



# JPIA

The Journal of Politics and  
International Affairs  
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Winter 2012

# The Journal of Politics and International Affairs

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Winter 2012

The Undergraduate Political Science Organization  
The Ohio State University



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Greetings readers:

The following is the culmination of a year's worth of planning, editing, and building. Over the past twelve months, this project has developed from a dead idea to the publication you see before you.

In January 2010, an ambitious student named John Adams decided to resurrect the Undergraduate Political Science Organization from its dormancy. From our first organizational meeting, John and what would later become our first executive board worked very hard to recreate this great resource for the students at The Ohio State University. Initially disbanded due to waning interest, UPSO has returned to our campus with a renewed mission to provide students with a network through which they can expand their academic and professional potential.

An important aspect UPSO's existence was the Journal of Politics & International Affairs. The Journal was the primary vehicle of engagement for past organizations, and presented political science students with the unique opportunity to present their research and writing to an audience beyond the classroom. From that very first meeting, I knew that I wanted to spearhead the revival of this project. The idea of being published as an undergraduate, quite a rare phenomenon unfortunately, sparked my interest, and I felt that this was an opportunity that all students deserved to take part in. With the full support of the Political Science department, and a dedicated editorial staff, the project slowly blossomed into the Journal that follows.

Moving forward, I am hopeful that our team can improve upon this project and release an even better issue in spring 2011. We will be expanding our outreach to student-writers, streamlining our editing process, improving our layout and design, and exploring possibilities for publishing our Journal online. We will be working closely with the Department of Political Science to reach an even broader audience, and continue laying the foundation for this project's long term success. We look forward to connecting with other Political Science journals across the country, as well as building closer relationships with our faculty and research staff.

I could not have completed this project without the help of John Adams and Joe Guenther, two friends who were there on day one of the planning process. Our adviser Wayne DeYoung was a tremendous resource along the way, always willing to listen and guide me in the right direction. I would like to thank Dr. Weisberg for his early support of our project, as well as Dr. Richard Herrmann for allowing us to pursue this opportunity.

This project wouldn't have been possible without the help of Alicia Anzivine, Charles Smith, Janet Box-Steffensmeier, Demetra Stamatakos, and Benjamin Presson. I extend my gratitude to each of you, and anyone I may have forgotten, for your input and guidance.

I hope you enjoy this first issue of the newly reestablished Journal of Politics & International Affairs. After a few years out of commission, we're glad to be publishing again, and we welcome any compliments and criticism that would help us improve our operation.

And as always...Go Bucks!

Cameron DeHart  
Editor-in-Chief

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# The Evolution of Hope and Change

Zach Frye

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*In this article, the foreign policy positions of Barack Obama are examined, with a focus on how his actions and positions have changed over time. As a candidate in 2007 and 2008, then Senator Obama derided the policies of the Bush Administration and advocated a less aggressive stance for the U.S. Since he took the oath of office in January 2009, President Obama has generally attempted to rely on diplomacy and international institutions when waging foreign policy, to mixed success. The presence of the international financial crisis has shifted the world's attention towards economic issues, which has been problematic for Obama's attempts at changing the way the U.S. makes foreign policy. When the Democratic Party performed poorly in the 2010 midterm elections, a shift could be seen in the administration's foreign policy. The intervention in Libya without congressional consultation and the killing of Osama Bin Laden in Pakistan without the Pakistani government's knowledge or approval are the two most prominent examples of a shift in policy. With economic troubles ongoing and a presidential election looming, Obama will have to tread cautiously in the area of foreign policy.*

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The turbulent political year of 2008 was a breeding ground for high-minded platitudes and appeals to ideological sentiment for presidential candidates. Most famously, Barack Obama effectively captured the milieu of the times, utilizing unprecedented methods of message spreading and soaring rhetoric to win mass support and an electoral victory. His campaign focused on the theme of change, as Obama positioned himself as a departure in both substance and style from the Bush administration. In the arena of foreign policy, Obama was particularly prone to emphasize his differences with the preceding president. Rejecting the Bush Doctrine of using U.S. military force unilaterally to further American interests, candidate Obama pledged to speedily withdraw troops from Iraq, sit-down with “rogue” leaders that Bush had previously refused to, and use diplomacy and negotiation as the primary tools of U.S. foreign policy. Overall, then Sen. Obama projected an image of a president that would take a less aggressive posture on the world stage, employ the use of military force more selectively, and make deliberation and consultation an essential feature of his administration's foreign policy.

Upon entering office, President Obama has generally attempted to live up to the high expectations he set for himself as a candidate, but various political factors have complicated the picture.

Although he has at times acted in accordance with the ideals he articulated in the 2008 campaign, Obama has made foreign policy decisions that have stretched and exceeded the boundaries of the multilateral institutionalism that he had previously championed. The two most profound and visible of these decisions have come after the 2010 midterm election: the bombing of Libyan government targets in support of rebels against Muammar Gaddafi under the auspices of a U.N. resolution authorizing the enforcement of a No-Fly Zone, and the intrusion in Pakistani authority in order to execute a surgical raid to kill Osama Bin Laden. By examining these two prominent events and establishing how the Obama administration's foreign policy has changed over time, one can develop a possible rationale for the shift in course. The overarching explanatory variable in the study of the current administration's foreign policy is the looming presidential election, and the need to establish concrete success that the president can point to as he seeks reelection. In light of complicated political considerations, the Obama administration has been mixed in its execution of U.S. foreign policy, with a noticeable shift towards aggressive action after the 2010 midterms.

### A Candidate of Change

The underlying theme of Barack Obama's 2008 presidential campaign was that he would seek to be a change from the Bush Administration. When then Senator Obama announced his presidential campaign in Illinois in February 2007, he established his vision of how Bush conducted foreign policy and how he would differ from it. Obama told the crowd "For the past six years we've been told that...tough talk and an ill-conceived war can replace diplomacy, and strategy, and foresight."<sup>1</sup> He further elaborated on his foreign policy stance in a 2007 widely published article entitled "Renewing American Leadership", defining his view of America's place in the world as a paragon of peace and diplomacy: "The mission of the United States is to provide global leadership grounded in the understanding that the world shares a common security and a common humanity." Concerning specific policies in response to the biggest problems that confronted the U.S., Obama championed "a comprehensive regional and international diplomatic initiative to help broker an end to the civil war in Iraq"; "Throughout the Middle East, we must harness American power to reinvigorate American diplomacy"; and "We should not hesitate to talk directly to Iran."<sup>2</sup>

This tendency towards espousing diplomacy and negotiation over unilateral American ac-

<sup>1</sup> "Illinois Sen. Barack Obama's Announcement Speech." The Washington Post. Associated Press, 10 02 2007. Web.

<sup>2</sup> Obama, Barack. "Renewing American Leadership." RealClearPolitics. Foreign Affairs Magazine, 06 01 2007. Web.

tion fit in neatly with Obama's overall message of departure from the ways of the Bush administration. This was an incredibly effective strategy, with the public hungry for symbolic and substantive change from the increasingly unpopular President Bush. In no other permutation of American society was the sentiment for change more powerful than in the Democratic primary electorate, explaining Obama's focus on change and how he was able to meteorically rise to the top of the party. Indeed, President Bush's policies on the War in Iraq and the Bush Doctrine of preemptive war and unilateral engagement contributed to his unpopularity, opening the door for Obama to propose a new path. By 2006, Bush's approval rating had fallen to 34%, with only 30% approving of his handling of the Iraq War and 43% approving of Bush's role in the War on Terror.<sup>3</sup> By the middle of the presidential election of 2008, with the Iraq War raging on, Bush's approval rating was at 31%, clearly showing an unpopular president and an American public full of fatigue from the Bush administration's foreign policy.<sup>4</sup>

Given the combination of political circumstances surrounding the 2008 election, it should not seem all that surprising that Obama was easily elected president in November 2008. As was quickly made evident, however, running for president on change and being a president that ushers in change are very different ventures.

### Governing Isn't Easy

Upon taking office in January 2009, President Obama and his foreign policy advisors embarked upon the task of forging a new kind of foreign policy. The president carried forward the high ideals of his campaign into his inaugural address, declaring to the world: "Know that America is a friend of each nation and every man, woman and child who seeks a future of peace and dignity, and that we are ready to lead once more."<sup>5</sup> Secretary of State Hillary Clinton immediately went to work phoning world leaders, indicating the new administration's intentions to try to implement a new kind of foreign policy.<sup>6</sup> Fulfilling a campaign promise, Obama issued an executive order to close down

<sup>3</sup> Roberts, Joel. "Poll: Bush Ratings At All-Time Low." CBS News. CBS News, 27 02 2006. Web.

<sup>4</sup> Steinhauser, Paul. "Poll: Bush's Popularity Hits New Low." CNN Politics. CNN, 19 03 2008. Web.

<sup>5</sup> "Obama's Inaugural Speech." CNN Politics. CNN, 20 01 2009. Web.

<sup>6</sup> Richter, Paul. "World Breathes Sigh of Relief, Hillary Clinton Says." Los Angeles Times. Los Angeles Times, 28 01 2009. Web.

the Guantanamo Bay detention facility and relocate the prisoners held within one year.<sup>7</sup> However, numerous legal and political challenges emerged when the president attempted to close the facility, demonstrating the difficulty of carrying ideals into action. As of November 2011, Guantanamo still houses 171 foreign detainees, although 600 captives have been transferred elsewhere. The likelihood of complete and permanent closure of the base appears to be low.<sup>8</sup> Guantanamo is but one flashpoint in what was a general theme for the Obama administration, especially in its first two years: Ideals are pursued in general, but political reality often results in a mixed net effect.

Barack Obama has been true to the 2008 candidate version of himself in that he has been willing to meet and negotiate with world leaders that the previous president often refused to. In 2009, he expressed his desire to engage the Cuban government, led by Raul Castro, as well as sit down with controversial Venezuelan leader Hugo Chavez.<sup>9</sup> The problem for Obama has been that these meetings and attempts at diplomacy often do not materialize, leading to a perception that his grand vision for internationalism is nothing but campaign rhetoric. This leads to an important realization in the framing of foreign policy: Americans tend to remember the big, headline-making events, not the tedious diplomatic overtures by which ideal Obama foreign policy was heavily characterized. Thus, other issues have tended to overshadow Obama's well-intentioned efforts, which have yielded moderate success at best. Another factor that has limited the president in achieving his foreign policy objectives has been the primacy of domestic economic issues in the political debate. Throughout his tenure, the economic stimulus, healthcare reform, and unemployment have been the main issues on the minds of the American voters, pushing aside many of the high-minded foreign objectives Obama had initially targeted. With little political will to heavily invest valuable time and resources into global diplomacy, the first years of the Obama administration have featured some attempt at implementing Obama's foreign policy campaign promises with mixed results, but the administration had to defer to domestic issues.

### **“A Shellacking”**

Undoubtedly, voters had economic worries on their mind as they went to the polls in

7 Manzetti, Mark. “Obama Issues Directive To Shut Down Guantanamo.” *The New York Times*. The New York Times, 21 01 2009. Web.

8 “The Guantanamo Docket.” *The New York Times*. 09 11 2011. Web.

9 Stolberg, Sheryl Gay. “Obama Says U.S. Will Pursue Thaw With Cuba.” *The New York Times*. The New York Times, 17 04 2009. Web.

November 2010, and paid little attention to what the Obama administration had done in terms of foreign policy. Republican candidates rode these conditions to a House majority and a greatly reduced Democratic majority in the Senate. This sent an ominous sign to President Obama and his advisors, as the president's reelection chances in 2012 began to be sized up. Obama called the elections a “shellacking” for Democrats, and political advisors noted that this could be a sign that Obama recognized he would have to change in some way if he wanted to remain president come 2013.<sup>10</sup>

### **Change in Course**

The 2010 midterm congressional elections potentially represented a watershed point for the Obama administration. With Republicans now in control of the House and President Obama pivoting towards his reelection effort, new political dynamics may explain important foreign policy developments in 2011. The military intervention in Libya and the killing of Osama Bin Laden represent a shift towards aggressive foreign policy intended to shore up President Obama's reelection chances.

The so-called “Arab Spring” of 2011 has raised questions over what the roles of the U.S. and the West in general are in securing human rights and democracy in the Middle East. In the case of Libya, the conflict between Muammar Gaddafi's government and rebels led to an international intervention, in which the United States and France took early leading roles. While the intervention was internationalist in nature, as the action was under the auspices of a U.N. resolution and command was eventually transferred to NATO, the speed and nature with which Obama employed military force was a departure from earlier in his administration and his candidacy. Before the attack, Obama did not gain congressional approval and quickly decided to intervene.<sup>11</sup> This surprising turn away from diplomacy and consultation may have been motivated by a desire on Obama's part to appear “tough” on foreign policy and a resolute defender of American interests and democracy as the 2012 election nears. Only a month and a half after the beginning of the Libya intervention, President Obama announced to the world that Osama Bin Laden had been killed.

The killing of Osama Bin Laden was hailed as a great victory from all corners of the ideological spectrum. Undoubtedly, it represents much-needed political capital for the Obama adminis-

10 Richardson, Chris. “Obama Calls Midterm Elections a “Shellacking” for Democrats.” *Christian Science Monitor*. *Christian Science Monitor*, 04 11 2010. Web.

11 Williams, J.B. “Obama Attacks Libya, and Where's Congress.” *The American Thinker*. *The American Thinker*, 03 20 2011. Web.

tration, and likely will be a topic of discussion in the 2012 presidential election. The surprising aspect of the killing, however, was that Pakistan was not made aware of the operation until after it had occurred, making the raid a unilateral incursion into a sovereign country. Many political observers have argued that the operation was in violation of international law.<sup>12</sup> The mercurial relationship between the United States and Pakistan has been significantly strained in the aftermath of the raid. Obama's decision to launch the operation without consulting Pakistani leadership seems more consistent with a neoconservative view of foreign affairs, which is commonly associated with the Bush administration. A strategically important ally for the U.S. in the Middle East, Obama risked significant political capital with Pakistan in order to carry out the Bin Laden killing. The Pakistani government expressed "deep concerns and reservations" regarding the unauthorized incursion into its territory.<sup>13</sup> On the domestic front, the Bin Laden raid clearly has benefitted the perception of the president as an able leader on foreign policy, regardless of how congruent the action was with candidate Obama's message of change. Recent polls indicate that the American people generally give Obama high approval ratings on foreign affairs, although he does much worse on the economy and job creation.<sup>14</sup> It remains to be seen whether this perception of foreign policy strength will hold true during the 2012 election, and what impact it will have on his chances for reelection. For Obama, the candidate of diplomacy and multilateralism over rash unilateralism, the Bin Laden raid means that the president is now willing to be more aggressive on the world stage in order to position himself as strong on foreign policy for the 2012 election.

### Ramifications and Conclusions

In 2008, Barack Obama campaigned as a president who would conduct foreign policy in a vastly different way than his predecessor, George W. Bush. Thus far, there has undeniably been a degree of change in U.S. foreign policy. Obama has indicated more of a willingness to sit down with rogue world leaders, attempted to shut down the Guantanamo Bay facility, and engaged the Muslim world in diplomacy and negotiation in an unprecedented way. He has faced domestic problems that have hobbled his ability to effectively conduct the foreign policy in the way he might like to. After the 2010 midterms in which the Democrats suffered major losses, a shift can be seen towards a more ag-

12 "Bin Laden 'Was Unarmed' When Shot Dead." Al Jazeera English. Al Jazeera English, 04 05 2011. Web.

13 Yousaf, Kamran. "Abbottabad raid: Pakistan upset about being kept in the dark." . The Express Tribune, 04 05 2011. Web.

14 Jackson, David. "Poll: Obama strong on foreign affairs, weak on domestic." . The USA TODAY, 09 11 2011. Web.

gressive foreign policy, most visibly in the intervention in Libya and the killing of Osama Bin Laden. For the 2012 election and Obama's seeking of reelection, these events may or may not play an important role. Reelection serves as a likely rationale for the president's actions, in an attempt to win over independent voters who defected to the GOP in 2010, but President Obama must be worried about annoying his own liberal base. Additionally, domestic issues are still most important on the mind of the American electorate, complicating the foreign policy picture for Obama. It remains to be seen what impact internal political pressures will have on U.S. foreign policy, and how voters see America's place in the world as the 2012 election approaches.

