

THEORETICAL APPROACHES TO WATER LEVEL MANAGEMENT ON THE ST.
LAWRENCE RIVER AND LAKE ONTARIO

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INTRODUCTION

When I first came to St. Lawrence University, I hardly knew anything about the St. Lawrence River. Because of my participation on the crew team, I was introduced to this majestic river shortly after my arrival for freshman year. I still remember my first sight of it from the team van; I was in awe of its size! Obviously, I had seen rivers before, but none as large as the St. Lawrence. The location of the university's boathouse in Waddington is next to an island, so the full width of the river is hard to see. From the dock, to the point where we usually turn around, the size of the river is about half of the total, but the full extent of the river is clear from the turnaround point.

Over the years, the sight of sunrises over the river every fall and spring has grown to be one of my fondest memories of living in Canton. The sound of honking geese flying to warmer waters, the black silhouettes of reeds lining the banks in the early morning, and the smell of river water permeate my memories of my college experience. I cannot imagine what my time at St. Lawrence would have been like without this calming presence to start off my day every morning.

This past summer, I began research along the river and Lake Ontario to examine how what seems to be such a natural and unharmed body of water is actually highly controlled. This summer experience introduced me to a much greater expanse of the river and lake. I noticed a progression of different regions with a distinct feel along the course of the ecosystem. For example, the Thousand Islands region is a hotspot of tourist activity, whereas closer to the mouth of the river there is much less human development. As a result of this summer research, I have continued to develop my understanding of the ecosystem.

The purpose of this paper is to examine the historical context of water level regulation on the St. Lawrence River and Lake Ontario using the core-periphery model, dimensions of power, and internal colonization as a guiding framework of analysis. Water level management is a contentious subject along the river and lake, because there are so many diverse stakeholders concerned with the ecosystem. It is important to take the environment into consideration as a stakeholder as well, because it has largely been ignored since regulation began.

The paper will begin with a discussion of each of these theoretical ideas, present methods, move into a description of the history of water level management on the river, and then explain

how the theories can be applied to the concepts previously explained. The International Joint Commission is proposing to change the water level management plan to an alternative known as Bv7. The summary and conclusions section connects the water level management issue with ideas presented by John Gaventa regarding the Appalachia region.

THEORETICAL FRAMEWORKS

Core-Periphery Model

The core-periphery model or center-periphery model is a theory that describes economic, political, cultural, and social relations on global, national, and regional scales.¹ Originally the theory was “an attempt to model spatial changes in national economic structures as various levels of industrialization occur.”² Generally, the core is described as an urban region with a highly developed economic system and the bulk of the political power, whereas the periphery is generally an undeveloped rural region that is exploited by the core for primary materials and natural resources.³ John Friedmann, who originally advanced the model in his book *Regional Development Policy—A Case Study of Venezuela*, described the periphery as having a stagnant or declining economy when not related to the core.⁴ That is to say that when the periphery is related to the core, it still has an economy with minimal growth, but it is much less profitable and effective than the core’s economy. When the economies of the core and the periphery are not related, the periphery’s economy does not grow.⁵ The core needs the periphery in order to accumulate power and wealth, but the disparity in equality between the regions grows over time.⁶ Core regions tend to have more political power, a more developed military, and a

¹ Pekka Kanppila. “Cores and Peripheries in a Northern Periphery: A Case Study in Finland.” *Fennia* 189, 1 (2011): 20-31.

² Tyrel Moore. “Core-Periphery Models, Regional Planning Theory, and Appalachian Development.” *Professional Geographer* 46, no. 3 (1994): 318.

³ Ibid.

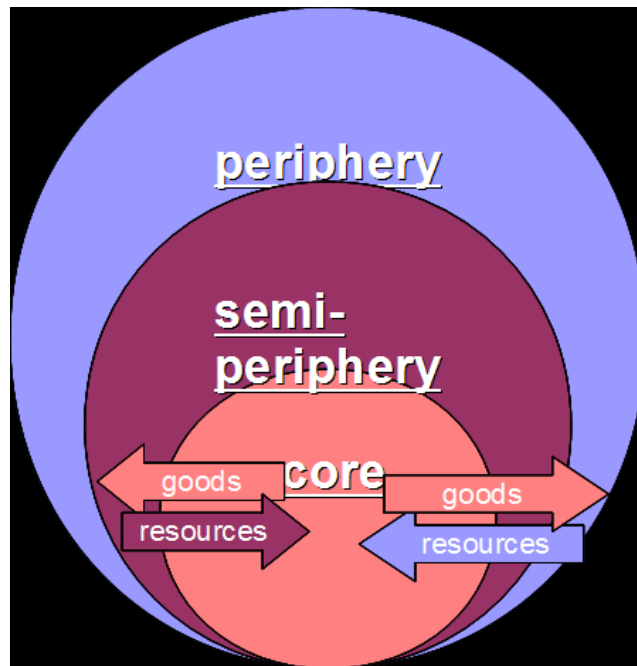
⁴ John Friedmann. *Regional Development Policy- A Case Study of Venezuela*. (Cambridge: MIT Press, 1966). 9.

⁵ Ibid.

⁶ Friedmann, 14.

strong economic base and trading ties.⁷ However, households in periphery areas tend to be more self-sufficient.⁸

Model showing the core-periphery concept.⁹ The core takes resources from the periphery and the semi-periphery and then sends the manufactured products back out for a high price.



According to Friedmann, the center is where quick development happens and investments multiply faster than in the periphery.¹⁰ The periphery produces raw materials to supply the core; for example, many Latin American countries produce primary materials for the United States and Europe.¹¹ The core-periphery model shows a polarization between regions or countries.¹² Sometimes this model is referred to as Dependency Theory because of the power dynamics involved and how that creates a necessity for periphery countries to be in contact with the core.¹³ Friedmann classifies this relationship as colonial because the core is forcing the periphery to trade in an unequal relationship by exchanging valuable items for the primary products, often but not always agricultural, that the periphery creates.¹⁴ The core needs the periphery to supply natural resources and contribute to its power, but the dependency is really created because the

⁷ C.P. Terlouw. "The Elusive Semi-Periphery: A Critical Examination of the Concept Semi-periphery." *International Journal of Comparative Sociology* XXXIV, no. 1-2 (1993): 93.

⁸ Ibid.

⁹ Image from <http://en.wikipedia.org/wiki/Core%E2%80%93periphery>.

¹⁰ Friedmann, 9,15.

¹¹ Friedmann, 10.

¹² Kanppila, 21.

¹³ Erik Wibbels. "Cores, Peripheries, and Contemporary Political Economy." *Studies in Comparative International Development* 44 (2009): 441.

¹⁴ Friedmann, 13.

developing regions cannot survive economically without the center.¹⁵ In times of global depressions, core regions suffer, but peripheral regions see drops in the stock market that are twice as large as in the core.¹⁶

As previously mentioned, the center or core has faster development than the periphery and investments grow at a faster rate.¹⁷ This creates a growing inequality between cores and peripheries. Economic geography explains why cores grow faster than the periphery, but it does not explain how the cores became areas with more development to begin with.¹⁸ When examining the model at a global scale, the history of capitalism is fundamental to why centers developed in certain regions or countries.¹⁹ Core countries such as the United States, Canada, Australia, and Norway developed because of access to natural resources in conjunction with democracy and certain power dynamics, whereas periphery countries such as Bolivia, Nigeria, and Venezuela, which also have many natural resources, became marginalized because of their enclave production, authoritarian rule, and other factors.²⁰ Core countries initially develop due to access to their own resources, but then they need the periphery to maintain high growth and success.²¹ According to Galeano in his famous work on exploitation of Latin America, the current core countries are rich because of their policies and exploitation of the poor.²² The current system increases the gap between the core and the periphery by maximizing the returns to already rich countries at the expense of the poor.²³ Location is extremely important in development as well; close proximity to existing cores and easy accessibility make certain places predisposed to more development than others.²⁴ The distance between the government and periphery also means that the decisions made do not directly affect those who make them.²⁵

The political power of the core decides the laws that govern the periphery and the movements to develop the periphery in order to provide for a greater movement of wealth towards the core.²⁶ Another model, the Equilibrium Model, attempts to explain the flow of

¹⁵ Friedmann, 9.

¹⁶ Wibbels, 441.

¹⁷ Friedmann, 9, 15.

¹⁸ Wibbels, 444.

¹⁹ Ibid.

²⁰ Wibbels, 445.

²¹ Ibid.

²² Eduardo Galeano. *Las Venas abiertas de América Latina*. (Madrid: Siglo XXI Editores, 1971). 17.

²³ Ibid.

²⁴ Friedmann, 11.

²⁵ Friedmann, 18.

²⁶ Friedmann, 13.

capital and labor from areas of low to high productivity and wages until equilibrium is reached, but this model is not supported by historical evidence.²⁷ The core-periphery model, on the other hand, has been widely used in applications ranging from a global to a regional scale.

In addition to periphery and core, a third component was added to the model more recently: the semi-periphery. The semi-periphery is not as well defined as the core and the periphery, but it does play an important role in the power system.²⁸ The role of the semi-periphery, according to Wallerstein, is to mitigate the drastic political polarization between the rich and poor, thereby making an alliance with the poor, and providing an outlet for core capital investment in low-wage industrial production.²⁹ Many regions can be classified as semi-periphery, although they vary broadly in economic and political situations, and for this reason, there is often debate over which ones should be considered semi-periphery.³⁰ For example, the following countries are usually considered to be between the core and the periphery: Mexico, Algeria, Ireland, Portugal, Turkey, Israel, Iraq, Pakistan, South Korea, Thailand, Malaysia, Indonesia, and New Zealand.³¹ Nigeria and Venezuela can be sometimes classified as semi-periphery as well, but can be placed in the periphery category too.³² The semi-periphery is often comprised of dynamic and adaptable regions that are able to take advantage of economic downturns to advance themselves.³³ These areas are able to make significant economic gains when core and periphery regions suffer in recessions.

The core-periphery model has also been used to describe the relationship in Bolivia with the entrance of foreign companies. Bolivia is considered a periphery country in relation to countries such as the United States, which are clearly in the core.³⁴ In 2006, Evo Morales, the president of Bolivia, began the process of nationalizing the exploitation of hydrocarbons in the country.³⁵ Hydrocarbon extraction had been dominated by transnational companies, but

²⁷ Friedmann, 14.

²⁸ Terlouw, 87.

²⁹ Immanuel Wallerstein. "Internal Colony of Internal Periphery? A Critique of Current Models and an Alternative Formulation." in Helen Matthews Lewis, Linda Johnson, and Don Askins, eds. *Colonialism in Modern America: The Appalachian Case*. Appalachian Consortium Press. Boone, NC. (1978): 338.

³⁰ Terlouw, 87.

³¹ Ibid.

³² Ibid.

³³ Terlouw, 96.

³⁴ María José Paz Antolín and Juan Manuel Ramírez Cendrero. "Alcance y limitaciones de las políticas de IED en las economías periféricas. Reflexiones sobre el caso boliviano." *Análisis Económico* XXVI, no. 63 (2011): 51-74.

³⁵ Ibid.

periphery countries do not necessarily get benefits from the presence of foreign companies.³⁶ Foreign Direct Investment (FDI) can be helpful in periphery countries, but it is important that there are development standards that foreigners are obliged to meet so that countries in the core do not take advantage of periphery countries.³⁷

In addition to its application on the global scale, the Center-Periphery model can also be used to describe areas within a country. Appalachia, the region in the central eastern part of the United States, is a clear example of the periphery.³⁸ Coal mining is the primary occupation in the region as well as a bit of agriculture.³⁹ In 1960, one-third of families in Appalachia had incomes less than \$3,000 and the average per capita income in certain areas was only \$840 per year.⁴⁰ In an attempt to remedy this extreme inequality, the government instituted a development project to build access roads and highways through the region.⁴¹ A goal was set to construct 4,000 miles of roads and highways, but this project, as of 1994, was not completed.⁴² In the 1980s there were fewer people living in extreme poverty, but there was still a significant percentage below the poverty line and gains were likely due to the demand for coal and not the construction of highways.⁴³ The highways mainly resulted in creating an easier way to extract resources from the area rather than bringing economic development in to the region. A collapse of the mining industry in some areas brought further distress and the region still remains peripheral in the United States.⁴⁴ Appalachia is a clear example of the core-periphery model on a regional scale.

In Finland, the core-periphery model has been applied to tourism and resort areas.⁴⁵ The country has four main resorts: Levi, Ruka, Saariselkä, and Ylläs.⁴⁶ These areas serve as cores and attract tourists, capital, and therefore, power, so that the municipalities outside of the resort areas must look to the centers for jobs and social services, etc.⁴⁷ As Britton said, tourism

³⁶ Ibid.

³⁷ Ibid.

³⁸ Moore, 316.

³⁹ Moore, 317.

⁴⁰ Moore, 316,322.

⁴¹ Moore, 317.

⁴² Moore, 321.

⁴³ Moore, 323.

⁴⁴ Moore, 327.

⁴⁵ Kanppila, 21.

⁴⁶ Ibid.

⁴⁷ Kanppila, 23.

accentuates economic disparity.⁴⁸ Tourism is common in periphery areas, but it serves to amass power and capital in the center, in this case the four central resorts in Finland.⁴⁹ The periphery areas are the natural resource base that is exploited to draw tourists to an area. In Finland, the resorts were constructed in a periphery region to bring in economic revenue.⁵⁰ The result of this tourism development was that the resorts themselves became cores and the surrounding area remained periphery.⁵¹

There are numerous contemporary applications of the core-periphery model. A chronological search of SocIndex online database yielded 35 relevant articles on the topic published since 2009.⁵² The model now employs many diverse methods ranging from algorithm applications⁵³ to discussions of industrial plant siting in Japan's periphery⁵⁴ to a review of the development of kingdoms in Cameroon's grasslands.⁵⁵ Warnier, for example, uses historical evidence to show that the centralization of power into kingdoms in Cameroon pre-dates the slave trade and to explain that the cores developed because of the exploitation of other resources such as palm oil.⁵⁶ Current applications of the core-periphery model have utilized a variety of methods to fill out the original philosophical ideas of the framework.

Dimensions of Power

As discussed in relation to the core-periphery model, political and economic power tends to be centralized in different areas.⁵⁷ These areas usually have a group of people who have power and are able to control groups without power.⁵⁸ The group in power uses methods

⁴⁸ S. Britton. "Tourism, capital, and place: Towards a Critical Geography of Tourism." *Environment and Planning D* 9,4 (1991): 451-478.

⁴⁹ Kanppila, 22.

⁵⁰ Kanppila, 20.

⁵¹ Ibid.

⁵² Accessed through St. Lawrence University library website.

⁵³ Michael Brusco. "An exact Algorithm for Core/Periphery Bipartitioning Problem." *Social Networks* 33, 1 (2011): 12-19.

⁵⁴ Toshihiro Okubo. "Industrial Relocation Policy, Productivity and Heterogeneous Plants: Evidence from Japan." *Regional Science and Urban Economics* 42,1-2 (2012): 230-239.

⁵⁵ Jean-Pierre Warnier. "The Grasslands of Cameroon: Ancient Center or Recent Periphery?" *Africa Today* 58,3 (2012): 59-72.

⁵⁶ Ibid.

⁵⁷ Kanppila, 21.

⁵⁸ Friedmann, 13.

including coercion, influence, authority, force, and manipulation to maintain their domination.⁵⁹ Power can be expressed in various ways, some more overt than others.⁶⁰

The group in power, also referred to as group A or the élite in the published literature, must be cohesive and group B, or those without power, must allow them to decide issues in his/her name.⁶¹ In real-life applications of power theory, it can be challenging to determine how the powerless might act if the powerful were not present because of differences in cultural and social values.⁶² In a 2005 revision of his earlier work, Lukes modifies his view of power to be an ‘ability’ or ‘capacity’ to decide issues, because this potential may be present whether or not it is being used in certain situations.⁶³ In general, the type of power discussed in the literature is domination and is referred to as a negative act of control, but in his more recent work Lukes states that some forms of power can be helpful, positive, and transformative, such as the relationship of power between teachers and students.⁶⁴

The first dimension of power, also known as the pluralist view of power, is primarily concerned with decision-making behavior in situations of observable conflict of interests.⁶⁵ According to Dahl, the first dimension of power is when, “A has power over B to the extent that he can get B to do something that B would not otherwise do.”⁶⁶ The power dynamics come into play when decisions made by an elite group take priority over conflicting ideas by group B and, therefore, group A is successful.⁶⁷ Polsby also helped to develop this idea of the first dimension of power.⁶⁸ According to Polsby, power can only be claimed when elites have acted in an observable situation and the non-elites have responded in an appropriate manner.⁶⁹ The first dimension of power is, therefore, easier to identify than the other dimensions.

⁵⁹ Steven Lukes. *Power: A Radical View* (Hong Kong: The Macmillan Press LTD, 1974). 17.

⁶⁰ Lukes, 10.

⁶¹ Lukes, 28.

⁶² Lukes, 46.

⁶³ David Swartz. “Recasting Power in its Third Dimension.” *Theory and Society*, 36 (2007). 104. This article reviews Lukes’ new work about power. Steven Lukes. *Power: A Radical View* (New York: Palgrave Macmillan, 2005).

⁶⁴ Swartz, 105.

⁶⁵ Lukes, 15.

⁶⁶ Robert Dahl. “The Concept of Power.” *Behavioral Science*, 2 (1957). 201-205.

⁶⁷ Lukes, 12-13.

⁶⁸ John Gaventa. *Power and Powerlessness: Quiescence and Rebellion in an Appalachian Valley* (Chicago: University of Illinois Press, 1980). 5.

⁶⁹ M. Crenson. *The Un-Politics of Air Pollution: A Study of Non-Decisionmaking in the Cities*. (Baltimore, MD: John Hopkins University Press, 1971).

The second dimension of power was developed by thinkers such as Bachrach and Baratz as a critique of the pluralist view.⁷⁰ They argue that the one dimensional view is restrictive:

Of course power is exercised when *A* participates in the making of decisions that affect *B*. Power is also exercised when *A* devotes his energies to creating or reinforcing social and political values and institutional practice that limit the scope of the political process to public consideration of only those issues which are comparatively innocuous to *A*. To the extent that *A* succeeds in doing this, *B* is prevented, for all practical purposes, from bringing to the fore any issues that might in their resolution be seriously detrimental to *A*'s set of preferences.⁷¹

Lukes explains the second dimension of power as a mobilization of bias, meaning one group determines the rules of the game that will only benefit themselves at the expense of all other groups.⁷² Lukes states:

So I conclude that the two-dimensional view of power involves a *qualified critique* of the *behavioral focus* of the first view...and it allows for consideration of the ways in which *decisions* are prevented from being taken on *potential issues* over which there is observable *conflict* of (subjective) *interests*, seen as embodied in express policy preferences and sub-political grievances.⁷³

Group A makes the 'rules of the game' and determines who plays and what topics are on the table.⁷⁴ In politics, leaders exclude important issues and present a predetermined agenda of struggle to the public.⁷⁵ As this process continues, the non-élite begins to accept the status quo and internalize their role as the powerless.⁷⁶ The élite or powerful have more forceful and enduring control over the non-élite when the second dimension of power is applied.

The third dimension is much more subtle than the first two dimensions and is not as well defined.⁷⁷ Lukes claims that the first two dimensions of power are inadequate to describe power

⁷⁰ Lukes, 10.

⁷¹ Peter Bachrach and Morton Baratz. *Power and Poverty. Theory and Practice* (New York: Oxford University Press, 1970). 7.

⁷² Lukes, 17.

⁷³ Lukes, 20.

⁷⁴ Gaventa, 9.

⁷⁵ Gaventa, 9-10.

⁷⁶ Gaventa, 11.

