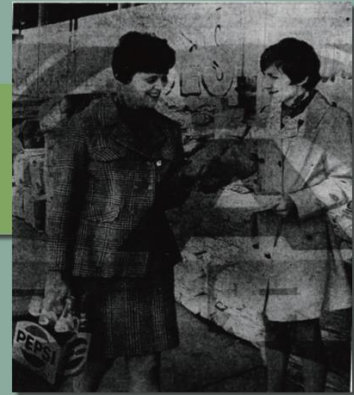


The group taught consumers how to abate pollution by recycling or buying products with less packaging. The committee organized glass drives in Indianapolis in 1971, collecting over six tons of glass. Members also testified at public hearings, lobbied politicians, and urged women to advocate politically for the environment.

Left: Mrs. Joseph Cerola and Mrs. Peter von Stein accept Mrs. John Troyer's glass at the Northside Environmental Action Committee's glass drive, 1971. Note the common practice in the media at the time of identifying a woman by her husband's name. Photo courtesy Indianapolis Star.

As concerned consumers and caretakers, Hoosier women became local environmental activists.

In the 1970s, scientists warned that algae blooms fed by phosphate were destroying waterways. Many Hoosier women worried that there would not be enough clean water for future generations. Housewives asked shoppers to stop buying phosphate laundry detergents. They handed out lists of each detergent's phosphate content at grocery stores to help consumers make informed decisions.



Mrs. George Oclander offers Mrs. William Lennon a list of phosphate content in detergents outside an Indianapolis grocery store, 1970. Photo courtesy Indianapolis Star.

Women read literature, like this book by Betty Ann Ottinger, *What Every Woman Should Know--And Do--About Pollution*, to learn how to reduce their environmental impact. Ottinger suggested women create their own "environmental budgets" to cap the impact their household had on the water, air, and land. Several of Ottinger's suggestions have made it into mainstream practice. Which of her tips have you done?

Yes, you can touch! Please open the book.

The third panel supports the sub-theme “Informed Choices.” The panel highlights the difficult decisions Hoosier women had to make regarding the phosphate detergent debate. The panel also emphasizes that Hoosier women became divided on the issue: some supported the phosphate ban, while others decided it was not the best policy and tried to get it repealed. For example, I reproduced two letters women wrote to Governor Bowen: one writer supported the ban and the other did not. Additional labels provide context about Indiana becoming the first state in the nation to ban phosphate detergents, why women were particularly influential in the phosphate debate, and what life was like under the phosphate ban. The bottom half of the panel engages in the “dialogic history” format, in which the viewer is presented with information and asked to evaluate it and come to a decision, much like Hoosier women did when deciding whether or not to support the phosphate ban. Common arguments that lobbyist groups often employed in literature are listed. One column contains arguments in favor of the phosphate ban and one in favor of repealing it. The bottom of the panel features a continuum where visitors can place a tab to mark their stance once they have come to a conclusion.

What Would You Choose?

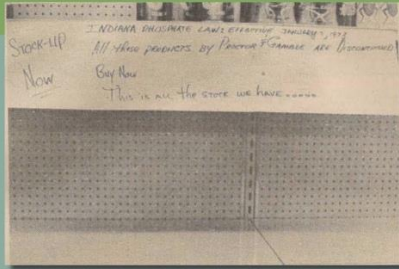
In 1971, Indiana became the first state to ban phosphate detergents. Congress was then debating a nationwide ban, like one Canada enacted in 1970, to improve water quality. However, studies emerged suggesting new non-phosphate detergents posed health risks. Since women most often did laundry, their insights on whether to keep or repeal the ban became important.

Women did how much housework?

Studies show that wives spent 32 hours per week on housework in 1965, while husbands only spent 4 hours. Today, women spend 15 hours and men 9 hours per week respectively.



Do you see any men doing laundry? Brouhard's Quick-Wash Laundry, 1960, Brownsburg, Indiana. Photo courtesy Brownsburg Then and Now/Brownsburg Public Library Archives.



A grocery store shelf in Muncie, Indiana, 1972. Photo courtesy Ball State University Archives and Special Collections.

Hey, Where'd my Tide go?

After the ban began, shoppers faced empty detergent aisle shelves, like one pictured to the left. So many detergents had phosphates that most familiar brands were no longer available. Grocery stores started stocking non-phosphate detergents, like Ecolo-G and the Unpolluter, for women to use.