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## The Political History of Coca-Cola

Matthew Gulas

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*Coca-Cola is America's most popular beverage and the industry leader among soft drinks today, yet beneath the surface of this sugary delight resides a plethora of cultural, economic and political history that is American as any. Started as a backyard medicine in the late 1800s, "Coke" as it soon became known, was embraced by the nation not only as a great tasting soft drink but also as a symbol of the American economic boom. And just as America took the reigns as a super power, Coke followed along entering foreign countries as the symbol of western culture and prosperity. The story of Coca-cola is endearing for any American but with such recognition, Coke surely had its fair share of problems as well. Environmentally, through the schools and even with its advertising practices, the Coke brand occupies a contentious place in society. This paper seeks to illustrate the nature of the Coke brand as both the best and worst of Western civilization and that despite its shortcomings, its place in American society is all but assured.*

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Soft drinks can be found about everywhere in the world today, but nowhere are they as ubiquitous as in the United States. Over the last century, soft drink consumption has increased steadily with figures approaching 52 gallons per year per person in 2004, in the United States.<sup>1</sup> Another estimate shows Americans drinking 13.15 billion gallons of carbonated drinks each year.<sup>2</sup> Additionally global consumption is high and growing as developing markets desire more consumer products and adopt the American vernacular symbolized in Western culture. What this spells out for Coca-Cola is nothing short of spectacular. The Atlanta based company's beverage is the world's most widely distributed product and universally recognized word; few have never heard of the fizzy soft drink in the bright red can.<sup>3</sup> In other words, Coke has reached a level in its recognition among consumers topping that of the industry in which it resides. When people order soft drinks or even

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1 Jacobson, Michael F. Petition to Require Health Messages on Soft Drinks Containing High-fructose Corn Syrup and Other Caloric Sweeteners. Rep. Center for Science in the Public Interest- United States Department of Health and Human Services, 13 July 2005. Web. 10 Mar. 2011.

2 Nestle, Marion. Food Politics: How the Food Industry Influences Nutrition and Health. Berkeley: University of California, 2007. p 205.

3 Pendergrast, Mark. For God, Country, and Coca-Cola: The Definitive History of the Great American Soft Drink and the Company That Makes It. New York: Basic, 2000. 9.

think of one, they consider Coca-Cola.

Exactly how Coke has achieved this iconic status is a complex question with many contributing factors. The drink was a product of its time, place, and culture. Few realize that the beverage was started as a patent medicine and that its success hinged on the nature of the American advertising market at the time for these “backyard medicines.” As time passed and Coke continued to sell, the beverage came to grow up with Americans; it lived the same events ordinary citizens did, occupying their refrigerator shelves and was always within an arm’s reach of desire, as the company’s popular slogan once said. Consequently, Coke was propelled to the forefront of the soft drink industry where it rests today. This paper seeks to explore the unique relationship Coca-Cola has with the world in terms of its production, regulations, costs, and even harms. If nothing, it should be clear that Coke is as American as any, representing the best and worst of Western civilization and the so-called classic American success myth of humble origins and hard work, all in only 12 fl oz.

**The Production of Coca-Cola**

When discussing the production of Coca-Cola, it is important to distinguish the difference between the bottlers and the parent company. At the turn of the century in 1899, Coke was only a successful fountain drink business. The company sold syrup, which was prepared and then sold to customers in their local beverage store. But following intuition and the inspirations of a few young entrepreneurs, Coke agreed to establish separate bottling entities to sell the product. The parent company would continue selling syrup to fountain sellers. Little to the knowledge of executives, this new business model would redefine the company as one of the most innovative and dynamic franchising systems in the world.<sup>4</sup> By 1919, there were 1,200 bottling plants; more importantly, Coke’s business could now reach untapped areas inaccessible to the fountain drink business.<sup>5</sup> Following its successes, The Coca-Cola Company would end up buying back ownership. Coke had early success as solely a syrup and fountain drink producer, but the development of a strong bottling system is what made it the world famous brand it is today. To date, these two companies are listed separately despite Coca-Cola, the parent company, owning a substantial portion of the bottling entity.

A common theme throughout readings on its history is The Coca-Cola Company’s instillation of a sense of reverence for the drink in all of its employees. This business strategy asks workers

4 Pendergrast 71.

5 Pendergrast 81.

to “make your product an icon and your job a religious vocation” and stresses an emphatic belief in the product.<sup>6</sup> The notion that Coke is the finest product on earth is something the company truly believes, and thus, is a great starting place in dealing with the production of the “mythical” drink. The release of the recipe of the drink is somewhat a point of contention between competitors, enthusiasts, and the company. Classified as part of its trade secret, the company associates great value with protecting this facet of the soft drink from the public. Over the years and with increasing frequency recently, reports have published what they believe to be the secret formula to the world’s favorite soft drink. The formula is as follows<sup>78</sup>:

Citrate Caffeine	1 oz.
Extract of Vanilla	1 oz.
7X Flavoring	2.5 oz.
Fluid Extract of Coca	4 oz.
Citric Acid	3 oz.
Lime Juice	1 Qt.
Sugar	30 lbs.
Water	2.5 Gal.
Caramel (for coloring)	Sufficient Amount

Instructions call for a mixing of caffeine acid and lime juice in 1 qt. of boiling water. Then add vanilla and flavoring when cool.

Perhaps the greatest source of mystique behind Coke resides within its secret 7X formula that flavors its sugar/water base. Until recently, the ingredients for this concoction were only to be guessed, but reports have surfaced attempting to break down the famed 7X flavoring. Coke has refused to comment and alluded to its long history of protecting its trade secret. One such instance details that in the midst of Coca-Cola’s competitive quest to establish a worldwide market, the company left India rather than give up the ingredients to the government.<sup>9</sup> Ingredients to the 7X flavoring are

6 Pendergrast 461.

7 Pendergrast 456.

8 Praetorius, Dean. “Coca-Cola Secret Recipe Revealed?: ‘This American Life’ Says It Hid In Plain Sight.” The Huffington Post. 15 Feb. 2011. Web. 11 Mar. 2011.

9 Pendergrast 311.

listed below in parts<sup>1011</sup>:

Orange Oil	80
Lemon Oil	120
Nutmeg Oil	40
Cinnamon Oil	40
Coriander Oil	20
Neroli Oil	40

\* Added to 1 Qt. of Alcohol. Let stand for 24 hours.

A common myth surrounding Coca-Cola is whether the drink has, or at some point had, cocaine in its sugary essence. The answer to this is a definite yes; cocaine played an important part in the history of Coca-Cola. Available recipes from the past list fluid extract of coca (also coca leaf) as an ingredient, but at the time this was neither confirmed nor denied by the company. Thus, widespread public suspicion of the illicit drug's presence in Coke remained over time. At the beverage's inception, the presence of cocaine was questioned in whether it hindered sales or was necessary to them as it was an original ingredient in the Coke recipe. According to Mark Pendergrast, people "were intrigued by the stigma associated with the drink and felt a sinful thrill when imbibing in it."<sup>12</sup> Despite customers' appreciation toward the inclusion of cocaine in the beverage, success brought notoriety and contention on the drug. The question came to a tradeoff; the company had to choose between ridding the drink of a major selling point and an ingredient considered integral to its unique taste, the coca leaf, or continue to deal with the public scorn from using such a controversial substance in its beverage. Following race riots that struck Atlanta, cocaine, which was widely available to African American sharecroppers at the time, was brought to the attention of Caucasian Americans and assigned a very negative connotation, thereby reflecting poorly on its supposed presence in the drink.<sup>13</sup> Resulting trials with the Internal Revenue Service, negative testimony, and adverse press coverage forced the company to remove the coca leaves and opt instead for leaves without cocaine from 1901 through

10 Pendergrast 457.

11 Praetorius.

12 Pendergrast 57.

13 Pendergrast 87.

1903.<sup>14</sup> A pamphlet released the next year admitted the use of cocaine in the beverage, but claimed that at least thirty glasses were needed to get a significant dose of the drug.<sup>15</sup> To this day, the company does not acknowledge cocaine's place in its history, relegating the coca leaf among the plethora of myths that make up the lore of Coca-Cola.

A final point about the production of Coke considers the economic strategy involved in producing the beverage. Coke's business model has always worked toward selling a cheaply produced item. The cost of a single drink is only a few cents, largely due to the low cost of sweetener.<sup>16</sup> The introduction of domestically produced high-fructose corn syrup in place of sugar cane has cut this cost further in the past decade. But these recent changes only add to the low cost image Coke has sought to uphold. For approximately 75 years, a Coke sold for only a nickel, making the beverage affordable to even the poorest of nations.<sup>17</sup> Even given the economic downturn today, the drink is still relatively inexpensive, and qualifies as an inferior good whose consumption increases as income level decreases. Although Coke is by no means a necessity and even considered a luxury product symbolizing Western culture, its low price and low cost of production positions the beverage to remain well within the demand range of all consumers, and in other words, is recession proof.

### Domestic Agricultural Policies

Soft drinks rely on one of two crops for sweeteners: sugar cane or corn turned into high fructose corn syrup. The differences between the two sources are explained well by the American diet, which favors high-fructose corn syrup (HFCS). HFCS accounts for nearly all added caloric sweeteners used by manufacturers of soft drinks.<sup>18</sup>

At equal calorie measures, high-fructose corn syrup is both sweeter and less expensive than sugar cane and other artificial sweeteners.<sup>19</sup> According to Ephraim Leibtag, Coca-Cola made the switch from sugar to corn syrup in 1985, followed by most other beverage makers due to cost-savings implications. The consumer cost of corn has remained 25-30% below the cost of production over the

14 Pendergrast 88.

15 Ibid.

16 Pendergrast 462.

17 Ibid.

18 Park Y, Yetley E. "Intakes and food sources of fructose in the United States." *American Journal Clinical Nutrition* 1993;58 (suppl):737S-47S.

19 Duffey, Kiyah J., and Barry M. Popkin. "High-fructose Corn Syrup: Is This What's for Dinner?" *The American Journal of Clinical Nutrition* 88.6 (2008): 1722S-32S. Dec. 2008. Web. 11 Mar. 2011.

last 10 years because of extensive government subsidies.<sup>20</sup> The savings provided by the use of HFCS are transferred to the soft drink companies, keeping costs low and freeing up money for advertising. As a result, the soft drink industry has become characterized by the ability to opt for larger bottles and a greater frequency of advertisements.

Introduced in the 1980s, genetically modified foods (GM foods) are a point of contention in agriculture today because they are unnatural and the long-term effects of consumption are uncertain. Typically, GM foods are crops such as corn or soybeans. Thus, it begs the question of whether Coca-Cola's use of GM corn in the production of Coke is appropriate. The benefit to GM corn is its ability to target a specific inhibiting trait of a crop and modify it to be advantageous. Lower pesticide usage, higher yields, and higher profitability to farmers have made GM crops a hot topic in agriculture today for both consumers and corporations alike. Although significant controversy exists over whether any of these benefits are true, GM crops are allowed in the U.S., which has especially seen a widespread adoption of GM corn.<sup>21</sup> According to Ronnie Cummins and Ben Lilliston, the processing of elements, such as corn syrup, serves as a cover for food companies in whether or not they use genetically modified crops in producing their goods. Coca-Cola, for example, "tells consumers that it does not use ingredients that are genetically modified."<sup>22</sup> However, when asked further, Coke argues that genetically engineered ingredients potentially used in its products are destroyed in the processing. The authors state that "Coca Cola will not guarantee that the corn used in its corn syrup is genetically engineered free."<sup>23</sup> While their evidence makes it clear that Coca-Cola does indeed use GM corn in their soft drinks, I was unable to find any other sources confirming this and thus treat this evidence with caution.

Many scientists have explored the relationship between HFCS and obesity at length. As explained above, HFCS consumption in the United States has increased greatly due to greater availability and affordability of the substance. Between 1970 and 1990, the American public's ingestion of HFCS grew by over 1000%, exceeding changes to the intake of any other food group according to

20 Duffey and Popkin 1722S.

21 "ERS/USDA Data - Adoption of Genetically Engineered Crops in the U.S." USDA Economic Research Service. 1 July 2010. Web. 14 Mar. 2011.

22 Cummins, Ronnie, and Ben Lilliston. *Genetically Engineered Food: a Self-defense Guide for Consumers*. New York: Marlowe, 2004. 111.

23 Ibid.

the U.S. Department of Agriculture's food consumption tables.<sup>24</sup> Conservative estimates illustrate a daily consumption of 132 kcal from HFCS by all Americans aged two and up.<sup>25</sup> Studies show that this increase in HFCS occurred just before the epidemic of obesity came to the attention of nutritionists. While we do not know for certain if the rise in HFCS usage solely triggered this subsequent rise in obesity occurring in the U.S., biological factors suggest that calorically sweetened beverages are associated with over consumption when the sweetener is in liquid form.<sup>26</sup> Calories and sugars that are normally meant to come from meals are now coming from beverages as well.

Preliminary studies have shown that fructose, when consumed in excess, can lead to potentially damaging biological effects. Upon entering the body, fructose does not stimulate the release of insulin to the same degree as glucose.<sup>27</sup> These differing metabolic effects separating glucose and fructose change the amount of sugars that are burned. When large amounts of fructose are digested, an event which occurs when drinking a Coke, it provides the inputs for increased lipogenesis (fat production).<sup>28</sup> A further study conducted by Harvard University found for each additional serving of a soft drink daily in children, there was a 60% increased risk for obesity after controlling for demographics, lifestyle, and diet.<sup>29</sup> This information, coupled with the knowledge of increased HFCS production and consumption in the diets of Americans, shows a strong link to obesity. Although it has been scientifically determined that HFCS consumption correlates with increased levels of obesity, other effects that this ingredient may have on the body remain widely unknown. While benefits of HFCS include its reduced cost and added sweetness over sugar, its excessive presence in soft drinks coupled with its potentially harmful side effects are troubling. If HFCS does indeed cause negative side effects, Americans may be endangered by soft drink companies' readiness to utilize this cheap, sweet solution.

Common knowledge tells us that Coca-Cola is not a health drink, but is America's problem with obesity so cut and dry as to blame it on an overconsumption of soft drinks? More importantly, if one is to believe that soft drinks are one of the main causes to obesity in America today, then how

24 Bray, George A., Samara Joy Nielsen, and Barry M. Popkin. "Consumption of High-fructose Corn Syrup in Beverages May Play a Role in the Epidemic of Obesity." *The American Journal of Clinical Nutrition* 79.4 (2004): 537-43. Apr. 2004. Web. 13 Mar. 2011.

25 Ibid.

26 Bray, Nielsen and Popkin 540.

27 Bray, Nielsen and Popkin 538.

28 Ibid.

29 Brownell, Kelly D., and Katherine Horgen. *Food Fight: The Inside Story of the Food Industry, America's Obesity Crisis, and What We Can Do About It*. Chicago: Contemporary, 2004. 169.

have they reached this point? Is it the addictive nature, brand loyalty or just Coke's good business practices? The answer to that question lies in the eye of the beholder, as there is no single response. But as companies like Coca-Cola continue to excel in the marketplace due to whatever reason one attributes, obesity will continue to come up in conversation right along with it.

### Coca-Cola in Schools

With reports that daily per capita intake of calories from HFCS and added sugar have followed a general upward trend since the mid-1960s, it only makes sense that consumption habits would spread to children and thus into schools. Studies show that children today are consuming more and more soft drinks. Recent numbers suggest that as a percentage of total energy, soda represents nearly 8.5% of per capita energy intake and 15.9% of energy from carbohydrates among Americans ages two and above in 2004.<sup>30</sup> Coca-Cola, as a major player in the soft drink industry, is a significant contributor to the representation of soft drinks in schools. Coca-Cola vending machines are readily available in school cafeterias, at sporting events, and in teacher lounges. Despite being unhealthy, sugary soft drinks such as Coke are seen as treats that are often used as rewards or even motivators for students. Due to their presence within schools, it is relatively easy for a teacher to offer a soft drink in exchange for extra effort in the classroom. The real question, though, does not reside with whether Coke is an appropriate reward for hard work, but instead, whether it should be available in schools in the first place.