⁷⁷ Gaventa, 15.

dynamics: “But this is to ignore the crucial point that the most effective and insidious use of power is to prevent such conflict from arising in the first place.”⁷⁸ Group A shapes and determines group B’s wishes in order to prevent conflict and solidify control over group B.⁷⁹ In the third dimension of power, the fact that B has misconceptions about or does not correctly attribute grievances protects A.⁸⁰ Lukes goes on to state that:

...the three-dimensional view of power involves a *thoroughgoing critique* of the *behavioral focus* of the first two views as too individualistic and allows for consideration of the many ways in which *potential issues* are kept out of politics, whether through the operation of social forces and institutional practices or through individuals’ decisions.⁸¹

The third dimension of power emphasizes the manipulation of the non-élite so that he/she does not always act in his/her own self interests and his/her beliefs have changed to match this inaction.

In a study done by Crenson, the three dimensions of power were applied to air pollution and power dynamics in various cities in the United States.⁸² A November 1953 air pollution event in New York City (NYC) increased deaths over the background mortality rate by 200 fatalities in one week.⁸³ According to Dahl’s concept, people will complain if they have easy participation options, low costs to inaction, and their needs are not being met; in this case, living in a polluted environment is a situation of not having access to clean air in a place where it is relatively easy and safe to protest.⁸⁴ Both Lukes and Gaventa criticize this view because it puts the blame for non-action on the victim.⁸⁵ In the NYC case study there was little public outcry over the air pollution event.⁸⁶ However, Crenson claims that just because the people did not raise complaints, does not mean that they have no interest in avoiding poison in the air.⁸⁷ Covert political manipulation, what Lukes would call the third dimension of power, could be at work,

⁷⁸ Lukes, 23.

⁷⁹ Gaventa, 12.

⁸⁰ Gaventa, 20.

⁸¹ Lukes, 24.

⁸² Crenson.

⁸³ Crenson, 2.

⁸⁴ Gaventa, 6,7.

⁸⁵ Gaventa, 6,7.

⁸⁶ Crenson, 11.

⁸⁷ Crenson, 27.

and people's attention can sometimes be diverted from the issue by political neglect.⁸⁸ Crenson compared several cities affected by air pollution. In his analysis, B represented the general population and A represented the city leaders, and some cities were clear examples of non-decisions by group A, who ignored the problem.⁸⁹ A non-decision is defined by Lukes as a decision which curbs an unconscious challenge to the interests of the decision-maker.⁹⁰ Group A illustrates the second dimension of power because they set the agenda, but they also show the third dimension of power by influencing how the citizens thought about the problem. In Gary, Indiana, for example, the city leaders in power delayed effective action for seven years while a nearby town with similar pollution problems, East Chicago, had effectively generated an ordinance to combat the same problem.⁹¹ City leaders in East Chicago, Indiana quickly identified air pollution as a problem and took action to mitigate the issue.⁹² The U.S. Steel Company in Gary used lobbying to slow decisions by the local elite in order to prevent local laws that would force them to stop emitting pollutants.⁹³ From these examples, one can see that group A, who has the power, is usually found in the core, whereas group B is in the periphery.

Internal Colonization

Power dynamics are an important part of societal development and control of resources. Internal colonization is a similar concept to the core-periphery model and has at times been used as a synonym for Dependency Theory and the core-periphery model.⁹⁴ As discussed on pages 2-6, the core of political power is often a metropolitan region that has both the government and the main market for goods/services, so this center tends to control the more far reaching peripheral areas.⁹⁵ Internal colonization seems to involve a more complete control and domination of periphery by the core than the core-periphery model suggests. According to Lewis et al., internal

⁸⁸ Ibid.

⁸⁹ Crenson, 34.

⁹⁰ Lukes, 18.

⁹¹ Crenson, 55.

⁹² Crenson, 36.

⁹³ Crenson, 122.

⁹⁴ Peter Calvert. "Internal Colonialism, Development, and Environment." *Third World Quarterly* 22,1 (2001): 52.

⁹⁵ Calvert, 54.

colonization is different from classic colonization because the colonizer brings the colonized into a region instead of moving in from the outside.⁹⁶

Part of the difficulty in distinguishing the terminology (or understanding the overlap), is that internal colonization is a term that has been defined in several different ways. In a historical review, for example, Calvert outlines different uses of the term. The use of the phrase was in the late 1800s by Lenin to refer “to physical conquest within, not across, political boundaries,”⁹⁷ meaning within a country. Later, internal colonization was used to mean the conquest of ‘unoccupied’ lands within a nation.⁹⁸ Blauner stated that there were four parts of the colonization complex: forced involuntary entry, significant change in cultural or social organization, control of the colonized, and racism by the dominant group.⁹⁹ A further usage of the term has been to describe certain groups of elite in developing countries that attempt to industrialize the nation at the cost of environmental health to consolidate their own political or economic power.¹⁰⁰ Regardless of differences in use, the term internal colonization refers to situations of inequality within a country.

The Appalachia region of the United States has been used as an example of the core-periphery model theory as we saw in the previous section, but it has also been used in the literature as an example of internal colonization. Lewis et al. says:

As the 19th Century drew to a close and the new century progressed through the first decade, the penetration of the South and the Southern Appalachians was begun by Northeastern capital and is continuing at an accelerated rate. The Morgans, Mellons, the Rockefellers sent their agents to take charge of the region’s railroads, mines, coke furnaces and financial corporations.¹⁰¹

The region was taken over for the exploitation of coal resources. “Speculators brought land, mineral, and timber rights from illiterate, simple mountain farmers.”¹⁰² These deceptive land deals allowed for environmental degradation from strip mining and there was little

⁹⁶ Helen Matthews Lewis, Linda Johnson, and Don Askins, eds. *Colonialism in Modern America: The Appalachian Case*. Appalachian Consortium Press. Boone, NC: 1978. 16.

⁹⁷ Calvert, 51.

⁹⁸ Ibid.

⁹⁹ Lewis, 16.

¹⁰⁰ Calvert, 54.

¹⁰¹ Ibid.

¹⁰² Lewis, 17.

documentation in the area to show outsiders what was occurring.¹⁰³ As a result of this conquest, the region is economically marginal and has high rates of homicide and alcohol abuse.¹⁰⁴

According to Schwaner and Keil:

Region alone explains 65 percent of the variance in poverty, 60 percent of unemployment, 68 percent of (economic) distress, 51 percent of mining, and over 27 percent of the variance in homicide in Kentucky. Clearly, when compared to the rest of the state, the (Periphery of Appalachia) coal-producing counties persist as an internal colony.¹⁰⁵

In regions where the primary economic activity is coal extraction, the miners and counties receive only one-third of the money generated by the sale of the coal.¹⁰⁶ Coal companies have allegiances to stockholders and headquarters in other locals and take little responsibility for the miners, environment, or coal mining region.¹⁰⁷ Attitudes of those in power toward the natives in Appalachia are generally negative and many insulting names such as hillbillies, low class, untrustworthy, lazy, primitives have been used against them.¹⁰⁸ The region is taken advantage of by outsiders and the main economic capital is exported rather than developing basic goods and services in the internal colony region.

The classification of Appalachia as an example of internal colonization has been critiqued by Wall, who claims that it lacks several aspects that would make the analogy fit the situation.¹⁰⁹ People were looking for a way to describe the inequality and exploitation of the periphery within a country and therefore applied the internal colonization model.¹¹⁰ Wall states:

Through conceptual confusion or carelessness, internal colonialism has been used to designate situations of stratification by class, race, ethnicity, or geography, alone or in various combinations. It is also used to describe absentee industrial ownership, although this is a characteristic feature of uneven and polarized

¹⁰³ Ibid.

¹⁰⁴ Shawn Schwaner and Thomas Keil. "Internal Colonization, Folk Justice, and Murder in Appalachia: The Case of Kentucky." *Journal of Criminal Justice* 31 (2003): 279.

¹⁰⁵ Schwaner and Keil. 280.

¹⁰⁶ Lewis, 20.

¹⁰⁷ Lewis, 21.

¹⁰⁸ Lewis, 23.

¹⁰⁹ David Walls. "Internal Colony or Internal Periphery? A Critique of Current Models and an Alternate Formation." Accessed 4 October 2012. <http://www.sonoma.edu/users/w/wallsd/pdf/Internal-Colony.pdf>

¹¹⁰ Ibid.

capitalist development. Included among such internal colonies have been the U.S. South; northern New England, the northern Great Lakes region, the Southwest, the “Celtic periphery” of England, southern Italy and so on. One explanation may be that the vocabulary of colonization IS more comfortable than that of class conflict, and regional or ethnic chauvinism is more acceptable than talk of socialism.¹¹¹

Drawing upon a definition of internal colonialism created by Pierre van den Berghe, Wall says that there are four main aspects of an internal colony: rule of one group over another within a state, territorial separation of the subordinate group from the dominate group and a difference between land tenure rights, existence of an internal government that mainly governs the subordinate group, and economic inequality that forces the subordinate group to work in inferior labor conditions.¹¹² Essentially the Appalachia region lacks several key factors, including racism and an internal government, which would allow it to adequately fit the internal colonization model.

According to Pinderhughes, African Americans communities in many areas of the United States can also be considered as a case of internal colonization.¹¹³ Many famous writers, such as Frederick Douglass, Cyril Briggs, and W.E.B. Du Bois, have written about the conditions that lead Pinderhughes to suggest this as a case of internal colonialism.¹¹⁴ Jim Crow laws, black ghettos, the prevention of development of a bourgeois middle class, the restriction of blacks to provide manual labor, and other societal inequalities such as inferior systems of education, public safety, and employment are examples of how some black communities can be considered as internal colonies of the United States.¹¹⁵ Wall also agrees that African Americans are an example of internal colonization.¹¹⁶

Internal colonization is often used to describe the situations in South Africa and Zimbabwe as well.¹¹⁷ Even though both are now independent countries, in Zimbabwe Europeans still control about two-thirds of the best farming land.¹¹⁸ A policy for land redistribution in Zimbabwe reallocated 270 white-owned farms, but it was given to “the attorney general, the

¹¹¹ Walls, 4.

¹¹² Walls, 5.

¹¹³ Charles Pinderhughes, “How Black Awakening in Capitalist America Laid the Foundation for a New Internal Colonialism Theory,” *The Black Scholar* 40, 2 (2010): 71.

¹¹⁴ Ibid.

¹¹⁵ Pinderhughes, 72-75.

¹¹⁶ Walls, 5.

¹¹⁷ Calvert, 58.

¹¹⁸ Ibid.

mines and tourism minister, the speaker of the parliament, two high court judges and a retired general—none of them conspicuously either subsistence farmers or landless peasants.”¹¹⁹

Resources were redistributed within the country, but given to local elites instead of the poor, so the country became an example of internal colonialism instead of classic colonialism. South Africa has seen similar examples of corruption and power dynamics with its past policy of apartheid, during which whites controlled the country at the expense of other citizens.¹²⁰ Black South Africans made up the majority of the country in the 1950s and were important to the economy because of the manual labor they provided.¹²¹ However, blacks were not represented in politics nor were they allowed to vote.¹²²

The three dimensions of power show how the dominant group in both the core-periphery model and internal colonization gets and maintains power over group B. The core-periphery model and internal colonization also both refer to situations of inequality. However, the internal colonization model requires more specific geographical locations because it must be an oppressed group within a country. The core-periphery model can be applied on a national, regional, or international scale. In examples of internal colonization, group A has more power and control over group B than in examples of the core-periphery model.

METHODS

The theories explained above will be used to explain the current situation surrounding water level management on the St. Lawrence River. In order to accumulate the information about the river and lake system that is presented in the following section, research was conducted in the summer of 2012 at St. Lawrence University, along the St. Lawrence River, and the Lake Ontario community. Additional research was pursued during the fall academic semester in order to better apply the history of water level regulation to the theoretical models presented above.

¹¹⁹ Calvert, 59.

¹²⁰ Leo Marquard. *A Short History of South Africa*. New York, Frederick A Praeger, Publishers: 1968.

¹²¹ Marquard, 245.

¹²² Marquard, 249.

At the beginning of the summer study, a thorough review of local newspaper articles found in the online database News Bank from *The Watertown Daily Times* was undertaken. Several key word searches were used including “St. Lawrence River water level management.” Other pertinent listings were found from research conducted on winter navigation on the St. Lawrence River and several spotting of relevant news in other local papers such as the *Thousand Islands Sun*. Articles were assigned a number based on their listing in the online database. A chart was developed listing the assigned number of the article, the date it was published, relevant notes about its content, and a list of potential people to contact that were mentioned in the article as being involved with the water level issue over time. Important quotations and information on public meetings and events was noted as well. The summer research also involved visits to the Owen D. Young Library at St. Lawrence University to consult various archives of microfilm and paper copies of the *Watertown Daily Times*. The microfilm search did not seem to be an effective use of time, as it only turned up one slightly relevant article in two hours of searching, so other methods of research were employed instead. The paper copy of the newspaper was useful in finding the reports of the public informational meetings conducted by the IJC and other current events.

After the newspaper review, a series of searches for other published literature on the topic was carried out online and in the Owen D. Young Library holdings. This search led to several sources of interest and contact names and information for stakeholders, principally the Save the River group based in Clayton, NY. Three relevant academic articles on wetland science were found as a result of this database search: one on cattails in areas with water level regulation, one on northern pike, and one on integrated ecosystem management on Lake Ontario. Various websites were also consulted, primarily Citizens Campaign for the Environment, Save the River, and the International Joint Commission (IJC).

During the research, various communities along the St. Lawrence River and Lake Ontario were explored. There were visits to river outlooks between Ogdensburg, NY and Clayton, NY, and exploration of Chippewa Bay, Goose Bay, Minna Anthony Common Nature Center on Wellesley Island, the Department of Environmental Conservation Fisheries Aquarium, Tibbets Point Lighthouse in Cape Vincent, NY, Sodus Point, NY, coastal dunes on the East side of Lake Ontario, Wolfe Island, and a ride on a Uncle Sam’s Boat tour of the Thousand Islands region.



The Thousand Islands region.



Tibbets Point Lighthouse.



Emergent marsh habitat near Lake Ontario.



Sand dunes on Lake Ontario.



Wolfe Island, Canada.

The research involved attendance at public informational meetings conducted by the IJC in Massena, NY, Clayton, NY, and Williamson, NY. The IJC is looking for an alternative plan for water level management and held a series of meetings in both the United States and Canada in order to involve the public. These meetings proved to be invaluable sources of information. Reactions to the information were compared between different river and lake communities, discourse by high-ranking officials was heard, and passionate comments made by residents and other stakeholders were noted. This data is an important part of analysis for the way that the theoretical frameworks presented above can be applied to the stakeholders and situation regarding the water levels management issue on the St. Lawrence River and Lake Ontario.

The Massena meeting was held on May 29th and was the smallest of the three. There were perhaps 50 people in attendance and most of them were waterfront property owners on Lake St. Lawrence or politicians. At the beginning of the meeting IJC officials passed around cards for people who wished to speak; only three attendees were interested in expressing opinions. The main presenter was Russ Trowbridge from the IJC, but there were many officials in the room including George Cotroneo from the US Army Corps of Engineers (ACE), Dierdre Scozzafava Deputy Secretary of State for Local Government for the New York Department of State on the Lake Ontario St. Lawrence River Working Group, Don Zelazny from the Department of Environmental Conservation, David Fay from Environment Canada, Roy Caldwell from the IJC, André Carpentier representing Quebec, Frank Bevacqua public affairs officer for the IJC on the United States side, and Bernard Beckhoff the public affairs officer for the IJC on the Canadian side. There were several area politicians in the audience as well and Laurie Crane, Supervisor to the town of Huron on the south shore of Lake Ontario. Most comments and questions were about the potential for water level changes and property damage on Lake St. Lawrence with a new plan.

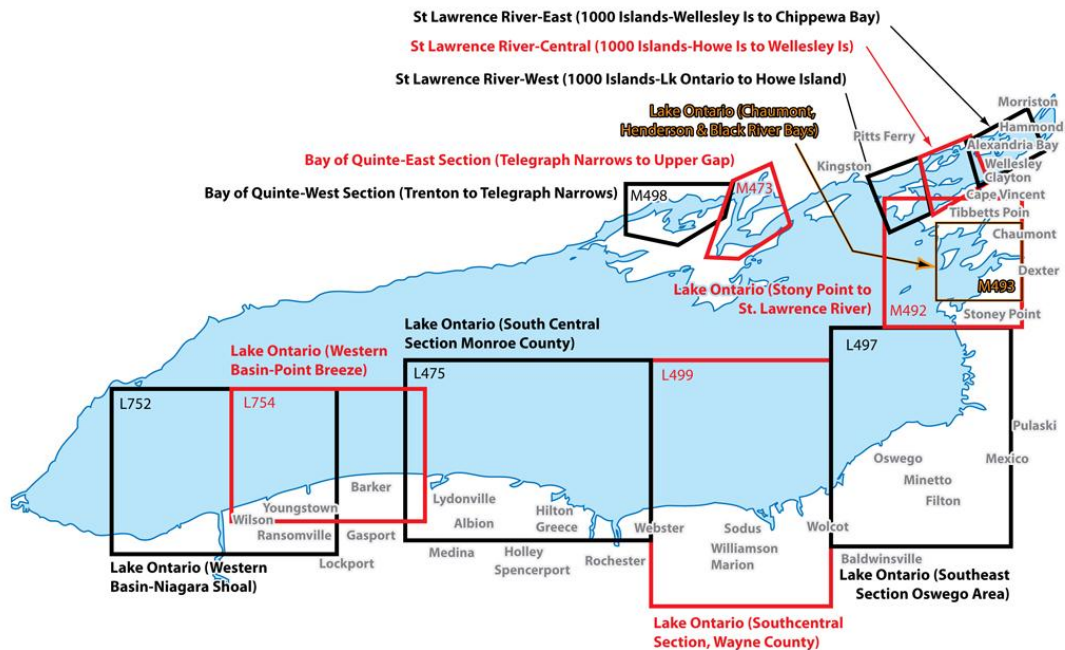
The Clayton meeting was held on May 30, 2012 in the Clayton Opera House, right next door to the Save the River office. Save the River is an environmental group working to get a more environmentally friendly plan passed. The meeting was much larger than the Massena gathering and there were roughly 130 people in the room. There was an abundance of people who wished to make comments and the overwhelming majority was people speaking out in favor of plan Bv7, the environmental plan. The environmental community was a strong force at the

gathering and handed out information sheets and “I support plan Bv7” stickers at the entrance. The main presenter was again Russ Trowbridge and some other officials that were present at the meeting in Massena attended as well including George Cotroneo, André Carpentier, David Fay, Dierdre Scozzafava, Don Zelazny, Frank Bevacqua and Bernard Beckhoff. Emphasis was placed on introducing leaders from environmental groups as well including Stephanie Weiss and Jennifer Caddick from Save the River, and David Kline from the Nature Conservancy. Several comments were made by people representing the south shore of Lake Ontario, but the majority of public input was in favor of the proposed plan Bv7 and a healthy environment.

The Williamson meeting was held on June 7, 2012. Many people arrived 45 minutes in advance and were gathered in groups in the auditorium discussing the issue amongst themselves. There were approximately 250 people in attendance, so clearly water level management is an important issue in this community. Many members of the audience were strongly opposed to the proposed Bv7 plan and advertised that by handing out radical pamphlets and speaking out heatedly during the comments time period. Franck Bevacqua from the IJC gave the standard presentation. The officials in attendance were Chuck Lawsen, the Secretary for the US side of the IJC, Deborah Lee from the ACE, George Cotroneo also from the ACE, Don Zelazny, and Dierdre Scozzafava. The meeting lasted for three and a half hours, far longer than the others that were attended. Several people representing environmental issues traveled many hours in order to attend the meeting and attempted to change the minds of the locals in opposition to Bv7. Laurie Crane, the Supervisor to the town of Huron, was given public recognition for attending all of the meetings held by the IJC. She raised very strong opposition to plan Bv7 and her comments were greeted with rowdy applause and whistles. Several other area politicians gave strong oppositional speeches as well and were also well received by the audience.

