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How Humans Made the Wilderness and Our Role in Protecting It: Invasive Milfoil and  
Wilderness Ideologies in Little Sebago Lake

Presented to the Faculty of the  
Environmental Studies Program

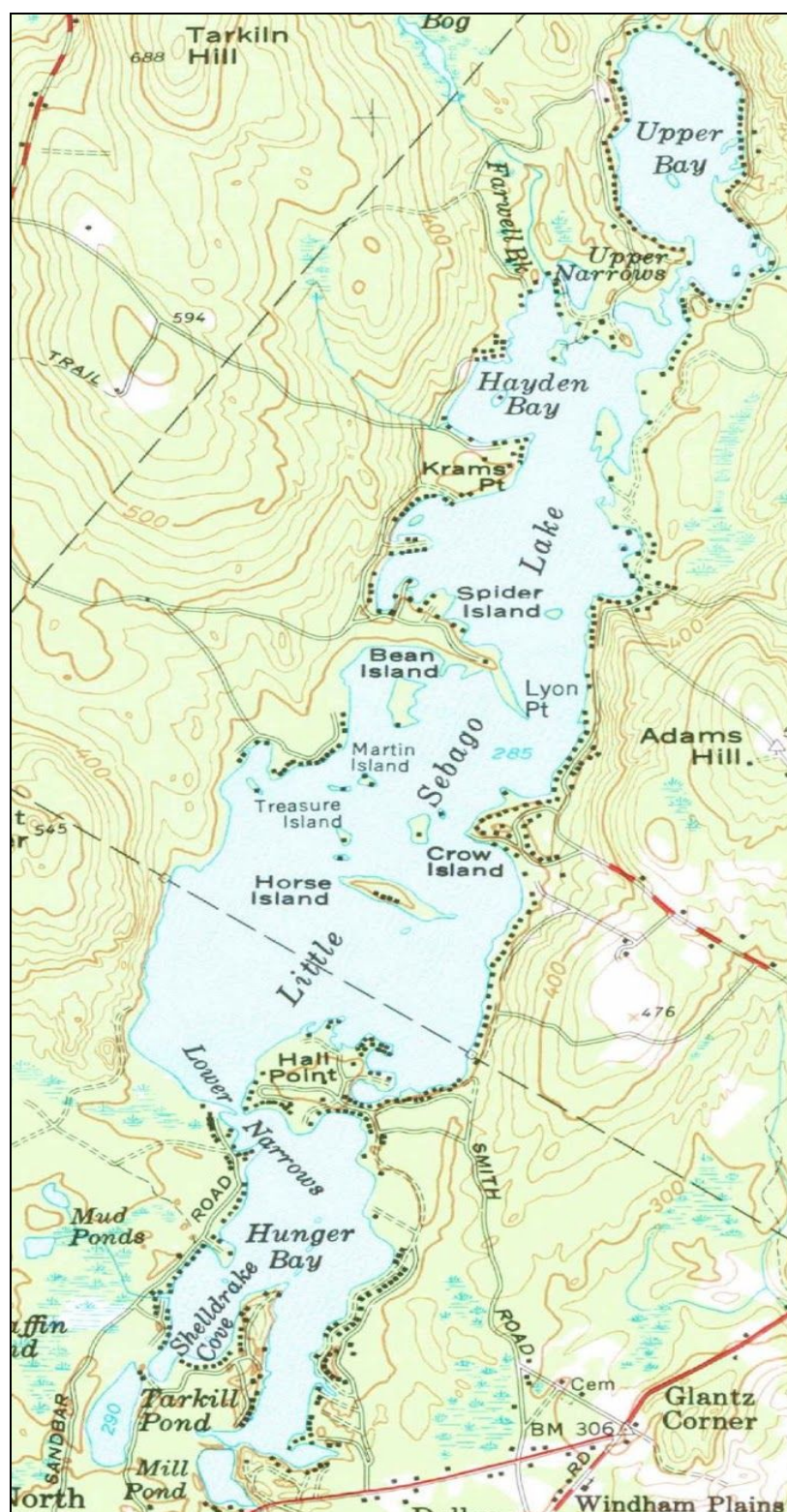
Bates College

In partial fulfillment of the  
Requirement for the degree of the  
Bachelor of Arts

By

Kassandra Wilson

Lewiston, Maine  
December 2020



Little Sebago Lake, Maine

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I would like to thank my family for their support both academically and emotionally throughout my undergraduate experience. This thesis is in dedication to them as to show how thankful I am for the family moments and memories shared at Little Sebago Lake. It is due to them that I was able to complete this project with dedication and joy.

Lastly I would like to thank all of those who participated in my interviews and who allowed me some glimpse into their lives at Little Sebago Lake. I can never be grateful enough for all of the stories and emotions that were shared with me throughout this experience and I hope in some part this paper gives back to the community that helped me so much.

Thank you to everyone who played a part in my career at Bates College on and off the campus. I hope the reader enjoys the work and heart put into this thesis and in some part gains a new perspective on the role of humans in the environment they are part of.



Thank you to Crosby and Beau who made life at the lake worthwhile.

## Introduction

Maine has over 6,000 lakes spanning across the entire state as well as ponds, rivers, and various other smaller bodies of water<sup>1</sup>. Many of these have been used for leisure and recreation, including a small body of water in southern Maine called Little Sebago Lake. Since its induction into the United States proper, Maine has been mandated as a place of relaxation and respite from the everyday stressors of life, this sentiment gave rise to the state's motto "Vacationland". For hundreds of years, people have come to vacation in Maine's perceived wild spaces with the fantasy that they are in an untouched natural space free from human interference. This is the calling of respite in wilderness, the removal of civilization and the perceived closeness with the natural world. Little Sebago Lake is home to many seasonal and full time residents who value the lake for its beauty, tranquility, and recreational activities. Many view the lake as a wilderness within itself, simply a natural space they can enjoy without the stressors of civilized life. However, wilderness in the United States was not always used for fun and relaxation; it was feared as a place of unknown and in need of conquest. This allowed people to spread into "untouched" territory for the sake of conquering and manipulating the wild. Maine is no different, these natural resources have a long and complex history of human interaction far beyond our modern memory.

Humans have long negatively impacted the environment but within the last 100 years, there has come a new, very visible issue affecting recreational bodies of water in Maine; invasive species. Invasive species are plants or animals that have been brought to a place they are not native to by humans, and often devastate the new ecosystem. This is one of the greatest threats to

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<sup>1</sup> Lake Stewards of Maine, "Little Sebago Lake," Lakes of Maine, <https://www.lakesofmaine.org/lake-overview.html?m=3714>.

Little Sebago Lake and many other bodies of water throughout New England. The invasive species of Variable Leaf Milfoil has infested Little Sebago for almost twenty years with no hope of ever totally removing it. Milfoil is an aquatic plant that is spread through human actions, mostly recreational ones. This threat against Maine's natural resources exposes the underlying issues centered around our views of wilderness and natural spaces. However, invasive species are not the only change humans have caused to the lake. By forgetting the expansive history of human contact with nature, we forget our role in the environment as a whole and therefore the very creation of "wilderness" in places like Maine. We must understand and take responsibility for our actions which affect these natural resources as well as the history of manipulation of said natural spaces. In this thesis I will explain why invasive species are so detrimental to recreational resources like Little Sebago Lake and explore the residents' ideology and views of the lake. I will prove how the history of wilderness ideology has changed therefore causing the history of human creation of these natural spaces to be forgotten and argue that in order to protect the natural environment we enjoy we must understand our role and take responsibility in its creation, shaping, and future.