Women wrote letters to politicians about the phosphate ban. Here are two letters to Governor Bowen, one supporting the ban and one favoring repeal.

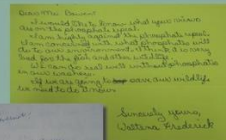


Photo courtesy Indiana State Archives and Special Collections.

Danger in the Family Wash

In 1971 a little girl in Connecticut died after swallowing non-phosphate detergent. New studies also indicated non-phosphate detergents might break down into cancer-causing substances in waste water. Hoosiers wondered, should we repeal the phosphate ban?

Clean Clothes Versus Clean Water

Hoosier women received literature from lobbying groups urging them to support the ban or urge its repeal. Like debates today about growing GMO crops or eating organic produce, consumers had to make decisions with limited and conflicting information.

Evaluate common arguments presented to the right. Which argument would have persuaded you? Vote on the ticker below.

Keep the Ban

- 1) Non-phosphate detergents do not pollute. They help ensure enough clean water for future generations.
- 2) Sewage treatment plants that would filter out phosphates in waste water will cost billions and take years to build.
- 3) All chemicals pose health risks. Non-phosphate detergents are not caustic. Canadian studies show they do not increase rates of cancer.
- 4) Non-phosphate detergents clean just as well as phosphate detergents.
- 5) The phosphate ban makes Indiana a national leader in water quality.

Repeal the Ban

- 1) Non-phosphate detergents are toxic and a danger to children.
- 2) We can build enhanced sewage treatment plants to filter out phosphates.
- 3) NTA, a common chemical in non-phosphate detergents, may break down into cancer causing substances in wastewater.
- 4) Non-phosphate detergents don't get clothes as clean and they corrode washing machines.
- 5) Indiana acted too quickly taking a stance on the phosphate issue.

Keep the Ban

Unsure

Repeal the Ban

What side would you support? Place a tab on the continuum to mark your choice.

The last panel highlights the continued problem of eutrophication. Labels provide context about how human action still is the primary culprit behind accelerated eutrophication, but instead of phosphate detergent use, other input sources, like agricultural and industrial waste, urban and suburban runoff are major contributors. The panel provides guidelines on how to help reduce pollution, by making some small lifestyle changes gradually, in addition to supporting local environmental groups and holding political representatives responsible for enacting the proper regulations. Lastly, the panel highlights the history of the Indiana Recycling Coalition as an example of an organization viewers could get involved with or support.

Dangerous Water

Hoosiers decided to keep the phosphate ban, since the law decreased phosphorus levels in Indiana waterways. Indiana set a precedent. By 2017, 27 states had phosphate detergent bans. Unfortunately, eutrophication has returned because phosphate detergent was only one cause of the pollution. Other sources include nutrients in agricultural and industrial waste, as well as urban and suburban runoff. Climate change also intensifies the pollution.

Background photo courtesy NOAA Great Lakes Environmental Research Laboratory.

Wait, Algae is Visible from Space?

The green water in the aerial photo of Lake Erie to the right marks algae outbreaks.

What's the harm? In 2011, Lake Erie, the Great Lake most prone to eutrophication, experienced its worst algal bloom in history. Some of these blooms produce toxins and bacteria, which harm humans and fish. Such pollution can even infiltrate ground water that millions of Americans rely on for clean drinking water.



Satellite image of Lake Erie, 2012. Photo Courtesy NOAA Great Lakes Environmental Research Laboratory.

Women's activism in the 1970s showed constituent action is needed to abate pollution.

How Can I Prevent This?

Who wants to face signs like these every time they take a walk on the beach?

The best way to reduce eutrophication, or any type of pollution, is to incorporate small changes gradually into your daily life. Once you've mastered one, try another!



Beach Sign, 2014. Photo courtesy NOAA Great Lakes Environmental Research Laboratory.

Fight Pollution: Take These Steps

- 1) Choose phosphate-free cleaning products.
- 2) Pick up pet waste.
- 3) Reduce fertilizer use and over watering lawns.
- 4) Walk, use public transit, or carpool.
- 5) Support local environmental organizations.
- 6) Urge your representatives to support laws to reduce water pollution.
- 7) Tell others about water pollution.

For additional options and resources, visit: epa.gov/nutrientpollution.

Spotlight: Indiana Recycling Coalition

The Indiana Recycling Coalition formed in 1989 as a volunteer, grassroots non-profit to strengthen recycling initiatives in Indiana. Today, the coalition has grown to become the state's major recycling expert. The IRC sponsors educational programs and advocates for strong state recycling measures.