Following the initial period of research, one interview was conducted with Jennifer Caddick from Save the River. Her responses represented the environmental point of view on water levels and she affirmed the organization’s support for the Bv7 plan that is proposed. She was also able to clarify understanding on certain effects on the environment and environmental processes. An additional interview was conducted with Franck Bevacqua from the IJC during the fall semester. He was able to add comments relevant to the IJC perspective, founding, and operation.

Lake Ontario Index Map



This map shows that places along the Upper St. Lawrence and Lake Ontario that were explored during the summer and/or referenced in the text.¹²³

Additional research has been carried out after the summer period in order to more fully understand this issue. Specifically, sources were found to evaluate the effects of different water level plans on specific indicator species in the St. Lawrence-Lake Ontario ecosystem. Muskrats are one of the species that have appeared most frequently in the debates over water regulation. Peer reviewed literature was found using the St. Lawrence University library research tools.

The next section overviews the history of water level management on the St. Lawrence River and Lake Ontario. This section will outline approximately 100 years of regulation on the river and lake ecosystem. The information presented in this historical section and the data that were developed in order to write it will be utilized to explicate theoretical models in the section that follows.

¹²³ Image taken from http://www.fishinghotspots.com/products/Lake_Ontario_Index_Map.html and altered slightly from original form.

BACKGROUND ON WATER LEVEL MANAGEMENT

History of Water Level Management for Lake Ontario and the St. Lawrence River

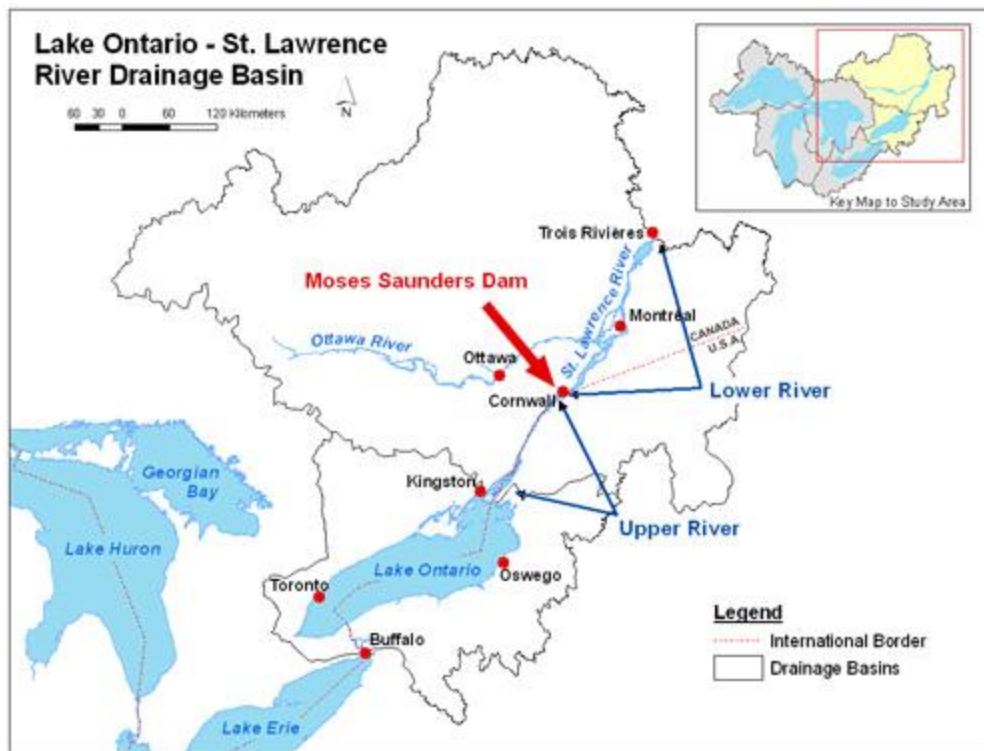
Water levels on the St. Lawrence River and Lake Ontario are regulated at the Moses-Saunders hydroelectric dam in Massena, NY under a plan called 1958 DD. Artificial regulation began in 1958 after the completion of the dam. One intention of regulation was to help in the interest of property owners along the lake and river to control flooding, erosion, and damages.¹²⁴ The regulation attempts to maintain water levels within a four-foot range, half of the approximate eight-foot range that would be experienced with naturally unregulated water levels.¹²⁵ After a few tweaks in the original proposal, 1958 DD was implemented in 1963 and has been in use ever since.¹²⁶ Unfortunately this plan caused widespread harm to the natural ecosystem and created various problems for other stakeholders. In 2008, the St. Lawrence River was listed as fourth on a “most endangered rivers” list due to uncertainty over regulation and potential for further harm to the river.¹²⁷

¹²⁴ International Joint Commission, *Lake Ontario and the St. Lawrence River: A New Path Forward*. Information booklet. Spring 2012, 5.

¹²⁵ IJC Booklet, 5.

¹²⁶ IJC booklet, 6.

¹²⁷ “Global Warming Places Rivers Across the Nation at Risk,” America’s Most Endangered Rivers (April 2008). Accessed 20 June 2012. <http://www.americanrivers.org/newsroom/press-releases/2008/global-warming-places-rivers.html>



The Lake Ontario and St. Lawrence River System.¹²⁸

The name ‘1958 DD’ is made up of several parts. 1958 was when regulation began, the first D means that it is the fourth version of the original 1958 plan, and the second D stands for deviations.¹²⁹ Deviations allow the International St. Lawrence River Board of Control, which implements the plan, to stray from the management guidelines in order to alleviate threats to stakeholders.¹³⁰ Deviations were necessary after several years of high water inputs, higher than had been seen in any of the years previously on record from 1860-1954 to maintain water levels within a four foot range.¹³¹ The higher water levels caused flooding of shoreline properties in several years by exceeding the maximum levels called for under 1958 DD. The International Board of Control was given permission to deviate from the Orders of Approval, so long as no undue harm was done to one or more user groups.¹³²

¹²⁸ Image from IJC website. http://www.losl.org/boardroom/system_intro_e.php

¹²⁹ IJC Public Informational Meeting. Clayton, NY. 30 May 2012.

¹³⁰ IJC booklet, 28

¹³¹ Ibid.

¹³² “History of Water Regulation in the LOSLR Basin,” International Joint Commission (2012). Accessed 28 October 2012. <http://www.ijc.org/loslr/en/background/>

Today, the IJC is attempting to change plan 1958 DD to a more environmentally friendly plan that keeps pace with evolving ecosystem knowledge and provides greater benefits to many stakeholders. The St. Lawrence River watershed spans a huge area, 764,000 square kilometers,¹³³ and about 12 million people live in the Lake Ontario-St. Lawrence River basin.¹³⁴ There are many different interest groups such as shoreline property owners, environmental groups, local business owners including marinas, anglers, other recreationists, hydropower, and commercial shipping, all of which will be affected by a change in water level management.



Some of the stakeholders affected by water level management.

¹³³ John Farrell, Brent Murry, Donald Leopold, Alison Halpern, Molly Beland Rippke, Kevin Godwin, and Sasha Hafner. "Water-Level Regulation and coastal wetland vegetation on the upper St. Lawrence River: inferences from historical and aerial imagery, seed banks, and *Typha* dynamics," *Hydrobiologia* 647 (May, 2009): 127-142.

¹³⁴ IJC booklet, 32.

The International Joint Commission

The International Joint Commission was established in 1909 with the Boundary Waters Treaty.¹³⁵ It is an independent governing body for the waters shared by the United States and Canada in order to “prevent and resolve conflicts over the use and quality of freshwater (inland waters) shared by Canada and the USA.”¹³⁶ According to the IJC website the organization’s purpose is to:

Rule upon applications for approval of projects affecting boundary or transboundary waters and may regulate the operation of these projects; it assists the two countries in the protection of the transboundary environment, including the implementation of the Great Lakes Water Quality Agreement and the improvement of transboundary air quality; and it alerts the governments to emerging issues along the boundary that may give rise to bilateral disputes.¹³⁷

The organization has power to make decisions on water bodies along the border and does not represent the two governments. The IJC has three commissioners from the United States and three from Canada, all of whom are appointed by the highest level of government in each country.¹³⁸ President Obama appointed the current IJC commissioners from the United States and the Senate confirmed them.¹³⁹ Presently, the US chair is Lana Pollack, and the two other US commissioners are Rich Moy and Dereth Glance.¹⁴⁰ There is one chair from each country and they work together. The Canadian section currently has one vacant seat; the two current representatives are Joseph Comuzzi, chair, and Lyall Knot, commissioner.¹⁴¹ The IJC also has

¹³⁵ Claire Bleser and Kristen Nelson. “Climate Change and Water Governance: an International Joint Commission Case Study.” *Water Policy* 13(2011): 884.

Note: to read a copy of the Boundary Waters Treaty see Appendix C.

¹³⁶ Ibid.

¹³⁷ International Joint Commission website. Accessed 8 April 2013. http://www.ijc.org/en/About_the_IJC

¹³⁸ IJC website.

¹³⁹ “Commissioners,” International Joint Commission. (2012) http://ijc.org/en/background/biogr_commiss.htm

¹⁴⁰ Ibid.

¹⁴¹ Ibid.

over 20 boards and task forces to assist the commissioners and carry out its obligations in boundary waters.¹⁴²

Although it does not represent the two governments, the IJC does receive money from them. The IJC is funded by the Department of State on the US side and from the Department of Foreign Affairs on the Canadian side.¹⁴³ Despite its funding and creation by the federal governments, the IJC emphasizes its independence from governmental opinions. When the IJC receives a reference, or a request for study and recommendations on a transboundary issue, they carry out the specifications and report back to the federal governments.¹⁴⁴ However, the IJC pledges to remain unbiased and independent of government views.

The IJC celebrated 100 years of operation in 2009 and has a long history of resolving conflicts in boundary waters. The organization has dealt with issues in the following transnational waterways: St. Mary's River, Milk River, Columbia River, St. Lawrence River, the Great Lakes, Missouri River, Skagit River, Flathead River, Souris River, Osoyoos Lake, and many others. Various issues have resulted from causes such as water pollution, air pollution, water diversion, hydroelectric dams, and natural resource usage.¹⁴⁵ The role of the IJC in preventing and resolving conflicts in boundary waters is important to stop larger-scale disputes between the two countries.

The IJC is responsible for controlling any bodies of water along the 5000 mile border between the two countries, but mainly focuses on the Great Lakes Region.¹⁴⁶ According to Schwartz:

Since 1972 the commission has had a "standing reference" to be the permanent watchdog for the Great Lakes water quality. It is to report regularly to both nations on its assessment of progress, or lack thereof, in meeting the objectives of the Great Lakes Water Quality Agreements. This permanent watchdog status does not apply to any other water quality issues along the remaining two-thirds of the international boundary. Here the commission can act only when specifically requested to do so by both governments.¹⁴⁷

¹⁴² IJC website.

¹⁴³ Frank Bevacqua. Personal email. 4 December 2012.

¹⁴⁴ IJC website.

¹⁴⁵ Ibid.

¹⁴⁶ Alan Schwartz. "The Canada-U.S. Environmental Relationship at the Turn of the Century." *The American Review of Canadian Studies* (2000): 208.

¹⁴⁷ Ibid.

This means that the IJC has played a slightly different role in the Great Lakes Region than in other places along the border. The IJC does regulate water levels along many of the border regions including for the St. Lawrence River and Lake Ontario.

The IJC is the main organization involved with water level regulation on the St. Lawrence River and Lake Ontario. Concern for climate change and citizen dissatisfaction with the current water level regulation plan provided most of the impetus to begin a \$20 million, five-year study by the IJC in 2000 to find an alternate.¹⁴⁸ A proposed plan developed in 1998 was deemed insufficient as it did not contain enough information to determine potential harm to the major stakeholders.¹⁴⁹

With so many stakeholders, it was vitally important to study how changing water levels would affect different groups. The 1956 Order of Approval that allowed construction of the Moses-Saunders hydroelectric dam states:

WHEREAS the Commission finds that suitable and adequate provision is made by the laws in Canada and by the Constitution and laws in the United States for the protection and indemnity of all interests on either side of the International Boundary which may be injured by reason of the construction, maintenance and operation of the works;¹⁵⁰

Furthermore, in a 1952 letter from the Canadian and US governments to the IJC, it was stated that all interests must be taken into account before changes are made.¹⁵¹

In order to determine, having regard to all other interests, whether measures can be taken to regulate the level of Lake Ontario for the benefit of property owners on the shores of the lake in the United States and Canada so as to reduce the extremes of stage which have been experienced, the Governments of the United States and Canada have agreed to refer the matter to the International Joint Commission for investigation and report pursuant to Article IX of the Treaty relating to boundary waters between the United States and Canada, signed January 11, 1909.¹⁵²

¹⁴⁸ IJC booklet, 6.

¹⁴⁹ Marc Heller, "IJC Levels Plan Might be Stalled," *Watertown Daily Times*, (May 6, 1998): 30.

¹⁵⁰ 1956 Orders of Approval for Regulation of Lake Ontario. International Joint Commission website. Accessed 20 June 2012. http://www.ijc.org/en/activities/losl/documents/orders_approval_web.php

¹⁵¹ IJC Public Informational Meeting. Massena, NY. 29 May 2012.

In particular, property owners on the south shore of Lake Ontario also believe that they are entitled to mitigation and damage compensation under the 1909 Boundary Waters Treaty if a new plan is implemented.¹⁵³ The Treaty states:

...to compensate so far as possible for the particular use or diversion proposed, and in such cases may require that suitable and adequate provision, approved by the Commission, be made for the protection and indemnity against injury of all interests on the other side of the line which may be injured thereby.¹⁵⁴

The IJC recently stated that “no plan be implemented that results in disproportionate losses to any one user group or geographic area.”¹⁵⁵ The study conducted from 2000 to 2005, called the International Lake Ontario-St. Lawrence Study, proposed three different alternatives: A+, B+, and D+.¹⁵⁶ Two other plans, C and E, were discarded before the study was concluded because they did disproportionate harm to one or more interest groups. Consideration was given to six major interest groups: shoreline owners, commercial shipping, recreational boating, the environment, hydropower, and industrial/municipal water usage. This was the first time that the environment had been taken into account when developing a plan to regulate water levels.¹⁵⁷ Plan E was basically natural water levels and may have been best for the environment, but it was extremely harmful to the property owners as high water levels would have caused severe shoreline damage.¹⁵⁸ Some scientific studies also claimed that it did not help certain bird species.¹⁵⁹ Plan C was discarded because it was almost identical to plan D, but had slightly

¹⁵² Letter from Department of External Affairs Canadian Government to the International Joint Commission. 25 June 1952. International Joint Commission website. Accessed 1 December 2012.

<http://www.ijc.org/en/activities/losl/documents/LOSL-June-25-52.pdf>

¹⁵³ IJC public informational meetings. Clayton and Williamson, NY. 30 May and 7 June 2012. This point was made by many speakers representing south shore interests.

¹⁵⁴ Boundary Waters Treaty. International Joint Commission website. Accessed 20 June 2012.

<http://www.ijc.org/rel/agree/water.html>

¹⁵⁵ IJC Meeting. Massena. Comments made by Laurie Crane, Town supervisor of Huron.

¹⁵⁶ International Lake Ontario-St. Lawrence River Study Board, “Final Report- Options for Managing Lake Ontario and St. Lawrence River Water Levels and Flows,” International Joint Commission.(March 2006). V.

<http://www.ijc.org/loslr/en/library/LOSLR%20Study%20Reports/report-main-e-6KB.pdf>

The “+” symbol signifies that the plans were tweaked slightly from the original version after they received public input.

¹⁵⁷ IJC booklet, 11.

¹⁵⁸ Ibid.

¹⁵⁹ Mark Bain, Nuanchan Singkran, and Katherine Mills. “Integrated Ecosystem Assessment: Lake Ontario Water Management.” *PLoS ONE* 3.11 (2008): 21.

inferior economic and environmental results.¹⁶⁰ Plan A was known as the economic benefits plan and was supported by many shoreline owners because it provided them with slightly more benefits than under the current plan 1958 DD. It is important to note that property owners would not be receiving money from anyone; rather, the economic benefits would be the result of paying less in erosion damages or for shoreline protection structures due to more stable water levels. However, Plan A was not a very environmentally friendly plan.¹⁶¹ The proposed Plan D was essentially the same as 1958 DD and was originally expected to be the one chosen by the IJC.¹⁶² It was known as the “blended benefits plan” or the “do nothing plan.”¹⁶³ Plan B was eventually selected by the IJC from the three put forth by the study group.

Before the IJC endorsed Plan B, they suggested an alternative known as Plan 2007. This proposal was developed behind closed doors during a two-year period after the five-year study results were released.¹⁶⁴ The Commission had decided that none of the three plans produced in 2005 were adequate and therefore decided to craft a different one. In a letter to the public when releasing Plan 2007, the IJC stated that it had consulted with some experts involved in the study to create the proposal:

The Commission’s proposed new Order and regulation plan (Plan 2007) are founded on the five-year binational Lake Ontario – St. Lawrence River Study (May 2006). That Study identified three candidate regulation plans (A+, B+, and D+). The Commission subsequently asked experts associated with the Study to explore whether any of the three candidate plans could provide additional environmental benefits while maintaining as much as possible the level of protection and benefits enjoyed by other interests as provided for by the current Order. This new work resulted in two additional plans: a D+ variant, called Plan 2007, and a B+ variant.¹⁶⁵

Plan 2007 was in essence Plan D+, and similar to 1958 DD. The IJC claimed that this option was necessary because none of the three other options satisfied the 1909 Boundary Waters

¹⁶⁰ International Lake Ontario-St. Lawrence River Study Board, “Final Report,” 37.

¹⁶¹ Ibid.

¹⁶² International Lake Ontario-St. Lawrence River Study Board, “Final Report,” V.

¹⁶³ IJC booklet, 11.

¹⁶⁴ IJC booklet, 6.

¹⁶⁵ Proposed New Order of Approval and Plan 2007. International Joint Commission. Letter to the Community from IJC Commissioners. Accessed 1 December 2012. http://www.ijc.org/LOSLdocuments/pdf/LOSL_guide_e.pdf

Treaty since all of them might harm one or more interest groups.¹⁶⁶ The IJC explained the process by which it eventually discarded Plan 2007 in the following excerpt from a September 2008 letter to US Secretary of State:

The Commission released a proposed Order of Approval and related regulation plan (Plan 2007) for a 105 day public comment period on March 28, 2008. During that public comment period, we held 10 public information sessions and 10 public hearings throughout the Lake Ontario-St. Lawrence River basin. The public comment period closed in July. We have now completed our analysis of the hundreds of pages of testimony from the hearings, and the approximately 1,200 comments submitted outside the hearings. The hearings and public comments showed serious divisions by political unit and by interest, and there was little support for regulation Plan 2007. There was also a broad, strong interest in returning to more natural flows.

Taking this into account, the Commission has determined that Plan 2007 is not a practical option for implementation and concludes that the regulation of water levels and flows should be based on a revised set of goals and objectives and criteria, specifically moving towards more natural flows to benefit the environment, while respecting other interests.¹⁶⁷

Jennifer Caddick, executive director of Save the River, reinforced the idea that public outcry was essential in stopping Plan 2007.¹⁶⁸ According to Caddick, “nobody liked the Plan (2007), nobody.”¹⁶⁹ As a result, the IJC is now proposing the B plan that is better for the environment.

Despite past policies that disregarded the natural world, recently the IJC has shown progress incorporating the environment into their mission and implementing an ecosystem based approach as a policy position. The impetus for this change came after a request by the US and Canadian government for the IJC to rethink its mission for the new millennium in 2000.¹⁷⁰ A proposal has been put forth to create ecosystem-based international watershed boards for all boundary waters between the two countries, but governmental assistance for this initiative has been slow.¹⁷¹ As part of their millennium organizational revision the IJC is also attempting to

¹⁶⁶ IJC Booklet, 6.

¹⁶⁷ Letter to US Secretary of State Condoleezza Rice from Irene Brooks, Chair of the US section of the IJC. 4 September 2008. International Joint Commission website. Accessed 1 December 2012. http://www.ijc.org/en/activities/losl/documents/2008_09_04_Rice_Emerson.pdf

¹⁶⁸ Jennifer Caddick, “From the Director...,” *River Watch* (Spring 2012) Save the River newsletter. 14.