In my first section of the thesis, I explain the basic ecology of Little Sebago Lake. The lake's appearance and range is detailed as well as the basic human activities that take place there. From large birds to small fish, this body of water has a large variety of animals and natural plants. This section is defined by the natural history of the lake's ecosystem and the monitoring of various species by volunteers. Loons, the symbol of Little Sebago, are given a larger section as they are incredibly important to the atmosphere of the lake.

The environmental history of Little Sebago is explained in the next part of the thesis. The towns of Windham and Gray have a long history of relying on the lake for revenue and economic purposes. This is detailed as well as the shift from work to recreational uses of the lake and the shared history of the towns as well as small historical tales of surrounding towns. The construction of the dams and subsequent dam breaks are a large part of the history of Little Sebago Lake and its future as a recreational resource. The basic history of Little Sebago Lake and the towns encapsulating it show how the lake ended up the way it is today.

The next section is a short description of the state of Maine becoming “Vacationland”. The state was promoted for tourism due to its large variety of natural resources and potential for tourist revenue. This idea of vacationland promoted many people to visit lakes like Little Sebago and the towns surrounding it for recreation and relaxation. This period greatly affected how people see the lake today and other natural resources like it in the state.

The two invasive species, the Variable Leaf Milfoil and the Chinese Mystery Snail, negatively affect the ecosystem of Little Sebago. In this section of the thesis, I detail the basic biology and history of these species in the lake with milfoil being the more important of the two. Invasive species are brought to new environments by human actions, showing the latest part of the long history of human interaction with natural spaces. Variable leaf milfoil destroys lake environments and negatively affects the recreational value of these bodies of water as well. I explain how the plant continues to spread and threatens the integrity of Little Sebago.

In the next section I explain the lake association's response to invasive variable leaf milfoil in Little Sebago and their efforts to remove it. The numbers of removal and cost are showcased as well as the basic method of removal. This is included to show how significant the



economic effect of milfoil is and why the residents are so afraid of it spreading. There are a few interviews with previous presidents of the lake association that give insight into not only the association's feelings and views of the plant, but also how the residents reacted to the invasion of their recreational space.

The introduction of milfoil into Little Sebago Lake is hypothesised to be from the Windham Public Boat Ramp as shown in the next section of the thesis. Due to the public nature of the boat access ramp, residents blame day-trippers for introducing the invasive species and costing them money for their irresponsible use of the access point. Property values are one of the main concerns for those who have homes on the lake. They are the ones who have to deal with the economic repercussions of variable leaf milfoil, not the day trippers. However, as a former president of the lake association states, we have no idea if the ramp's opening to the public is how milfoil was brought into the lake and therefore can not place definite blame.

The next part of the thesis is about the historical ideologies of wilderness and how those have changed over time and were eventually forgotten and replaced. The three authors that discuss the historical views of nature are Aldo Leopold, Roderick Nash, and William Cronon. Leopold's main argument is that we must have a moral code for how we treat the land and then we will become morally right people. Nash argues eight different benefits natural spaces give us on top of being places that were created in the form of national parks in the United States. Cronon explains that humans must accept their place and role in changing wilderness by understanding our history of shaping it. The previous two authors argue how the wilderness was a place of mystery and fear for the white settlers who came to the United States. Such sentiment caused the wilderness to be feared and a place to be conquered and civilized rather than a palace

that needed to be preserved for its beauty and existence. This change in view of natural spaces is forgotten and so is the long history of interaction humans have had with the wild. Such forgetting of history leads to people thinking that places like Little Sebago Lake are completely natural and that milfoil is the only negative impact humans have had on this environment.

The next part details my interviews with residents and vacationers of Little Sebago Lake and their views of the lake. Each states that the lake is aesthetically pleasing and gives them respite from the stresses of everyday life. The direct quotes show how people value the lake and how they speak about this place near to their hearts.

The second to last section is my own suggestion of how we should treat natural resources that we find valuable. The way we can repay these places we value is through education and preservation. In terms of Little Sebago Lake, we should educate ourselves on how to not contribute to the growth of milfoil and other harmful human interventions with the lake.

The final section is my conclusion where I detail my argument and what I accomplished throughout the thesis. I restate my evidence and main points to come to the conclusion of how we should treat natural resources we value. The forgotten history of human intervention in the environment leads to our passiveness in its protection and ensuring its health and longevity. If we value something like Little Sebago Lake we must acknowledge our role in creating and shaping it in order to change our relationship with it.



*Little Sebago Lake taken by Adam Remley*

### Basic Ecology of Little Sebago Lake

Little Sebago Lake is a small body of water in Maine that spreads across the towns of Windham and Gray. It is over nine miles in length and is at its largest point only a mile wide. The lake is composed of four different basins; the lower, two middle, and the upper basins. The first and most southerly is referred to as the lower basin. The largest basin is the middle which is actually two different entities but referred to as one. The next is the upper narrows which connects the middle basin with the most northern part of the lake, the upper basin<sup>2</sup>. Little Sebago Lake covers about 2,009 acres of land in total. It has a perimeter of 30.7 miles and has a rated water quality of "average" according to the Lake Stewards of Maine. The lake at its deepest is 52 feet but has a relatively shallow mean depth of 16 feet. The lake is labeled as both a warm and

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<sup>2</sup> Bates College, *Limnological and Sociological Studies of Little Sebago Lake, Maine* (Lewiston, ME: Bates College, 1976), 3.

cold water fishery<sup>3</sup>. The lake has twenty recognized islands throughout its basins as well as some very small islands that are too numerous to count. All are privately owned and a contact list can be found on the Little Sebago Lake Association website for each island<sup>4</sup>. Today Little Sebago Lake is used almost exclusively for recreation. Motor boats are the most common form of lake activity with people water skiing, tubing, or just going for a ride. Although pontoon and speed boats are the most common on the lake, there are a handful of small fishing boats and skiffs putting through the water. Other water sports such as kayaking, canoeing, and paddle boarding are popular among residents. There are a few private boat launches and a public one for anyone to use as well as some public docks, although most waterfront property owners have their own docks. In the summer there is an ice cream boat that drives around the lake each day and once waved down will park on your dock. There are a few volunteer safety patrols that stop boaters and count the number of life vests and people on board. A popular spot for kids in the summertime is the rope swing off of a small island by the middle basin. There are also quite a few sandbars where boaters will anchor down and play in the water. In the winter, ice fishing and snowmobiling are popular pastimes on the frozen lake. There are rangers from the department of Fish and Wildlife that patrol the ice and are happy to help snowmobilers and ice fishers. Overall Little Sebago Lake will most likely remain a recreational body of water for the foreseeable future.

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<sup>3</sup> Lake Stewards of Maine, "Little Sebago Lake," Lakes of Maine, <https://www.lakesofmaine.org/lake-overview.html?m=3714>.

<sup>4</sup> Little Sebago Lake Association, <http://littlesebagolake.com>.



*Little Sebago Lake Taken by David Gretchell April 4, 2020*

There is a rich ecosystem present at Little Sebago with an array of species. These species all coexist alongside humans and our activities at the lake. Of these animals the most visible and admired are the fish and large birds that inhabit the waters. There are 18 species of fish including high value game fish such as the Largemouth Bass, Rainbow Trout, and Brown trout<sup>5</sup>. The rainbow and brown trout are re-stocked into the watershed by Maine Wildlife and Fisheries each year. The particular fish that are introduced into Little Sebago are raised at the fishery site in New Gloucester, Maine. Fishing is a frequent recreational activity enjoyed by many at the lake so re-stocking the fishery is not only a crucial part of the lake ecosystem, but also crucial to keeping the atmosphere of natural beauty and recreation.