The presence of soft drink companies in schools is all about the business, offering a win-win situation to both school administrators and soft drink companies alike. Schools, which are strapped for funds in this era of budget cutbacks and increasing costs, benefit from the funds they receive from soft drink companies to sell only their products in their district. For its part of the deal, Coca-Cola gains access to a desired and hard to reach market with the opportunity to establish brand loyalties at an early age. As Brownell and Horgen describe the relationship, "children expect their favorite drinks, communities count on the money when funding schools, vending machines become part of the school landscape, and partnerships between soft drink companies and schools are cemented into the country's education milieu."<sup>31</sup>

Consequently, the dependence on this relationship is something neither party wishes to

30 Duffey and Popkin 1728S.

31 Brownell and Horgen 162.

break. The contracts school districts and companies create, known as pouring rights contracts, involve large lump-sum payments to school districts along with additional payments over a 5 to 10 year period giving the soft drink company exclusive selling rights.<sup>32</sup> According to Marion Nestle, these funds are often used for sports facilities, scoreboards, furniture, sound systems, computers and even scholarships. The most troubling aspect with pouring rights contracts concerns that it often links the returns to both companies and schools with soda consumption. Thus, schools are forced into the position of pushing soft drinks onto its students and faculty in order to maximize the money it receives. This brings to mind the likely scenario of when a school district is forced to use these dollars to fund its daily operations and not just for unnecessary luxuries.

Legislative attempts have been made in Congress and state legislatures to curb the sale of soft drinks at schools, but have varied in success. To many, regulations on the sale of soft drinks in schools illustrate how commercial interests dominate congressional decisions. The first appearance of legislation concerning soft drinks sold in schools occurred in amendments to the 1946 National School Lunch Act, which were later titled the Child Nutrition Act of 1966; the amendments permitted the sales of soft drinks in schools.<sup>33</sup> Over the course of the next thirty years, Congress, school districts, and soft drink companies have engaged in a series of back and forth legislative battles that have proved that the income derived from sales of soft drinks is of considerable value to companies such as Coca-Cola, as well as school districts.

In 1970, "time and place" restrictions were passed by Congress banning the sales of sodas and other vending items in cafeterias during mealtimes. However, after noting the difference in their bottom lines, both school officials and soft drink companies worked to lobby Congress in the following years to lift these restrictions, as long as the proceeds benefited school food service operations, schools or school groups.<sup>34</sup> USDA regulatory authority on competitive foods (sales of soft drinks) was also a common scapegoat involved in regulatory legislation. Removed in 1972, after being passed down to the individual school districts, these regulations were proved to be beneath the desires of soft drink companies. In other words, according to critics, "profit had triumphed over nutrition."<sup>35</sup> After years of debate, lawsuits, and lobbying, in 1985, Congress settled on the current policy: competitive foods are prohibited from being sold during lunch periods in cafeterias, but are permitted at all other

32 Nestle 202.

33 Nestle 207.

34 Nestle 208.

35 Nestle 209.

times and places with no additional restrictions on spreading out revenues.<sup>36</sup> The legislation also called for state and local school authorities to impose more restrictive rules, which many argue are largely ignored or nonexistent. Evidence suggesting the frequency of rule breaking is ubiquitous. One such study by the General Accounting Office reports that 20% of schools in the United States give students access to soft drinks and various snacks in vending machines during lunch periods. Furthermore, the placement of vending machines in cafeterias is striking; with 25% of all schools reporting that they have vending machines in or next to their cafeterias and allude to the notion that children are still getting their hands on soft drinks at schools despite the presence of restrictive legislation.<sup>37</sup> Pouring rights contracts, although supporting schools through much needed funding, seem to cause as much, if not more, harm. To many children, soft drinks such as Coke offer the allure of a meal. It is unknown whether this is due to successful advertising or just a lack of nutritional education on the part of children, but today more than 75% of children have at least one soft drink each day.<sup>38</sup> Liquid calories that these soft drinks provide make it hard on the body to compensate for the actual calories that children need.

Locally, the existence of these contracts plays a vital role in the funding of public school districts. I conducted research to gather information on the terms of these pouring rights contracts. The table below supports the view that children are being exposed to soft drinks out of necessity to the schools because schools benefit from the funds companies such as Coke provide for selling the product.<sup>39</sup>

School District	Contract Details
Columbus Public	Currently in a 3rd year of contract with Coca-Cola (10 year contract). Machines sell soft drinks only in teacher lounges and break rooms. Vending machines accessible to students sell only water and sports drinks. Guaranteed \$75,000 commission from bottler each year. They have received more than that amount each of the past 2 years.

<sup>36</sup> Ibid.

<sup>37</sup> Nestle 212.

<sup>38</sup> Brownell and Horgen 167.

<sup>39</sup> Interviews with various business department heads.

Upper Arlington	<ul style="list-style-type: none"> <li>- District contract is with Pepsi for 10 years commencing on October 2005. Exclusive pouring rights contract that requires UA to serve Pepsi products in vending machines, food service, and concession stands.</li> <li>- District receives a commission from vending sales along with an annual payment (would not disclose amount).</li> <li>- Pepsi receives full-page athletic program advertisement free of charge as well as scoreboard advertising on throughout the district. District receives sideline equipment like coolers, cups, and squeeze bottles each year, as well as a set amount of cases of Pepsi products.</li> </ul>
Grove City	Currently in 15th year under contract with Coca-Cola. District receives a commission on cases sold, no annual payment. Used to receive scoreboards and contributions to educational foundation but apparently that money has since dried up. No amounts disclosed.
Westerville	Currently in 5th year under contract with Pepsi. District receives an annual payment of \$57,000 in addition to a set amount of money per case sold. District also receives coolers, squeeze bottles, 300 free cases of product and various athletic materials.

Pouring rights contracts are locally present and provide significant benefits to area school districts. As the tax base for public schools has lessened in recent years, these payments from soft drink companies have become increasingly important. Even providing items such as coolers and cups saves dollars that districts quickly use in other areas. In addition to the stable base of sales, soft drink companies also receive an added benefit in the form of advertising. Advertising is crucial for a company such as Coca-Cola to add to its customer base. Also of note is the unwillingness of some of the districts to provide the amount of money they received in the contracts. Ambiguity in this matter adds to the controversial nature of contracts and is evident at the collegiate level as well.

Similar to K-12 schools, colleges often face budget gaps and look to pouring rights contracts to provide a stable source of funding. Even The Ohio State University (OSU), the top university in Ohio in terms of endowment, has a use for contractual agreements providing funding from bever-

age rights. The Coke Contract, as it came to be known on campus, became a source of contention in 2010, when reporters tried to investigate the specifics of the contract. According to an article from *The Lantern*, information provided by OSU on its current and former contracts with Coca-Cola was redacted and defended by the university as a trade secret even though similar contracts at other public institutions were not.<sup>40</sup> Under Ohio law, the phrase “trade secret” is defined as information deriving independent economic value in being unknown to others who could receive economic value from its disclosure. Upon obtaining the full contract with Coca-Cola from OSU, it was found to be worth \$33.95 million over the course of its 10-year duration with revenues coming from both royalty fees and vending commissions in the form of a percentage of money earned from Coke products sold on campus (similar to K-12 schools).<sup>41</sup> In return, Coke receives the exclusive right to sell on OSU’s campus. Although the university released the total worth of the contract, actual amounts received from vending commission were not released, again classified as trade secrets. In addition, in 2009, it was reported that OSU did not receive all of the funding it expected due to an inability to meet its expected amount for vending commissions.<sup>42</sup> Funds paid to the university as per the contract (the \$34 million) are distributed among various groups and university projects, including construction of the Ohio Union, Student Life and Sustainability programs, and payouts to individual departments such as Athletics, the Ohio State University Medical Center, the Recreation and Physical Activities Center (RPAC) and various Housing Food Service Event Centers.<sup>43</sup>

Whether or not one sees the presence of soft drinks in schools and on college campuses as a blessing or a detriment, one cannot deny its great impact on the American educational system today. This situation is a perfect example of commercialism guiding the decisions of factors responsible for the development of children, which many regard as a civic duty. Although the argument can be made that since ultimately children are exposed to advertisements at home, how could the same exposure at school make any difference? Funding issues have forced schools to look for monies other than tax revenues to keep operations running. Schools are forced to become salesmen, encouraging the consumption of soft drinks.

## Advertising

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40 Moore, Jack. “Coke Contract Shrouded in Secrecy.” *The Lantern*. 31 May 2010. Web. 14 Mar. 2011.

41 Ibid.

42 Moore, Jack. “How Is Coke Money Spent?” *The Lantern*. 1 June 2010. Web. 14 Mar. 2011.

43 Ibid.

Throughout the history of Coca-Cola, advertising has dictated the progression of the company from the Atlanta medicinal solution to a worldwide icon. Coke began as a nerve tonic, attempting to capitalize on the worries of the day and to alleviate indigestion.<sup>44</sup> These types of backyard medicines, due to their unique nature, were both highly profitable, but not essential to the greater public. Thus, in order to sell one’s product, advertising was crucial.

At the time, Coke was questionably established as both a patent medicine and a bracing soft drink, but advertising decisions by Coke executives promoted Coke from that point on solely as a beverage, unifying the product to serve one purpose. Slogans such as “Drink Coca-Cola. Delicious and Refreshing” flooded the market along with signs, posters, calendars, thermometers, clocks, pencils and even glass plates for fountains, all adorned with the same message.<sup>45</sup> The switch from health concoction to socially acceptable drink, while innovative at the time, marked a crucial period in the company’s history, as within a matter of years backyard medicine use would decline sharply at the turn of the 20th century.<sup>46</sup> Flash forward to today when Coca-Cola functions as a major advertising agent in the U.S. food industry. The company spends over \$4 billion a year to market its product worldwide, helping Coke to reach icon status among American brands.<sup>47</sup>

## Conclusion

Of all the factors to consider when studying the political history of Coca-Cola, its unlikely rise to prominence and its success as a company speaks volumes about the nature of the brand. Coke did not make it to the top without its fair share of bumps, as documented in this paper. In the end, Coca-Cola, just like America, blossomed in the era of industrial prosperity into a symbol of Western capitalism: rugged yet innovative. Living through and dealing with the same political turmoil our nation faced, Coke has matured and even come close to failing at times. But just as I think when reaching for one, Coke is intertwined in my history. I believe many Americans feel the same.

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44 Pendergrast 10.

45 Pendergrast 63.

46 Pendergrast 64.

47 Pendergrast 463.

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# Bottled Promises: Regulating Bottled Water Consumption

Maegan Miller

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*Bottled water consumption in the United States has risen drastically over the past thirty years. The growth of the bottled water industry is paradoxical as it is driven by consumers seeking a source of water that is safer and more pure than public water services. Yet, there is no substantial evidence to suggest that bottled water is less likely to contain harmful substances than public water supplies, and furthermore, nearly half of bottled water is drawn directly from municipal water sources. As such, I argue that the economic success of the bottled water industry is possible due to an asymmetry of available information resulting from the under-regulation and underfunding of government regulatory agencies, specifically the Food & Drug Administration (FDA) and Environmental Protection Agency (EPA).*

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The bottled water industry has faced extensive opposition. Mayors in cities such as San Francisco, Salt Lake City, Toronto, Ann Arbor, and Minneapolis have banned the use of taxpayer dollars to purchase bottled water.<sup>1</sup> Miami and New York City have launched tap water promotional campaigns.<sup>2</sup> The United Church of Canada and Coalition of American Nuns have proposed a total North American boycott,<sup>3</sup> and activist organizations such as the Earth Liberation Front have attempted to burn down Nestle water bottling facilities in Michigan.<sup>4</sup> Each of these campaigns raises issues surrounding the ethical consumption of bottled water in the United States.

Today, the United States is the world's leading consumer of single-serving bottled water with an average annual consumption of 26 billion liters.<sup>5</sup> Consumers now drink more bottled water annually than any beverage except carbonated soft drinks,<sup>6</sup> and the industry generated \$60 billion

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1 Elizabeth Royte, *Bottlemania: How Water Went on Sale and Why We Bought It*, (Bloomsbury USA, 2008).

2 "Only Tap Water Delivers," American Water Works Association. Accessed Nov. 30, 2011.

3 Martin Mittelstaedt, "The Religious War on Bottled Water: Church Groups Decry Profit-Fueled Craze."

4 "The Fight for Water," Earth First! Journal, Accessed Nov. 30, 2011.

5 Emily Arnold, "Bottled Water: Pouring Resources Down the Drain," Earth Policy Institute 2006.

6 "Perception, Status, and Bottled Water," Physorg.com, April 11, 2007.

of revenue in 2006.<sup>7</sup> Yet 89% of tap water meets or exceeds federal health and safety regulations, regularly wins in blind taste tests against name-brand bottled waters, and costs 240-10,000 times less.<sup>8</sup> Furthermore, 44 % of bottled water is tap water, pumped directly from municipal facilities.<sup>9</sup> Nevertheless, concern with tap water safety and quality is the leading motivation behind bottled water consumption.<sup>10</sup>

The bottled water industry (BWI) is able to capitalize on regulatory discrepancies between tap water, overseen by the Environmental Protection Agency (EPA), and bottled water, overseen by the Food and Drug Administration (FDA). Institutional discontinuities in areas such as quantity of pollutants tested, treatment processes, and mandated reporting of contaminated drinking water, suggest that bottled water is safer and healthier than tap water, leaving consumers misinformed and increasingly susceptible to deceptive marketing campaigns. As such, it is both plausible and probable that an individual, in attempt to avoid the dangers associated with public drinking facilities, is unknowingly exposed to the same contaminants.

Water bottlers are largely criticized for misleading marketing strategies, claims of purity and superior quality over tap water, and environmentally harmful practices. In addition, flaws within the bottled water industry raise broader concerns of governmental regulatory inadequacies, culpability for poor drinking water quality, and methods of remedying water sanitation deficiencies. Moreover, the expansion of the bottled water industry in the United States is representative of global trends toward water privatization, which ultimately restricts access to individuals and communities who cannot afford to purchase water. I argue that the increase in bottled water consumption is a response to unstandard and inadequate regulation by government agencies (namely the EPA and FDA) as a result of rollback neoliberal policies beginning in the early 1980s, and that through the restoration of the enforcement capacity of these organizations, consumer safety will increase, and environmentally destructive practices in the name of providing “clean” drinking water will diminish.

## History

Bottled water in America predates the country's independence, with records of water bot-

<sup>7</sup> “For Want of a Drink: A Special Report on Water,” *The Economist*. May 22, 2010.

<sup>8</sup> Royte, 2008.

<sup>9</sup> Ibid.

<sup>10</sup> Catherine Ferrier, “Bottled Water: Understanding a Social Phenomenon.” World Wildlife Foundation, 2001.

tled and sold from Jackson's Spa in Boston in 1767, where mineral spa water was reportedly used to combat illnesses such as malaria.<sup>11</sup> The bottled water industry boomed at the beginning of the nineteenth century when new glass technologies made the cost of a bottle affordable and practical for mass production and consumption, and by 1856, over 7 million bottles were produced annually.<sup>12</sup>

The bottled water industry (BWI) further expanded in the 1970s, when the French mineral water company Perrier began its marketing campaign in the United States. Profits from Perrier's natural mineral water increased from \$20 million in 1978 to \$60 million in 1979 following its sponsorship of the New York marathon, and continued to increase until its collapse in 1990.<sup>13</sup> Perrier withdrew 280 million bottles due to benzene concentration levels 2-3x EPA standards discovered at a North Carolina plant and lost \$133 million as the result of the world recall.<sup>14</sup> Following this incident, Perrier, who was at the time the world's largest distributor of mineral water, was purchased by today's largest bottled water distributor, Nestle.<sup>15</sup> Despite numerous documented cases of contamination, the bottled water industry continued to grow substantially (see figure 1). However, the increasing presence of the bottled water industry and consumption of bottled water beginning in 1978 cannot be divorced from the ascendancy of “roll-back” neoliberal policies of state austerity, deregulation, and marketization beginning in the early 1970s.<sup>16</sup>

## Marketing and Consumption

Today's increasingly fast-paced lifestyle makes convenience a significant factor in any decision-making process.<sup>17</sup> While millions of Americans seem to take into consideration the convenience and transportability of light-weight bottled water, one can argue that refilling a reusable water each day with water from a faucet or drinking fountain is comparably convenient in terms of weight and time consumption. However, in the United States, 35% of people who drink bottled

<sup>11</sup> Royte.