¹⁶⁹ Jennifer Caddick. Personal Interview. June 4, 2012.

¹⁷⁰ Schwartz, 208.

¹⁷¹ Ibid.

implement long term monitoring plans in order to sustainably monitor resources.¹⁷² According to Bleser and Nelson:

While conflict management is critical for water management, an integrated ecosystem approach is essential for sustainable management. The IJC developed the International Watersheds Initiative (IWI) to facilitate the development of watershed-specific responses to emerging challenges such as intensified population growth and urbanization, global climate change, changing uses of water, pollution from air and land, and introductions of exotic species' (IJC, 2009a). The idea of this approach was first introduced in 1997. It was further developed in consultation with different governmental levels: states and provinces, First Nations, and local authorities.¹⁷³

An ecosystem-based approach has the potential to conserve large areas in both countries because it focuses on the many different factors involved in watershed health and not just the physical presence of the water body. The International Watershed Initiative "promotes an integrated, ecosystem approach to issues arising in transboundary waters through enhanced local participation and strengthened local capacity."¹⁷⁴ Since 2005 the IJC has met every year to update the IWI.¹⁷⁵ The recent emphasis on environmental conservation can be summed up in number 10 of the IJC's guiding principles:

10. In environmental matters, the Commission affirms the concept of sustainable development, the ecosystem approach, and the virtual elimination and zero discharge of persistent toxic substances. While emphasizing the importance of a sound scientific basis for its conclusions and recommendations, the Commission also recognizes that it may sometimes be necessary to adopt a precautionary approach and to act even in the absence of a scientific consensus where prudence is essential to protect the public welfare.¹⁷⁶

The environment is garnering more attention by the International Joint Commission, so it is no surprise that the new plan for water level regulation includes the environment as a stakeholder.

¹⁷² Bleser and Nelson, 891.

¹⁷³ Bleser and Nelson, 889.

¹⁷⁴ Bleser and Nelson, 888.

¹⁷⁵ Bleser and Nelson, 890.

¹⁷⁶ IJC website.

Environmental Considerations

Although water level regulation might seem like a minor issue, the ecosystem along the lake and river has been profoundly affected. About 50% of wetlands have been lost since the plan was implemented; northern pike (*Esox lucius*) have seen a population decline of about 70%; black terns (*Chlidonias niger*) have decreased by about 80%; muskrats (*Ondatra zibethicus*), a keystone species, have declined substantially, as well as muskellunge (*Esox masquinongy*) and other members of the meadow marsh community.¹⁷⁷ According to one source, muskrat density has fallen by 38% under the current water level regulation plan.¹⁷⁸ Stable water levels under 1958 DD do benefit shoreline owners and save them \$27.16 million per year in shore protection maintenance, damages from flooding, and erosion, but the environment was not considered at all when this plan was implemented in 1963.¹⁷⁹

Because water levels do not vary as greatly as they would naturally, cattails (*Typhus x glauca*) have taken over much wetland habitat, decreasing biodiversity.¹⁸⁰ Cattails invaded the diverse meadow marsh community because consistent water levels allow habitat that normally gets flooded and dewatered to be almost always wet, providing the ideal cattail habitat.¹⁸¹ Regulation that prevents low water levels from occurring creates a habitat that does not favor sedges and grasses of the meadow marsh community that can tolerate low soil moisture. These dry-tolerant plants usually exist at higher elevations, but stable wet conditions under regulation allow cattail growth and expansion landward.¹⁸² Muskrats play a critical role in wetlands by eating cattail rhizomes and using the stalks to make dens, which allows room for other species to grow and increases biodiversity.¹⁸³ However, high cattail density does not mean an increase in muskrats. Muskrats have suffered from water level regulation under the 1958DD plan. Even though there are lots of cattails as a result of more stable water levels, unnatural water level draw downs in the winter have affected the muskrats. Because muskrats build their houses in the fall

¹⁷⁷ Caddick. Personal Interview.

¹⁷⁸ Jason Toner. "Muskrat House Abundance and Cattail Use in Upper St. Lawrence River Tributary Wetlands: Modeling the Effects of Water Level Regulation." *MS Thesis*, SUNY College of Environmental Science and Forestry, Syracuse, NY.

¹⁷⁹ IJC booklet, 26.

¹⁸⁰ Caddick. Personal Interview.

¹⁸¹ Webinar by Doug Wilcox. IJC website. <http://www.ijc.org/loslr/en/events/index.php> (Webinar can be found on the left hand menu of the screen.)

¹⁸² Ibid.

¹⁸³ Ibid.

where there is standing water, the winter draw downs leave the houses on dry ground, so the muskrats face either starvation by staying in the house or predation by moving out of the house to seek food.¹⁸⁴ Muskrats sometimes eat fish and crustaceans, but their preferred foods are aquatic plants, especially cattails.¹⁸⁵ Some studies in other areas show that an increase in cattails will result in a higher population of muskrats.¹⁸⁶ However, as already stated, the muskrats on the St. Lawrence River are negatively affected by stable water levels seen under 1958 DD. According to Jennifer Caddick, when water levels go back to a more natural flow, the muskrats return.¹⁸⁷ Toner et al. agree: “Sensitivity to flow regime alteration via hydrologic regulation...may limit [muskrat] populations and ability to facilitate wetland diversity and heterogeneity.”¹⁸⁸ Regardless of a high concentration of their preferred food source, muskrats are unable to flourish because of current water level management.

¹⁸⁴Ibid.

¹⁸⁵Eric von Wettberg. “Muskrat Ramble,” *New York State Conservationist* (2001): 8-9.

¹⁸⁶Kathleen Skinner and Lawrence Skinner. “Abundance and Aggression of Muskrats in Selected Wetlands of Northeastern New York,” *Journal of Freshwater Ecology* 23.2 (2008): 231-232, 234.

¹⁸⁷Caddick. Personal Interview.

¹⁸⁸ Jason Toner, John Farrell, and Jerry Mead. “Muskrat Abundance Responses to Water Level Regulation Within Freshwater Coastal Wetlands,” *Wetlands* 30 (2010): 211.



Cattail invasion near Goose Bay.

As mentioned above, fall and winter water depth seem to affect muskrat populations the most out of other variables.¹⁸⁹ According to Toner et al. “when more adequate fall and winter levels were provided in treatment sites, muskrat house densities increased.”¹⁹⁰ The higher water levels in fall and winter under Plan B+ would increase the muskrat population, whereas under current regulation and plan 2007 muskrat populations would remain low due to a drawdown of water levels in the fall.¹⁹¹ The improvements of plan B+ over current regulation for muskrat houses seem to be minimal (see Appendix A for table).¹⁹² Toner et al. also stated: “despite dominance of cattail in the upper St. Lawrence River, muskrat house density was considerably lower in reference wetlands under the influence of IJC regulation. High muskrat densities are

¹⁸⁹ Ibid.

¹⁹⁰ Toner et al. “Muskrat Abundance Responses,” 217.

¹⁹¹ Toner et al. “Muskrat Abundance Responses,” 214.

¹⁹² Toner et al. “Muskrat Abundance Responses,” 217.

often reported for cattail dominated wetlands because cattails are an important food source with similar nutrient value to other vegetation types and a preferred vegetation type for house building.”¹⁹³ Farrell et al. also stated:

Muskrats are also wellknown for their preference of [cattails] as a forage species, and it is considered the most important plant associated with house and mound construction...The study indicated that regulated low fall levels prevented muskrat access to floodplains and their distribution was generally limited to channel edges.¹⁹⁴

Unregulated water levels would benefit muskrats the most, but the proposed plan Bv7 would offer some benefits to this species. Muskrats are sometimes considered “ecosystem engineers” because of their important behaviors in wetlands.¹⁹⁵ Toner et al. reported:

Muskrat disturbance positively impacts wetland vegetation composition and structure through reduction of standing crop biomass, leading to increased plant species richness and biomass of less abundant plant species. Furthermore, muskrats facilitate decomposition processes by increasing litter breakdown and altering wetland topography thereby promoting accelerated organic decomposition and higher microbe densities.¹⁹⁶

Muskrats are able to increase plant biodiversity in the wetland by eating cattails and providing space for other species to grow. With more natural water level changes muskrats and wetland meadow marsh biodiversity will increase. Muskrats are important for “plant architecture” and they also increase habitat for shorebirds and waterfowl that prefer open water areas for feeding.¹⁹⁷ Muskrats affect abiotic conditions such as organic sediment matter, which in turn affect the invertebrate community and other trophic levels.¹⁹⁸ Muskrats in low population density create open water areas that allow for diverse vegetation in wetlands.¹⁹⁹ They change the habitat by breaking off vegetation below the water’s surface, digging up roots and rhizomes,

¹⁹³ Toner et al. “Muskrat Abundance Responses,” 216-217.

¹⁹⁴ Farrell et al., “Typha dynamics”, 142.

¹⁹⁵ Toner et al. “Muskrat Abundance Responses,” 211.

¹⁹⁶ Toner et al. “Muskrat Abundance Responses,” 211.

¹⁹⁷ Ferenc A. de Szalay and William Cassidy. “Effects of Muskrat (*Ondatra Zibethicus*) Lodge Construction On Invertebrate Communities In a Great Lakes Coastal Wetland.” *American Midland Naturalist* 146.2 (2001): 307.

¹⁹⁸ Szalay and Cassidy. “Effects of Muskrat.” 300.

¹⁹⁹ Ibid.

disturbing sediments, and fertilizing it with their fecal matter.²⁰⁰ In high populations, muskrats alter a wetland habitat so that it becomes an open water area.²⁰¹ They build new lodges every year²⁰² and are extremely territorial.²⁰³ Muskrats also help predator fish species because they open up areas of water that are better fish habitat.²⁰⁴

It is unclear how much muskrats are affected by other factors besides water levels. In New York State, there is a no bag limit on trapping from October 25th-April 15th in all of the counties along the St. Lawrence River and eastern Lake Ontario.²⁰⁵ In the counties that line the south shore of the lake, the season is from November 25th-February 15th.²⁰⁶ It is also unclear how much of an impact trapping has on muskrat populations. Regardless, muskrats are an important species in wetlands along the St. Lawrence River and Lake Ontario. Without their presence cattails are able to crowd out other plant species with subsequent effects throughout the food chain.

With cattail takeover, the dense mats that are formed prevent fish, like northern pike, from spawning and also prevent other plants from growing, hence the importance of muskrats. Regulated water levels have had a significant impact on some fish species at the top of the food chain, altering the species relationships throughout the food web in the system. For example, high level predators, such as pike and muskies, that have shrinking populations, consume fewer individuals on other trophic levels, causing alterations throughout the food chain. Muskellunge eat mainly fish, but have also been known to consume birds, mammals, and amphibians.²⁰⁷ Studies of these top level predators have determined that they eat a wide range of fish including, but not limited to, tessellated darter, banded killifish, shiners, yellow perch, alewife, white sucker, smelt, lake trout, common carp, northern pike, and bass.²⁰⁸ Clearly, decreasing numbers of muskies has wide ranging effects throughout the ecosystem.

²⁰⁰ Ibid.

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ Webinar by Doug Wilcox.

²⁰⁴ Szalay and Cassidy. "Effects of Muskrat." 307.

²⁰⁵ "Mink & Muskrat Trapping Seasons." *NYS Department of Environmental Conservation*. 2013. Web. 31 Mar. 2013.

²⁰⁶ Ibid.

²⁰⁷ John Farrell, Rodger Klindt, and John Casselman. "Update of the Strategic Plan for Management of the St. Lawrence River Muskellunge Population and Sportfishery Phase III:2003-2010," *New York State Department of Environmental Conservation*, (2003): 12.

²⁰⁸ Ibid.

Due to declining numbers of the muskellunge population, Save the River, Fish Improving with Sportsman's Help (FISH), and Ande Monofilament Line Company implemented a catch-and-release program.²⁰⁹ Fishermen who release a muskie of 44 inches or larger and have two witnesses receive a unique print of the fish by local artists.²¹⁰ Programs like these are important to help regenerate fish populations, but water levels and overall ecosystem health are also essential in maintaining fish populations.

Northern pike are known to spawn on vegetation in shallow waters in early spring with water temperatures of 8-12°C.²¹¹ According to Casselman and Lewis, "Optimal spawning substrate is flooded vegetation in a shallow, sheltered area. Grasses and sedges are preferred, but other vegetation may be used."²¹² Due to winter water level draw-downs under the 1958DD regulation plan, much of the meadow marsh grass and sedge plants that pike use for spawning are left dry and therefore unavailable as fish habitat.²¹³ As a result of the lack of preferred spawning habitat, the adult pike are forced to spawn in deeper waters and have a lower survival rate.²¹⁴ Spawning habitat is a limiting factor for pike in many waterways.²¹⁵ Pike embryos were the most sensitive to changes in water levels for all ages of pike, because of their limited mobility.²¹⁶ One study found that the current regulation plan was the most favorable for the early life of pike, and plan E, the natural levels plan, was the least favorable.²¹⁷ Perhaps water level changes at other critical periods are more to fault for the decline in the northern pike population. For example, Casselman and Lewis state:

Spawning success has been linked to water-level changes. High water levels at time of spawning with stable levels after the incubation period are associated with large year-classes of northern pike. High water levels increase nutrient concentrations and primary and secondary production in inundated areas, increasing the amount of available prey for the larval fish, make more spawning

²⁰⁹ Eileen Stegemann. "Saving the St. Lawrence Muskies," *The Conservationist*, 48.4 (January, 1994): 22-23.

²¹⁰ Ibid.

²¹¹ John Casselman and Cheryl Lewis. "Habitat Requirements of Northern Pike (*Esox lucius*)," *Canadian Journal of Fish and Aquatic Scienc*, 53 (1996): 162.

²¹² Ibid.

²¹³ Webinar by Doug Wilcox.

²¹⁴ Ibid.

²¹⁵ Bain et al. "Integrated Ecosystem Assessment." 15.

²¹⁶ Ibid.

²¹⁷ Ibid.

habitat accessible, expand the amount of cover, and reduce the potential for predation and cannibalism.²¹⁸

However, during the fall and early winter months, higher water levels are apt to result in a decline of pike populations as young fry, born that spring, would be more susceptible to predation. This is because lower water levels force young fish to move further offshore and into deeper waters where they can more easily avoid predation. On the other hand, higher water levels cause young fish to stay close to shore where they could more easily be entrapped within vegetation.²¹⁹ Aquatic vegetation that is preferred by northern pike varies with life stage. As northern pike mature they prefer a wider range of vegetative cover starting with emergent vegetation, floating vegetation, and eventually submergent vegetation. The projected variation in vegetation anticipated from Bv7 would favor a more varied vegetative cover, which in turn would make northern pike a more successful species. Northern pike are visual predators, which normally feed at dusk and prefer shallow vegetated areas.²²⁰

Similar to the northern pike, muskellunge are another fish species that is both ecologically and economically important to the St. Lawrence region. The New York DEC's Strategic Management Plan for muskies cites human disturbance as a key reason for population decline.²²¹ The large size of these fish makes them particularly prized by anglers.²²² Muskellunge spawning typically happens in May/June and is thermal dependent between 7-17°C.²²³ This fish prefers both submergent and emergent vegetation for spawning.²²⁴ It appears that the young of the year population of muskellunge has been increasing over the past two decades, whereas northern pike numbers appear to be declining (see Appendix B for graph). It remains unclear what factors are contributing to this trend, but it seems that higher water temperatures have been positive for overall population growth.²²⁵ A healthier ecosystem, with more natural water level fluctuation, could benefit the muskellunge population.

²¹⁸ Casselman and Lewis. "Northern Pike." 162.

²¹⁹ Casselman and Lewis. "Northern Pike." 167.

²²⁰ Ibid.

²²¹ Farrell et al. "Update-Muskellunge." 3.

²²² Ibid.

²²³ Farrell et al. "Update-Muskellunge." 9.

²²⁴ Ibid.

²²⁵ Farrell et al. "Update-Muskellunge." 15.

Furthermore, black terns are another species that has been affected by water level regulation. In New York, the bird is classified as an endangered species.²²⁶ Tern habitat is primarily located in areas that have a combination of open water, vegetation, small fish, and a diverse invertebrate population.²²⁷ Terns require mats of vegetation over water that is about 0.6 meters deep for nesting and their nesting season is from May to August.²²⁸ According to Naugle et al., terns prefer large wetland areas that have a mixture of emergent vegetation of varying height and density.²²⁹ Plan Bv7 offers lower summer water levels in some years that would allow a higher percentage of tern nest protection from flooding, wave action, and water level changes.²³⁰ It is hoped that with water levels more similar to unregulated levels the black tern can be removed from the endangered species list.

Regulated water levels weaken the entire lake and river system and make it more susceptible to other environmental threats such as invasive species. Purple Loosestrife (*Lythrum salicaria*) is one exotic plant that is known to have impacted the Lake Ontario and St. Lawrence River system.²³¹ More destructive, however, is the Common Reed (*Phragmites australis*) that has widely impacted North America and southern Canada, and is known to have had serious impacts on plant diversity in St. Lawrence River wetlands.²³² The good news is that restoring the lake and river system to more natural water level flows may help to stop the spread of invasive species like *Phragmites*. According to Braun, “Water levels have been identified as one of the very few limiting factors of invasive *Phragmites*. High water level and continued flooding may successfully limit the spread of invasive *Phragmites*...Studies of large and small scale patterns of distribution demonstrated that native *Phragmites* is more frequently observed near rivers and wetter marshes.”²³³ Variation in high and low water levels in different years can limit the spread

²²⁶ Bain et al. “Integrated Ecosystem Assessment.” 16.

²²⁷ Ibid.

²²⁸ Ibid.

²²⁹ David E. Naugle, Kenneth F. Higgins, Michael E. Estey, Rex R. Johnson and Sarah M. Nusser. “Local and Landscape-Level Factors Influencing Black Tern Habitat Suitability.” *The Journal of Wildlife Management* 46.1 (2000): 257-58.

²³⁰ Bain et al. “Integrated Ecosystem Assessment.” 21.

²³¹ Paul M. Catling and Susan Carbyn. “Recent Invasion, Current Status and Invasion Pathway of European Common Reed, *Phragmites australis* subspecies *australis*, in the Southern Ottawa District.” *Canadian Field-Naturalist* 120.3 (2006): 307.

²³² Ibid.

²³³ Heather Braun. “Where Is It Found?” *Great Lakes Phragmites Collaborative*. Great Lakes Phragmites Collaborative, 2012. Web. 31 Mar. 2013.

of invasive Phragmites, and the more natural water levels can also help to restore the health of the lake and river system so that it is less vulnerable to other attacks.

Many native species have been affected by regulated water levels, but the species listed on page 31 are some of the more important indicator species that have been strongly influenced by management.²³⁴ These indicator species are reflective of overall ecosystem health, but no one species can tell the whole story. More natural flows on the St. Lawrence River and Lake Ontario would likely benefit almost all species.

Bv7

After Plan 2007 was proposed and withdrawn, the IJC then developed a version of the B+ plan known as Bv7 (version 7 of the original B plan), which is supposed to be more favorable to environmental interests. The commissioners have spent six months since January 2012 seeking public input and approval of this plan among stakeholders along the St. Lawrence River and Lake Ontario. The 1909 Boundary Waters Treaty, which created the IJC, states that all stakeholders must be given a “convenient opportunity to be heard.”²³⁵ A series of public informational meetings was conducted in both Canada and the United States, throughout May and June. Following those information sessions, the IJC held a web dialogue so that interested parties could ask a panel of experts questions about Bv7 and its effects. June 15th was the cutoff for accepting public comments that could potentially be incorporated into the proposed plan. The IJC had hoped to announce a formal proposal by the end of 2012 or early 2013 before moving into formal public hearings.²³⁶ It is also unclear how much actual sway the public will have at this point, although the IJC emphasizes the importance of public input in their public relations campaign. The IJC also has a section on their website titled “Public Process” that details the extent that the public is involved in determining a new regulation plan. It appears that the IJC involves the public after plans have been created and not during the creation process, which may be leading to the delay in making change to the outdated regulations. They also must

²³⁴Caddick. Personal Interview.