People are oftentimes surprised to find that the American Eel resides in Little Sebago. When thinking of eels many people associate the intimidating fish with the ocean or aquariums where there is a least a few inches of glass separating you from the eel's gaping jaw with razor

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<sup>5</sup> Lake Stewards of Maine, "Little Sebago," Lakes of Maine.

teeth. The American Eel however, is nothing like it's ocean dwelling counterparts. It has a small mouth and an average body length of two to three feet, but individuals have been recorded to reach up to five feet in length. They eat small fish and invertebrates like crustaceans and clams. The eels usually stay away from humans and are rarely spotted which is why it comes as such a shock to people to learn they actually live in the lake<sup>6</sup>.

There are many species of birds that live on Little Sebago including Canadian Geese, Hawks, Mallard Ducks, and so on. However there are two large species of bird that truly capture the minds of residents and visitors alike. The first of these species is the Bald Eagle. There is a nest on Bean Island rumored to have been used by the eagles for some 50 years. Bald Eagles wingspan is about 80 inches, making it one of the largest birds in North America. They feed on fish and nest in forests with high trees. Oftentimes during the late summer, they can be seen soaring around their nests, mostly likely to encourage their chicks to attempt flight<sup>7</sup>.



*Bald Eagle on the shore of Little Sebago Lake, Taken by Alicia Bartlett May 15, 2020.*

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<sup>6</sup> U.S. Fish and Wildlife Service, "American Eel," U.S. Fish and Wildlife Service: Fish and Aquatic Conservation, [https://www.fws.gov/fisheries/freshwater-fish-of-america/american\\_eel.html](https://www.fws.gov/fisheries/freshwater-fish-of-america/american_eel.html).

<sup>7</sup> Cornell University, "Bald Eagle," All About Birds: The Cornell Lab, [https://www.allaboutbirds.org/guide/Bald\\_Eagle/id#](https://www.allaboutbirds.org/guide/Bald_Eagle/id#).



In one of the interviews I conducted, the owner of Bean Island recounts occasionally seeing the young chicks walking around on the ground after failing their first flight test<sup>8</sup>. Although the Bald Eagle is a beautiful and majestic bird, it is trumped by a much different species in terms of importance on the lake.

The symbol of Little Sebago Lake is undoubtedly the Loon. Loons are depicted on most of the Little Sebago Lake memorabilia sold by the Lake Association for a reason. Residents are fascinated and enthralled with these beautiful animals and have set up protections at their nesting sights. Loons are large measuring about 32 inches in length and with an average wingspan of 46 inches. The Maine Common Loon is the heaviest of the loons with males weighing an average of 14 pounds. They are easily identified by their black and white feathers and vibrant red eyes. Another major characteristic of loons are their distinctive calls. People who hear the birds “wail” for the first time are extremely startled by the eerie tow tone call<sup>9</sup>. This is used to locate other loons such as mates or chicks. These howls can be heard at night and sometimes in the early evening all across the lake. Although the loons are beautiful, they can be aggressive when defending their territory. During the mating seasons males claim an area of 20 to 200 acres and defend the entirety of it from rivals. When a fight breaks out between competing males, it can be deadly. Both males and females will protect their nest and chicks until they are able to care for themselves by mid-fall<sup>10</sup>. Loons will stop at nothing to protect their young as was proven in the summer of 2020 when the body of a bald eagle was discovered in Brighton, ME. It was found near the body of a baby loon in Highland Lake which is one town over from Little Sebago. A

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<sup>8</sup> Barbara Sawhill and Betsy Sawhill, video conference interview by the author, Gray, ME, May 14, 2020.

<sup>9</sup> Little Sebago Lake Association, <http://littlesebagolake.com>.

<sup>10</sup> "Maine's Common Loon," Maine Audubon, <https://www.maineaudubon.org/wp-content/uploads/2018/06/Loon-Guide.pdf>.

wildlife biologist was able to see that the heart of the Eagle was pierced through and what was originally thought to be a gunshot wound, was actually the work of an adult loon. The puncture wound was consistent with the size and shape of a loon's beak which they use like a spear to puncture the sternum of rival loons. The wildlife biologist speculates that the eagle attempted to catch and kill the baby loon and in its defense the mother used her bill to stab through the eagle's chest. Unfortunately she was unsuccessful in saving her chick's life, but this incident perfectly exemplifies the fierceness of this bird<sup>11</sup>. The loons are well respected and admired at Little Sebago and most residents know to keep their distance. This is especially the case around the nesting sites which are protected and certain spots have signage warning people to stay away. There is a loon monitoring program on Little Sebago which has been in place since 1997. From then on volunteers, with funding from the Maine Department of Environmental Protection, have banded and recorded the birds. There have been 10-12 nesting pairs of loons known to raise their chicks on the lake<sup>12</sup>.



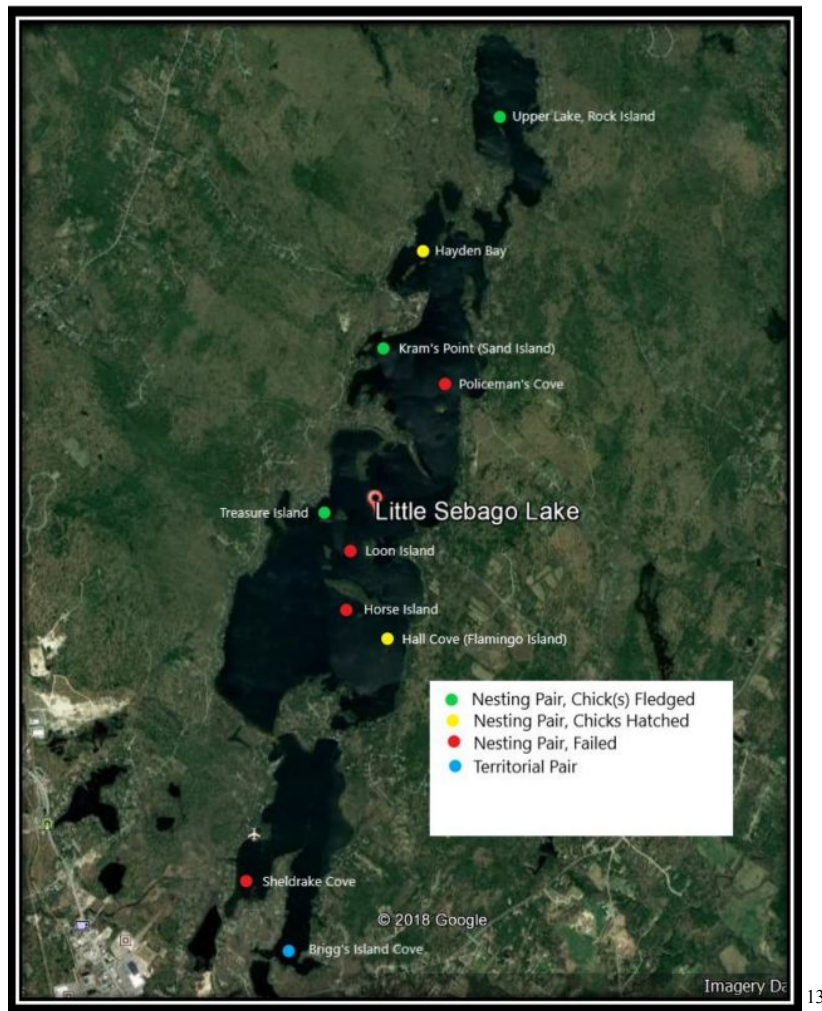
*A mother loon and her chick on Little Sebago Lake, Image taken by Mark Strong 09/7/2020*

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<sup>11</sup> Danielle D'Auria, "Bald Eagle Shot Through the Heart – By a Loon!," Maine Department of Inland Fisheries and Wildlife, last modified May 18, 2020, [https://www1.maine.gov/wordpress/insideifw/2020/05/18/bald-eagle-shot-through-the-heart-by-a-loon/?fbclid=IwAR3tq1ItNg\\_GGuLoFJdEAgir\\_nrBKC4cR9PPfY40u7UA2E7ENYbpz2Fx-jk](https://www1.maine.gov/wordpress/insideifw/2020/05/18/bald-eagle-shot-through-the-heart-by-a-loon/?fbclid=IwAR3tq1ItNg_GGuLoFJdEAgir_nrBKC4cR9PPfY40u7UA2E7ENYbpz2Fx-jk).