<sup>12</sup> Hall, 2009

<sup>13</sup> Ibid.

<sup>14</sup> George James, “Perrier Recalls its Water in US After Benzene is Found in Bottles,” *The New York Times*, Feb. 10, 1990.

<sup>15</sup> “Nestle Becomes Perrier Owners,” *The New York Times*, April 7, 1992.

<sup>16</sup> Jamie Peck & Adam Tickell, “Neoliberalizing Space,” *Antipode* 34, no. 3 (2002): 380-404.

<sup>17</sup> Marian Nestle, *Food Politics: How the Food Industry Influences Nutrition and Health* (Berkeley & Los Angeles, 2007).

water are concerned about tap water quality,<sup>18</sup> which suggests that the perceived health benefits of opting for bottled water rather than tap water weigh more heavily for consumers than the element of convenience. People often mistrust their tap water because of previous bacterial contamination and perceive bottled water as being safer than tap water.<sup>19</sup>

The image of bottled water as pure and more safe than tap water is the product of extensive marketing campaigns. In 2005, the industry spent \$158 million on marketing campaigns in the United States.<sup>20</sup> Advertisements promote youth, health, beauty, romance, status, image, religion, and sex,<sup>21</sup> and are often legitimized by celebrity endorsements and supplemented with images of mountains and natural springs, promising purity.<sup>22</sup> A evaluation of the International Bottled Water Association, an organization comprised of the sixty-two largest water bottling agencies, by the Natural Resource Defense Council (NRDC) found that fifty brands employed descriptive terminology including “purest,” “pristine,” and “for health conscious” to suggest that their product is extraordinarily pure and uncontaminated.<sup>23</sup> Moreover, when there are instances of drinking water contamination, the EPA recommends that consumers drink bottled water, which again solidifies the case for its superior quality.<sup>24</sup>

There is often little validity to companies’ claims of purity and little corporate accountability in terms of truthful labeling. The National Resource Defense Council (NRDC) cites a particularly troubling case:

“Massachusetts Department of Public Health files reveal that the Ann & Hope commercial well in Millis, Massachusetts supplied sever bottlers, including Cumberland Farms, West Lynn Creamery, Garelick Farms, and Spring Hill Dairy with “spring water” sold under many brand names. According to state officials and records, this well is locally literally in a parking lot at an industrial warehouse facility and near a state-designated hazardous waste site.”<sup>25</sup>

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18 Ferrier, 2001.

19 Robert Innes & Dennis Cory, “The Economics of Safe Drinking Water,” *Land Economics* 77, no. 1 (Feb. 2001).

20 Michiko Kakutani, “Distilled from Water, Designer or Tap: High Anxiety,” *The New York Times*, July 18, 2008.

21 Royte, 2008.

22 Kakutani, 2008.

23 “Bottled Water: Pure Drink or Pure Hype,” *Natural Resource Defense Council*, March, 1999, Ch. 2.

24 Innes & Cory, 2001.

25 “Bottled Water: Pure Drink or Pure Hype,” Ch. 2.

The FDA response to the conditions of this bottling site stated that:

“This label is acceptable so long as the water does come to the surface sometimes...as long as there is no claim to the effect that the location pictured in the vignette is the actual spring, we would not consider the label vignette to be in violation of our requirements.”<sup>26</sup>

The Millis, Massachusetts case is not the only example of bottled water companies extracting water from sources that are less “pure” than labels suggest. As such, an organization called Corporate Accountability International (CAI) has been pressuring bottled water sellers to curb what it calls misleading marketing practices. The group criticized Pepsi over its blue Aquafina label with a mountain logo as perpetuating the misconception that the water comes from spring sources. In response, Pepsi voluntarily agreed to print “PWS” on labels as a means of informing consumers that the water is drawn from “public water sources.”<sup>27</sup> In 2003, Nestle’s Poland Springs faced a similar situation but was not forced to make any label clarifications. Instead, the company voluntarily opted to step up quality control and pay \$10 million over 5 years in discounts to consumers and contributions to charities.<sup>28</sup> Coca Cola’s Dasani and Pepsi’s Aquafina also draw water from municipal sources such as city pipes in places such as Detroit and Jacksonville.<sup>29</sup>

Based on these examples, it is apparent that bottled water consumption is based on the perception of safety and purity, constructed through the use of misleading advertisements, rather than based on factual evidence that confirms the superiority of bottled water sources compared to tap water. Although the deception of bottled water labels and advertising is well-documented, very rarely are companies forced to change their practices. As such, customers consume bottled water unaware of the true source of their beverage or to what safety standards they are held.

### Health & Regulation

Numerous non-governmental organizations have conducted independent water quality studies, and have concluded that consuming bottled water instead of tap water has no guaranteed

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26 *Ibid*, Ch. 5.

27 “Aquafina Labels to Show Source: Tap Water,” *CBS Money Watch*, Feb. 11, 2009.

28 Peter Gleick, *Bottled & Sold: The Story Behind Our Obsession with Bottled Water* (Washington D.C., 2010).

29 Phil Lempert, “Is Your Bottled Water Coming from a Faucet,” *MSNBC’s Today Food*, July 24, 2004.

health benefits. For example, a 2000 study conducted by Case Western Reserve University tested 57 samples of bottled water against Cleveland tap and found that more than a dozen bottled water samples had at least ten times the bacterial levels found in the cities water.<sup>30</sup> A 2005 study conducted by “20/20” and The University of New Hampshire found no difference in microbial composition between New York City tap water and the five brands tested against it.<sup>31</sup>

Why, then, do consumers continue to voice a preference bottled water over tap water? In 2008, the Executive Director of Food & Water Watch testified before the Senate Committee on Environment and Public Works that “consumers are being misled by water bottlers and that the product lacks environmental and safety regulation.”<sup>32</sup> In United States, a 1997 survey showed that 47% of consumers want additional information about their water, yet 23% do not know who to contact to obtain that information.<sup>33</sup> The lack of consumer information is the result of differing regulatory standards for bottled water and tap water.

In the United States, bottled water and tap water are regulated by two different agencies. The FDA regulates bottled water and the Environmental Protection Agency (EPA) regulates tap water, also referred to as municipal water or public drinking water. FDA treatment and reporting requirements are in many cases lower than their EPA counterpart under the Safe Drinking Water Act (SDWA), which regulates public water systems.<sup>34</sup> For example, the FDA does not have the specific statutory authority to require bottlers to use certified laboratories for water quality tests or to report test results, even if violations of the standards are found.<sup>35</sup> Additionally, bottled water is required to be tested less frequently than city tap water for bacteria and chemical contaminants, nor is it required to ban fecal coliform, contrary to municipal tap water. In accordance with SDWA, public systems must annually provide consumer confidence reports that summarize local drinking water quality information about the water’s sources, detected contaminants, and compliance with national primary drinking water regulations as well as information on the potential health effects of certain drinking water contaminants.<sup>36</sup>

30 JA Lalumandier & LW Ayers, “Flouride & Bacterial Content of Bottled Water vs. Tap Water,” Arch Fam Med 9, No. 3, March 2000.

31 John Stossel, “Is Bottled Water Better than Tap,” ABC 20/20, May 6, 2005.

32 Shannyn Snyder, “Resource Demands of Bottled Water,” The Water Project, Accessed Nov. 30, 2011.

33 Ferrier, 2001.

34 Sara Goodman, “Fewer Regulations on Bottled Water than Tap, GAO Says,” The New York Times, July 9, 2009.

35 Arnold, 2006.

36 “Bottled Water: Pure Drink or Pure Hype,” Ch. 1.

The FDA’s rules completely exempt waters that are packaged and sold within the same state, which account for between 60 and 70% of all bottled water sold in the United States.<sup>37</sup> The FDA also excludes carbonated water and seltzer, and fewer than half of the states require carbonated waters to meet their own bottled water standards.<sup>38</sup> Most striking of all, the FDA does not require bottled water companies to release reports summarizing information about the water’s sources, or detected contaminants and potential health effects.<sup>39</sup> In a survey of 188 brands of bottled water released, the nonprofit Environmental Working Group found only two brands that provided such information about its product to consumers.<sup>40</sup> The lack of reporting by the bottled water industry leads consumers to believe that there are no cases of contamination to report. Given this asymmetry of information, individuals are unable to make “rational” decisions about bottled versus public water consumption.

The flaws in the American drinking water system are largely attributed to decreased funding and regulatory power. According to FDA Science Board, “American lives are at risk because the FDA lacks the funding to keep up with scientific advances... and suffers from a plethora of inadequacies including an appallingly low rate of food inspections and a lack of scientists who understand new technologies.”<sup>41</sup> The agency, with a budget of more than \$2 billion, regulates the sale of more than \$1 trillion of products annually, including food, drugs, cosmetics and medical devices.<sup>42</sup> Between 2001-2006, allocation of federal funds to the EPA for drinking and waste-water management treatment declined from \$1.3 billion to less than 900 million,<sup>43</sup> and the Government Accountability Office (GAO) estimates that full compliance with SDWA costs \$1.4 billion annually.<sup>44</sup> As such, while the EPA may have higher standards for reporting instances of contamination, both agencies seriously lack the financial resources to provide sufficient regulatory oversight.

## Environmental Impact

37 Ibid, Executive Summary.

38 Ibid, Ch. 1.

39 “Bottled Water: FDA Safety and Consumer Protections are Often Less Stringent than Comparable EPA Protections for Tap Water (GAO-09-861T),” Government Accountability Office, 2009.

40 Goodman, 2009.

41 Justin Blum, “Inadequacies at U.S. FDA Risk Lives, Report Says,” Bloomberg, Nov. 29, 2007.

42 Ibid.

43 Royte, 2008.

44 Innes, 2001.

While the health and safety benefits of bottled water are contentious, the environmental impact at all stages of the bottling process are undeniable. According to Robert Glennon, author of *Water Follies: Groundwater Pumping and the Fate of America's Fresh Waters*, "The United States is heading toward a water scarcity crisis: our current water use practices are unsustainable, and environmental factors threaten a water supply heavily burdened by increased demand."<sup>45</sup> The bottled water extraction, production, and transportation have lowered water tables, compromised biodiversity, consumed amounts of energy, and increased the amount of pollution within the United States.<sup>46</sup>

The global production and use of bottled water in 2007 required the equivalent of between 100 and 160 million barrels of oil not to mention the litany of environmental consequences of obtaining and using fossil fuels. Every bottle's production, transportation, and disposal on average requires the amount of oil needed to fill that bottle a quarter of the way.<sup>47</sup> Moreover, plants that use reverse osmosis lose three to nine gallons per gallon that ends up on the shelf.<sup>48</sup> While roughly 94% of the bottled water sold in the United States is produced domestically, Americans also import water shipped from as far as 6,000 kilometers from Fiji to satisfy the demand for chic and exotic bottled water.<sup>49</sup>

The disposal of polyethylene terephthalate (PET) bottles takes up to 1,000 years to biodegrade, and 40% of plastic collected from recycling ends up in Chinese landfills.<sup>50</sup> According to the Container Recycling Institute, 86 percent of plastic water bottles used in United States become garbage or litter, and in 2007, the National Association for PET Container resources reported that 5.6 billion pounds of PET bottles and jars were available for recycling, but only 1.4 billion pounds were actually recycled.<sup>51</sup> Incinerating used bottles produces toxic byproducts such as chlorine gas and ash containing heavy metals.<sup>52</sup>

In the last decade, public values have changed markedly in favor of protecting natural

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45 Royte, 2008.

46 Gleick, 2010.

47 Ibid.

48 Royte, 2008.

49 Arnold, 2006.

50 Royte, 2008.

51 Gleick, 2010.

52 Ibid.

ecosystems.<sup>53</sup> As a result of increased environmental consciousness, a number of alternative techniques in consumption, production, and disposal have emerged. Klean Kanteen, a company that produces stainless steel reusable water bottles, saw revenues of \$18 million in 2008, up from \$2.5 million in 2007 and less than \$1 million in 2006.<sup>54</sup> Companies such as Poland Springs have begun constructing more environmentally-friendly bottles. According to the company, the Eco-Shape® is made with 30% less plastic, features a label that is 1/3 smaller than the average competitor's, is more flexible and therefore easier to crush for recycling, and is easier to carry.<sup>55</sup> In 2009, Coca Cola released its PlantBottle™ made from a blend of petroleum-based products and up to 30% percent plant based products and reduces carbon emissions from bottle production by up to 25%.<sup>56</sup> Increasing environmental consciousness has led to some gains in eco-friendly packaging, yet little attention has been given to broader issues such as shipping and transportation.

### Ethical Dimensions

Given that human survival depends on the availability and accessibility of a safe drinking water supply, many organizations argue that water should not be commodified on the market. For example, the National Council of Churches claims that the moral call is not for the privatization of water, but for water to be free for all.<sup>57</sup> While consumers pay a monthly fee for tap water treatment, it is an average of 500 times less than regularly purchasing bottled water.<sup>58</sup>

As the growing consumption of bottled water increases, future incentives to maintain and improve public water systems will decrease.<sup>59</sup> As such, individuals who cannot afford to regularly purchase bottled water are exposed to even more deleterious drinking water. According to a University of Arkansas study, middle to upper-class individuals under the age of have been the most receptive toward marketing campaigns as 20% of respondents under 40 bought bottled water daily and half of those who earned greater than \$50,000 per year purchased bottled water two or three times a

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53 Sandra Postel, *Pillars of Sand* (New York, 1999).

54 Coeli Carr, "Awash in Sales," *Time*, Jan. 31, 2008.

55 "Eco-Shape Bottles," Poland Springs, Accessed Dec. 1, 2011.

56 "The Coca-Cola Company Introduces Innovative Bottle Made from Renewable, Recyclable, Plant-Based Plastic," *The Coca-Cola Company*, May 14, 2009.

57 Gleick, 2010.

58 John Stossel, 2005.

59 Gleick, 2010.

month.<sup>60</sup>

## Discussion

The purpose of this article is not to suggest the public water systems under the regulation of the EPA are wholly adequate and void of regulatory flaws. Rather, the goal is to demonstrate how and why public water systems have come to be viewed as inferior to bottled water. A second objective is to present the bottled water industry as an example of the market failing to respond to the demands of the people. By this, I demonstrate that despite safety concerns serving as the primary motivator for bottled water consumption, the industry largely failed to supply a safer, cleaner product. In light of these contentions, I propose a series of regulatory alterations aimed at increasing consumer education and standardizing testing and reporting for both public and bottled water systems.

Numerous alterations should be made to ensure the safety of consumers. First, the EPA and FDA must adopt uniformed reporting, testing, and treatment standards for drinking water. Consumers should be knowledgeable about the origins of their drinking water. The basis for purchasing bottled water should be based on tastes, status, or other aforementioned marketing strategies that are not centered around the perceived purity of bottled water and, by default, impurity of tap water. The adopted protocol should, at the minimum, hold bottled water to the same standard as tap water. Ideally, the uniformed framework would mandate continued research on exposure risks of new chemicals.

The flaws in the American drinking water system are largely attributed to decreased funding and regulatory power. According to FDA Science Board, "American lives are at risk because the FDA lacks the funding to keep up with scientific advances... and suffers from a plethora of inadequacies including an appallingly low rate of food inspections and a lack of scientists who understand new technologies."<sup>61</sup> The agency, with a budget of more than \$2 billion, regulates the sale of more than \$1 trillion of products annually, including food, drugs, cosmetics and medical devices.<sup>62</sup> Between 2001-2006, allocation of federal funds to the EPA for drinking and wastewater management treatment declined from 1.3 billion to less than 900 million,<sup>63</sup> and the Government Accountability Office

<sup>60</sup> "Perception, Status, and Bottled Water."