²³⁵ “Treaties and Agreements,” International Joint Commission. (November 2011). Accessed 29 October 2012. <http://www.ijc.org/rel/agree/water.html>

²³⁶ More information can be found on the International Joint Commission’s website: www.ijc.org/loslr. The timeframe for when actual public hearings and a final decision will be made is still unclear.

“seek the concurrence of the federal governments” on the proposal, although what this means is rather vague.²³⁷ It is anticipated that they will move forward unless an outright objection is declared by either federal government.²³⁸

Bv7 provides both slightly higher water levels than 1958 DD and greater fluctuation on a more natural cycle. On average, water levels in the proposed plan are expected to be 2.4 inches higher than the current plan in the spring, 1.2 inches higher in the summer, and 2 inches higher in the fall.²³⁹ Additionally, there are several years that will have ‘higher highs’ and some with ‘lower lows,’ which is anticipated to allow reclamation of wetlands by about 40%.²⁴⁰ The fluctuating water levels will flood and dewater areas along the river creating a diverse meadow marsh community instead of a monoculture of cattails, a species that thrives with less water level changes. The largest variations are expected on the Upper St. Lawrence and Lake Ontario rather than the Lower St. Lawrence, downstream of the Moses-Saunders power dam; the Lower St. Lawrence is already subject to much variability.²⁴¹ The proposed plan also includes an adaptive management component so that in the future alterations can be made in order to adjust for uncertainties, such as unexpected changes that might occur with global warming.²⁴²

²³⁷ IJC Public Informational Meetings. Massena, Clayton, Williamson, NY. 29 May, 30 May, and 7 June 2012.

The main speaker at all three meetings mentioned this as part of the general presentation.

²³⁸ IJC Meeting. Massena.

²³⁹ “Solution-A New Regulation Plan,” International Joint Commission. (2012) <http://www.ijc.org/loslr/en/solution/>

²⁴⁰ IJC booklet, 22.

²⁴¹ IJC Meetings. Massena, Clayton, and Williamson. The introductory speaker at all three meetings mentioned this as part of the general presentation.

²⁴² IJC booklet, 27.

Environmental Performance Indicators		1958DD	Levels	Bv7
O n t a r i o	Wetland Meadow Marsh Community	1.00	1.56	1.44
	Low Veg 18C - spawning habitat supply	1.00	0.88	0.96
	High Veg 24C - spawning habitat supply	1.00	1.08	0.99
	Low Veg 24C - spawning habitat supply	1.00	1.11	1.04
	Northern Pike - Young-of-Year (YOY) recruitment	1.00	1.03	0.99
	Largemouth Bass - YOY recruitment	1.00	0.96	0.98
	Least Bittern (IXEX) - reproductive index	1.00	1.13	1.13
	Virginia Rail (RALI) - reproductive index	1.00	1.15	1.15
	Black Tern (CHNI) - reproductive index	1.00	1.16	1.19
	Yellow Rail (CONO) - preferred breeding habitat	1.00	1.01	1.03
	King Rail (RAEL) - preferred breeding habitat	1.00	1.27	1.19
U p p e r R i v e r	Low Veg 18C - spawning habitat supply	1.00	1.04	1.01
	High Veg 24C - spawning habitat supply	1.00	1.02	1.00
	Low Veg 24C - spawning habitat supply	1.00	1.04	1.02
	Northern Pike - YOY recruitment	1.00	1.06	1.03
	Largemouth Bass - YOY recruitment	1.00	1.00	1.00
	Northern Pike - YOY net productivity	1.00	2.07	1.40
	Virginia Rail (RALI) - reproductive index	1.00	1.33	1.19
	Muskrat (ONZI) - house density in drowned river mouth wetlands	1.00	14.29	2.59
L o w e r R i v e r	Golden Shiner (NOCR) - suitable feeding habitat surface area*	1.00	1.01	1.00
	Wetlands fish - abundance index (Lower St. Lawrence River)	1.00	0.97	1.03
	Migratory wildfowl - floodplain habitat surface area*	1.00	0.94	0.98
	Least Bittern (IXEX) - reproductive index*	1.00	1.06	1.01
	Virginia Rail (RALI) - reproductive index*	1.00	1.04	1.03
	Migratory wildfowl - productivity*	1.00	1.02	1.01
	Black Tern (CHNI) - reproductive index*	1.00	1.01	1.00
	Northern Pike (ESLU) - suitable reproductive habitat surface area*	1.00	1.01	0.99
	Frog sp. - reproductive habitat surface area*	NA	NA	NA
	Eastern Sand Darter (AMPE) - reproductive habitat surface area*	1.00	1.00	1.00
	Map Turtle (GRGE) - reproductive habitat surface area*	1.00	1.01	0.99
	Bridle Shiner (NOBI) - reproductive habitat surface area*	1.00	0.97	0.96
	Muskrat (ONZI) - surviving houses*	1.00	1.05	0.94
*(Lake St. Louis to Trois-Rivières)				

Figure shows environmental performance indicators for plan 1958DD, unregulated levels, and Bv7.²⁴³

One of the positive aspects of Bv7 is that it is better for almost all stakeholders. Higher water levels will benefit commercial shipping by preventing costly delays due to shallow waters. The more gradual draw-down of water throughout autumn will allow recreational boaters easier and longer access than at present, thereby preventing the stranding of boats and forcing an early end to the recreational season. This, in turn, may create a positive spin-off for local businesses dependent on recreational tourism. Tourism interests and marina and business owners in the Thousand Islands region generally support the plan.²⁴⁴ Hydropower at the Moses-Saunders hydroelectric facility stands to gain about \$5.4 million in revenues, so naturally utility interests support the plan as well.²⁴⁵ Additionally, commercial navigation will likely see modest gains, projected at \$1.74 million per year.²⁴⁶ Economic projections were determined by looking at

²⁴³ Image taken from IJC website. http://www.ijc.org/loslr/en/library/Tables/perf_environment.pdf

²⁴⁴ IJC Meeting. Clayton.

²⁴⁵ IJC booklet, 26.

²⁴⁶ Ibid.

potential hydraulic conditions, which contribute to the transit time needed for movement of goods and the cost of fuel.²⁴⁷ Water level conditions can also affect the amount of cargo that a ship can carry, thereby leading to economic benefits or losses.²⁴⁸ The environmental benefits have been well studied and the plan has full support from Save the River, Ducks Unlimited, the Nature Conservancy, the National Wildlife Foundation, Environment Canada, the New York Department of Environmental Conservation, and other environmental groups.²⁴⁹ The majority of people along the Upper St. Lawrence River, the region between Lake Ontario and the Moses-Saunders dam, seem to support Bv7 due to its environmental benefits. Save the River, based in Clayton, has a strong following in the Thousand Islands region; it is in favor of the proposal.

Bv7 will provide significant benefits to the environment as discussed on pages 31 through 39. The water draw down in the fall will be less intense than under current water level regulation. As discussed on pages 31-35, this will allow better conditions for muskrats, which in turn may positively affect other species. The variance in water levels from year to year will help establish diverse meadow marsh habitat and decrease the invasive population of cattails. Black terns will see benefits from healthier wetland communities. Additionally, northern pike and muskellunge fish species will benefit from the proposed Bv7 plan.

The group that will suffer losses from Bv7 is south shore property owners on Lake Ontario. These property owners do not see Bv7 in a positive light, nor do they accept the reasoning of the IJC that they will still see benefits under the proposed plan as compared to unregulated levels. From computer simulations of Bv7, these owners will likely see a \$3.09 million annual increase in costs from damages to the shoreline, erosion, and property destruction.²⁵⁰ Compared to an estimated \$27 million in protection that they now receive under plan 1958 DD, property owners will see slightly less, projected at \$24 million annually as compared to unregulated levels.²⁵¹

²⁴⁷ "Impact Evaluation Model for Commercial Navigation on the St. Lawrence and Lake Ontario- Final Report," Marine Innovation. 28 September 2004. International Joint Commission. Accessed 1 December 2012. <http://www.ijc.org/loslr/en/library/Navigation/IJC30009FinalReport.pdf>

²⁴⁸ Ibid.

²⁴⁹ Save the River website lists many more organizations that support Bv7 and have signed a letter that was sent to the NY State Governor.

²⁵⁰ IJC booklet, 26.

²⁵¹ IJC booklet, 26.

South shore riparians claim that plan Bv7 would be a “disproportionate loss” to their geographical region because the plan would place 95% of the damages on them.²⁵² At several of the IJC public informational meetings along the south shore, people speaking in favor of the plan were booed at by others in attendance. At the session in Williamson, NY on June 7th, a letter written by the Lake Ontario Riparian Alliance (LORA) was distributed to every person entering the meeting.²⁵³ The letter angrily denounces the IJC, claims the effects of 1958 DD on environmental indicator species are due to causes other than regulated water levels, characterizes environmental groups as “extremist,” and inflates numbers regarding damages to the south shore.²⁵⁴ A citizens group, Save Our Sodus, which is opposed to Bv7, was founded in 1999. Sodus Point is a small village that is literally built on the shoreline of Lake Ontario. Water levels above 248 feet on the Lake (the current high allowed by plan 1958 DD) can cause extreme flooding in the town.²⁵⁵ Since Bv7 will allow higher water levels than 1958 DD, Sodus residents are understandably opposed to the proposal. Furthermore, the majority of elected officials representing the south shore are opposed to plan Bv7.²⁵⁶ William A. Barclay, who represents the area in the New York State Senate, recently switched his position supporting Bv7. He is now against its implementation due to the effects it is expected to have on property owners.²⁵⁷

Yet, when the additional \$3.09 million annual cost is divided among all of property owners on the Lake, each would only shoulder a very small amount.²⁵⁸ The IJC takes the position that the south shore owners will not suffer disproportionate losses from Bv7. From the viewpoint of the IJC, south shore riparians have been benefitting from 1958 DD at the disproportionate expense of the environment. And although some property owners will likely

²⁵² Open Letter to the Commissioners of the International Joint Commission. Lake Ontario Riparian Alliance. www.loranet.org

²⁵³ IJC Meeting. Williamson.

²⁵⁴ LORA Letter to the IJC.

²⁵⁵ IJC Meeting. Williamson. Various speakers from community mentioned this point, for example, Mike Sullivan, mayor of Sodus Point.

²⁵⁶ Ibid.

²⁵⁷ Jaegun Lee, “Barclay Explains Position Change on Lake Ontario Water Plan,” *Watertown Daily Times*, (12 June 2012). A1.

²⁵⁸ One must consider that not every property owner would suffer equal damages, nor would each year have equivalent water levels. However, using some numbers found in IJC documents, it is easy to make some simple calculations as to the amount of money in question. Using the \$3.09 million in increased damage costs and dividing it by 5,770, the amount of single-family dwellings located on the 100-year floodplain downstream of the Moses-Saunders hydroelectric dam (IJC website. International Lake Ontario-St. Lawrence Study Board, Annex 2, P. 63. <http://www.ijc.org/loslr/en/library/LOSLR%20Study%20Reports/report-ann2-e.pdf>), the average annual cost per household would only be around \$540.

endure slightly greater costs under Bv7, these costs will be low compared to the unregulated flows that existed before the dam was built.²⁵⁹

A related issue of debate concerning the water level management plan is the overdevelopment of the south shore of Lake Ontario in the floodplain. The International Water Levels Coalition, a US and Canadian organization working towards a water level management plan that considers all interests including the environment, states the following opinion as to why the south shore is unhappy with Bv7:

New York State government policy gives each town jurisdiction to determine where people can or cannot build. You would think that not allowing people to build in a flood zone or too close to the shoreline would be a no-brainer. No. The problem is that same town has a conflict of interest in that it is the beneficiary of property taxes generated by expensive shoreline properties. You might think that the town would be concerned about lawsuits by property owners that get flooded out. But alas, FEMA the Federal Emergency Management Agency will come to the rescue with flood insurance to bail out the homeowner, and, in essence, protect the town from any flood liability. The result is a positive feedback loop working to exacerbate the situation and produce more downward pressure on water levels. The IJC admits this is the case but clearly states that it is not in its jurisdiction to make any change.²⁶⁰

First, the south shore owners are compensated for costs of mitigation related to property damage. Next, local governments benefit from greater tax revenues due to higher assessments for stable shorelines. Finally, the federal flood insurance program provides a safety net for any catastrophic damages that should occur to flooded properties.

Some people at the public informational meetings along the Upper St. Lawrence claimed that property owners in the flood plains might actually deserve to be flooded due to a lack of concern for where they developed.²⁶¹ Additional comments in the recent web dialogue on the IJC website directly attacked riparians who were questioning the plan; for example,

The 1% decrease in benefits is spread out across the entire lake. Your perspective is limited to the small number of people who believe the shoreline ends at Beechwood in the West and Fairhaven in the East. The old plan provided a \$27

²⁵⁹ IJC Meeting. Massena. Comments made by Laurie Crane, Town supervisor of Huron.

²⁶⁰ Barbara Lewis and Alan Lewis, "Water Levels Management Plan- A Canadian Perspective of the Current Status," International Water Levels Coalition website (updated 2012). Accessed 19 June 2012.

<http://www.iwlc.org/index.php/feedback/>

²⁶¹ IJC Meeting. Clayton. Comments by several unidentified attendees.

million subsidy to you to build vacation homes in a flood plain. The new plan provides a \$24 million subsidy. This represents only a 4% increase over the current rate of annual depreciation of the 5,500 break-walls and other shore protection structures on the Lake and Upper River (IJC Final Report Annexes, p. 63).²⁶²

Jack Steinkamp, LORA leader and vocal south shore resident fired back that response is ridiculous and does not tell the whole story.²⁶³ Laurie Crane, the Town Supervisor to Huron and attendee at all of the IJC public meetings, responded to similar allegations by saying it was like someone who promises they would build a wall to protect your tree house, and then someone else pulled it down, destroying everything.²⁶⁴ She also said the four-foot range promised in the 1958 DD plan affected home building. “Most of the homes on the south shore were built with these regulations...so [the homes] have all been adapted to what the government said was gonna be our flood zone.”²⁶⁵ Using stronger language in an open letter to the IJC, the Directors of LORA write:

On a path to ethical bankruptcy, your working group is attempting to remove the promise of damage mitigation by saying that the grossly underestimated \$4.5 million in annual BV7 damages is not damage at all, but rather a “reduction in benefits” that the system has provided to south shore riparians over the years...This “sleight of hand” would be similar to saying that, as you have had ten fingers your whole life, cutting off three of them would not be a problem, but just a reduction in the benefits of that having ten fingers provides.²⁶⁶

The outcry from south shore owners and politicians is likely one of the biggest challenges that the IJC will face in attempting to implement plan Bv7.

Adaptive Management

Adaptive planning and rational comprehensive planning are clearly a part of the IJC’s proposed water level management plan. The original plan was an attempt at rational

²⁶² Comments by Jeffery Pennington. Posted June 13, 2012 at 1:51 pm. <http://www.webdialogues.net/cs/jjc-loslr-discussions/view/dm/15186>

²⁶³ Ibid.

²⁶⁴ IJC Meeting. Clayton. Comments by Laurie Crane.

²⁶⁵ Ibid.

²⁶⁶ LORA Letter to the IJC.

comprehensive planning, but it soon became clear that not all circumstances had been taken into account. The derivations added to the plan are an example of adaptive management. The proposed plan, however, clearly includes an adaptive management aspect so that changes can be made in the future as circumstances dictate. Allowing the IJC Water Board of Control this ability to manipulate the regulation, gives the Commission a lot of power. The following excerpt explains the IJC's proposal for including an adaptive management plan in 2007.

Flexibility is built into the proposed new Order to allow for a future shift from Plan 2007 to a plan with additional environmental benefits, such as a B+ based plan, when implemented mitigation may provide for such a transition. In the future, the Commission could adopt a new regulation plan without revising the Order. Change could occur whenever sufficient mitigation measures are in place and monitoring confirms they are working satisfactorily... The Commission is proposing an adaptive management program to be the key vehicle for confirming that expected benefits are realized, for assessing changing risks to various interests through monitoring, for reporting on the effects of implemented mitigation measures, and for making needed improvements. The governments of Canada and the United States have indicated their strong support for adaptive management and will actively participate in the further development of an adaptive management plan for implementation.²⁶⁷

The public is also mainly in support of the adaptive management idea, so that changes can be made in case the new plan does not work. For example, the following attendees at the IJC meetings in Clayton and Massena approve of the adaptive management idea: Twyla Webb, a citizen of Clayton and member of the International Water Levels Coalition; Zel Stever, wetland biologist; Jack Hooper, Wellesley Island resident; and Dalton Foster, a scientist. It is important to have the flexibility of adaptive management in case conditions change or adjustments need to be made.

The St. Lawrence Seaway Development Corporation also supports an adaptive management plan.²⁶⁸ However, an adaptive management plan would allow the IJC complete control to assess whether change was needed or whether specific interest groups should benefit more or less than they do under the Orders of Approval for a new plan. In other words, they would have the power to change the regulation at whim, regardless of whether problems arise.

²⁶⁷Proposed New Order of Approval and Plan 2007. International Joint Commission. Letter to the Community from IJC Commissioners. Accessed 1 December 2012. http://www.ijc.org/LOSLdocuments/pdf/LOSL_guide_e.pdf

²⁶⁸ Craig Middlebrook, Acting Administrator SLSDC. Letter to IJC 10 August 2006.

APPLICATION OF THEORY TO ST. LAWRENCE RIVER AND LAKE ONTARIO WATER LEVEL MANAGEMENT

Internal Colonization

Although at first glance internal colonization seems to be almost synonymous with the core-periphery model, the two are actually quite distinct. As stated on pages 11-15, internal colonization requires the presence of all the following aspects: forced involuntary entry, significant change in cultural or social organization, control of the colonized, and racism by the dominant group.²⁶⁹ In the water level management issue there does not appear to be any of the above except for control of one group by another. First, consider the idea of forced involuntary entry. The IJC is not forcing itself into the North Country or Lake Ontario region. It could be argued that in the past, the New York Power Authority used forced involuntary entry to seize lands by eminent domain to construct the Moses-Saunders power dam. However, present day control of water levels in the ecosystem does not involve forced involuntary entry. Second, there does not seem to be any radical change in cultural or social organization of the region. Citizens did not change their social or cultural ways because of the creation of the IJC. Finally, there does not appear to be racism involved with water level management. The IJC does not discriminate against different races regarding regulation plans, nor any other aspect of their functioning.

According to Wall's definition of internal colonization, all of the following conditions must be met: rule of one group over another within a state, territorial separation of the subordinate group from the dominate group and a difference between land tenure rights, existence of an internal government that mainly governs the subordinate group, and economic inequality that forces the subordinate group to work in inferior labor conditions.²⁷⁰ The issue at hand seems to meet almost two out of these four criteria. There is territorial separation of the

²⁶⁹ Lewis, 16.

²⁷⁰ Walls, 5.

groups because the IJC governs from Washington DC and Ottawa and not near the river system, but no difference exists between land tenure rights. There is also economic and political inequality because the money and power are centralized in the cores. However, the economic inequality does not create inferior or forced labor conditions for the subordinate group. Furthermore, the IJC does not have rule over people in the state; the governments of the US and Canada govern the people in each country. An internal government does not exist besides local/regional governments, which are not considered to be colonizing people.

Core-Periphery Model

When the core-periphery model is applied to the water level management issue in the St. Lawrence River and Lake Ontario watershed, certain areas emerge as cores and others as peripheries. In general, the whole area surrounding the river can be considered a periphery, including the North Country, the south shore of Lake Ontario, Canadian waterfront property owners, and the environmental groups located along the river. The cores are mainly Washington DC and Ottawa, where the political power is concentrated. The commissioners that make up the IJC seem to live in various centers away from the river and lake system. At the Williamson meeting, a speaker complained that none of the commissioners were present.²⁷¹ It is not clear how often the commissioners become actively involved in the local issues.