<sup>12</sup> Loon Conservancy Associates, "Little Sebago Lake Common Loon Monitoring Report 2019," last modified December 5, 2019, PDF.

The following map shows the nesting sites for 2019:



13

It is evident that the residents of Little Sebago care about the loon population and view the birds as a crucial part of the lake community. The loons themselves are a symbol of the lake and the residents here take great pride in that.

Data from The Maine Loon Project published to the Lake Stewards of Maine website:

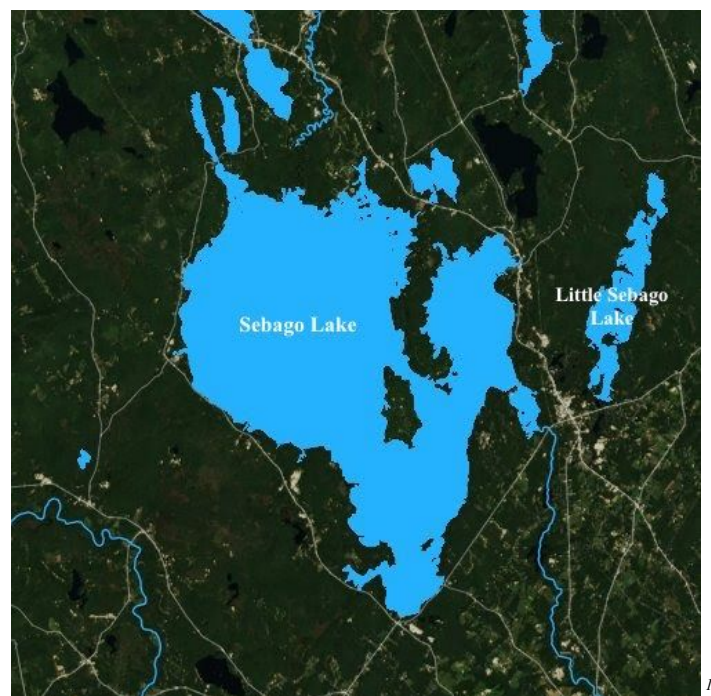
Year	Adults	Chicks
1983	0	0

<sup>13</sup> Loon Conservancy Associates, "Little Sebago."

1984	0	0
1985	0	0
1986		
1987		
1988	2	2
1989		
1990	3	0
1991	6	0
1992	2	0
1993	6	3
1994	8	3
1995	8	2
1996	17	1
1997	7	1
1998	9	2
1999	12	1
2000	23	1
2001	13	2
2002	20	6
2003	16	2
2004	21	5
2005	19	4
2006		
2007	15	1
2008		
2009	26	8
2010	29	3
2011	21	2
2012	21	1
2013	24	0
2014	29	6
2015	22	5
2016	26	0
2017	20	4
2018	29	3
2019	25	5

### The Environmental History of Little Sebago Lake

In order to give context to the issue of invasive species and the rights to natural resources, the following section details a brief environmental history of the lake. There is little written about the actual history of Little Sebago Lake so this section is largely about the history of the towns, Windham and Gray, where the lake is located. There is also context given in the form of history from Big Sebago or Sebago Lake which helps to give context clues as to the story of its smaller counterpart.



*Sebago and Little Sebago Lake*

Sebago Lake stretches over 28,771 acres and sits at an elevation of 262 feet above sea level. Its maximum depth is 316 feet in its center<sup>14</sup>. This means that Big Sebago is more than fourteen times larger than Little Sebago. There is much more known about Big Sebago lake, due

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<sup>14</sup> Whacking Fatties, "Sebago Lake Fishing Report," Whacking Fatties, <https://www.whackingfatties.com/fly-fishing-report/maine/sebago-lake>.

<sup>15</sup> Gerald P. Cooper, *A Biological Survey of Thirty-One Lakes and Ponds of the Upper Saco River and Sebago Lake Drainage Systems in Maine* (n.p.: Maine Department of Inland Fisheries and Game, 1939), 128.

to its sheer size, than its counterpart to the east. For this reason it is crucial to look at historical accounts of Big Sebago lake. In the early nineteenth century the two bodies of water were actually connected and therefore were used for the same recreational and industrial purposes. Simply put, whatever was happening on the large lake during its first discovery, was most likely taking place on the Little Sebago as well.

The two lakes both have land partially in the town of Windham. It was in Windham where the first white settlement on Little Sebago Lake land was made. The town formerly known as New Marblehead was created in 1762 and later named Windham. This township is at the heart of the lakes region as it incorporates more than twenty five miles of lakeshore. Windham touches eight lakes including Big Sebago and Little Sebago<sup>16</sup>. In order to encourage families to settle in Maine, the Massachusetts General Court offered prime 100 acre land to anyone who would move there. The family would be required to build a house and clear four acres of their plot. This deal led many european settlers to Windham, which would be the first white township on Sebago lake land<sup>17</sup>.

In the early nineteenth century Little and Big Sebago Lake were connected by a natural water way near Little Sebago southern basin. This waterway served as a shipping route for lumber into Sebago lake. From Sebago the lumber was taken downstream towards Portland on the Presumpscot River. These annual lumber drives were the only major disturbance to Little Sebago waters. The Sebago watershed was drastically changed by a series of floods between 1810 and 1840. These natural disasters are what finally separated the lakes, “The low land

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<sup>16</sup> Herbert G. Jones, *Sebago Lake Land* (Portland, ME: Bowker Press, 1949), 73.

<sup>17</sup> Jones, *Sebago Lake*, 74.



between the two lakes was washed into the connecting brook, and the lakes were cut off from one another. Little Sebago could not longer be used for lumber transportation”<sup>18</sup>.

Pearly Varney, a young entrepreneur, built a sawmill on the tributary feeding Little Sebago on the northern basin. The lumber saw mill was erected in 1830's on Sucker Brook. The brook served as not only a means of power but a disposal system. Wood scraps and sawdust were discarded into the stream, “The pollution from this industry remains today in Little Sebago Lake, and in Sucker Brook. The northern half of the upper basins floor is still littered with wood chips. A walk of a mile up the brook, and an examination of the bottom will reveal twelve to eighteen inches of black, vile smelling, rotting wood chips”<sup>19</sup>. The dam Varney had built was passed down to his son and eventually sold to Samuel Dennis Warren who used the dam for powering his paper mill. The Warren Paper Company soon bought out all of the useful land around the Sebago watershed and soon became known as “largest paper company in the world”. The water from Little Sebago Lake was used to power the mill until the turn of the century, when the company turned to steam power. Both the northern and southern dams on the lake were discarded by the Warren Paper Company. The northern dam was torn down while the southern one was sold to a resident who used the power for his home's electricity. The leaving of the Warren Paper Company marked the end of industry in Little Sebago Lake<sup>20</sup>.