<sup>61</sup> Justin Blum, "Inadequacies at U.S. FDA Risk Lives, Report Says," Bloomberg, Nov. 29, 2007.

<sup>62</sup> Ibid.

<sup>63</sup> Royte, 2008.

(GAO) estimates that full compliance with SDWA costs \$1.4 billion annually.<sup>64</sup>

Increased funding would certainly allow agencies to more effectively regulate and enforce quality standards. Unless agriculture, industry, and domestic sources of water contamination are also held to a higher standard, the price of SWDA enforcement will continue to rise, or quality of drinking water regulations will again fall short. In order to truly improve the quality and safety of drinking water in America, a complete regulatory overhaul and redefinition of the role of the state as a provider rather than as secondary to the market are necessary.

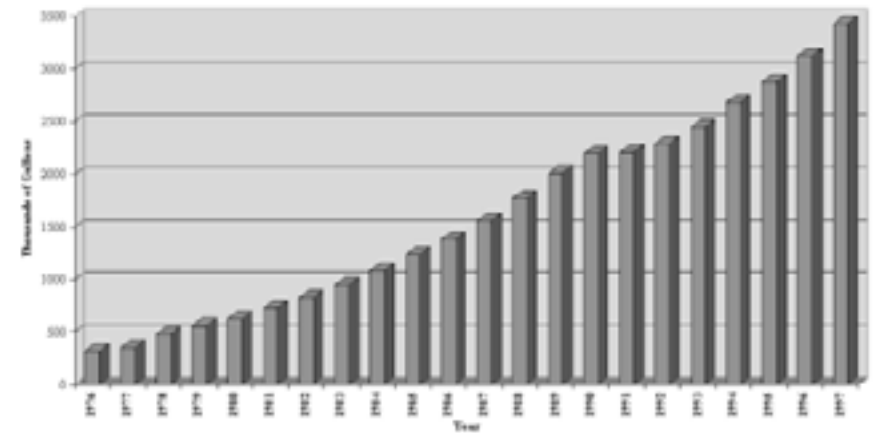


Figure 1 (United States Bottled Water Market 1976-1997<sup>65</sup>)

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<sup>64</sup> Innes, 2001.

<sup>65</sup> "Bottled Water: Pure Drink or Pure Hype," Natural Resource Defense Council, March 1999, Ch. 2.

- "Aquafina Labels to Show Source: Tap Water," CBS Money Watch, Feb. 11, 2009.
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# Nations within a Nation: An Analysis on the Development of Canadian Aboriginal Recognition and Self-Government

Lisette Alor Pavon

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*This paper aims to explain the current status of Canada's Aboriginal peoples and the tensions dominating this particular issue by focusing on the development of Native title recognition and self-government through legislation, litigation, and negotiation, as well as the changes in interactions between the provincial and federal governments and First Nations. Legislation and litigation at the local, provincial, and federal levels have enabled several Native groups to attain varying levels of self-government, including full legal jurisdiction within Native land borders and the establishment of the province of Nunavut. Additionally, continued negotiation and treaty construction in response to land disputes between local and provincial authorities and Native groups have brought Aboriginal land rights to the political forefront. Legal cases for such rights, likewise, have traveled as far as the Canadian Supreme Court and have brought successes to Canada's First Nations in the pursuit of greater autonomy, independence, and self-government.*

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**D**ispersed throughout the country, Canada's Aboriginal tribes represent what most would consider a small percentage of the nation's population, and yet, both the federal and provincial governments have begun to make considerable efforts to redefine their relationships with the First Nations. At the same time that they have struggled to retain their traditional lands and cultures, the Aboriginal Peoples of Canada have begun to seek greater representation and recognition of their rights and titles, demanding self-government in various degrees. This issue is becoming fairly prominent in Canadian politics. This, in turn, has raised many concerns, among them the question of how the law is to define Aboriginal self-government and entitlement. Furthermore, when it comes to conflicts of interest, who ultimately has the last say? Since the institution of the Charter of Rights and Freedoms in 1982, both government and Aboriginal approaches to confronting these issues have begun to change, and two clear paths can be discerned: the path of treaty and negotiation and the path of litigation. This paper, with the aim of explaining the current status of Canada's Aboriginal peoples and the tensions dominating this particular issue, will focus on the development of Native title recognition and self-government through these approaches, as well as the changes in interactions between the provincial and federal governments and First Nations.



The Constitution Act of 1867 equipped the Canadian Parliament with exclusive legislative jurisdiction to handle both Natives and land reserved for them. At the same time, provincial legislatures were given some control over issues which might have eventually impacted Aboriginals, particularly through the granting of Crown land ownership directly to the provinces existing at the time. Retrospectively, it can be argued that this structuring of power and ownership would come to define a large portion of governmental relations with the First Nations, land disputes in particular. The Act, nonetheless, failed to discuss the concept of Aboriginal self-government, a fact which would come to fuel some suspicion about the validity of such a concept in later years.<sup>1</sup>

With this legislative foundation established, following the institution of Confederation, the Canadian Parliament passed the much-disputed Indian Act. While the Act did contain provisions to protect the validity of treaty rights, it also enhanced the existing power of the Crown. It stated that Aboriginal Peoples must deal with the Crown itself in regard to land claims and interests, as the primary targets of this stipulation. In the opinion of many, this was a direct blow to the desired sovereignty of the First Nations, as it effectively created what has been described as a Crown monopoly in pursuing recognition of their interests.<sup>2</sup> The Act affirmed the Aboriginals' entitlement to settle on reserves, and it established several tax exemptions for these residents in particular, which have not been discontinued. Nonetheless, the bans that the Act imposed were seen by many as stifling, ranging from bans on traditional cultural ceremonies to limits on self-government even at a local level.<sup>3</sup> To many of the Aboriginal Peoples to which it pertained, the Indian Act appeared to be a clear attempt at gradual assimilation, and it would come to lay the foundation for Aboriginal indignation against the state and an increased desire for the official recognition of rights that they believed to be inherent. This would be a factor in driving the First Nations to more fervently pursue changes in their status, questioning the very definition of their relationship with Canada as it exists in federal legislation and policies.<sup>4</sup>

Section 88 of the Indian Act is of particular relevance, and it defines federal jurisdiction over treaties themselves. This section addresses the conflict between Aboriginal interests and provincial laws when these laws are of "general application," that is, when their effects are wide, affecting

1 Elliott, David W. *Law and Aboriginal Peoples in Canada*. Concord, Ontario, Canada: Captus, 2005.

2 Mainville, Robert. *An Overview of Aboriginal and Treaty Rights and Compensation for Their Breach*. Saskatoon, Sask.: Purich Pub., 2001.

3 Elliott, David W. *Law and Aboriginal Peoples in Canada*. Concord, Ontario, Canada: Captus, 2005.

4 Mawhiney, Anne-Marie. *Towards Aboriginal Self-government: Relations between Status Indian Peoples and the Government of Canada, 1969-1984*. New York: Garland, 1994.

the general population and Aboriginals only "indirectly or incidentally." In this instance, the section incorporates provincial laws into federal law, enabling the federal government to enforce these provincial laws even for Aboriginals, as their enforcement by the provinces themselves would be seen as a constitutional violation. Thus, the section creates a roundabout way for the federal government to avoid conflicts of interests, making general laws applicable to Aboriginals in certain circumstances despite standing treaties or claims. Nonetheless, the legislation remains subject to specific constraints that originate from the doctrine of Aboriginal rights.<sup>5</sup>

Still in place today, the Indian Act is seen as a generally unsuccessful piece of legislation. Seemingly suppressive and restrictive to Aboriginals and ineffective in the protection of native land, it has enabled the purchase of reserve property through the government at marginal prices in the past, and Aboriginal grievances towards the Act have been continuously expressed since its institution.<sup>6</sup>

Another early example of legal and judicial action which heavily impacted the First Nations came with St. Catherine's case in 1889, in which a provincial and Aboriginal dispute over natural resources came to establish a precedent for Aboriginal title which would last for years to come. In its ruling, the Privy Council maintained that the Aboriginal Peoples had a "legal interest" in the land, as established by the Royal Proclamation of 1763. However, when the land was surrendered by way of treaty with the province, ownership rights were ceded. Most importantly, the case formally declared the Royal Proclamation as the basis of Aboriginal title in Canada, a decision which would come to affect the way governments dealt with land claims in the future. The ruling also emphasized the role of the province in agreements with Aboriginals, which likewise shaped the methods of negotiation employed by governments in treaty construction in later years, setting convention for such procedures, although it had not been explicitly outlined.<sup>7</sup>

Despite several changes which have reduced the government's role in reserve activities, giving native communities a more substantial amount of autonomy, past legislation has emphasized the need to readdress natives' concerns in a different fashion. It has become increasingly clear that legislation that could be perceived as restrictive by Aboriginals will never be able to ease the tensions between natives and the state, and it is due to this that policy has begun to shift more towards constitutional definitions and guarantees of Aboriginal status and rights.

Provincial approaches to the treatment of Aboriginal Peoples have historically differed from

5 Mainville, Robert. *An Overview of Aboriginal and Treaty Rights and Compensation for Their Breach*. Saskatoon, Sask.: Purich Pub., 2001.

6 Ibid.

7 Elliott, David W. *Law and Aboriginal Peoples in Canada*. Concord, Ontario, Canada: Captus, 2005.

those of the federal government. More often than not, disputes between Aboriginals and provinces have risen over land interests and claims, while the provincial government has remained heavily involved. The methods that have been employed by these governments to resolve conflicts have helped define the current concerns of First Nations in the provinces. The various stipulations of entrance into the Canadian Confederation for later-constituted provinces determined the varying extent of their power over lands, and in many cases, such distribution of land ownership pitted many Aboriginals directly against provincial governments.

The most outstanding case of repeated conflict with Aboriginals is that of British Columbia. Upon the province's admittance to the Confederation, the federal government was committed to a policy regarding policies toward Aboriginal lands "as liberal as that hitherto pursued by the British Columbia government."<sup>8</sup>

The landmark case of the Nisga'a Treaty occurred in British Columbia, setting the example for province-Aboriginal negotiation for years to come, a milestone in the Aboriginal journey towards self-assertion.<sup>9</sup> When the Nisga'a residing in northern British Columbia raised claims to that land, most of the land in the province was unclaimed, having never been placed under treaty. British Columbia, not covered by the Constitution Act of 1867, could not constitutionally assert ownership of the land. In the early years of the Nisga'a struggle, Ottawa expressed support for the government of British Columbia, allowing Victoria to refuse the consideration of the Nisga'a claims based on Aboriginal title. This led to an outright rejection of the tribe's claims, followed by a federal amendment to the Indian Act which, in turn, increased difficulties for the acknowledgment of the existent Aboriginal title.<sup>10</sup>

Nisga'a Land Committee was re-established as the Nisga'a Tribal Council in 1955. Frustrated by the lack of responsiveness in part of British Columbia to what the Nisga'a regarded as legitimate claims, the Council moved towards litigation in 1967. The case, appealed at every step of the way, reached the Canadian Supreme Court in 1973. The decision on the case was split, and while a fraction of judges determined that any Aboriginal title to the territory in question had been extinguished in the colonial period and by provincial action later on, another fraction stated that the title remained, since no legislative action had ever been taken to explicitly extinguish it.<sup>11</sup> This opinion, known as

8 Canadian Parliament. British Columbia Terms of Union. 1871.

9 Miller, J. R. *Compact, Contract, Covenant: Aboriginal Treaty-making in Canada*. Toronto: University of Toronto, 2009.

10 Ibid.

11 Ibid.

the Calder decision, rejected Nisga's claim, but the legal recognition of native lands suddenly became more than a legal interest. Rather, by bringing the issue to the attention of the courts, the 1973 case created a new outlook for such matters, a de facto transformation of recognition into a right, bound to be enforced by the law. Now, the reality of Aboriginal title seemed undeniable.

Premier Campbell, in the case of the Nisga'a, called upon the British Columbia Treaty Commission, set up in 1992, to facilitate negotiations. A new process for treaty negotiation in British Columbia, consisting of six steps, was born. Eventually, 58 First Nations would come to participate in such treaty negotiations in British Columbia, though the Final Agreement would not come until 15 years later. Nonetheless, this helped to establish a formal procedure for the creation of agreements, a factor which would help provincial relations establish a less turbulent co-existence with First Nations, as well as leading to greater recognition of Aboriginals as entities independent of the provincial government which must be diplomatically dealt with. The process outlined by the Commission was a tedious one, but it was one which allowed all parties an equal role at the negotiation table, described as follows<sup>12</sup>:

1. The First Nation files statement of intent to negotiate.
2. The Commission meets with parties to determine readiness to negotiate.  
Approves negotiation.
3. All Parties negotiate framework agreement.
4. All Parties negotiate an Agreement in Principle.
5. All Parties negotiate a Final Agreement.
6. After ratification, the Final Agreement is implemented.

Thus, through this process, British Columbia entered a new era in its relations with Aboriginals, inadvertently setting an example for other provinces. It was with these set guidelines and procedures that the government of British Columbia finally reached a settlement with the Nisga'a tribes in 1998, demarcating land specifically for these Peoples.

In response to the British Columbia case, the government drafted new legislation, providing for a system distinguishing between specific title claims, based on legal obligations to Aboriginals that the Crown had not discharged, as well as comprehensive title claims based on title which had not

12 Miller, J. R. *Compact, Contract, Covenant: Aboriginal Treaty-making in Canada*. Toronto: University of Toronto, 2009.

been extinguished. The following year, the government created the Office of Native Claims, in order to directly deal with such issues specifically.<sup>13</sup>

In this case, provincial proceedings eventually led to federal action, but this is not always so. Aboriginal issues more often tend to be entirely under the jurisdiction of the provinces. The James Bay and Northern Quebec case, for example, began when the Quebec government sought to develop a hydroelectric facility in the James Bay area, to which Cree and Inuit populations had a claim. Although, initially, the Quebec Court of Appeal to which the Cree and Inuit turned ruled in favor of the Aboriginals, it became clear to the province that negotiation for settlement would be necessary if they wished the project to proceed. In the end, the Natives received exclusive hunting-gathering rights to thousands of square miles. The Agreement also included the subsidization of much of the traditional hunting economy through the Income Security Program, in addition to the creation of large and detailed educational, health policy, and justice articles, as well as environmental protection provisions.<sup>14</sup>

This Agreement demonstrated a different method of dealing with disputes, unlike past attempts at court action. Effectively, the Agreement proved that it was possible to reach a solution satisfactory to both parties not through litigation but through treaty and negotiation. Since 1975, there have been 13 other land claims agreements such as this, particularly in northern Canada.<sup>15</sup>

In 1982, the incorporation of the Charter of Rights and Freedoms in the Canadian Constitution fundamentally changed the direction of future Aboriginal claims, placing these issues in a federal context once more and leading to a resurgence of the litigation approach as a means of pursuing agendas. The Charter formally recognized Aboriginal and treaty rights, thus protecting them. Further constitutional changes in 1984, likewise, expanded protections.<sup>16</sup> The provisions in the Charter that deal with Aboriginal rights are included in section 35, and they are as follows<sup>17</sup>:

1. The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.

<sup>13</sup> Miller, J. R. *Compact, Contract, Covenant: Aboriginal Treaty-making in Canada*. Toronto: University of Toronto, 2009.

<sup>14</sup> Ibid.

<sup>15</sup> Elliott, David W. *Law and Aboriginal Peoples in Canada*. Concord, Ontario, Canada: Captus, 2005.

<sup>16</sup> Ibid.

<sup>17</sup> Mainville, Robert. *An Overview of Aboriginal and Treaty Rights and Compensation for Their Breach*. Saskatoon, Sask.: Purich Pub., 2001.