Left: A recent photo of the IRC staff and board members. Photo courtesy IRC.

Some of their major successes include establishing a \$500,000 grant program with the state of Indiana in the mid-1990s, launching the E-Scrap Action Program to reduce electronics waste in 2009, and halting a "dirty recycling plan" that favored incineration over a cleaner curbside recycling plan in Indianapolis in 2016.

For the conference, I set up my exhibit in the exhibitor's hall. The IRC placed me near their own informational tables, therefore conference attendees often saw my panels right away when they entered the exhibit hall. Space was limited, so I set up my panels in a row as shown in the photo below. I also brought a box of Arm & Hammer non-phosphate detergent that I propped up on a stool, since it had been too big and heavy to include on one of the panels. Out of two-hundred conference attendees, I counted fifty that visited my exhibit and spent time investigating the panels. One woman even remarked that she and her colleagues had looked over the panels the night before, so I suspect more individuals than the fifty I counted looked at my exhibit.



My display stood out amongst the others in the hall. Most exhibitors represented a company that offered environmentally sustainable goods or services and thus had tables

filled with business cards, fliers, and promotional products. Since my display was so different, it often caught attendees' eyes. They seemed eager to talk about my research, women's history, and the environmental movement once they discovered I was not selling a product or service. I heard several remarks along the lines of, "I'm glad you put this up here," or "I'm happy you are here at the conference." Many also commented that the design "grabbed their attention" or that it "looked really nice."²²²

During the conference, I noted specific reactions to the display to gauge how well my big idea, "during the 1970s, housewives learned to question the environmental impact of postwar goods and popularized changing consumption practices to abate pollution and influence environmental policy," came across. Most attendees vocally praised women's work debating the phosphate ban and expressed the view that women's activism and leadership has historically shaped policy. Another attendee commented that women had the unique ability to enact change in legislation and politics. One woman even specifically took pictures on her mobile phone of all the panels to show her daughter, who was interested in political activism. Overall, the attendees' comments made it clear they understood that women majorly influenced the phosphate debate through grassroots activism.²²³

It also appeared that the attendees liked the material culture and activities I included on the panels. Several picked up the boxes of detergent to inspect them more closely. This helped attendees home in on eutrophication. Many asked me specific questions about detergent formulas and expressed the notion that they had no idea that detergent could be a pollutant. One woman spent some time leafing through Betty

²²² Personal notes, IRC Conference, June 13-14, 2017.

²²³ Ibid.

Ottinger's book, commenting to me that it brought back her own personal memories of the environmental movement and the phosphate debate. While some expressed that they enjoyed the "dialogic history" format at the bottom of the third panel, in which viewers are encouraged to put themselves in the shoes of a 1970s housewife and decide based on the evidence displayed if they would support the ban or repeal, few felt the urge to actually place a post-it note to on the continuum. Several empathized with the housewives, commenting the data appeared so conflicting that it must have been a hard decision.²²⁴ Overall, given attendees' tendency to connect grassroots activism in the phosphate debate to women's history and their appreciation of the material culture included in the exhibit, I was pleased with how attendees interacted with my exhibit.

Even though several historians and museum professionals have started to interpret the relationship between the environment and humans to the public, a recent piece in the *Dallas News* titled "Museums Tiptoe Around Climate Change," suggests there is still a lot of work to be done. A journalist investigated several science museums in Texas and across the country and reported that museums face challenges interpreting climate change to the public "at a time when the issue has become politically fraught." Interviews conducted with museum experts indicated that "the difficulty of presenting a complex subject in a clear, engaging way; the rapid pace of new findings about the effects of climate change vs. the amount of time needed to design exhibition materials; and a desire to avoid stirring up controversy with donors, visitors, and political representatives," all made climate change a difficult topic for even many science museums to handle. While the article reached out to several science and natural history museums, as well as zoos

²²⁴ Ibid.

and aquariums, no history museums were represented in the article.²²⁵ It's time that museum professionals bridge the divide between natural and cultural history. Taking a historical approach to interpreting pollution and climate change will help museum visitors understand humankind's major role in shaping the current state of the planet. Historical examples of activists in the environmental movement prevent exhibits from becoming tales of doom and destruction. Instead we can develop exhibits that educate and empower.

²²⁵ Anna Kuchment, "Museums Tiptoe Around Climate Change," *Dallas News*, June 14, 2014, accessed https://www.dallasnews.com/news/news/2014/06/14/museums_tiptoe-around-climate-change.