The cores seem to be located in the capitals of the federal governments respectively. The IJC Public Information Officer for the US, Frank Bevacqua, is based out of Washington DC and the Public Affairs Advisor for Canada, Bernard Beckhoff, is based out of Ottawa.²⁷² Furthermore, the three commissioners from the US were appointed by President Obama and confirmed by the Senate.²⁷³ This is another indication that the real centers of power are not in the vicinity of the St. Lawrence River or Lake Ontario. The IJC is a governing body created and funded by the federal governments, therefore its real power lies in these centers. The US section receives funding from the Department of State and the Canadian section obtains money through

²⁷¹ IJC. Williamson. Comments made by Jack Steinekamp.

²⁷² IJC booklet, 35.

²⁷³ "Commissioners," International Joint Commission. (2012) http://ijc.org/en/background/biogr_commiss.htm

the Department of Foreign Affairs.²⁷⁴ The St. Lawrence and Lake Ontario ecosystem is quite large, so the centralization of power to manage the system is also located in the federal cores.

Political will on water level issues has some influence on the IJC's decisions. Politicians have taken different stances on the water level issue. St. Lawrence County legislators asked for higher water levels on the river, so the IJC discarded other proposals and put forth Bv7.²⁷⁵ New York State Assemblywoman Addie Russell supports Bv7.²⁷⁶ Many other New York senators have been supporters of the earlier version of the plan, B+. For example:

Since the proposal of Plan 2007 in March, numerous New York lawmakers, including Rep. John M. McHugh, R-Pierrepont Manor, state Sen. Darrel J. Aubertine, D-Cape Vincent, Rep. Louise M. Slaughter, D-Fairport, and state Environmental Conservation Commissioner Alexander B. "Pete" Grannis, voiced their support for the environmentally friendly plan (B+).²⁷⁷

Former New York Governor David Patterson also supported plan B+.²⁷⁸ New York State Senator William Owens refused to take a position on the proposed Bv7 plan until the public comment period for the IJC's proposed plan was almost over in June 2012.²⁷⁹ He finally came out in support of the plan.²⁸⁰ William Barclay, New York State Senator representing Oswego and Onondaga Counties, switched his original position of support to one of opposition.²⁸¹ Politicians were also given special recognition at the IJC meetings to speak before the public was given a chance to comment.²⁸² The respect given to politicians indicates that the IJC is part of the core, where political and economic power is centralized.

North Country communities such as Clayton, NY, Massena, NY, as well as Montreal in the province of Quebec could be considered local centers in the periphery, or part of the semi-periphery. These areas lack the full political power of the main cores, but they do seem to have a

²⁷⁴ Frank Bevacqua. Personal email. 4 December 2012.

²⁷⁵ "What the St. Lawrence County Legislators Did," *Watertown Daily Times*, (10 October 2011).

²⁷⁶ "Russell Requests Increase in Lake, River Water Levels," *Watertown Daily Times*, (16 May 2010). B1.

²⁷⁷ Jaegun Lee. "IJC Implored to Use Plan B+-Alexandria Bay Hearing: Lawmakers, Residents, Business Owners Say Environment Must be Protected," *Watertown Daily Times*, (26 June 2008). A1.

²⁷⁸ Ibid.

²⁷⁹ Nora Flaherty, "Owens Backs IJC Water Level Plan," *North Country Public Radio*, (6 June 2012).

²⁸⁰ Ibid.

²⁸¹ Jaegun Lee. "Barclay Explains Position Change on Lake Ontario Water Plan," *Watertown Daily Times*, (12 June 2012).

²⁸² IJC Meetings. Massena, Clayton, and Williamson.

bit more power than the rest of the peripheral areas. They act as a bridge between the big cores and the periphery. According to the definition by Wallerstein mentioned on page five, the semi-periphery acts to decrease the political polarization between the rich and poor, thus providing an outlet for core capital investment in low-wage industrial production.²⁸³ For example, in Massena, the presence of the Alcoa plant, which was sited to take advantage of low-cost hydroelectric energy, provides jobs to the North Country community and allows for some economic activity in the region.

Clayton, NY seems to have a mix of upper middle class people, environmentalists, and tourist related business-people.²⁸⁴ The main street through Clayton is along the waterfront, and therefore, attracts many small businesses and a tourism industry. According to Twyla Webb, a Clayton resident, the water level management plan Bv7 will increase tourism in the area because it will benefit the natural environment that draws visitors.²⁸⁵ Beatriz Schermerhorn, another area resident from Hammond, said that tourism was essential for the economy of the North Country and that the river was the main attraction.²⁸⁶ Additionally, the presence of stores such as an organic food co-op and a specialty cheese store indicates that the populace is somewhat well off economically or that it can support commercial activity for a somewhat financially advantaged clientele.²⁸⁷ Recreational boating is also an important aspect of the area; this can easily be observed by the huge amount of watercraft and marinas on the water and in the bays.²⁸⁸ Every year, the Clayton Chamber of Commerce holds a Spring Boat Show that attracts thousands of visitors to the area.²⁸⁹ This community is also the home of Save the River, an organization of informed citizens working to protect the river. The presence of this group has created a wide-support network of environmentally minded residents as observed at the IJC meeting in Clayton.²⁹⁰ At the public informational meeting held in Clayton, the IJC took special care to introduce representatives from environmental groups such as the DEC, Save the River, and the

²⁸³ Wallerstein, 338.

²⁸⁴ Observations made by author when visiting the community 30 May, 4 June, and 15 June 2012.

²⁸⁵ Jaegun Lee, "Water Level Plan Floated Clayton Boat Show: IJC Advocating to Keep Lake, River High Through Fall," *Watertown Daily Times*, (14 April 2012). A5.

²⁸⁶ Jaegun Lee, "Petition Seeking Higher Water-Levels on River: 400 Residents Urging IJC to Implement Plan B+," *Watertown Daily Times*, (4 May 2010). A1.

²⁸⁷ Observations made by author in the community on 30 May, 4 June, and 15 June 2012.

²⁸⁸ Observations of the author while visiting the community on 30 May, 4 June, and 15 June 2012.

²⁸⁹ Jaegun Lee, "Water Level Plan Floated Clayton Boat Show: IJC Advocating to Keep Lake, River High Through Fall," *Watertown Daily Times*, (14 April 2012). A5.

²⁹⁰ IJC Meeting. Clayton. Observations made by author.

Nature Conservancy.²⁹¹ These individual introductions did not occur at the meetings in either Massena or Williamson. According to Jennifer Caddick, public input is important and has the ability to sway the IJC and decision makers.²⁹² Ms. Caddick was given a “sneak peek” at the Bv7 plan while it was being developed by the IJC and before it was released to the public.²⁹³ A sense of local control appears to have given this community somewhat of an ability to affect political change, though they clearly do not hold ‘all of the cards.’

Massena, NY is the location of the Moses-Saunders hydroelectric facility. Here, the presence of the New York Power Authority has given Massena more political control than along other stretches of the river. Economic benefits from hydroelectricity are an important aspect of the decisions made about the river. The dam is also the control point for the water levels on Lake Ontario and the Upper and Lower St. Lawrence River.²⁹⁴ Consequently, certain stakeholders in Massena are affected, and some of them may hold a bit of power in the larger political context. Alcoa, for example, located a plant in the area to take advantage of the inexpensive energy in order to run their operations. Alcoa has endorsed plan Bv7 because it maximizes hydropower, but they also claim to support it because of its environmental benefits.²⁹⁵ The low-cost power production also attracted industrial plants owned by General Motors and Reynolds Metals Company.²⁹⁶ These industrial activities create an economic incentive for hydropower maximization under any water level management plan.

Additionally, the geographical area in the vicinity of Montreal can be considered an example of the semi-periphery. It has had some influence in the history of water level regulation. When the IJC proposed Plan 2007, for example, officials from the government of Quebec Province were important in derailing that plan because it would have caused flooding at Montreal Harbor.²⁹⁷ It is unclear exactly who these officials were, but they did have a role in changing the action plan of the IJC. Government officials in Quebec did not support the B+ plan

²⁹¹ Ibid.

²⁹² Caddick. Personal Interview.

²⁹³ Jaegun Lee. “IJC Will Rethink Water Strategy 2012 Deadline: Agency Strategy Hasn’t Seen Change For Half a Century,” *Watertown Daily Times*, (22 September 2011). A1.

²⁹⁴ IJC Meeting. Massena.

²⁹⁵ Jaegun Lee, “Alcoa Massena Endorses Bv7 Water Management Plan,” *Watertown Daily Times*, (22 May 2012).

²⁹⁶ Cox, Heather; DeMelle, Brendan; Harris, Glenn; Lee, Christopher, and Montondo, Laura. “Drowning Voices and Drowning Shoreline: A Riverside View of the Social and Ecological Impacts of the St. Lawrence Seaway and Power Project,” *Rural History* 10(2): (1999), 247.

²⁹⁷ Marc Heller. “IJC Backs off its Water Plan,” *Watertown Daily Times*, (6 September 2008).

(version before Bv7) because it also had potential to flood the harbor.²⁹⁸ André Carpentier, who was present at several of the meetings, representing the province of Quebec, was in attendance as part of the IJC's travelling team.²⁹⁹ His introduction by IJC officials implies that he has some political power as a representative of Quebec. Montreal is an important city on the St. Lawrence River system and therefore can be considered as part of the semi-periphery, a transition zone between the core and the periphery.

The profits from the energy generation in Massena do not spread far into the surrounding peripheral area, as can be observed from the poor economic state of the North Country. The economic benefits do not largely accumulate in Massena either, so that is why this area is an example of the semi-periphery and not a core region. The majority of the North Country can be considered the periphery. St. Lawrence County had 17.6% of the population below the poverty line from 2007-2011, compared to 14.5% of the population throughout the whole state.³⁰⁰ This region is clearly in the periphery because economic activity does not generate high benefits for the populace.

The south shore of Lake Ontario can be clearly classified as the periphery. Politicians representing the surrounding area at the Williamson meeting were truly angered about the possibility of an increased tax burden on their counties. For example, Kim Park, the town of Wolcott supervisor, stated that the proposal to change the water levels plan was a "radical change" with extreme economic impacts and it would cause "significant damage" to the area.³⁰¹ She also claimed that her town was already at poverty level and with an increase in damage costs they would have to decide what services to cut.³⁰² These stakeholders appear to be one of the groups not represented at IJC meetings to develop the plan. From a recent *Watertown Daily Times* article, the president of Save Our Sodus states, "there was no adequate representation from the south shore and economic interests during the development of this proposal."³⁰³ The south shore area appears to be very vulnerable to any increase in water levels and it depends on regulation to

²⁹⁸ Jaegun Lee. "IJC Will Rethink Water Strategy 2012 Deadline: Agency Strategy Hasn't Seen Change For Half a Century," *Watertown Daily Times*, (22 September 2011). A1.

²⁹⁹ IJC Meetings. Massena and Clayton.

³⁰⁰ US Census Bureau. Updated December 2012. <http://quickfacts.census.gov/qfd/states/36/36089.html>

³⁰¹ IJC Meeting. Williamson. Comments made by Kim Park.

³⁰² Ibid.

³⁰³ "Groups Propose Channel Barriers-Split Water Basins: Move Would Prevent Species from Invading Great Lakes," *Watertown Daily Times*, (1 February 2012). A1.

protect properties. Part of this unstable situation is a result of zoning laws that allowed buildings in such close proximity to the water system, but also the history of water regulation has increased the susceptibility of the region. An increase in flooding or fluctuating water levels could severely affect the areas surrounding Lake Ontario.

Dimensions of Power

As discussed on pages 8-11, the three dimensions of power explain how one group controls another. In the first dimension, group A with power controls group B without power by causing that group to do something it would not do otherwise.³⁰⁴ In the second dimension, the group with power determines the rules of the game and can chose to exclude issues or stakeholders from the main debate.³⁰⁵ In the third dimension, the group in power operates in a covert manner and manipulates the attitudes of the group without power so that members of that group believe and act in ways that are not in their best interests.³⁰⁶

There is some suggestion that the first dimension of power is demonstrated by the IJC. Adaptive management, as mentioned on pages 45-47, will allow deviations to the new water level plan when actual conditions do not meet expected outcomes. For example, if climate change alters precipitation patterns, it may be necessary for the IJC to adjust the Order of Approval to prevent flooding. This flexibility gives the IJC a significant amount of power through their ability to control any and all response to future environmental change. The necessity for this aspect of the plan seems clear, since the system is quite large and unpredictable, but adaptive management still entrusts complete control to the commissioners. Future changes in the amount of available water supply are likely, especially with climate change and feedback loops that will alter the ecosystem. An example of a feedback loop on Lake Ontario would be greater evaporation due to higher temperatures, leading to more water vapor or greenhouse gases in the atmosphere, exacerbating climate change and raising temperatures still further. The IJC

³⁰⁴ Dahl, 201-205.

³⁰⁵ Lukes, 17.

³⁰⁶ Lukes, 24.

can decide when to make changes, what changes should be made, and how long the changes should be effective. Being able to overtly change the water regulation system is an example of the first dimension of power because all other stakeholders are being acted upon without their consent by the group with power. However, the actual creation of the adaptive management plan in the proposal for a new regulation plan is an example of the second dimension of power, creating the rules of the game.

The second dimension of power can be seen with several aspects of the water level management issue. For example, the IJC is the group that is creating all of the options for a new management plan. In other words, they are creating the rules of the game. Other management options exist, but the IJC emphasizes that they must follow the Boundary Waters Treaty and they have proposed only three plans (A+, B+, and D+). The IJC is also the primary organization that is presenting the information on the three plans and how they will affect different stakeholders. Earlier, in 2005, the IJC was accused at public meetings of slanting the data to make Plan D, the one most similar to the current regulation plan, seem like the best option.³⁰⁷ After the proposal for Plan 2007 was discarded, the IJC unilaterally decided to go with Plan B and eliminate the other alternatives. According to Gaventa, “it is not necessarily true that the people with the greatest needs participate in politics most actively—whoever decides what the game is about also decides who gets in the game.”³⁰⁸ The IJC, in this case the group deciding what the game is about, chose which stakeholders to include in their studies of the system. The environment was added as a stakeholder, and other interests that may exist were left out of consideration.

Furthermore, more recently, at the public informational meetings in Massena and Clayton, the presenter, Russ Trowbridge, gave a presentation full of long pauses, consultations with his notes, and unclear responses to questions.³⁰⁹

Umm, this is one of the reasons that we have shifted from the view that was taken in, after we withdrew Plan 2007, in which we said we would like to move to B+, but mitigation would have to be in effect to the position we are now taking where we are proposing B+ and there are measures with which are enforced umm, which we are looking at to see whether they are [unintelligible word] there is a *strong*

³⁰⁷ M.B. Pell. “Attendees at Meeting Accuse IJC of Favoring Wrong Water Level Plan,” *Watertown Daily Times*, (24 June 2005). D8.

³⁰⁸ Gaventa, 9.

³⁰⁹ IJC Meetings. Massena and Clayton. Observations made by author.

interest in protecting the environment and that phrase about public interest is a critical point....[long pause]. Now,...³¹⁰

This sloppy presentation style seemed odd given the number of meetings conducted by the IJC and the professionalism exhibited with style of dress, mannerisms, and tables of well-designed printed information; it would seem that the presenter would be very familiar with the presentation and give it more smoothly. Perhaps the issue was being framed in a certain way to appeal to the different majority stakeholders at the particular meetings.

Another example of the second dimension of power is secrecy in developing Plan 2007. Plan 2007 was a hybrid plan created by the IJC behind closed doors and allegedly ignored evidence from 180 scientists.³¹¹ However, Plan 2007 was not actually implemented. Further allegations concerned the more recent propositions of the IJC. The proposal for Bv7 was developed in “seven closed-door meetings since December 2009 [until 2011] and a couple of teleconferences between working group members - consisting of representatives from the U.S. and Canadian federal governments, New York State, Ontario, Quebec and the IJC.”³¹² The public was not aware of the plan until it was proposed, and then there was extensive public outcry because the plan damaged many stakeholder interests. As mentioned on page 29, public disapproval was effective in stopping Plan 2007. This may be an exception to the idea that the IJC is exerting control over other stakeholders, but the importance of public input is unclear.

A further example of the second dimension of power was at the public informational meetings, in Clayton especially, the IJC emphasized the desire to complete the process of implementing a new plan as soon as possible. However, when directly asked about how long the process would take, Frank Bevacqua stated that he would not “hazard a guess.”³¹³ If the IJC is the sole group with power to propose and decide upon an issue that has already been under study for more than a decade, how come they cannot say when they might actually take action? One possibility is that the IJC may be determining how the game is played and stalling to decide upon a new plan.

³¹⁰ IJC Meeting. Massena.

³¹¹ Jaegun Lee. “Schumer Slams IJC Water Report- ‘Jumping the Gun’: Senator Wants New Regulations to Use One of Three Previously Proposed Plans,” *Watertown Daily Times*, (21 March 2008). A1.

³¹² Jaegun Lee. “IJC Will Rethink Water Strategy 2012 Deadline: Agency Strategy Hasn’t Seen Change For Half a Century,” *Watertown Daily Times*, (22 September 2011). A1.

³¹³ IJC Meeting. Clayton.

The third dimension of power may be evident in the way the IJC is distracting the public from the real economic effects of the new plan. The debate has been structured by the IJC as pitting property owners against the environment and recreational boating. Why, instead, does the IJC not focus on the large economic gains that would be realized by hydropower and commercial shipping? The IJC is disseminating the information on the different plans, which allows them to frame the issue in a way that favors certain groups and not others.

The information utilized by the IJC to formulate a new plan has been conducted by a very small number of scientists and public policy researchers heading the important studies. The proposed plan Bv7 shows marginal improvements for the environment, but almost all of the environmental studies have been conducted by the same scientist, Doug Wilcox.³¹⁴ The research on costal processes has mostly all been done by W.F. Baird.³¹⁵ The recreational boating research information was gathered in studies by the same four researchers involved in all of the studies: Nancy Connelly, Jean-Francois Bibeault, Jonathan Brown, and Tommy Brown. Dalton Foster, a retired scientist involved with the water level management issue, claims that good scientific practices were not followed when researching plan B+ and therefore, the data are doubtful.³¹⁶ For example, water levels were only sampled once a week, but the levels change much more rapidly than that.³¹⁷ Jennifer Caddick from Save the River is not critical of the limited number of investigators producing results, which is consistent with the manner that the IJC has framed the issue.³¹⁸ Controlling the flow of information to the public, as the IJC appears to be doing, is an example of the third dimension of power.

The majority of the research is based on computer modeling systems. It is difficult to ascertain the reliability of these projections because it is unlikely that anyone has the capability to foresee every factor in an ecosystem as large as the St. Lawrence River and Lake Ontario. Skeptics claim, and there is no way to refute this possibility, that reliance on computer models gives the IJC a certain amount of power to manipulate data that produces different levels of benefits for different interest groups. Concern was raised over the reliance on computer

³¹⁴ "Reports," International Joint Commission. (2012) <http://ijc.org/loslr/en/library/reports.php>. Note: More in depth information about the studies commissioned by the IJC to study how different water level plans may affect the ecosystem can be found at this link.

³¹⁵ Ibid.

³¹⁶ M.B. Pell. "Report on Water Levels to be Released in April," *Watertown Daily Times*, (20 March 2006). D6.

³¹⁷ Ibid.

³¹⁸ Caddick. Personal Interview.

generated data and not actual historical data during the public meetings in Williamson and Clayton.³¹⁹ Computer data is only as reliable as the models used to input the algorithms. Therefore, by designing the computer programs to model different plans, the IJC has a substantial amount of power to influence data. Again, having the ability to control the stream of information is an example of the third dimension of power because the IJC can mold how the public feels towards the potential new plans.