2. In this Act, “aboriginal peoples of Canada” includes the Indian, Inuit, and Metis peoples of Canada.
3. For greater certainty, in subsection (1) “treaty rights” includes rights that now exist by way of land claims or may be so acquired.
4. Notwithstanding any other provision of this Act, the aboriginal and treaty rights referred to in subsection (1) are guaranteed equally to male and female persons.

The adoption of the Charter led to an explosion of legal cases and appeals concerning Aboriginal rights and titles, and soon after 1982, federal courts found themselves defining and redefining the meaning and scope of Aboriginal claims. It seemed that the Aboriginal Peoples of Canada had come to recognize the courts as one of the most effective and legitimate channels for their interests, serving to establish precedent on a national level.

Of the court cases which have dealt specifically with Aboriginal issues, few have been more relevant than the 1996 *Van der Peet* case, the 1990 *Sparrow* decision, and the 1997 *Delgamuuk* case, all of which allowed the Court to clarify key properties of Aboriginal rights and titles, including the definition of their proof, identification, and further details on their content.<sup>18</sup> The *Van der Peet* case, dealing with fishing rights and their extent, was tried by the Supreme Court of Canada in the context of the aforementioned Charter. While the Supreme Court ruled that Aboriginal fishing rights did not extend to the selling of fish, the legally relevant end result of the Court’s particular approach was an assertion that the doctrine of Aboriginal rights is by nature a doctrine of common law. Thus, protection from unilateral extinguishment must exist for Aboriginal rights, their regulation henceforth bound to the guidelines set out by the Supreme Court of Canada. This proved to be a landmark development for Aboriginal right demarcation, and in his ruling, Chief Justice Lamer proposed a test to determine the existence of a particular Aboriginal right. The test was broken down into two steps, the first of which was to determine the precise nature of the claim being made and the second being to determine whether the practice claimed to be a right was an integral part of Aboriginal society before European colonization.<sup>19</sup>

Complaints against this particular test on the part of many in Aboriginal communities

<sup>18</sup> Elliott, David W. *Law and Aboriginal Peoples in Canada*. Concord, Ontario, Canada: Captus, 2005.

<sup>19</sup> Mainville, Robert. *An Overview of Aboriginal and Treaty Rights and Compensation for Their Breach*. Saskatoon, Sask.: Purich Pub., 2001.

involve claims that Justice Lamer's test ignores the context in which Aboriginal rights operate and likewise does not provide a foundation for a "holistic" approach, failing to consider the changes in the dynamics of Aboriginal culture and society since European settlement. At the same time, however, opponents have admitted that the rights which may be recognized under such a test are wider in range than those outlined by the Constitution alone. Overall, despite the flaws of this test, the Van der Peet case has helped to more thoroughly identify the scope of Aboriginal rights.<sup>20</sup>

The Sparrow case served as an important legitimization of Aboriginal rights, declaring that these were fully protected by the Canadian Constitution Act of 1982, incapable of being infringed upon without full and legal justification.<sup>21</sup> The Delgamuukw case, likewise, was framed in a Constitutional context, and it dealt with claims of the Gitksan and Wet'suwet'en Peoples to land located in British Columbia. Like the Van der Peet case, it officially addressed the nature and extent of Aboriginal rights and titles in Canada, this time, however, strictly in terms of land ownership. Following a long and divisive process of appeal, the case reached the Canadian Supreme Court. Through its ruling, the Court directly addressed the nature of Aboriginal title, as well as conditions for infringement. To accompany these developments, the Court created a test specifically related to such instances. In this, Aboriginal title was defined as an interest specifically in the land, an inalienable right save by the Crown. Unlike Aboriginal rights, Aboriginal titles include the right to natural resources. In the decision of the Court, it was determined that the Aboriginal Peoples concerned must have occupied the land in question prior to the establishment of Canada under Crown rule.<sup>22</sup>

The evolution of Aboriginal Peoples' current status has not been affected merely by questions of rights and titles, but also by the much-sought-after idea of self-government.<sup>23</sup> Although many reserves retain a certain degree of limited local self-government, the recent clamor by many First Nations has been for greater autonomy. It is the desire of various Aboriginal groups to gain recognition as separate national entities, to be treated as equal partners by provincial governments and the government of Canada. And yet the cases of self-government that have surfaced have not resulted in this, though they have laid the groundwork for further experimentation and innovation on the path to greater Aboriginal self-determination and autonomy.

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20 Ibid.

21 Miller, J. R. *Compact, Contract, Covenant: Aboriginal Treaty-making in Canada*. Toronto: University of Toronto, 2009.

22 Mainville, Robert. *An Overview of Aboriginal and Treaty Rights and Compensation for Their Breach*. Saskatoon, Sask.: Purich Pub., 2001.

23 Mawhiney, Anne-Marie. *Towards Aboriginal Self-government: Relations between Status Indian Peoples and the Government of Canada, 1969-1984*. New York: Garland, 1994.

In 1995, the federal government instituted a milestone policy enhancing the prospects for Aboriginal self-government by recognizing it as an inherent right. As it stands, this inherent right encompasses "province-like" powers of education and training, welfare and health services, and law enforcement, along with the ability to create policy in regards to cultural practices, language, and citizenship definitions. Through this governmental action, Aboriginal Peoples have been considerably empowered when it comes to seeking self-government, as it, being defined as their inherent right, cannot simply be denied to them. Thus, the drafting of contemporary treaties must go hand-in-hand with greater recognition of Aboriginal self-government.<sup>24</sup> In 1996, the Royal Commission on Aboriginal Peoples called for an expansion of Aboriginal self-government, as well as increases in government funding for Aboriginals, a demand which could be seen as one of the first signs of the Aboriginal shift in focus from right and title to self-determination.<sup>25</sup>

The great benefits for Aboriginal recognition that have resulted from such policy have not come without tradeoffs. The recognition of the right to self-government, on a federal level, was accompanied by a prohibition on Aboriginal Peoples from playing an international role, as well as required eventual responsibility for the payment of taxes.<sup>26</sup> Nonetheless, proceedings in many areas of Canada have gone forth to establish more autocratic native communities, 'nations within a nation.'

The Tungavik Federation of Nunavut, founded by Inuit Peoples, initiated a negotiation process with the federal government in the 1990s, seeking to found a self-governed Inuit nation within Canada. In a completely unprecedented instance, the Inuit managed to reach an agreement with the federal government, and legislation was effectively drafted in 1993 to create the territory of Nunavut, which was officially founded on April 1, 1999.<sup>27</sup>

Entirely experimental in nature, Nunavut possesses territorial powers which enable it to determine a large majority of its affairs, politically autonomous in a way that no other Aboriginal community had managed to become. At the same time, however, the territory of Nunavut has always remained heavily dependent financially on the federal government, a fact which some embittered Aboriginals concede may undermine the application of their autonomy, though it has left much of their self-government unhampered. Having been created from the ground up, the creation of a bureau-

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24 Miller, J. R. *Compact, Contract, Covenant: Aboriginal Treaty-making in Canada*. Toronto: University of Toronto, 2009.

25 Elliott, David W. *Law and Aboriginal Peoples in Canada*. Concord, Ontario, Canada: Captus, 2005.

26 Miller, J. R. *Compact, Contract, Covenant: Aboriginal Treaty-making in Canada*. Toronto: University of Toronto, 2009.

27 Ibid.

cratic system to manage Nunavut's affairs has been only marginally successful, while the need for the establishment of adequate training and educational systems has been dire. The Nunavut population remains faced with relatively low educational levels, which, accompanied by the lack of social programs, have contributed to widespread poverty in the territory. The need to develop these programs, in turn, has created extremely high economic demands for the federal government, resulting, at times, in increased tension between the territory and Ottawa.<sup>28</sup>

Adding to the existing host of problems faced by Nunavut, territorial claims have been made by other First Nations to land within the territory, and grievances against Nunavut by various groups of Aboriginals include infringement and title violation. However, due to the officially-drawn boundaries of the territory and the 1993 agreed-upon ownership status of Nunavut's lands, the parties in question have come to understand that the only means of gaining recognition of their title is through legal or political actions, and these contested land disputes remain unresolved today.<sup>29</sup>

Despite its troubles, the existence of Nunavut is, in legal and political terms, a sign of hope and progress for Aboriginal Peoples, as a clear example of native ability, and furthermore, of the Aboriginal right, to improve political status and obtain the amount of self-government for which they have yearned.

Attempts at establishing self-governing native bodies have not been limited to Nunavut, though the territory has been the only successfully-instated so far. In Ontario, the Nishwabe-Aski Nations have proposed the institution of a northern Ontario "public" government through provincial legislation, enabling them to establish a system of self-government.<sup>30</sup> Similarly, the Metis of Canada, lacking land base and excluded from lands claims processes in all areas save the Northwest territories, have established the Metis National Council and are currently seeking a non-constitutionally-based tripartite self-government agreement for themselves. In Saskatchewan, in particular, the Metis Society of Saskatchewan has also begun a self-government restructuring process.<sup>31</sup>

The precedents established by both federal and provincial governments and the Courts, in terms of treaty-building and in terms of policy and legal action, have shown the Aboriginal Peoples of Canada that victory in the search for greater recognition and extended self-government is not only

28 Miller, J. R. *Compact, Contract, Covenant: Aboriginal Treaty-making in Canada*. Toronto: University of Toronto, 2009.

29 Ibid.

30 Peters, Evelyn J. "Geographies of Aboriginal Self-Government." *Aboriginal Self-government in Canada: Current Trends and Issues*. Ed. Yale Deron Belanger. Saskatoon: Purich Pub., 2008. 163-79.

31 Chartier, Clem. "Aboriginal Self-Government and the Metis Nation." *Aboriginal Self-government in Canada: Current Trends and Issues*. Ed. Yale Deron Belanger. Saskatoon: Purich Pub., 2008. 199-214.

possible but plausible. Frequently, Aboriginal issues such as struggles with poverty and the depletion of resources, as well as the increasing growth of economic gaps and the threat of cultural gaps, appear to be overshadowed by the government's other various concerns. Nonetheless, it has become clear that Canada has shifted away from attempting to assimilate the First Nations into contemporary society and, instead, has come to view them as legitimate co-inhabitants of the 'True North,' to whom recognition is owed as they seek to preserve their cultural practices and traditional lands. This shift in mentality, combined with the First Nations of Canada's increasing fervency in the pursuit of their agendas accounts in great part for the tremendous success they have had and, as their efforts progress, may be quite likely to continue having.

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Lisette Alor Pavon is currently a sophomore majoring in Political Science and International Relations with a minor in Russian. As a first-generation immigrant to the United States, she is highly interested in international affairs, and she hopes to focus on this in her academic pursuits. Lisette is particularly interested in Eastern European studies and post-communist development.

# Competing Economic Interests Between Fishing and Shipping Industries over Threat of Asian Carp in the Great Lakes Region

Jake Young

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*Asian carp are rapidly becoming a serious economic and ecological threat to the Great Lakes region. First introduced to the United States in the early 1970s, Asian carp were initially used to control algae in catfish farms in the South. After escaping into the Mississippi River in the early 1980s, Asian carp have slowly moved northward while populating other waterways. Presently, Asian carp can be found in the Chicago Area Waterway System (CAWS), less than 25 miles from Lake Michigan. Should Asian carp enter the Great Lakes, environmental scientists fear that the carp will ruin the fishing industry. As a result, the Obama administration drafted the Asian Carp Control Strategy Framework to address the impending crisis. Debate continues concerning particular proposals the federal government should implement to prevent Asian carp from invading the Great Lakes. This paper examines the competing economic interests between the fishing and shipping industries regarding specific proposals to stop the Asian carp movement within the CAWS.*

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The Great Lakes states have dire concerns about the calamitous threat Asian carp pose to the economic, environmental, and ecological stability of the region. For over 40 years, non-indigenous Asian carp have maintained a significant presence in U.S. waterways. Four species of Asian carp exist in the United States: bighead, black, grass, and silver carp. The carp have populated the Mississippi and Illinois Rivers while slowly moving northward. In some areas, Asian carp account for 95% of the biomass.<sup>1</sup> From 1994 to 1997, “commercial harvest of Asian carp in the Mississippi River Basin went from 5.5 to 55 tons - a ten-fold increase.”<sup>2</sup> In June 2010, an angler captured an Asian carp in Chicago’s Lake Calumet, six miles from Lake Michigan.<sup>3</sup> Efforts are being taken to prevent Asian carp from entering the Great Lakes, although implementing policies has been a slow and arduous task due to continued resistance from the shipping industry.

Asian carp differ in some respects compared to the common carp, which were introduced in 1831 and are now caught throughout the United States, but are especially ubiquitous in the Great

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1 Buck, Eugene, Harold Upton, Charles Stern, and James Nichols. “Asian Carp and the Great Lakes Region.” Congressional Research Service. 30 November 2010. Print.

2 U.S. Senate Committee on Energy and Natural Resources Oversight Hearing on Asian Carp, 112th Cong. (2010) (testimony of Dr. Leon Carl). Print.

3 Ibid.

Lakes region. Common carp are generally 15-30 inches and weigh between 5-10 pounds. However, large adult common carp have been known to weigh upwards of 60 pounds. Asian carp, moreover, are considerably larger on average, weighing 50 pounds but known to grow upwards of four feet and 100 pounds. Considered a nuisance fish, common carp possess little market value in the United States but are highly desired in Europe and Asia. Common carp are known to destroy vegetation and lower water quality. Further studies indicate that common carp prey on eggs of other fish species resulting in a decrease of native fish in the waters. Asian carp also prey on fish eggs and have similar diets to common carp. The increased threat of Asian carp to the Great Lakes, as opposed to common carp that are firmly established in the Great Lakes, is due to the size difference. Bighead carp (Asian carp species) do not have stomachs and constantly eat. The older fish, those around four feet and 100 pounds, reproduce more often than younger bighead carp. Asian carp's feeding habits will make them direct competitors to perch and walleye, the Great Lakes' most valuable commercial fish. No natural predators to Asian carp exist in the Great Lakes. In addition, silver carp (Asian carp species) are easily startled by noise when a boat or water-skier passes. This results in silver carp jumping several feet in the air, potentially causing injury to boaters. Should Asian carp become widespread in the Great Lakes, safety measures may need to be adopted to ensure the well-being of anglers. Besides safety measures, stringent ballast water regulations need to be enforced for the preservation of the Great Lakes.

Ocean freighters continue to violate the Clean Water Act by releasing contaminated ballast water upon entering the Great Lakes. Ballast water management ranges from ballast water exchange to treatment, with the intent to eliminate invasive species from entering the waterways. Subsequent amendments to the law focused on creating a "national ballast management program...wherein all ships entering U.S. waters are directed to undertake high seas ballast exchange or alternative measures pre-approved by the Coast Guard as equally or more effective."<sup>4</sup> This 1996 National Invasive Species Act has been severely criticized for slow implementation and numerous loopholes for ships traveling short distances.<sup>5</sup> In the process, dozens of invasive species were introduced into U.S. waters, most notably zebra mussels in the Great Lakes which caused millions of dollars in economic damage and restoration attempts. When any invasive species enter the Great Lakes, it is a near insurmountable task to eliminate the species. Rather, the best outcome is to control the spread of the invasive spe-

<sup>4</sup> Buck, Eugene. "Ballast Water Management to Combat Invasive Species." Congressional Research Service. 20 January 2011. Print.

<sup>5</sup> Ibid.

cies. Should Asian carp enter the Great Lakes, environmental scientists fear that the "carp will crowd out all other fish in the Great Lakes...ruining a \$7 billion per year fishing industry."<sup>6</sup> This does not include the potential impact to related industries such as dining and tourism.

Researchers attempting to estimate potential Asian carp damage to the Great Lakes should first analyze the impact from zebra mussels. Studies conclude that zebra mussels have been one of the costliest invasive species introduced to the Great Lakes to date. Discovered in the late 1980s, zebra mussels wreaked economic havoc on industries that use surface water in the Great Lakes. Zebra mussels colonize on nearly every hard surface, thus they instantly attach to water intake pipes, water filtration equipment, and electric generating plants.<sup>7</sup> Utility pipes became clogged, limiting the flow of water. Roughly \$1 billion was spent over 10 years in cleanup and control costs. Also, the fishing industry endured new costs to remove zebra mussels from their properties. Some native Great Lakes species have seen their populations drop due to zebra mussels eliminating algae that larval fish consume.