CONCLUSION

In 1971, EPA administrator William Ruckelshaus sent President Nixon a memo, urging him to back an accelerated clean-up plan for the Great Lakes. Ruckelshaus emphasized that the reputation Nixon built for himself in 1970 as an advocate for the environment had suffered. He warned Nixon of the political implications that tarnishing his image as a sympathizer of environmentalism would bring: “The very people RMN [Richard Milhous Nixon] appeals to are also vitally interested in the environment. The white middle-class suburbanite (particularly women) are very concerned over this issue.” Ruckelshaus predicted this group would not vote for Nixon in the upcoming 1972 presidential election unless he started emphasizing his dedication to protecting the environment. According to Ruckelshaus, if Nixon supported initiatives to abate pollution in the Great Lakes he could bolster his stance as an environmentalist since the Great Lakes had become “the one area that stands out for the environment and its degradation in the minds of the American people.” The threat of losing the vote of “white middle-class suburbanite” women apparently seemed too great to lose for Nixon. In March 1972, Nixon decided to sign the Great Lakes Water Quality Agreement with Canada.²²⁶

The above vignette shows Ruckelshaus recognized that white, middle-class women formed a key constituency fighting for the protection of the Great Lakes environment, which Nixon needed on his side if he wanted to be reelected. This thesis underscores what Ruckelshaus knew in 1971: that women, especially white, middle-class women, carved out an influential space in the environmental movement in the early 1970s as consumer-activists, specifically in the effort to clean up the Great Lakes.

²²⁶ Scarpino, Addressing Cross-border Pollution of the Great Lakes after World War II,” in *Transnationalism in Canada-United States History into the Twenty-first Century*, 126.

Women influenced the enactment of key water quality policy by distributing lists of phosphate content of detergents in grocery stores, lobbying government officials, writing letters to newspaper editors and politicians, speaking out at local hearings, and forming activist groups dedicated to pollution abatement. Even the women who did not believe banning phosphate was helpful or necessary played a key role. Without their emphasis on improving technology to filter out phosphate, the need to build sewage treatment plants to eliminate nutrients in influent in the United States may not have been as thoroughly investigated. Though I focused primarily on women's actions in Indiana, the first state to pass a state-wide phosphate ban, it is clear Canadian women, as well as those in other areas of the United States, also impacted water quality regulation. In many cases, Canadian women's success banding together in local activist groups dedicated to boycotting phosphates, which supported the enactment of a Canadian nation-wide phosphate ban, encouraged American women to act as well. American women across the nation, from New York to Wisconsin to California, started thinking about how their consumption choices, including the decision to use phosphate detergent, impacted the environment. Together, they agreed to evaluate and change their habits as consumers and encouraged industry and the government to make changes, such as banning phosphate detergents or marketing safe, non-phosphate detergents, to abate pollution.

The women I analyzed in my thesis understood the power of cumulative action. Though one woman deciding to use a non-phosphate detergent made little difference improving water quality, teams of consumers acting together in different localities, even two different nations, caused politicians and lawmakers to understand water pollution was an issue their constituents wanted solved. My thesis shows women formed a political

constituency as consumers that seriously influenced and strengthened the burgeoning environmental movement. Politicians, scientists, and industry representatives all looked to the “housewife,” the white, middle-class woman, for support and approval of new environmentally-friendly products (like non-phosphate detergents) or regulations that affected all consumers, such as the phosphate ban. This thesis underscores the need to flesh out histories of regulations that emerged from the environmental movement, at all levels of government, to include the citizens and consumers the legislation affected.

Cutting gender and consumer action out of the story of eutrophication of the Great Lakes during the 1960s and 1970s obscures and simplifies the narrative. As primary consumers and caretakers in many households in the 1970s, women in particular were able to acutely understand that humans largely impacted the environment in increasingly negative ways, even through actions seemingly as innocuous as what type of detergent used to wash clothes. Through these women’s efforts, governments eventually created and maintained policies to clean up the Great Lakes. Furthermore, industry stopped producing products that led to the pollution in the first place. Along the way, these women helped popularize the tenets of ecology and encouraged all consumers to think about how their purchases impacted the natural world.