Many of the lakeside houses in Windham sit on top of what was once the lake bottom. This is due to the great dam collapse of 1861. In 1781 the Mayor of the township ordered the building of a large saw mill and used water power from Pleasant River. Mayor Anderson thought

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<sup>18</sup> Bates College, *Limnological and Sociological Studies of Little Sebago Lake, Maine* (Lewiston, ME: Bates College, 1976), 56-57.

<sup>19</sup> *Limnological and sociological*, 57.

<sup>20</sup> *Limnological and sociological*, 58.

the water supply was lacking and dug a ditch connecting Sebago lake to the mill's water channel. Then in 1861 after a huge rainstorm that would come to be known as Pope's Freshet occurred. The Popes built their dam on an outlet of Little Sebago Lake near the narrows. The ground was unstable as it was made of sand and cobblestone. Not only did the family build their dam on shifting ground, they also refused to use cement to make a base. Because of this the dam was doomed to collapse. The dam gave way and washed the village of Popeville "out of existence". A first hand account of the occurrence states, "At about ten o'clock, a low sullen roar, like the rushing of a mighty wind, gave evidence that the hour of peril was near at hand; and in a short time, around a curve in the river came an immense wave bearing on its crest a huge quantity of debris, consisting of stumps, the ruin of bridges, mill logs, cord wood and trees that had been torn up by the roots, all in one confused mass, and borne along with irresistible force by the rushing waters"<sup>21</sup>. The mass of water said to drain Little Sebago carried on wiping out seven bridges and many houses until it drained into the Presumpscot river<sup>22</sup>. This event levied the water table of both Big and Little Sebago lake<sup>23</sup>.

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<sup>21</sup> Walter Lunt, "The Story of Windham's Massive Freshet of 1861," The Windham Eagle, last modified July 24, 2020, <http://lifestyles.thewindhameagle.com/2020/07/a-matter-of-historical-record-and-great.html>.

<sup>22</sup> Lunt, "The Story," The Windham Eagle.

<sup>23</sup> Samuel Thomas Dole, Windham in the Past, ed. Fredrick Howard Dole (Auburn, ME: Merrill & Webber, 1916), 232-234.

## Maine as “Vacationland”



*Vacationland Postcards from 1927 (left) and 1941 (right) published by Maine Central Railroad Company<sup>24</sup>*

The towns of Cumberland county started to grow and the population became steady as new generations of the white settlers were born. However, the still relatively small lake towns of southern Maine were about to experience a large influx of tourists, some of whom would buy vacation homes and come to visit every year. Maine was starting to become “Vacationland” which tied the territory to its origins as an attraction for tourists, because it represented both wilderness and relaxation. It started with the railroad companies; “The interest in outdoor recreation stimulated railroad development as an unexpectedly lucrative business opportunity. Maine was a state that saw a big uptick in outdoor recreation activities, due to a large expanse of forests, mountains, lakes, and wildlife”. These railroads published guides for tourist locations as a way to promote summer recreation and use the railroads as their primary mode of transportation, “The Bangor and Aroostook Railroad published the annual ‘In the Maine Woods’

<sup>24</sup> Historic New England, "Vacationland," Historic New England, <https://www.historicnewengland.org/explore/collections-access/capobject/?refd=EP001.12.015.002.035>.

beginning in 1900, with each year trying to expand its audience beyond the classic rugged sportsmen, to focus on women, children, and activities beyond hunting, such as canoeing, mountain climbing, photography, or just relaxation”<sup>25</sup>. Maine was a tourist destination because of its wildlife and wildlands. My grandmother recounted growing up in Saco and vacationing at Goose Rocks beach, “They were all Canadians and some people from Massachusetts. But they all rented houses on the shore”. Maine was seen as a retreat from the stress of everyday life. In the summer of 1972 and 1973, Maine welcomed over 3.1 million non-residential tourists<sup>26</sup>. With travel becoming easier, the number of out of state visitors is drastically increasing even today. “Vacationland” allowed lakeside towns to create a tourist economy and thrive off of the busy summer. Those who could afford to bought or built houses on lake shores, and although this continued to boost the economy of small Maine towns, some long term residents were not so pleased with the new crowd. Lake houses are becoming exceptionally popular with non-Maine residents as a way to relax, thus creating the modern lake house retreat phenomenon seen all over Little Sebago Lake. However, as is evident in the interviews I conducted, the majority of long term residents at Little Sebago inherited their cabins and homes from elder family members who either had built them in the beginning of the “Vacationland” craze or had had hunting or fishing cabins way before the idea of nature as a retreat was widespread. The influx of people visiting lakes and bodies of water in Maine created an environmental issue that no one knew was happening. Due to the movement of boats, canoes, and other aquatic equipment from place to place, some bodies of water were infected with non-native plant and animal species. These are referred to as invasive species. The United States Department of Agriculture defines the term

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<sup>25</sup> Bachmann, "Maine Becomes Vacationland," Harvard University: The Shelf, last modified July 13, 2016, <http://blogs.harvard.edu/preserving/2016/07/13/maine-becomes-vacationland/>.

<sup>26</sup> William R. Fothergill, *Tourism in Maine: Analysis and Recommendations* (Augusta, ME, 1974), 5

“Invasive Species” using the language outlined in Executive Order 13112 section 1. The order states that an invasive species is: “non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health”. The USDA states that invasive species are primarily introduced to new ecosystems because of human actions<sup>27</sup>. This environmental disaster affects some of the most famous New England lakes and rivers including Sebago and Little Sebago Lake.

The following section will define and describe the two invasive species in Little Sebago Lake, as well as the conservation efforts intended to remove them. The pristine “Vacationland” residents and visitors have enjoyed for centuries is now seen as being under threat by these invasive species. However, these invasive species are brought by human activities and interaction with the environment. We must understand that human influence is not a new phenomena in terms of these natural resources but that the new visible threat of invasives is and because of this, we categorize these specific interactions with the lake as negative. There are far larger changes people have made to Little Sebago lake but these are either seen as positive or not seen at all, effectively continuing the false belief that the lake is an untouched natural space. Invasive species are a very prominent and tangible change to an environment that affects all who interact with it, due to this, residents are now worried about the integrity of their beloved “natural” resource.

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<sup>27</sup> United States Department of Agriculture, "What Are Invasive Species?," National Invasive Species Information Center, <https://www.invasivespeciesinfo.gov/what-are-invasive-species>.

### Invasive Species: The Chinese Mystery Snail

The Chinese Mystery Snail was first recorded in Maine in 1965 but there is no information available on when they were first discovered in Little Sebago. The snails are native to areas of southeast Asia. They were originally brought to the United States as a food source sold from Asian markets. They are thought to have been intentionally introduced to some water bodies in order to create a local supply for these markets. The snails have now spread to many parts of the U.S. including Maine ponds and lakes. Chinese mystery snails are large and in many cases the size of a golf ball. They spend their lives under the surface of the water under the sediment, but when they die their bodies float on the surface of the water and wash up onto the shore.



*Photo taken by author September 25, 2020*

They have a terrible smell of decay once they wash up onto beaches and shorelines. Residents frequently have to rake their sections of beach everyday in the summer in order to



keep the shells and the smell under control. The snails are easily transported to other bodies of water through aquatic equipment and holding water on boats. The largest concern with this species is that, like other snail species, they could be carriers for different diseases and parasites. If they are ingested by native animals, these diseases and parasites threaten the entire ecosystem<sup>28</sup>. All of our family dogs have attempted to eat a snail at one point or another, despite our best efforts to clean them up. Thankfully none actually ingested them, but out of the many domestic and wild animals on the lake, there has certainly been some consumption of decaying snails. Currently there are no ways of controlling the snail population and no efforts in Little Sebago have been made.