Several positive impacts within the Great Lakes, however, are attributed to zebra mussels. For example, water clarity within the lakes has improved, and a few native fish eat zebra mussels. With the increased number of aquatic plants caused by zebra mussels, smallmouth bass populations, a valuable native Great Lakes fish, have increased. Although numerous published reports highlight potential negative economic impacts of an Asian carp invasion, like zebra mussels, some positive effects may occur in the Great Lakes.

Numerous actions to restore the Great Lakes have been taken by the Obama administration over the past two years, although environmentalists question the president's urgency in responding to the imminent crisis. During the 2008 campaign, Obama pledged \$475 million for clean up efforts which were appropriated by Congress in 2009. The President met with the Council of Great Lakes Governors in 2009 to discuss a "Zero Tolerance Policy for Invasive Species," which established funding for electric barriers in the Chicago Area Waterway System (CAWS) and planned fish poisonings in said waters.<sup>8</sup>

Yet, new research and evidence highlights the urgency to address the impending Asian carp crisis. In early 2010, the Senate Great Lakes Task Force offered these immediate proposals: ensure that entire ocean ships, not just their ballast tanks, are without invasive species, develop new tech-

<sup>6</sup> "Preparing for Battle." Columbus Dispatch [Columbus, Ohio] 22 Feb. 2010, Editorial sec. Print.

<sup>7</sup> USGS. "Zebra Mussels." U.S. Geological Society. Web.

<sup>8</sup> See figure 1.

nologies and advance research testing on effective ballast water treatments, and urge dialogue between Canada and the United States to create joint regulations on shipping procedures. Canada has concluded that the provinces' southern Great Lakes basins are at major risk should Asian carp maintain a population in the Great Lakes. To that end, Canada has joined the Great Lakes Fishery Commission to aid in prevention efforts. According to the task force, swift action among all government agencies must be achieved to ensure a prosperous future for the Great Lakes region. Michigan has taken a lead role petitioning to the federal courts to intervene in the disputes between the Great Lakes region and the shipping industry.

The state of Michigan, in December 2009, filed suit against the state of Illinois, the U.S. Army Corps of Engineers, and the Metropolitan Water Reclamation District of Greater Chicago calling for the immediate closure of the Chicago shipping locks (see Figure 1) to prevent Asian carp from entering Lake Michigan.<sup>9</sup> Shipping traffic within the CAWS offers Asian carp a prime entrance into Lake Michigan when ships release their ballast water while passing through locks. Lock closure would result in the transport of cargo via rail or truck starting just south of the closed locks to the mouth of Lake Michigan, several miles north. In January 2010, the United States Supreme Court turned down the request to hear an appeal. Again, the state of Michigan filed another suit in February 2010, this time citing new evidence of the threat. The Supreme Court subsequently chose not to hear the dispute. Leaders from the American Waterway Operators hailed the Supreme Court's refusal and predicted that closing the locks would have "disrupted vital transportation routes and devastated their industry."<sup>10</sup> In a subsequent motion, Michigan, Minnesota, Ohio, Pennsylvania, and Wisconsin sued the U.S. Army Corps of Engineers and the Metropolitan Water Reclamation District of Greater Chicago in the U.S. District Court, Northern District of Illinois in July 2010 for the Army Corps to permanently separate the CAWS, represented above in Figure 1, from Lake Michigan. The states highlighted the single Asian carp found in Lake Calumet and concerns relating to the electric barriers in the waterways. The shipping industry and the Army Corps cited potential loss of business for Chicago industries and flooding scenarios for their defense.<sup>11</sup> Judge Robert M. Dow denied the Great Lakes states' request in December 2010 by indicating that the states did not show sufficient im-

9 Associated Press. "U.S. Supreme Court Refuses to Jump into Asian Carp Fight | Cleveland.com." Cleveland OH Local News, Breaking News, Sports & Weather - Cleveland.com. 26 Apr. 2010. Web.

10 Associated Press. "Industry Hails Court Ruling on Asian Carp | Cleveland.com." Cleveland.com. Cleveland OH Local News, Breaking News, Sports & Weather - Cleveland.com, 22 Mar. 2010. Web. Mar. 2010.

11 Reuters. "Asian Carp Great Lakes Invasion Debated at Hearing." Business & Financial News, Breaking US & International News | Reuters.com. 18 Oct. 2010. Web.

pending harm from Asian carp.<sup>12</sup> Michigan Attorney General Mike Cox criticized President Obama for not issuing executive orders to close the locks.<sup>13</sup> Without support from the federal courts, Great Lakes proponents are relying on legislative proposals to protect the region from an impending crisis.

An established Asian carp population in the Great Lakes will result in significant changes for the Great Lakes, most of which may be negative. According to the Great Lakes Fishery Commission, Asian carp pose a significant threat to the native fish.<sup>14</sup> Asian carp have similar diets to native fish; therefore, Asian carp will eat the same food as native fish. That may result in fewer native fish and will destroy the ecological makeup of the Great Lakes. Fishermen are debating whether Asian carp will have a strong market value in the United States. Asian carp have more bones after filleting than many Americans enjoy consuming. A social concern arises if Asian carp damage the public image of the Great Lakes. Tourists and area residents may less frequently visit the lakes resulting in fewer lake-related activities.<sup>15</sup> It is difficult to estimate changes in social welfare and economic loss or gain from the introduction of Asian carp. However, Asian carp are likely to cause economic damage to the Great Lakes region. Recreational and commercial fishermen are at risk, as well as recreational boating and hunting. Moreover, new commercial and recreational fisheries may be created should Asian carp become appetizing.

New reports from the Army Corps of Engineers indicate that Asian carp can enter the Great Lakes through other waterways. The most likely scenario, albeit a slim one, may occur when flooding temporarily connects the Wabash River in Indiana, currently populated with Asian carp, to the Maumee River that flows into Lake Erie at Toledo. At one point a half-mile natural wetland separates the two rivers. Asian carp that cross into the Maumee River would then be able to easily swim to Lake Erie. Lake Erie's western basin is the shallowest region of Lake Erie with average depths of 25 feet. Due to the extreme shallowness, Dr. Leon Carl, Midwest Area Regional Executive for the U.S. Geological Society, contends that Asian carp will become well adaptive to western Lake Erie.<sup>16</sup>

Presently, the only direct line of defense preventing Asian carp from reaching Lake Michigan are electric barriers in the Chicago Sanitary and Shipping Canal 25 miles south of Chicago.

12 Harris, Andrew. "States' Bid to Block Asian Carp Migration to Great Lakes Rejected by Court - Bloomberg." Bloomberg - Business & Financial News, Breaking News Headlines. 02 Dec. 2010. Web. 23 Feb. 2011.

13 Ibid.

14 Buck, Eugene, Harold Upton, Charles Stern, and James Nichols. "Asian Carp and the Great Lakes Region." Congressional Research Service. 30 November 2010. Print.

15 Ibid.

16 See figure 2.



When asked at a February 2011 National Oceans Policy Briefing on Capitol Hill, Rear Admiral Paul Zukunft, U.S. Coast Guard's Response Policy Director, indicated nothing currently can stop Asian carp should they swim past these electric barriers. The Coast Guard's involvement has been on the maritime safety issues associated with the electrically-charged fish barrier that is maintained by the Army Corps of Engineers in consultation with the Asian carp Regional Coordinating Committee. The barrier exemplifies the trade-offs between economic (shipping) and environmental (invasive species) interest, but does not allay the long term concern of Asian carp entering and potentially populating the Great Lakes. For the short-term, the Coast Guard provides advisories to vessels and mariners transiting the Sanitary and Shipping Canal since the electrical field makes it restrictive for Coast Guard rescue swimmers to enter the water and render assistance.

Responding to mounting urgency to reduce the deficit, President Obama proposed \$350 million for the Great Lakes Restoration Initiative in his Fiscal Year 2012 budget, \$125 million less than Fiscal Year 2010 (\$475 million), but \$50 million more than Fiscal Year 2011 (\$300 million). Additionally, President Obama appointed John Goss, former head of the Indiana Department of Natural Resources, in September 2010 to oversee the federal response to the Asian carp threat. Fiscal Year 2012 funding for specific projects within the initiative has yet to be made public. The President cites fiscal constraints as the primary reason for the decrease in spending. However, the United States House of Representatives, on February 19, 2011, passed a continuing resolution (H.R. 1) to complete the Fiscal Year 2011 budget that would appropriate \$225 million for the Great Lakes Restoration Initiative. This \$75 million reduction from President Obama's allocation is significant in that it may undermine the economic and ecological improvement of the Great Lakes over the last several years. Jeff Skelding, campaign director for the Healing Our Waters-Great Lakes Coalition, contends, "Cutting successful efforts to protect drinking water, safeguard public health, create jobs, and improve the lives of millions is the wrong way to go. Investing in efforts to restore the Great Lakes, a resource that more than 30 million depend on for drinking water, results in some of the best returns on the dollar in the federal budget."<sup>17</sup> It is important to note, nonetheless, that the United States Senate must agree to the same continuing resolution, and the Senate may increase or further decrease appropriations for Fiscal Year 2011. Invasive species are inherently a nonpartisan issue, but unfortunately bipartisan support is not enough to overcome regional voting differences.

Representative Dave Camp, chairman of the House Ways and Means Committee from Michigan, offered an amendment that would have stopped shipping traffic between the Illinois and

17 Healthy Lakes. "Coalition: Bolster Federal Support for Great Lakes Programs." 14 Feb. 2011. Web.

Mississippi Rivers and the Great Lakes by closing the Chicago locks. The amendment failed, 292-137, but the entire Michigan Congressional delegation voted in support of closing the locks. All but one member from the Illinois delegation voted against the amendment.<sup>18</sup> This amendment vote is significant for several reasons: outside the Great Lakes region there is not much support to close the Chicago locks, a majority of Congress is siding with the shipping industry, tensions remain high between the Michigan and Illinois Congressional delegations regarding long term solutions, and all three branches of government are refusing to become directly involved with the closing of the CAWS locks.

Similar to the fishing industry, the shipping industry generates significant economic revenue for the Great Lakes region. A ten-year compilation conducted by the U.S. Saint Lawrence Seaway Development Corporation concluded that the 16 primary ports in the Great Lakes St. Lawrence Seaway System produced \$3.4 billion in revenue in 2000 along with 152,508 jobs related to marine cargo and vessel activity.<sup>19</sup> Figure 3 analyzes the impacts in 1991 and 2000. Yearly economic revenue has risen since 2000.

The American Great Lakes Ports Association contends that lock closure will result in "disruption of commerce to the Port of Milwaukee, Port of Burns Harbor, Port of Indiana Harbor, and Port of Chicago, with negative impact on thousands of jobs."<sup>20</sup> An August 2010 study of waterborne shipping on the Indiana lakeshore, referenced in Figure 4, found that 17,565 jobs and \$1.9 billion in economic activity are attributed to barge movements through the Thomas J. O'Brien Lock in the CAWS.<sup>21</sup> Environmental groups call for the O'Brien Lock in the CAWS to close to prevent the movement of Asian carp. Another study conducted by DePaul University predicts that permanent lock closure within the CAWS will cause \$582 million in lost economic revenue the first year, \$531 million annually the next seven years, then roughly \$155 million annually thereafter.<sup>22</sup> Figure 5 highlights specific economic losses to Chicago should a complete closure of locks in the CAWS occur. The states of Indiana and Illinois, and to a lesser extent Wisconsin, would initially suffer the most economic loss from closing the CAWS locks, and it is understandable why the entire Illinois Congressional delegation, except one member, voted against closing the locks. The \$3.4 billion per year

18 "House Vote 84 - H.R.1: On Agreeing to the Amendment." New York Times Politics. 17 Feb. 2011. Web.

19 "Economic Impact Study of the Great Lakes St. Lawrence Seaway System." U.S. Saint Lawrence Seaway Development System." 01 Aug. 01. Print.

20 "2010 Federal Policy Agenda." American Great Lakes Ports Association.

21 "Economic Impacts of Waterborne Shipping on the Indiana Lakeshore." Martin Associates. August 2010. Print.

22 "Analysis of Terminating Locks on the Chicago Area Water System." DePaul University. 07 April 10. Print.

shipping industry is significant to the states of Illinois and Indiana and shipping revenue is threatened to decrease in the short term should lock closures ensue. However, the states of Michigan and Ohio would suffer the greatest fishing economic loss should Asian carp establish a presence in the Great Lakes, which may explain why those two Congressional delegations voted for lock closure. As a compromise between competing interests, new Asian carp legislation has been proposed in the 112th Congress to stop the spread of Asian carp while keeping the CAWS locks open.

The Stop Asian Carp Act of 2011, introduced by Representative Dave Camp and Senators Richard Durbin and Debbie Stabenow on March 3, 2011, calls for the Army Corps of Engineers to complete a study on hydrological separation of the Mississippi and Great Lakes watersheds within 18 months after the bill is enacted.<sup>23</sup> This legislation reflects the competing interests of transportation, economic, and ecological concerns of the CAWS and Great Lakes. The Illinois Department of Natural Resources, along with the seven other Great Lakes states, endorses the act; however, one must note that the legislation will not close any shipping locks in the CAWS. It is likely that the state of Illinois would not have initially supported the bill had there been provisions closing certain locks. To date, the Stop Asian Carp Act of 2011 has been referred to several Congressional committees.

Since a separation of the two watersheds is the only means for a permanent solution to the spread of invasive species between the watersheds, Great Lakes leaders must seek new approaches to the impending crisis or garner increased public support of watershed separation. Unfortunately, beginning with the 113th Congress, seven fewer members of Congress will represent the Great Lakes region due to Congressional redistricting. The change of demographics will force the Great Lakes Congressional delegations to become unified if investment for the Great Lakes region remains strong.

Although numerous Great Lakes advocacy groups and environmentalists are calling to close the Chicago shipping locks and to separate the Great Lakes and Mississippi River watersheds, the short term reality is that separation will not happen. However, in February 2010, the White House organized a summit for Great Lakes governors in which a federal response plan, referred to as the Asian Carp Control Strategy Framework, was drafted. The Framework, funded through the Great Lakes Restoration Initiative, "outlines future actions to eliminate the threat of Asian carp in the Great Lakes and builds on the existing Corps barrier."<sup>24</sup> Last updated in November 2010, the Framework specifically addresses current and future short-term recommendations as well as long term-term pro-

23 "Great Lakes Fishery Commission Urges Immediate Passage of Bill to Stop Asian Carp and Other Invasive Species." Great Lakes Fishery Commission. 03 Mar. 11. Print.

24 Buck, Eugene, Harold Upton, Charles Stern, and James Nichols. "Asian Carp and the Great Lakes Region." Congressional Research Service. 30 November 2010. Print.

jections dealing with the threat of Asian carp.

Environmental DNA (eDNA) sampling and testing within the CAWS is conducted in conjunction with the Army Corps of Engineers. First proposed in 2009 but implemented in 2010, eDNA testing is designed to obtain DNA samples of fish in the Chicago waterways. Fish release DNA into the water through secretions that can be collected. The primary objective is to determine if Asian carp DNA is detected above the electric barriers. To date, Asian carp eDNA has been detected in the Chicago waterways, but debate continues on the legitimacy of the samples. A February 11, 2011 report by a team of University of Notre Dame researchers states that no Asian carp are in the Great Lakes basin. Researchers conducted extensive eDNA sampling for Asian carp in several Michigan waterways.<sup>25</sup> Fiscal Year 2011 calls for \$600,000 in funding for continued eDNA testing. The Framework's goal is to publish weekly reports. However, several obstacles remain when sampling for eDNA: inclement weather, specifically rain, may alter results, insignificant funding for extensive testing, and a lack of urgency in collecting samples. Environmental groups have been highly critical of the Army Corps of Engineers in their perceived slow response to expediting eDNA collection samples after an Asian carp was found in the CAWS.<sup>26</sup>

A further action implemented by the Framework has been increased monitoring above and below electric barriers in the CAWS. For Fiscal Year 2011, President Obama proposed \$800,000 in funding. Similar to additional eDNA testing, increased monitoring will yield data to estimate the extent of the Asian carp migration. "High risk" areas will be labeled where Asian carp may be sighted. Within the "high risk areas," netting will be installed to identify captured fish, as well as toxicants being released to kill fish. Numerous monitoring obstacles may arise: cooperation from shipping and local industries must occur, additional safety measures will need to be enacted, determining small fish populations is challenging, and weather can be an issue. This proposed action is rather noncontroversial and enjoys support from lawmakers.<sup>27</sup>

The Framework allocates \$800,000 for Fiscal Year 2011 to the Illinois Department of Natural Resources to encourage commercial fishing crews to catch Asian carp in the southern part of the CAWS. Asian carp represent a majority of the biomass in some Chicago waterways. In 2010, over 25,000 pounds of Asian carp were caught daily by commercial fishermen in the Illinois River.