The IJC publically posits that Bv7 best meets the needs of all stakeholders; however, it does not emphasize that the groups to benefit the most are those with interests in hydropower and commercial shipping. Hydropower is expected to see a \$5.4 million annual increase in revenues with plan Bv7 and commercial shipping a rise of \$1.74 million. Hydropower would likely see greater profits from an increase in water levels that generate more power. Shipping would see fewer delays on the St. Lawrence River as a result of low water levels and increased profits from greater carrying capacities for ships on higher waters.³²⁰ The SLSDC believes that they have priority to benefits, “second only to domestic and sanitary purposes,” under the “order of precedence of uses” in the Boundary Waters Treaty.³²¹ The Seaway also stated in a letter to the IJC that if no “improvements” to shipping interests could be demonstrated by a new plan model, regulation should not be changed from 1958DD.³²² It is unclear if this reasoning has affected the IJC.

The environment is expected to see a 1.40 increase in the ratio of wetland meadow marsh communities around Lake Ontario.³²³ Moreover, the number of muskrat houses is thought to increase under Bv7. A figure documenting this increase is reproduced in Appendix A. This figure also shows a very large number of muskrat houses for pre-regulated water levels. In fact, the number of houses that will increase under plan Bv7 compared to the present plan (1958DD) is relatively small in relation to pre-regulated conditions. In light of such a slight increase, the

³¹⁹ IJC Meetings. Clayton and Williamson. Comments made by Mike Fleser, land owner on Eastern Lake Ontario and Donald Woodward, farmer from Lake Ontario area.

³²⁰ “Impact Evaluation Model for Commercial Navigation,” (2004). 17.

³²¹ Craig Middlebrook, Acting Administrator SLSDC. Letter to IJC 10 August 2006.

³²² Ibid.

³²³ “Graphs and Tables- Economic Performance Table: Stochastic Supply Sequence.” International Joint Commission. (2012) http://ijc.org/loslr/en/library/Tables/perf_econ_stochastic.pdf Note for the environmental indicators that the current plan is counted as 1.00, so Bv7 shows a 0.4 increase over the amount of wetland meadow marsh community. The wetland meadow marsh community is one of the main indicators of a healthy river and lake environment.

euphoria of environmentalists over Bv7 might seem a bit overstated. According to one study of ecological conditions for various water level plans, “there are no uniformly good and bad options for environmental conservation.”³²⁴

Recreational boating, on the other hand, is expected to see economic declines of about \$630,000, according to the IJC study,³²⁵ many proponents of Bv7 argue that it will actually be the opposite. Despite some lower water levels during summer, boating will still be possible and desirable then, because summertime boating is a lifestyle that people are not willing to change.³²⁶ More importantly, the boating season will be extended into the fall, so tourists will remain longer.³²⁷ Often, the levels of water in the lake and river drop to very low heights in late autumn, making boating extremely difficult. Under Bv7, water levels are expected to be somewhat higher in many autumns. A 2004 study by Cornell University revealed that the average boater spent \$3,890 in communities bordering the Lake and River and \$525 in the surrounding communities.³²⁸ An estimated 45,800 boaters visit the area per year, resulting in about \$178 million in the interior counties and \$24 million in the surrounding areas.³²⁹ The stakeholders interested in recreational boating have been led to believe that they will benefit from the new plan proposal, similar to hydropower and shipping interests despite data to the contrary. The distraction of public attention to key issues and dispute among stakeholders over less central issues is one mechanism of the third dimension of power.³³⁰

Political power over water level management is mainly controlled by the IJC, which as was already mentioned is based in Washington DC and Ottawa. The IJC commissioners are appointed by the president in the United States and confirmed by the Senate.³³¹ The commissioners from Canada are appointed by the Governor in Council of Canada with the advice of the Prime Minister.³³² However, the commissioners do not seem to have to report to higher authorities. The IJC website states that “[the commissioners] must act impartially, in

³²⁴ Bain et al. “Integrated Ecosystem Assessment.” 21.

³²⁵ Ibid.

³²⁶ Jaegun Lee, “High Water Levels Good for Boating,” *Watertown Daily Times*, (31 August 2008). B1.

³²⁷ “IJC Unveils Updated Water Plan-“Environmentally Friendly” Proposal Bv7 Would Increase Long-Term Fluctuation of Lake, River Levels,” *Watertown Daily Times*, (31 January 2012). A1.

³²⁸ Itai M. Maytal, “Cash Clout of Boaters Promoted- Study Says Water Levels Must Target Community,” *Watertown Daily Times*, (29 July 2004). D3.

³²⁹ Ibid.

³³⁰ Gaventa, 19.

³³¹ “Who We Are,” International Joint Commission. (2012) http://www.ijc.org/en/background/ijc_cmi_nature.htm

³³² Ibid.

reviewing problems and deciding on issues, rather than representing the views of their respective governments.”³³³ The governments seem to merely have a representative role in the decisions made about the river and lake system, although they do occasionally debate the water level management issue. The IJC included as part of their presentation at the three public informational meetings that they are “seeking concurrence” of the two governments.³³⁴ What this actually means is unclear, but when questioned officials stated that they would probably not proceed if there were outright objections from the governments, but the governments did not necessarily have to fully approve the plan.³³⁵ The IJC does receive funding from the two federal governments. The five year study that began in 2000 to investigate alternate water level management plans was funded by the US and Canadian governments.³³⁶

In summary, all three dimensions of power apply to the water level management issue. The first dimension can be seen in the adaptive management plan; if the IJC has the power to change the regulation at any time, they will be able to exert control over the other stakeholders without their approval. It is not the existence of the adaptive management plan itself that is an example of the first dimension, but rather the exercise of control over stakeholders without their consent. Having the ability to change regulation when desired might be an example of the second dimension. In the second dimension of power, the IJC makes the rules of the game. They are the organization that determines which issues are presented, how to frame them, and essentially if the management plan will change at all. Despite a decade of study and public outcry to change the plan, the IJC has still not formally proposed a new water regulation plan.³³⁷ Because the IJC has the power to change the rules at whim, they have a considerable amount of power in affecting change or preventing change from happening. It is a bit more difficult to determine if the third dimension of power is actually at work in this situation because those with power have the authority to hide information that may illustrate this dimension at work. However, some clues suggest that the third dimension may be in play. For example, why are a majority of stakeholders arguing about the environmental benefits versus recreational boating or property damages, when by far the biggest economic gains are going to commercial shipping and

³³³ Ibid.

³³⁴ IJC Meetings. Massena, Clayton, and Williamson.

³³⁵ Ibid.

³³⁶ Marc Heller, “A History of Highs and Lows that Defies Simple Solutions,” *Watertown Daily Times*, (28 December 2008). B2.

³³⁷ IJC Meeting. Clayton. Comments made by Art Files and others.

hydropower production? The stakeholders have adopted the values of the IJC and are debating the issue without stepping back to examine the core beliefs, which are the economic benefits to shipping and hydropower.

THE ENVIRONMENT AS A STAKEHOLDER

Management of any natural system could well be interpreted as an anthropocentric view of the environment. Should humans control the environment? The IJC has always tried to include all of the stakeholders in the creation of a new water level plan. Now they are also including the environment. However, the idea of controlling nature, in other words regulating the St. Lawrence River, is still very anthropocentric. Wouldn't a more ecocentric point of view benefit the greatest number of beings?



Many other species besides humans exist.

According to the ecologist Aldo Leopold, the environment should be respected. “There is yet no ethic dealing with man’s relation to land and to the animals and plants which grow upon it. Land, like Odysseus’ slave-girls, is still property. The land relation is still strictly economic, entailing privileges but not obligations.”³³⁸ Leopold goes on to say that we have not recognized a land ethic yet, but “we have at least drawn nearer the point of admitting that birds should continue as a matter of biotic right, regardless of the presence or absence of economic advantage to us.”³³⁹ The land, or the river and lake system in this case, has biotic rights.

The concept of deep ecology includes the idea that the environment should have biocentric equality, an extension of Leopold’s idea of biotic right. According to Devall and Sessions, biocentric equality is “that all things in the biosphere have an equal right to live and

³³⁸ Aldo Leopold. *A Sand County Almanac*. (New York: Oxford University Press, 1966). 217.

³³⁹ Leopold. *A Sand County Almanac*. 247.

blossom and to reach their own individual forms of unfolding and self-realization within the larger Self-realization.”³⁴⁰ The St. Lawrence River and Lake Ontario should be given this opportunity to live and blossom without harmful management practices by humans. The basic principles of deep ecology include the ideas that human and non-human Life has intrinsic value, humans do not have the right to reduce diversity except to satisfy vital needs, and that human interference in the nonhuman world is excessive.³⁴¹ In the St. Lawrence ecosystem human interference with the environment has greatly altered the natural system and robbed certain species of their right to live and blossom.

The environment does not, as of yet, have legal rights either. According to law professor Christopher Stone:

...there will be resistance to giving a “thing” rights until it can be seen and valued for itself; yet, it is hard to see it and value a “thing” for itself until we can bring ourselves to give it rights—which is almost inevitable going to sound inconceivable to a large group of people...I am quite seriously proposing that we recognize legal rights of forests, oceans, rivers and other so-called “natural objects” in the environment—indeed, of the natural environment as a whole...To say that the natural environment should have rights is not to say anything as silly as that no one should be allowed to cut down a tree. We say human beings have rights, but—at least as of the time of this writing—they may be executed. Corporations have rights, but they cannot plead the Fifth Amendment; the case of *In re Gault* gave fifteen-year-olds certain rights in juvenile proceedings, but it did not give them the right to vote.³⁴²

The environment ought to have the right to be its own stakeholder and not merely represented as an interest for human use. Enjoying the natural environment, tourism, and activities such as fishing as important aspects of the culture that has developed around the St. Lawrence River and Lake Ontario, but the environment *itself* also has a right to be represented as a stakeholder with standing.

The idea of giving legal right to the environment is not meant to be extreme. Stone continues:

³⁴⁰ B. Devall and G. Sessions. *Deep Ecology: Living as if Nature Mattered*, (Salt Lake City: Peregrine Smith Books, 1985). 67.

³⁴¹ Devall and Sessions. *Deep Ecology*. 70.

³⁴² Christopher Stone. *Should Trees Have Standing?* (New York: Avon Books. 1972). 25, 27.

In the same way, to say that the environment should have rights is not to say that it should have every right we can imagine, or even the same body of rights as human beings have. Nor is it to say that every thing in the environment should have the same rights as every other thing in the environment.³⁴³

The environment should be respected as a stakeholder and may merit legal standing in issues such as water level management. Several residents along the St. Lawrence agree that the environment should be given its own voice and representation in this issue. At the Clayton meeting, Jen Burroughs, an educator and naturalist stated: “[Plan Bv7] is the best that I have seen, that can bring us back to a more natural situation, with human beings in the background. We are only one species. We have got to learn to control ourselves.”³⁴⁴ Another resident at the Clayton meeting, Jeff Garnsey, President of the Clayton Guides Association, Executive Director of the Muskie Hall of Fame, and Board of Directors member at the Thousand Islands Museum, had similar comments from an ecocentric point of view. He stated:

...who I really want to represent are the fish. [applause by audience and chuckles] The muskies and the northern [pike] are the guys that really suffer. These cold water spawners, if you look at the amount of water that we lose and how it affects the ecosystem of the river, all of this is going to be a mute point if we continue to let it deteriorate.³⁴⁵

Some meeting attendees in Williamson shared similar views. Robin Mckegilsworth, a resident on Lake Ontario, advocates protecting the environment so that the “critters” are happy.³⁴⁶ Making the environment a stakeholder is a good first step in representing environmental rights, but the natural world should get more serious consideration under a new regulation plan.

An ecocentric point of view would look at the river from the standpoint of the fish, the wetlands, and the muskrats. How have these species been affected by stabilized water levels? It appears that they are not doing as well as they did under natural water levels before regulation of the St. Lawrence with the first water level management plan. Perhaps a re-examination of plan E, essentially the natural water levels plan, should be the approach taken by the IJC.

³⁴³ Ibid.

³⁴⁴ IJC Meeting. Clayton. Comments made by Jen Burroughs.

³⁴⁵ IJC Meeting. Clayton. Comments made by Jeff Garnsey.

³⁴⁶ IJC Meeting. Williamson. Comments made by Robin Mckegilsworth.

SUMMARY AND CONCLUSIONS

A new regulation plan for the St. Lawrence River and Lake Ontario ecosystem is long overdue. It is time for the public, especially the environmentally minded folks along the shore, to demand a new plan. The power held by the IJC in this situation has allowed them to drag their feet and delay implementing a better solution to management for more than a decade. It seems like public informational meetings and public hearings on potential new plans are not enough to actually create change, but rather only serve to give the public the illusion of power. More radical action by the public is necessary to overthrow the monopolization of the playing cards of natural resources by the IJC and force a better solution for the St. Lawrence River and Lake Ontario. The economic and special interests along the river and lake ecosystem cannot continue to received benefits at the expense of the environment, if the ecosystem is to continue to exist in its present or superior form. The time has come for the public along the St. Lawrence River and Lake Ontario to take the power from the IJC to implement a more ecocentric plan for the ecosystem.

In accordance with the core-periphery model, the groups that are located in peripheral areas do not have much political or economic power to determine what happens with the water level management plan. Recreational boaters, property owners (especially those along the south shore), small business owners, shoreline communities, municipalities, and environmental groups are the stakeholders who do not have the majority of the power. As mentioned earlier, some of these groups can be classified as semi-periphery because they have had some influence on opposing other plan proposals. It is uncertain how much public input will affect the final decision or the crafting of the plan.

The majority of stakeholders do not have control over the decisions to manage the lake/river system. The decisions are generally made by experts or officials from the core. This disconnect between the core and the periphery could lead to poor management of a communal resource because the officials from far away are less impacted by the consequences than the people living near the river/lake.

The connections between the dimensions of power and the water level management question have larger implications. Identifying the dimensions of power can help to advise local leaders on how to resist or modify the system if they do not agree with the decisions made by the IJC. Stakeholders can have power if they refuse to allow the IJC to control the river/lake system.³⁴⁷ As Gaventa has documented in his study of coal mining in Appalachian communities, one group has power over another if the powerless allows that group to have power.³⁴⁸ However, the difficulty is that the group in power can use methods of control to change the attitudes and assumptions of the powerless so that the powerless will not try to take initiative. In this case, the IJC has prevented the public from forcing implementation of a plan that best meets everyone's interests. The IJC allows people to feel that they have power to influence the planning process, and one could argue that the rejection of Plan 2007 was simply a ploy by the IJC. Even if one is not willing to go that far, it is clear that the IJC is in control of the rules of the game, and that the environment has not been formally represented in anything except anthropocentric terms other than with a few comments by enlightened individuals. Presenting this issue in connection with these theoretical frameworks might encourage the IJC to utilize public input and move forward quickly and transparently to implement a more environmentally acceptable plan.

Despite widespread poverty in the North Country, the region is not poor in natural resources. This situation is similar to Appalachia, a region with extreme economic poverty, but rich in many natural resources, like coal and timber, that can be exploited by the core.³⁴⁹ The St. Lawrence River and Lake Ontario is an area abundant in wildlife, wetlands, and the enormous power of the water. From an anthropocentric point of view, the region has much to offer, so there are many stakeholders with a vested interest in appropriating benefits from these natural resources. Outsiders want to generate electricity and move commodities using the river. Residents want to protect these resources for recreation and aesthetic purposes.

According to the application of the core-periphery model along the St. Lawrence River ecosystem, much of the area surrounding the river and Lake Ontario is part of the periphery. The abundant resources that this area has to offer are appropriated by the core and the people and other living beings in the periphery lose out. It is time that the periphery takes control of the

³⁴⁷ Gaventa, 6.

³⁴⁸ Gaventa, 7.

³⁴⁹ Gaventa, 35.

situation and prevents exploitation by the core if it is not in the periphery's self interest. The citizens of the area should speak for the environment. In order to protect the environment, the core-periphery model will likely need to be dismantled. Economic and political power that forms core areas are often a result of the development of the natural resources in the periphery. By recognizing the principles of deep ecology and allowing the environment biocentric equality and self-realization, the entire system of economic and political power centers would be altered. People would need to respect the environment and by leaving large ecosystems intact and not subjugated would create a new type of core, a core rich in justice and undomesticated wilderness.

The whole idea of "natural resource" has parallels with the third dimension of power. Calling the river and lake ecosystem a natural resource is saying that it is for human use, which is an anthropocentric point of view. The language used in these kinds of situations reflects the values and ideas of the group in power. The IJC desires to manage the river for human gain, whether it is for property protection, electricity generation, or commercial shipping. Including the environment as a stakeholder is a far cry from actually giving the environment rights.

In recent years, ecological thinking has evolved to encompass the natural world as more deserving of rights. An ecocentric point of view is needed on the Lake and River system to include not only humans, but also all other species and the ecosystem as a whole. The IJC should not be looking at how to solely benefit humans and preserve the environment for future human use and exploitation, but rather how can the environment be protected for its own right to live and blossom? Humans should not feel entitled to own or control such vast ecosystems as the St. Lawrence River. As is clear from half a century of regulated water levels, we humans are far inferior at management than nature herself.

If the IJC is managing the environment, might they also be managing the stakeholders along the river to a similar degree? For the 50 years that the current water level management plan has been in place, relatively little has been done as a result of public participation. Plan 2007 may be an exception though. Little public participation along the St. Lawrence and Lake Ontario is similar to Gaventa's argument that in Appalachia there appeared to be apathy by the impoverished towards creating a better situation for themselves.³⁵⁰ This non-participation, however, is not for lack of caring, but rather a result of internalizing a marginal role. If people

³⁵⁰ Gaventa, 36.

do not see hope for change, they will not act to change the situation. Moreover, the issues can be constructed in a way that residents are unaware of whose interests they are advancing, for example, if residents adopt values that are really in the interest of those in the core. When the IJC began the process of developing a new plan and conducting studies of the river ecosystem, they asked for public participation by means of comments and formal hearings. Stakeholders began to vocalize concerns and support for different alternatives, but the amount that public input was actually taken into consideration is unclear. In addition, it is obvious that almost all stakeholders in the peripheral and semi-peripheral areas have failed to see or question the dominant economic concerns of the core.

According to Gaventa, the appearance of apathy can lead to justification of the élite for their dominance.³⁵¹ The IJC can justify their control of the issue by saying that people did not wish to change the situation due to years of silence over the plan. This approach makes the IJC seem benevolent and progressive for proposing to change the situation on behalf of the other stakeholders, using new technology, such as improved computer programming, and better data. However, according to the theoretical framework being advanced here, these actions only further reinforce the power of the core, driving the stakeholders in the periphery deeper into the dimensions of powerlessness. They must now understand new methodologies and information, and refute them if it is not in their interest to adopt them.

In conclusion, the core-periphery model and the three dimensions of power are a useful framework to analyze the water level management for the St. Lawrence River and Lake Ontario ecosystem. The model of internal colonization, although it does share some similarities with the current situation, cannot be easily applied to the issue of water level management planning. There is no evident racism or internal government by the dominant group of the region in question.

³⁵¹ Gaventa, 41.