#### Invasive Species: Variable Leaf Milfoil

The second and more economically and environmentally impactful invasive species in the lake is Variable Leaf Milfoil. Watermilfoils are aquatic plants that root at the bottom of lakes. There are five subspecies of milfoil that are native to Maine lakes, and two that are classified as invasive species. The common names of the two non-native plants are Eurasian and Variable Leaf milfoil. The kind found in Little Sebago Lake and 26 other Maine lake systems is Variable Leaf milfoil (*Myriophyllum heterophyllum*). It's first recorded presence in Maine was in Sebago Lake in 1970<sup>29</sup>. It was later confirmed by the state to have infested Little Sebago Lake in 2001<sup>30</sup>.

Variable Leaf milfoil is a submerged aquatic plant that roots on the bottom of a body of water. There is a main stem with fine, pine needle like leaves attached to it. The stem can reach

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<sup>28</sup> Lake Stewards of Maine, "Chinese Mystery Snails," Lake Stewards of Maine, accessed 2020, <https://www.lakestewardsofmaine.org/programs/other-programs/chinese-mystery-snails/>.

<sup>29</sup> Lakes Environmental Association, "What Is Milfoil?," Lakes Environmental Association, <https://mainelakes.org/invasives/what-is-milfoil/>.

<sup>30</sup> Lake Stewards of Maine, "Little Sebago," Lakes of Maine.

up to 15 feet and can be green to reddish in color<sup>31</sup>. Variable Milfoil can survive in a wide range of ecosystems with varying conditions. Although it is native to the Southern United States, the plant can survive the winters of New England and will once again thrive when the weather is warmer. It can also be found in a wide range of chemistry conditions and can live in acidic and calcium rich bodies of water. Milfoil grows best in slow moving waters but can tolerate river ecosystems as well. This species can reproduce through asexual and sexual means. The reproduction of the plant is done through fragmentation, budding, and rhizome division<sup>32</sup>. The term "Rhizome" actually refers to the stem of a plant. When the Rhizome is split into pieces, each piece has the potential to grow into a new plant. This process is called vegetative reproduction<sup>33</sup>. Milfoil can also grow by sprouting from seeds buried in the sediment of a body of water, although it is less common<sup>34</sup>. Variable leaf milfoil can be confused with bladderwort, mermaid weeds, hookworts, water crowfoots, and other watermilfoils<sup>35</sup>. Luckily, the only native plant among this list to be found in Little Sebago is Bladderwort<sup>36</sup>.

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<sup>31</sup> Adirondack Watershed Institute, "Variable Leaf Milfoil," Paul Smith's College, <https://www.adkwatershed.org/stewardship/invasive-species-info/variable-leaf-milfoil>.

<sup>32</sup> Commonwealth of Massachusetts Department of Conservation and Recreation and Michelle Robinson, "Variable Milfoil: An Invasive Aquatic Plant," last modified November 2002, PDF

<sup>33</sup> "Rhizomes: Plant Propagation Technique," Plant Propagation, last modified 2016, <http://plantpropagation.com/rhizomes.html>.

<sup>34</sup> Commonwealth of Massachusetts Department of Conservation and Recreation and Robinson, "Variable Milfoil."

<sup>35</sup> Maine Center for Invasive Aquatic Plants, *Maine Field Guide to Invasive Aquatic Plants; And Their Common Native Look Alikes* (n.p., 2007), 46.

<sup>36</sup> Lake Stewards of Maine, "Little Sebago," Lakes of Maine.



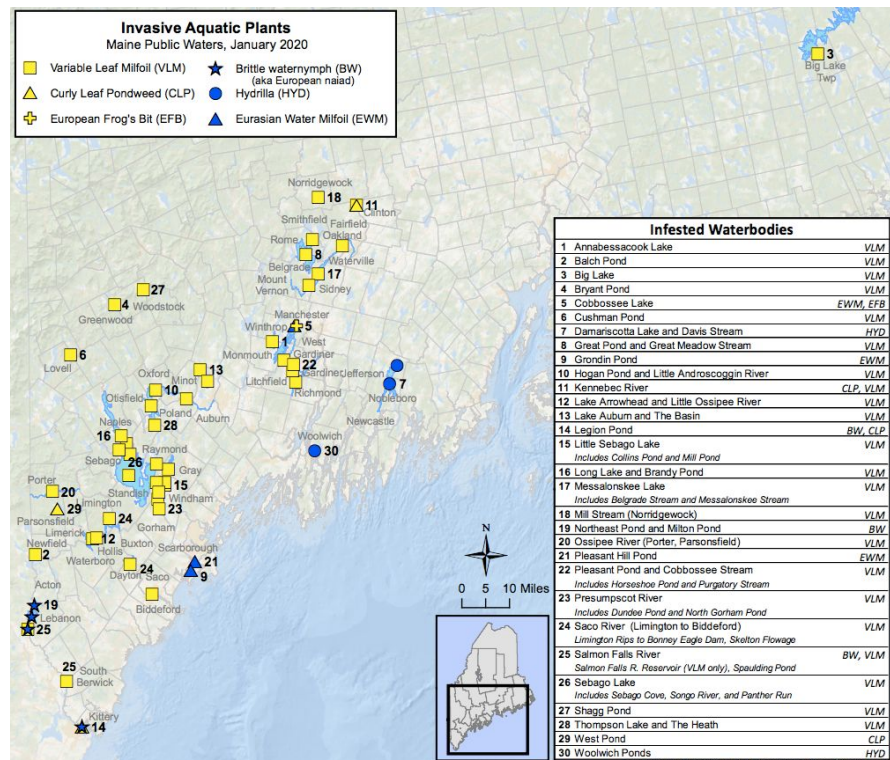
*Image Credit: Adirondack Watershed Institute, "Variable Leaf Milfoil," Paul Smith's College.*

Variable Leaf Milfoil is native in the Midwestern and Southeastern United States. The plant was first seen in New England in 1932 in Bridgeport, Connecticut. Although it is unknown how the milfoil originally made its way into New England, it was most likely introduced by accident. Since milfoil can reproduce asexually, any small fragment of the plant could have taken root in a new water system. These plant fragments could have been carried overland by boats, bilge water or other aquatic equipment<sup>37</sup>. Due to its ability to reproduce through small fragments, this milfoil can spread extremely quickly and only needs a tiny piece of the original plant to do so. This makes it an extremely dangerous invasive species to the environment and to the ecosystem. Both Maine and New Hampshire are seriously affected by the invasive plant because of the ideal water conditions each state provides. Variable leaf milfoil has infected over 90 bodies of water in these states, including New Hampshire's largest and most famous lake; Lake

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<sup>37</sup> Adirondack Watershed Institute, "Variable Leaf," Paul Smith's College.

Winnepesaukee<sup>38</sup>. The following is a map depicting the water bodies in Maine known to have been infected by the invasive milfoil:



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Milfoil plants can grow up to 15 feet long and can form dense mats in the water, oftentimes completely covering the surface of that section of water. These mats kill native plant species by blocking sunlight and thus outcompete them for resources. With more and more submerged plants dying, the oxygen levels of the water decline rapidly, making these environments unsuitable for fish and other organisms in the lakes. Furthermore, the mats can make recreational activities like swimming and boating impossible due to the thickness and abundance of the plants. To make things worse, the mats make a perfect breeding ground for

<sup>38</sup> Max Carol, "The Invasive Species That Nobody Is Talking About," Treehugger, last modified October 11, 2018, <https://www.treehugger.com/variable-milfoil-invasive-species-nobody-talking-about-4857883#:~:text=Yet%2C%20variable%20milfoil%20can%20grow,fish%20and%20other%20aquatic%20animals>.