25 "DNA Tests Show No Evidence of Invasive Carp in Michigan Rivers | Detroit Free Press | Freep.com." Detroit Free Press. 12 Feb. 2011. Web.

26 The Asian Carp Regional Coordinating Committee. "2011 Asian Carp Control Strategy Framework." (December 2010). Print.

27 Ibid.

The goal of the funding is to reduce the number of Asian carp that can potentially move upstream. A chief concern is ensuring that no native fish are harmed in the process. Furthermore, an additional \$3 million is proposed to enhance commercial marketing of Asian carp. In 2010, a Chinese meat processing company agreed to purchase up to 50 million pounds of Asian carp from the state of Illinois. The agreement created 180 jobs, and more jobs are forthcoming with expected trade deals. A primary intention of increasing Asian carp's commercial market value is to raise revenue for the Great Lakes region while finding ways to make Asian carp more palatable to Americans.<sup>28</sup>

Over the past year, several fish kills have occurred in the CAWS. Rotenone, an odorless poison, is dissolved into waterways and causes all fish to die instantly. Scientists then collect the dead fish to determine if any Asian carp were present. However, no poisons presently exist that would only kill Asian carp. Initial hurdles consist of limiting harm to native fish species while testing new poisons.<sup>29</sup> The Framework proposes \$333,000 in Fiscal Year 2011 to develop new poisons for Asian carp. Current technologies do not enable scientists to quickly make the poisons, hence this proposal remains a long-term investment.

As previously mentioned and indicated in Figure 2, flooding in Great Lakes tributaries may result in Asian carp entering the Great Lakes. In 2010, the Indiana Department of Natural Resources installed a mesh fence where the Maumee and Wabash Rivers nearly intersect in Fort Wayne, Indiana (depicted with a star in Figure 2). The fence is 1,300 feet across a marsh and stands two feet above historical flood levels. The Indiana Department of Natural Resources will continue to upgrade the fence from Fiscal Year 2010 funds. In addition, the Fiscal Year 2011 budget allocates \$4.8 million for the Army Corps of Engineers to study the feasibility of permanently separating the Maumee-Wabash watersheds. Studies began in 2010 and are currently continuing. With proposed reductions from the continuing resolution, funding is likely to be decreased for this project. Permanent separation between the watersheds remains questionable in Fiscal Year 2012 as first suggested.<sup>30</sup>

Several technological advancements to counteract reproduction of Asian carp have been proposed within the Framework. Asian carp are sensitive to sound in water, hence sonic disruption is seen as potentially limiting their advancement upstream. Researchers also believe that the annoying sound may decrease spawning in rivers. For this project, \$160,000 has been proposed in the President's Fiscal Year 2011 budget. The funding is a relatively small amount and implementation of sonar

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28 Ibid.

29 Ibid.

30 Ibid.

devices in rivers presents the only minor hurdle.<sup>31</sup>

Similar to sonic disruption, the Framework calls for \$465,000 in Fiscal Year 2011 for seismic technology to interfere with the Asian carp movement. Sound waves at various frequencies would be blasted in waterways to confuse Asian carp. Future research will determine if seismic technology can kill Asian carp before entering Lake Michigan. Few obstacles stand in the way of implementing seismic cannons in waterways. Seismic technology is a long-term investment that can begin immediately.<sup>32</sup>

Electrofishing involves stunning fish so scientists can observe the species of fish present in an area. This is not a new strategy used to monitor Asian carp, but \$1 million in funding was proposed in Fiscal Year 2011. Scientists will collect Asian carp stunned by electrofishing to create data of their presence in the CAWS. The new funding is meant to upgrade the effectiveness of electrical shocks. This proposal will be easy to implement but requires ideal weather and additional research to produce improved data. Also, scientific labs will need to be created to serve as long-term data collection centers.<sup>33</sup>

The United States Geological Society (USGS) continues to monitor waterways to determine which ones are suitable for Asian carp to easily reproduce. In 2010, the USGS collected data from numerous waterways and determined that the Milwaukee River in Wisconsin and the St. Joseph River in Michigan are ecologically ideal for Asian carp. Determining ideal waterways provides scientists opportunities to conduct further testing of new technologies to combat Asian carp movement. An additional \$341,000 in Fiscal Year 2011 funding was included in the Framework to further advances from 2010. Yet, several challenges persist when collecting data: weather remains a crucial variable, false positives are a possibility, and researchers must collect many Asian carp eggs for accurate results.<sup>34</sup>

Asian carp reproduce quickly when adequate food is readily available. Hence, scientists are researching ways to limit available food that Asian carp consume starting at the lowest food chain level. The Fiscal Year 2011 Framework provides \$300,000 in funding for said research. Current funding levels are not sufficient enough to implement nutrient controls. Significantly more funding will be needed for this technological advancement to reduce Asian carp levels. Under new House

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31 Ibid.

32 Ibid.

33 Ibid.

34 Ibid.

rules for HR 1, the continuing resolution, an increase of funding for one program must be offset by a decrease in another program. For example, if the Great Lakes Restoration Initiative were to be funded at Fiscal Year 2010 levels (\$475 million), \$250 million would have to be cut in other areas since \$225 million is the current funding amount. Again, the Senate must agree to any specified funding cuts or increases.<sup>35</sup>

Scientists and environmentalists have been debating whether Asian carp would establish a viable population should they invade the Great Lakes. Those who support the affirmative have garnered newspaper headlines recently; however, dissenters cite the relative coldness and certain types of destructive bacteria in the Great Lakes that would hinder Asian carp from multiplying freely. \$166,000 for Fiscal Year 2011 is devoted to studying the feasibility of Asian carp, specifically silver carp, living in the Great Lakes. Scientists are collecting data to see if silver carp can diversify their diets upon entering the Great Lakes. Food sources would be different in the Great Lakes compared to the CAWS. This project faces no immediate hurdles and can produce positive long-term results.<sup>36</sup>

The Great Lakes region has suffered hundreds of millions of dollars from economic damages due to the federal government not anticipating threats from invasive species. With some areas in the Great Lakes already suffering severely from the recent recession, the region cannot minimize the Asian carp risk. Figure 6 details commercial fishing sales, direct jobs relating to the industry, and subsequent economic impact from the Great Lakes. The \$4 billion statistic represents the economic impact solely for the Great Lakes region while the \$7 billion sum denotes total economic impacts attributed throughout the United States. Further, an additional 246,000 jobs are related to recreational boating in the Great Lakes.<sup>37</sup> Asian carp may destroy Great Lakes fishing, evaporating the prosperous industry and revenue heavily relied upon by the region. Representative Jim Moran (D-VA) commented on the Asian carp threat and cuts to waterway restoration programs during C-SPAN's Washington Journal on March 3, 2011. He contends that it is "penny wise and pound foolish to be cutting these programs just when our economy needs the kind of boost that Midwestern states need right now and to a larger extent are dependent upon the commerce going through the Great Lakes... cuts like this to save a few million at a time is going to cost us billions to the private sector economy in the long run." Representative Moran also reiterated that clean water, a healthy fishing industry, and reducing pollution out of major waterways has enormous positive economic consequences. Further,

<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> Buck, Eugene, Harold Upton, Charles Stern, and James Nichols. "Asian Carp and the Great Lakes Region." Congressional Research Service. 30 November 2010. Print.

he stated that funding to clean the Puget Sound in Washington has been reduced while all funding to restore the Chesapeake Bay was eliminated in HR 1 for Fiscal Year 2011. Decreased funding for restoration initiatives will undermine years of progress revitalizing waterways and result in economic loss.<sup>38</sup>

The above mentioned proposals within the Framework delay the inevitable: Asian carp will enter Lake Michigan unless a permanent ecological separation between the Mississippi and Great Lakes watersheds is enacted. Although the Chicago shipping industry will endure some short-term challenges if the Mississippi River and Great Lakes watersheds are permanently severed, separation remains the only sure solution to stop Asian carp and other invasive species from entering the Great Lakes. An ecological separation will require building and modifying current water infrastructure and physical barriers. Lawmakers must ask themselves if spending millions of dollars to separate the watersheds during this fiscally constrained time is worth the investment. If yes, action must begin immediately.

The Army Corps of Engineers, who would likely lead the separation process, cannot delay producing studies and timetable projections for separation. Asian carp will continue moving northward in the CAWS while studies ensue. Time remains a crucial variable in any implementation process to prevent Asian carp from entering Lake Michigan. Proposals in the Framework do not include contingency plans past the electric barrier. Should lawmakers fail to agree on an ecological separation, keep the CAWS locks open, and implement only the Framework's proposals, future actions will be to limit the spread of Asian carp in the Great Lakes. Just how much of an irreversible impact Asian carp would have on the Great Lakes' \$7 billion per year fishing industry remains to be seen.

<sup>38</sup> Moran, James. C-SPAN Washington Journal. 04 Mar. 11. Television.

Figure 1: Chicago Area Waterway System (CAWS), CRS February 2011



Figure 2: Possible waterways for Asian carp to enter Great Lakes (numbered accordingly), 2011 Asian Carp Control Strategy Framework

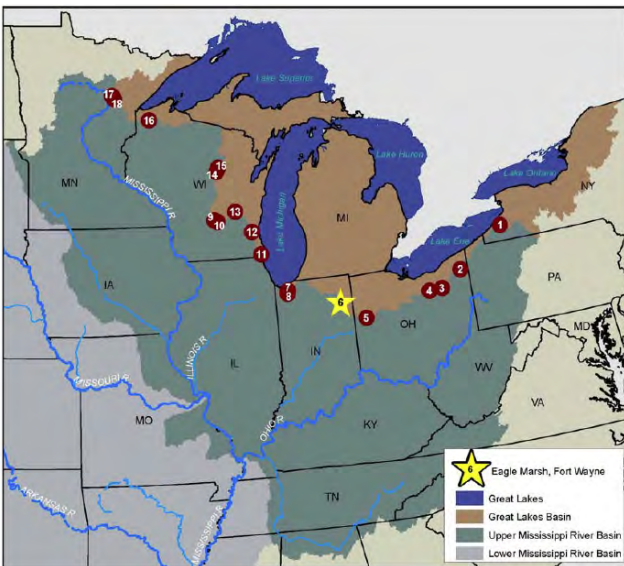


Figure 3: Summary of Great Lakes Shipping Economic Impact, U.S. Saint Lawrence Seaway Development Corporation

IMPACTS	2000	1991	CHANGE	PERCENT CHANGE
<b>JOBS</b>				
DIRECT	43,968	33,716	10,252	30.41%
INDUCED	27,392	10,912	16,480	151.03%
<b>SUB TOTAL</b>	<b>71,360</b>	<b>44,628</b>	<b>26,732</b>	<b>59.80%</b>
INDIRECT	26,757	NA	NA	NA
<b>TOTAL JOBS</b>	<b>98,117</b>	<b>44,628</b>	<b>26,732</b>	
RELATED SHIPPER JOBS	54,391	NA	NA	NA
<b>ALL DOLLAR VALUES IN 1,000 DOLLARS</b>				
<b>PERSONAL INCOME (1000)</b>				
DIRECT	\$1,623,014	\$1,050,128	\$572,886	54.55%
INDUCED	\$1,889,837	\$854,180	\$1,035,657	121.25%
INDIRECT	\$820,736	NA	NA	NA
<b>TOTAL INCOME IMPACT</b>	<b>\$4,333,586</b>	<b>\$1,904,308</b>	<b>\$2,429,278</b>	
<b>REVENUE (1000)</b>	<b>\$3,385,243</b>	<b>\$1,724,883</b>	<b>\$1,660,360</b>	<b>96.26%</b>
<b>FEDERAL, STATE, LOCAL TAXES (1000)</b>	<b>\$1,336,290</b>	NA	NA	

Figure 4: Economic Impacts of Shipping along Indiana Lakeshore, Martin Associates

CATEGORY	SHIP ACTIVITY (LAKER & SALTY)	BARGE ACTIVITY VIA O'BRIEN LOCK	TOTAL MARITIME SHIPMENTS
<b>DIRECT JOBS</b>	<b>17,443</b>	<b>3,394</b>	<b>20,837</b>
<b>TOTAL JOBS</b>	<b>86,912</b>	<b>17,655</b>	<b>104,567</b>
<b>DIRECT PERSONAL INCOME</b>	<b>\$781,620,212</b>	<b>\$141,502,699</b>	<b>\$923,122,911</b>
<b>TOTAL PERSONAL INCOME</b>	<b>\$5,145,679,348</b>	<b>\$890,168,403</b>	<b>\$6,035,847,751</b>
<b>LOCAL PURCHASES</b>	<b>\$1,889,242,899</b>	<b>\$227,006,700</b>	<b>\$2,116,249,599</b>
<b>TOTAL STATE &amp; LOCAL TAXES</b>	<b>\$483,693,859</b>	<b>\$83,675,830</b>	<b>\$567,369,689</b>
<b>TOTAL VALUE OF ECONOMIC ACTIVITY</b>	<b>\$12,287,459,456</b>	<b>\$1,909,005,610</b>	<b>\$14,196,465,066</b>

Figure 5: Summary of Economic Loss from Closure of CAWS Locks, DePaul University, 2010

	<b>Year 1</b>	<b>Years 2 - 8</b>	<b>Years 9 - 20</b>
Commercial Shipping	\$95,230,082	\$95,230,082	\$95,230,082
External & Highway Costs	\$29,828,326	\$29,828,326	\$29,828,326
Recreational boating	\$5,077,920	\$5,077,920	\$5,077,920
River Cruises and Tours	\$19,762,600	\$19,762,600	\$19,762,600
Flood prevention	\$375,478,436	\$375,478,436	
Municipal protection	\$5,643,913	\$5,643,913	\$5,050,000
Property value loss	\$51,000,000		
<b>Total</b>	<b>\$582,021,277</b>	<b>\$531,021,277</b>	<b>\$154,948,928</b>

Figure 6: Fishing Economic Impact in Great Lakes, U.S Department of Interior 2006

States	Anglers	Days Fished	Retail Sales (000s)	Salaries (000s)	Jobs	Total Impact (000s)
Illinois	56,000	728,000	\$93,589	\$55,158	1,511	\$175,074
Indiana	46,000	759,000	\$224,588	\$117,321	4,170	\$394,866
Michigan	461,000	6,981,000	\$562,654	\$312,197	8,283	\$1,001,641
Minnesota	48,000	272,000	NR	NR	NR	NR
New York	247,000	2,060,000	\$213,174	\$122,147	3,288	\$369,194
Ohio	328,000	2,807,000	\$480,482	\$248,301	9,915	\$801,817
Pennsylvania	85,000	598,000	\$399,342	\$213,921	5,200	\$725,705
Wisconsin	235,000	3,705,000	\$315,336	\$159,420	6,153	\$528,274
<b>Totals (Great Lakes States)</b>	<b>1,506,000</b>	<b>17,910,000</b>	<b>\$2,289,165</b>	<b>\$1,228,465</b>	<b>38,520</b>	<b>\$3,996,571</b>
<b>Totals (United States)</b>			<b>\$2,524,266</b>	<b>\$2,189,490</b>	<b>58,291</b>	<b>\$7,089,230</b>

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