Appendix A

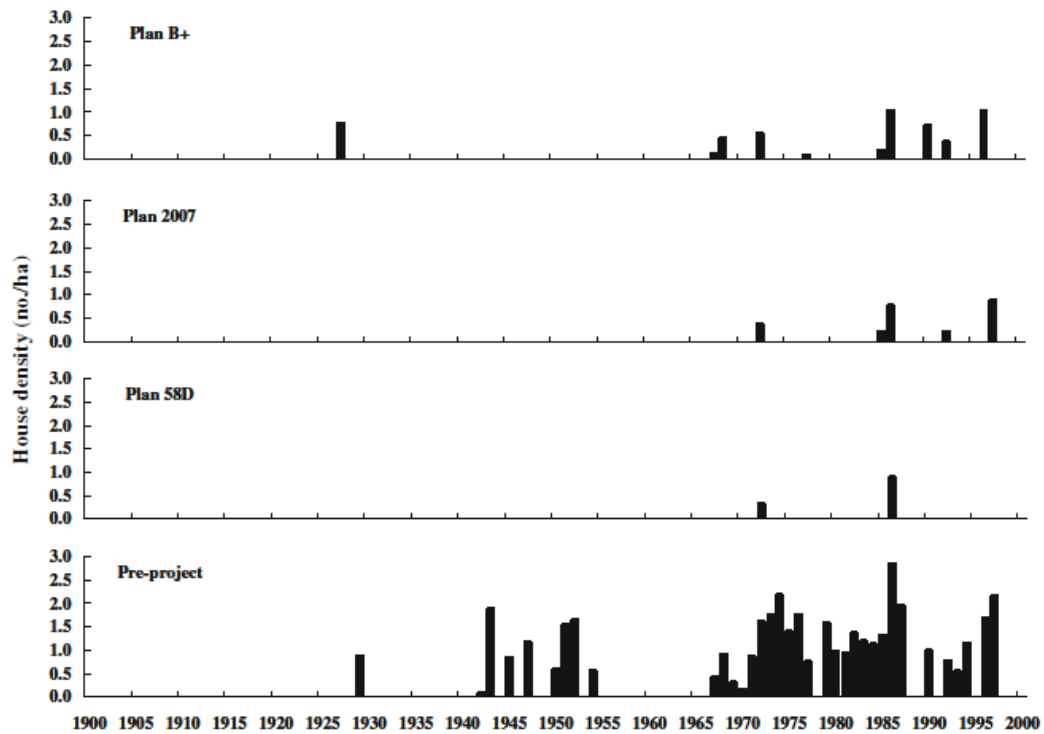


Fig. 5 Muskrat house density simulation (100 years, 1901 to 2000) in drowned river mouth geomorphic type coastal wetlands in the upper St. Lawrence River. IJC water-level-regulation plan 1958D has been in effect since 1960, pre-project represents simulated no-regulation water levels

Image from Toner et. al. "Muskrat Abundance Responses." 217.

Appendix B

Figure 2. Catch per unit effort of YOY northern pike and muskellunge captured in seine hauls in Upper St. Lawrence River nursery sites, 1987-2002.

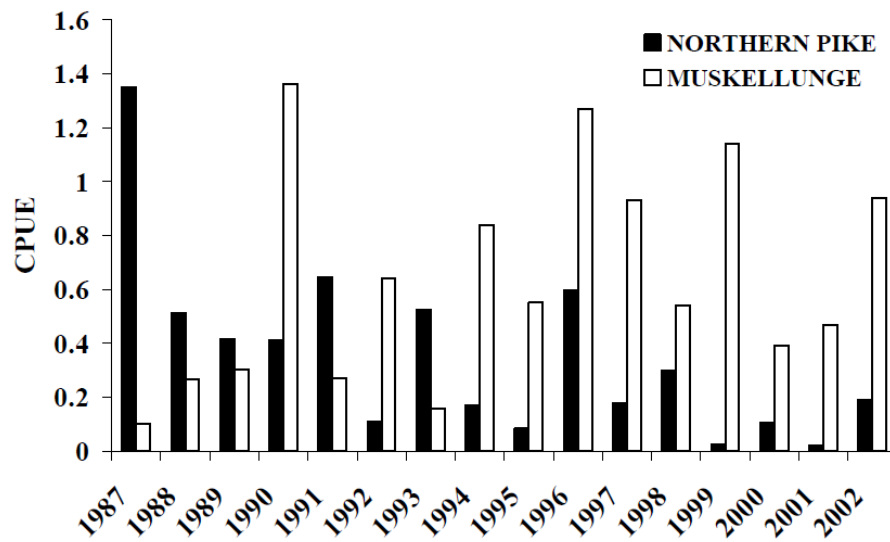


Image from Farrell et al. "Update-Muskellunge." 14.

Boundary Waters Treaty

TREATY BETWEEN THE UNITED STATES AND GREAT BRITAIN RELATING TO BOUNDARY WATERS, AND QUESTIONS ARISING BETWEEN THE UNITED STATES AND CANADA

The United States of America and His Majesty the King of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, Emperor of India, being equally desirous to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise, have resolved to conclude a treaty in furtherance of these ends, and for that purpose have appointed as their respective plenipotentiaries:

The President of the United States of America, Elihu Root, Secretary of State of the United States; and His Britannic Majesty, the Right Honourable James Bryce, O.M., his Ambassador Extraordinary and Plenipotentiary at Washington;

Who, after having communicated to one another their full powers, found in good and due form, have agreed upon the following articles:

PRELIMINARY ARTICLE

For the purpose of this treaty boundary waters are defined as the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.

ARTICLE I

The High Contracting Parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally, subject, however, to any laws and regulations of either country, within its own territory, not inconsistent with such privilege of free navigation and applying equally and without discrimination to the inhabitants, ships, vessels, and boats of both countries.

It is further agreed that so long as this treaty shall remain in force, this same right of navigation shall extend to the waters of Lake Michigan and to all canals connecting boundary waters, and now existing or which may hereafter be constructed on either side of the line. Either of the High

Contracting Parties may adopt rules and regulations governing the use of such canals within its own territory and may charge tolls for the use thereof, but all such rules and regulations and all tolls charged shall apply alike to the subjects or citizens of the High Contracting Parties and the ships, vessels, and boats of both of the High Contracting Parties, and they shall be placed on terms of equality in the use thereof.

ARTICLE II

Each of the High Contracting Parties reserves to itself or to the several State Governments on the one side and the Dominion or Provincial Governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; but it is agreed that any interference with or diversion from their natural channel of such waters on either side of the boundary, resulting in any injury on the other side of the boundary, shall give rise to the same rights and entitle the injured parties to the same legal remedies as if such injury took place in the country where such diversion or interference occurs; but this provision shall not apply to cases already existing or to cases expressly covered by special agreement between the parties hereto. It is understood however, that neither of the High Contracting Parties intends by the foregoing provision to surrender any right, which it may have, to object to any interference with or diversions of waters on the other side of the boundary the effect of which would be productive of material injury to the navigation interests on its own side of the boundary.

ARTICLE III

It is agreed that, in addition to the uses, obstructions, and diversions heretofore permitted or hereafter provided for by special agreement between the Parties hereto, no further or other uses or obstructions or diversions, whether temporary or permanent, of boundary waters on either side of the line, affecting the natural level or flow of boundary waters on the other side of the line shall be made except by authority of the United States or the Dominion of Canada within their respective jurisdictions and with the approval, as hereinafter provided, of a joint commission, to be known as the International Joint Commission.

The foregoing provisions are not intended to limit or interfere with the existing rights of the Government of the United States on the one side and the Government of the Dominion of Canada on the other, to undertake and carry on governmental works in boundary waters for the deepening of channels, the construction of breakwaters, the improvement of harbours, and other governmental works for the benefit of commerce and navigation, provided that such works are wholly on its own side of the line and do not materially affect the level or flow of the boundary waters on the other, nor are such provisions intended to interfere with the ordinary use of such waters for domestic and sanitary purposes.

ARTICLE IV

The High Contracting Parties agree that, except in cases provided for by special agreement between them, they will not permit the construction or maintenance on their respective sides of the boundary of any remedial or protective works or any dams or other obstructions in waters

flowing from boundary waters or in waters at a lower level than the boundary in rivers flowing across the boundary, the effect of which is to raise the natural level of waters on the other side of the boundary unless the construction or maintenance thereof is approved by the aforesaid International Joint Commission.

It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.

ARTICLE V

The High Contracting Parties agree that it is expedient to limit the diversion of waters from the Niagara River so that the level of Lake Erie and the flow of the stream shall not be appreciably affected. It is the desire of both Parties to accomplish this object with the least possible injury to investments which have already been made in the construction of power plants on the United States side of the river under grants of authority from State of New York, and on the Canadian side of the river under licences authorized by the Dominion of Canada and the Province of Ontario.

So long as this treaty shall remain in force, no diversion of the waters of the Niagara River above the Falls from the natural course and stream thereof shall be permitted except for the purposes and to the extent hereinafter provided.

The United States may authorize and permit the diversion within the State of New York of the waters of said river above the Falls of Niagara, for power purposes, not exceeding in the aggregate a daily diversion at the rate of twenty thousand cubic feet of water per second.

The United Kingdom, by the Dominion of Canada, or the Province of Ontario, may authorize and permit the diversion within the Province of Ontario of the waters of said river above the Falls of Niagara, for the power purposes, not exceeding in the aggregate a daily diversion at the rate of thirty-six thousand cubic feet of water per second.

The prohibitions of this article shall not apply to the diversion of water for sanitary or domestic purposes, or for the service of canals for the purposes of navigation.

Note: The third, fourth and fifth paragraphs of Article V were terminated by the Canada-United States Treaty of February 27, 1950 concerning the diversion of the Niagara River.

ARTICLE VI

The High Contracting Parties agree that the St. Mary and Milk Rivers and their tributaries (in the State of Montana and the Provinces of Alberta and Saskatchewan) are to be treated as one stream for the purposes of irrigation and power, and the waters thereof shall be apportioned equally between the two countries, but in making such equal apportionment more than half may be taken from one river and less than half from the other by either country so as to afford a more beneficial use to each. It is further agreed that in the division of such waters during the irrigation season, between the 1st of April and 31st of October, inclusive, annually, the United States is entitled to a prior appropriation of 500 cubic feet per second of the waters of the Milk River, or

so much of such amount as constitutes three-fourths of its natural flow, and that Canada is entitled to a prior appropriation of 500 cubic feet per second of the flow of St. Mary River, or so much of such amount as constitutes three-fourths of its natural flow.

The channel of the Milk River in Canada may be used at the convenience of the United States for the conveyance, while passing through Canadian territory, of waters diverted from the St. Mary River. The provisions of Article II of this treaty shall apply to any injury resulting to property in Canada from the conveyance of such waters through the Milk River.

The measurement and apportionment of the water to be used by each country shall from time to time be made jointly by the properly constituted reclamation officers of the United States and the properly constituted irrigation officers of His Majesty under the direction of the International Joint Commission.

ARTICLE VII

The High Contracting Parties agree to establish and maintain an International Joint Commission of the United States and Canada composed of six commissioners, three on the part of the United States appointed by the President thereof, and three on the part of the United Kingdom appointed by His Majesty on the recommendation of the Governor in Council of the Dominion of Canada.

ARTICLE VIII

This International Joint Commission shall have jurisdiction over and shall pass upon all cases involving the use or obstruction or diversion of the waters with respect to which under Article III or IV of this Treaty the approval shall be governed by the following rules of principles which are adopted by the High Contracting Parties for this purpose:

The High Contracting Parties shall have, each on its own side of the boundary, equal and similar rights in the use of the waters hereinbefore defined as boundary waters.

The following order of precedence shall be observed among the various uses enumerated hereinafter for these waters, and no use shall be permitted which tends materially to conflict with or restrain any other use which is given preference over it in this order of precedence:

Uses for domestic and sanitary purposes;

Uses for navigation, including the service of canals for the purposes of navigation;

Uses for power and for irrigation purposes.

The foregoing provisions shall not apply to or disturb any existing uses of boundary waters on either side of the boundary. The requirement for an equal division may in the discretion of the Commission be suspended in cases of temporary diversions along boundary waters at points where such equal division can not be made advantageously on account of local conditions, and where such diversion does not diminish elsewhere the amount available for use on the other side.

The Commission in its discretion may make its approval in any case conditional upon the construction of remedial or protective works to compensate so far as possible for the particular use or diversion proposed, and in such cases may require that suitable and adequate provision, approved by the Commission, be made for the protection and indemnity against injury of all interests on the other side of the line which may be injured thereby.

In cases involving the elevation of the natural level of waters on either side of the line as a result of the construction or maintenance on the other side of remedial or protective works or dams or other obstructions in boundary waters flowing there from or in waters below the boundary in rivers flowing across the boundary, the Commission shall require, as a condition of its approval thereof, that suitable and adequate provision, approved by it, be made for the protection and indemnity of all interests on the other side of the line which may be injured thereby.

The majority of the Commissioners shall have power to render a decision. In case the Commission is evenly divided upon any question or matter presented to it for decision, separate reports shall be made by the Commissioners on each side to their own Government. The High Contracting Parties shall thereupon endeavour to agree upon an adjustment of the question or matter of difference, and if an agreement is reached between them, it shall be reduced to writing in the form of a protocol, and shall be communicated to the Commissioners, who shall take such further proceedings as may be necessary to carry out such agreement.

ARTICLE IX

The High Contracting Parties further agree that any other questions or matters of difference arising between them involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along the common frontier between the United States and the Dominion of Canada, shall be referred from time to time to the International Joint Commission for examination and report, whenever either the Government of the United States or the Government of the Dominion of Canada shall request that such questions or matters of difference be so referred.

The International Joint Commission is authorized in each case so referred to examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

Such reports of the Commission shall not be regarded as decisions of the questions or matters so submitted either on the facts or the law, and shall in no way have the character of an arbitral award.

The Commission shall make a joint report to both Governments in all cases in which all or a majority of the Commissioners agree, and in case of disagreement the minority may make a joint report to both Governments, or separate reports to their respective Governments.

In case the Commission is evenly divided upon any question or matter referred to it for report, separate reports shall be made by the Commissioners on each side to their own Government.

ARTICLE X

Any questions or matters of difference arising between the High Contracting Parties involving the rights, obligations, or interests of the United States or of the Dominion of Canada either in relation to each other or to their respective inhabitants, may be referred for decision to the International Joint Commission by the consent of the two Parties, it being understood that on the part of the United States any such action will be by and with the advice and consent of the Senate, and on the part of His Majesty's Government with the consent of the Governor General in Council. In each case so referred, the said Commission is authorized to examine into and report upon the facts and circumstances of the particular questions any matters referred, together with such conclusions and recommendations as may be appropriate, subject, however, to any restrictions or exceptions which may be imposed with respect thereto by the terms of the reference.

A majority of the said Commission shall have power to render a decision or finding upon any of the questions or matters so referred.

If the said Commission is equally divided or otherwise unable to render a decision or finding as to any questions or matters so referred, it shall be the duty of the Commissioners to make a joint report to both Governments, or separate reports to their respective Governments, showing the different conclusions arrived at with regard to the matters or questions referred, which questions or matters shall thereupon be referred for decision by the High Contracting Parties to an umpire chosen in accordance with the procedure prescribed in the fourth, fifth and sixth paragraphs of Article XLV of the Hague Convention for the pacific settlement of international disputes, dated October 18, 1907. Such umpire shall have power to render a final decision with respect to those matters and questions so referred on which the Commission fail to agree.

ARTICLE XI

A duplicate original of all decisions rendered and joint reports made by the Commission shall be transmitted to and filed with the Secretary of State of the United States and the Governor General of the Dominion of Canada, and to them shall be addressed all communications of the Commission.

ARTICLE XII

The International Joint Commission shall meet and organize at Washington promptly after the members thereof are appointed, and when organized the Commission may fix such times and places for its meetings as may be necessary, subject at all times to special call or direction by the two Governments. Each Commissioner upon the first joint meeting of the Commission after his appointment, shall, before proceeding with the work of the Commission, make and subscribe a solemn declaration in writing that he will faithfully and impartially perform the duties imposed upon him under this treaty, and such declaration shall be entered on the records of the proceedings of the Commission.

The United States and Canadian sections of the Commission may each appoint a secretary, and these shall act as joint secretaries of the Commission at its joint sessions, and the Commission

may employ engineers and clerical assistants from time to time as it may deem advisable. The salaries and personal expenses of the Commission and of the secretaries shall be paid by their respective Governments, and all reasonable and necessary joint expenses of the Commission, incurred by it, shall be paid in equal moieties by the High Contracting Parties.

The Commission shall have power to administer oaths to witnesses, and to take evidence on oath whenever deemed necessary in any proceeding, or inquiry, or matter within its jurisdiction under this treaty, and all parties interested therein shall be given convenient opportunity to be heard, and the High Contracting Parties agree to adopt such legislation as may be appropriate and necessary to give the Commission the powers above mentioned on each side of the boundary, and to provide for the issue of subpoenas and for compelling the attendance of witnesses in proceedings before the Commission before the Commission. The Commission may adopt such rules of procedure as shall be in accordance with justice and equity, and may make such examination in person and through agents or employees as may be deemed advisable.

ARTICLE XIII

In all cases where special agreements between the High Contracting Parties hereto are referred to in the foregoing articles, such agreements are understood and intended to include not only direct agreements between the High Contracting Parties, but also any mutual arrangement between the United States and the Dominion of Canada expressed by concurrent or reciprocal legislation on the part of Congress and the Parliament of the Dominion.

ARTICLE XIV

The present treaty shall be ratified by the President of the United States of America, by and with the advice and consent of the Senate, thereof, and by His Britannic Majesty. The ratifications shall be exchanged at Washington as soon as possible and the treaty shall take effect on the date of the exchange of its ratifications. It shall remain in force for five years, dating from the day of exchange of ratifications, and thereafter until terminated by twelve months' written notice given by either High Contracting Party to the other.

In faith whereof the respective plenipotentiaries have signed this treaty in duplicate and have hereunto affixed their seals.

Done at Washington the 11th day of January, in the year of our Lord one thousand and nine hundred and nine.

(Signed) ELIHU ROOT [SEAL]

(Signed) JAMES BRYCE [SEAL]

And WHEREAS the Senate of the United States by their resolution of March 3, 1909, (two-thirds of the Senators present concurring therein) did advise and consent to the ratification of the said Treaty with the following understanding to wit:

Resolved further, (as a part of this ratification), that the United States approves this treaty with the understanding that nothing in this treaty shall be construed as affecting, or changing, any existing territorial or riparian rights in the water, or rights of the owners of lands under, on either side of the international boundary at the rapids of the St. Mary's river at Sault Ste. Marie, in the use of water flowing over such lands, subject to the requirements of navigation in boundary water and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Mary's rive, within its own territory, and further, that nothing in the treaty shall be construed to interfere with the drainage of wet swamp and overflowed lands into streams flowing into boundary waters, and that this interpretation will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will in effect, form part of the treaty;

AND WHEREAS the said understanding has been accepted by the Government of Great Britain, and the ratifications of the two Governments of the said Treaty were exchanged in the City of Washington, on the 5th day of May, one thousand nine hundred and ten;

NOW THEREFORE, be it known that I, William Howard Taft, President of the United States of America, have caused the said Treaty and the said understanding, as forming a part thereof, to be made public, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof. In testimony whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this thirteenth day of May in the year of our Lord one thousand nine hundred and ten, [SEAL] and of the Independence of the United States of America the hundred and thirty-fourth.

Wm. H. Taft

By the President:
P C Knox
Secretary of State
Protocol of Exchange

On proceeding to the exchange of the ratifications of the treaty signed at Washington on January 11, 1909, between the United States and Great Britain, relating to boundary waters and questions arising along the boundary between the United States and the Dominion of Canada, the undersigned plenipotentiaries, duly authorized thereto by their respective Governments, hereby declare that nothing in this treaty shall be construed as affecting, or changing, any existing territorial, or riparian rights in the water, or rights of the owners of lands under water, on either side of the international boundary at the rapids of St. Mary's River at Sault Ste. Marie, in the use of the alters flowing over such lands, subject to the requirements of navigation in boundary waters and of navigation canals, and without prejudice to the existing right of the United States and Canada, each to use the waters of the St. Mary's River, within its own territory; and further, that nothing in this treaty shall be construed to interfere with the drainage of wet, swamp, and overflowed lands into streams flowing into boundary waters, and also that this declaration shall be deemed to have equal force and effect as the treaty itself and to form an integral part thereto.

The exchange of ratifications then took place in the usual form.

IN WITNESS WHEREOF, they have signed the present Protocol of Exchange and have affixed their seals thereto.

DONE at Washington this 5th day of May, one thousand nine hundred and ten.

PHILANDER C KNOX [SEAL]

JAMES BRYCE [SEAL]³⁵²

³⁵² Taken from IJC website. Accessed 8 April 2013. <http://www.ijc.org/en/BWT>

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