<sup>39</sup> Maine Department of Inland Fisheries and Wildlife, "Invasive Aquatic Plants," last modified January 2020, PDF.

mosquitoes and their eggs<sup>40</sup>. Overall the presence of this plant effectively degrades not only the environment in which it infects, but also subsequently diminishes the economy that relies on these water bodies as well.

As previously established, a large part of Maine's economy is based on recreation and tourism. Maine's lakes bring in 2.3 billion dollars annually into the state's economy. Lake visitors spend a total of 3.5 billion dollars in Maine each year and 1.8 billion dollars of that total goes directly to the income of 50,000 Maine residents whose jobs rely on tourism. The dense growth and rapid spread of milfoil along lake shores dramatically impedes swimming and fishing. Due to this, tourists are less likely to visit the infected water bodies and the economy will suffer if they go to other towns or even other states according to the Lakes Environmental Association, they further state; "Additionally, a 2001 Maine DEP report states that if Maine suffers infestations even of a 'fraction' as severe as those in Vermont then lakefront landowners can expect an average property devaluation around \$12,000"<sup>41</sup>. This is an extremely alarming statistic for lake homeowners who plan on selling or renting out their lake houses. The seriousness of this situation is what caused the Little Sebago Lake Association to take action and fight against this aquatic invader.

### The Little Sebago Lake Association's Response to Milfoil

The Little Sebago Lake Association or LSLA is a group of individuals who manage and protect the lake. The current president is Pam Wilkinson who helped me a considerable amount

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<sup>40</sup> Max Carol, "The Invasive Species That Nobody Is Talking About," Treehugger, last modified October 11, 2018, <https://www.treehugger.com/variable-milfoil-invasive-species-nobody-talking-about-4857883#:~:text=Yet%2C%20variable%20milfoil%20can%20grow,fish%20and%20other%20aquatic%20animals>.

<sup>41</sup> Lakes Environmental Association, "What Is Milfoil?," Lakes Environmental Association.

with this project. The LSLA's mission statement is as follows; "To protect, restore, and improve our lake's water quality and fragile ecosystem. We will create and nurture a community of lake stewards, educate users on lake safety, and always be mindful that human needs must be balanced with the needs of the natural environment". They currently have a plethora of information about milfoil and how to prevent the spread of milfoil and other conservation advice on their website; [Littlesebagolake.com](http://Littlesebagolake.com). The Association is committed to stopping the growth of Variable Leaf Milfoil and leads the fight against it through costly removal efforts.<sup>42</sup> In order to showcase the real economic effects of milfoil, the following section includes facts and figures about the funds spent to remove the plant over the past twenty years.

Milfoil was first discovered in Little Sebago Lake in 1999 and then analysed and verified as Variable Leaf Milfoil in 2001 by the University of Connecticut. Carol Ann Doucette, one of the previous LSLA Presidents recounts the first discovery of milfoil in Little Sebago; "When milfoil was discovered in the cove that one of the board members lived in, I can remember her emailing us saying this is a really strange plant in the cove, and it's multiplying very, very fast. So she took it and sent it to the lake volunteer monitoring program. It was a milfoil that was from Connecticut, which was interesting because most of the infestations in Maine at that time, there weren't very many or not of that type"<sup>43</sup>. The plants were hand pulled from the lake until 2004 when the first suction dredge was developed by engineers living on the lake. Pam Wilkson recounts the first efforts at removal, "We began by hand pulling. We hired a firm from New York to come once. Then we used volunteer divers and crew to remove the milfoil on the

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<sup>42</sup> Little Sebago Lake Association.

<sup>43</sup> Carol Ann Doucette, video conference interview by the author, Lewiston, ME, October 6, 2020.



weekends. We found that this was not effective and then decided to hire the crew to be able to remove more milfoil during the week when the lake was not as busy”<sup>44</sup>.

Carol Ann Doucette recounts one of the first extractions in the rocky narrows of the upper lake. She states; “I remember Scott Lowe [President of LSLA before Doucette], and somebody else were diving, to try to get the bottom of the fronds which were as tall as he was and he was probably five feet, and they look like some creatures from the Black Lagoon. And people were sitting on their docks watching us do that and saying, ‘Why are you doing that?’ And we’re saying didn’t you know that you had this strange plant out in front of your house and they said ‘no’ and so it became very apparent that we didn’t have our arms around this”<sup>45</sup>. The team then moved to a suction dredge in order to completely eradicate the plant without lots of fragmentation. This is called the Hydraulic Invasive Plant Processing Operation or HIPPO and was first built in 2004 and renovated in 2006<sup>46</sup>.



<sup>44</sup> Pam Wilkinson, telephone interview by the author, Gray, ME, May 21, 2020.

<sup>45</sup> Doucette, video conference interview by the author.

<sup>46</sup> Little Sebago Lake Association.

*HIPPO Boat from Little Sebago Association Website*



*First Removal Efforts on Little Sebago By Carol Ann Doucette (faces intentionally blurred)*



*Milfoil Removal Diving Expedition by Carol Ann Doucette*

The process of removing milfoil consists of first identifying the mats and plant beds and marking them with buoys. Then dive teams are hired to remove the plants from 40 to 50 different sites. “A diver hand pulls by digging up the roots and feeding it into a suction hose up to a trough

which the milfoil is dropped into 40 pound onion bags to allow the water to be filtered twice back into the lake”, Wikinson describes<sup>47</sup>. This process costs about 40,000 to 50,000 thousand dollars annually. The divers are now only pulling about 10 bags of milfoil per day rather than the 80 bags per day the program started out collecting. The following is a comprehensive chart of the progress the Little Sebago Lake Association has made in their fight against milfoil:

Milfoil Militia Totals												
	Gray							Windham				
Year	Upper Basin	Twin Brooks	Beaver Cove	Farwell Cove	Mumford Cove	Bean Island	Misc Areas	Lower Basin	Bag Totals*	Volunteer Time in Dollars	Amount Spent	Total Project Costs
2006**									1,200.00	\$9,650	\$62,517	\$72,167
2007	271	55	91		133			710	1,260.00	\$9,255	\$67,296	\$76,551
2008	215	62	63		97			1,332.00	1,769.00	\$9,260	\$55,652	\$64,912
2009	390	58	9		296			967	1,720.00	\$13,786	\$51,580	\$65,366
2010	187	54	2		47			1,491.00	1,781.00	\$17,046	\$67,266	\$84,312
2011	178	17	7		16			500	718	\$12,466	\$48,350	\$60,817
2012	86.5	50	16		20.5	3		954	1,130.00	\$13,301	\$46,254	\$59,555
2013	314.5	25.75	49		33.5	3		760.75	1,186.50	\$13,910	\$51,508	\$65,418
2014	180.25	54.5	15		28			353	630.75	\$13,000	\$43,926	\$56,926
2015	93	11	50		71			164.5	389.5	\$9,246	\$32,233	\$41,479
2016	52.5		23.5		34			126.5	236.5	\$9,325	\$28,144	\$37,469
2017	38.5	2	10	0.25	1	2		130	183.75	\$8,311	\$28,814	\$37,125
2018	48.25	2	16	0.25	2	0	0.75	93	162.25	\$8,200	\$36,186	\$44,386
2019	41		3		4		6.5	109	163.5	\$8,138	\$44,183	\$52,321
<b>Totals</b>	<b>2,095.50</b>	<b>391.25</b>	<b>354.5</b>	<b>0.5</b>	<b>783</b>	<b>8</b>	<b>7.25</b>	<b>7,690.75</b>	<b>12,530.75</b>	<b>\$154,894</b>	<b>\$663,909</b>	<b>\$818,804</b>
<b>TOTAL TONNAGE REMOVED TO DATE BY THE MILFOIL CREW: 125</b>												
* Each bag equals approximately 20 pounds dry weight.												
** Lost info recovered from DEP. Only totals given, no breakdowns.												