To fight pollution effectively in the 21st century, citizens need to take a cue from the women featured in this thesis. For example, in 2017 a new study completed by scientists who work for Orb Media, a non-profit that produces journalism focused on science, education, trade, and government, suggested that drinking water supplies around the world, including the Great Lakes, are contaminated with microplastics: tiny, plastic fibers shed from clothing made from synthetic materials (like fleece) and other plastic

packaging commonly used today. Samples from the United States contained the highest contamination rate---a whopping 94 percent. Humans end up consuming these microplastics, which potentially carry pollutants and pathogens and can attract bacteria in sewage. Researchers suggested that humans contribute microplastics into waterways through their laundry: the average synthetic jacket sheds 1.7 grams of microfibers per load of laundry. Furthermore, once those clothes are dried in driers, more microfibers are released into the air.²²⁷

On November 1, 2017, a segment of the radio show called 1A on WAMU National Public Radio station in Washington, D.C., titled “Plastics are Forever,” discussed the new findings surrounding microplastic pollution. During the segment, a number of listeners emailed to express concern and wondered how the everyday consumer could possibly make a difference? They expressed that plastics are ubiquitous in 21st century daily life: for examples, food containers and wrappers, cleaning products, and clothing all contain plastics. How could consumers even possibly avoid plastics in their day-to-day lives, much less convince producers to stop using plastic? One listener wrote, “If the product [plastic] exists already [in the environment], am I really making any impact making the conscious decision not to take or buy the plastic?” Experts on the show emphasized that consumers needed to exercise their roles lobbying governments and industry to show their concern and convince companies to shift the way plastics are used. Molly Bingham, President and CEO of Orb Media stressed, “As consumers we

²²⁷ Chris Tyree and Dan Morrison, “Invisibles: The Plastics Inside Us,” *Orb Media*, accessed https://orbmedia.org/stories/Invisibles_plastics; Damian Carrington, “Plastic fibres found in tap water around the world, study reveals,” *The Guardian*, September 5, 2017, accessed <https://www.theguardian.com/environment/2017/sep/06/plastic-fibres-found-tap-water-around-world-study-reveals>; Ken Christensen, “Guess What’s Showing Up in Our Shellfish? One Word: Plastics,” *NPR*, September 19, 2017, accessed <http://www.npr.org/sections/thesalt/2017/09/19/551261222/guess-whats-showing-up-in-our-shellfish-one-word-plastics>.

have way more power than we give ourselves credit for...Companies change based upon consumer demands, so as we start demanding changes they will respond to that.”²²⁸

How would the women I analyzed in my thesis react to microplastic pollution? How would they suggest consumers begin to fight such an overwhelming threat to the environment and human health? They would publicly boycott buying and using synthetic fabrics and plastic containers. They would write, call, and lobby politicians, lawmakers, and plastics manufacturers. But most importantly, they would not act alone. As concerned consumers, they might form or join local environmentalist groups concerned with microplastic pollution and help their friends and family make more informed choices regarding the consumption of plastics. Women did this because they understood their individual efforts in the marketplace worked if their actions if they could get them to snowball: once one woman started buying non-phosphate detergent, within a few weeks, her friends and family would do the same, and so on. Such grassroots activism is what defines the environmental movement of the 1970s in Canada and the United States.

The recent Microbead-Free Waters Act of 2015 indicates such actions still garner results. Microbeads, a type of microplastic, are miniscule pieces of plastic once used in exfoliating beauty products, like cleansers and toothpastes. These microbeads passed through filtration systems and discharged in waste water into waterways, including the Great Lakes. Dr. Sherri A. Mason’s research on microbead pollution in the Great Lakes, which estimated eleven billion microbeads were released into American waters everyday, brought attention to the issue. Activists in environmental non-profits pushed for a ban. In December 2015 a bipartisan bill to ban microbeads “sailed through Congress in an age

²²⁸ “Plastics Are Forever,” *NPR*, WAMU, November 1, 2017, accessed <https://the1a.org/shows/2017-11-01/plastics-are-forever>.

when most legislation plods,” according to a *New York Times* journalist. On December 28, 2015, President Obama signed the bill into law. As of July 2017, microbeads have been phased out of all cosmetics in the United States.²²⁹

While it is important to recognize the politicians who pushed through major legislation in the 1960s and 1970s that form the backbone of North American environmental regulation, our histories of the environmental movement need to emphasize women’s work lobbying politicians, conducting research, providing testimony at public hearings, and popularizing environmentally-friendly practices. This work recognizes the continuing importance of the role women played in the environmental movement, often as unpaid activists and volunteers. Women utilized their power as conscientious consumers and participated in public discussions about sewage treatment, biology, and ecology in order to influence water quality policy and abate pollution, at a time when men largely dominated those fields. Doing so, women played important roles popularizing the idea that consumers need to recognize their actions had a direct, tangible impact on the environment. Housewife Betty Ottinger, author of the popular guidebook *Everything A Woman Should Know—And Do—About Pollution* (1970) perhaps best summarized the philosophy housewives’ advocated and popularized in the 1970s:

“Meeting the environmental challenge will take considerably more than just getting out

²²⁹ National Oceanic and Atmospheric Administration, U.S. Department of Commerce, “What are microplastics?” <https://oceanservice.noaa.gov/facts/microplastics.html>, accessed March 11, 2018; John Schwartz, “Ban on Microbeads Proves Easy to Pass Through Pipeline,” *New York Times*, December 22, 2015 <https://www.nytimes.com/2015/12/23/science/ban-on-microbeads-proves-easy-to-pass-through-pipeline.html>, accessed March 11, 2018; Amy DuFault, “Ditching microbeads: the search for sustainable skincare,” *The Guardian*, May 5, 2014, <https://www.theguardian.com/sustainable-business/microbeads-cosmetics-gyres-plastics-pollution-makeup>, accessed March 11, 2018.

our brooms and mops and cleaning up the mess we have already made. Unless we make a change in the attitude towards our resources, the mess will always stay ahead of us.”²³⁰

²³⁰ Ottinger, *What Every Woman Should Know—And Do—About Pollution*, 72.

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Chatelaine

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CURRICULUM VITAE

ANNETTE MARY SCHERBER

EDUCATION

Indiana University, earned at Indiana University-Purdue University, Indianapolis (IUPUI)
M.A. in History, Public History Track

University of Northern Iowa
B.A. in History
Minors in Literary Studies and Spanish
Certificate in Public History

WORK EXPERIENCE

Center for Local History, Arlington Public Library, Arlington, VA
Management Intern, (August 2017-Present)

Process archival collections, including arrangement and description, rehousing and boxing materials, and creating finding aids and image indexes. Special projects including assisting with moving entire collection to a temporary location, conducting inventory of collection, researching and writing a digital tour of a local history house and surrounding neighborhood, creating metadata, scanning, and writing narratives for a digital women's history archive.

Indiana Historical Bureau, Indianapolis, IN
Intern, (August 2016-July 2017)

Conducted research and writing for state historical markers, marker review reports, social media posts, and blog posts. Assisted with reviewing historical marker applications and editing historical markers.

Indiana State Museum, Indianapolis, IN
Collections and Exhibitions Intern, (October 2015-May 2016)

Conducted inventory of toy collections and inputted data into Mimsy XG. Wrote condition reports for artifacts and artwork. Prepped artifacts for display, including cleaning and mannequin dressing. Assisted with artifact installation and staging for bicentennial exhibit, Indiana in 200 Objects. Edited artifact labels and panels. Pulled and returned artifacts to storage.

Camp Algona POW Museum, Algona, IA
Summer Intern, May 2015-August 2015

Researched and wrote narratives for museum book, *14,000 Nights on Kossuth* County veterans' experiences as Prisoners of War during World War II. Managed museum collection and collection management database, Past Perfect. Researched, wrote, and designed special exhibit *Our Food is Fighting* on food production in Kossuth County during World War II. Acted as docent and handled ticketing and gift shop purchases.

John Deere Tractor & Engine Museum, Waterloo, IA

Part-time Student, June 2012-March 2015

Part of the team that created the John Deere's new corporate museum in Waterloo, IA focused on the company's tractor and engine manufacturing history. Helped build museum's collection. Catalogued items and processed collections, helped manage museum's collection database, PastPerfect, completed artifact condition reports, and helped track donation and loan agreement paperwork. Assisted with staging artifacts and artifact installation. Wrote and edited monthly newsletters and artifact labels.

HONORS, AWARDS, FELLOWSHIPS

Best Graduate Student Paper, Hoosier Women at Work: Science, Technology, and Medicine Conference, Indianapolis, IN, April 2017

IUPUI University Fellow, 2015-2016

Summa Cum Laude, University of Northern Iowa, December 2014

CONFERENCE PRESENTATIONS

Hoosier Women at Work: Science, Technology, and Medicine, Indianapolis, IN
April 2017

“Clean Clothes Vs. Clean Water,’ Hoosier Women and the Rise of Ecological Consumption” Paper

Indiana Recycling Coalition Annual Conference

Exhibitor