*Table and information created by Pam Wilkinson, President of The Little Sebago Association*

<sup>47</sup> Wilkinson, telephone interview by the author.

When interviewing Pam Wilkinson, the Little Sebago Lake Association President, one of the main points she emphasized was that “You can’t stop” when discussing the removal of milfoil. She further explained that the “Milfoil Militia” understands that being adamant about removal is one thing but it is also important to educate residents about milfoil. On the lake association website, there is plenty of information regarding the milfoil militia and their goals as well as contact information for residents to report suspicious looking plants. Furthermore, there are in person classes and informational sessions offered to better educate the seasonal and full time residents on how to identify milfoil, how to prevent it, and how to stop it from spreading. When Wilkinson was asked if she thought milfoil could ever be completely extracted from the lake she responded with; “I wish so but realistically management is what all we can do for now. Milfoil is so resilient. The roots are like rose bush roots which grow in the ground underwater and will grow shoots up the next spring. In the late summer it will grow roots from the plant and self-fragment allowing the current to take it to other places. This is why it is so important to keep our native vegetation on the bottom of the lake so it will discourage the milfoil from growing. Hopefully with continued re-grooming the lake it will eventually get discouraged from growing”<sup>48</sup>. She further stated that prevention is the key to ensuring Little Sebago does not lose the fight against milfoil. She describes the residents response to the Milfoil Militia, “They are extremely pleased and glad that their piece of paradise on the lake has not been compromised by not being to be comfortable swimming, boating and probably just as important their property values have not declined”<sup>49</sup>. This sense of relief is short lived as there is still a constant danger of reintroduction or further spread of the plant.

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<sup>48</sup> Wilkinson, telephone interview by the author.

<sup>49</sup> Wilkinson, telephone interview by the author.

Although there are established populations of the plant already in the lake, boaters could potentially bring in more plant fragments and spread milfoil to inactive removal zones and reverse all of the hard work the community has put into place<sup>50</sup>. The threat of economic downfall for the area was also a motivation for trying to remove the invasive plant. When speaking with Carol Ann Doucette, she describes the fear she had at the beginning of the fight against milfoil in terms of what she had seen happen to Lake Arrowhead in Maine. She states; “We wanted to, you know, raise the awareness of the fact that we had it [milfoil] on the lake, but flipside of that is in doing that, you make people more aware of it and then in turn will they come to the lake to purchase? And so there was kind of a mixed feeling about that. I know that, personally, I was panicking, I would go down to my waterfront every morning to check for fragments, because certain types of waterfronts will make it more easily able to be attached. And so, if you see it, grab it...You know that was a real eye opener to say we have an ongoing battle here but I think I know that we did put forth an article about property values on Lake Arrowhead. And that is scary to see, you know how a property value can diminish from having, you know, you could walk on the top of Lake Arrowhead”<sup>51</sup>. The fear of property value collapse was evident among residents and association members alike. Lake Arrowhead was infested with milfoil and there was nothing done about it, leading to Carol Ann’s claim of being able to walk on the mats across the lake. The shock and fear of the invasive species in what was once seen as an untouched lake led residents to ask who was to blame for their delmeia.

Those who knew about the milfoil crisis were quick to lay blame to the day trippers that had disturbed their once quiet place of respite. As previously established, milfoil can reach water

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<sup>50</sup> Wilkinson, telephone interview by the author.

<sup>51</sup> Doucette, video conference interview by the author.



bodies through unwashed boats, bilge water, or other aquatic equipment with fragments on it.

Many residents have their own docks and ramps to put and pull their boats out of the water. The general sense I received from conducting my interviews with lake residents was not that the land owners were being irresponsible, but that the milfoil infestation was due to those who did not own land on Little Sebago Lake.

### The Windham Public Boat Ramp



The public boat launch was opened in the late 1980s in Windham on the west side of the lake's middle basin<sup>53</sup>. As for why this was built, the cause was fish stocking. Little Sebago Lake is stocked with Brown and Rainbow Trout by the Department of Fish and Wildlife, and the fish populations rely heavily on this annual event<sup>54</sup>. This became the state's barraging chip; "The State stopped stocking the lake in 1981 because we didn't have public access. They restarted

<sup>52</sup> Photos taken by author Windham, ME Public Boat Ramp November 5, 2020.

<sup>53</sup> Bruce Micucci, telephone interview by the author, Gray, ME, May 14, 2020.

<sup>54</sup> Little Sebago Lake Association.

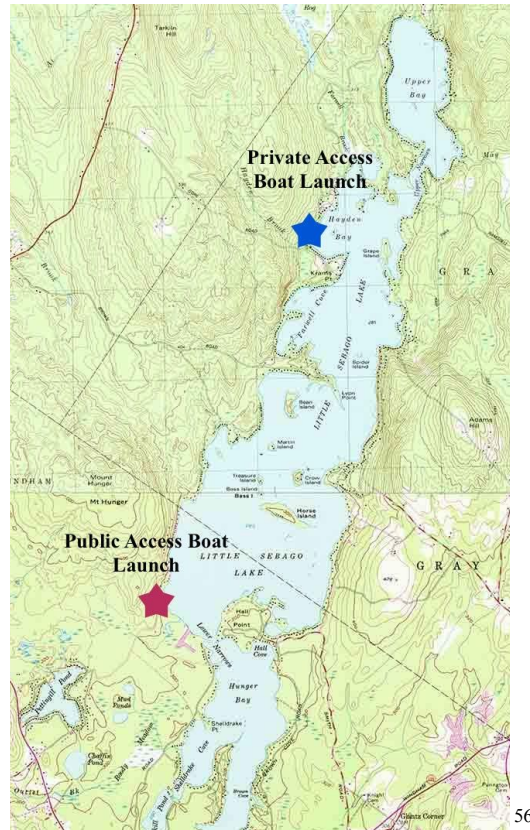
stocking in 1987, so I'm guessing there must have been a change in public access”<sup>55</sup>. The community of Little Sebago agreed to allow a public boat ramp to open in order to keep the annual fish stocking. The state is using the lake as a public resource, converting it from a private community to one of public access. It can only be assumed that the reason the state wanted a public access point to the lake was for increased revenue brought by visitors. The lake is free to enter but these day trippers go out into the lake towns to eat, buy gear or souvenirs, and fill their boats with gas. The nature of the boat launch's creation doomed it to be a sore spot in the eyes of residents and that sentiment continues on today. In many of my interviews, residents blamed the milfoil, increased activity, and trash in the lake on the public who did not own property on the lake. However, despite the animosity towards the public ramp, we must also consider other possible access points for invasive species.

There is one private boat ramp in Gray which can only be accessed by members of the Little Sebago Lodges Association who, once they pay their association fees, receive a key to the lock a rope strewn across the boat launch access driveway. This is to prevent non-members from accessing the ramp and despite it only being a small chain and lock, the ramp is across from several houses, actively deterring anyone from trying to trespass. I marked on a map of the lake where the two boat ramps are located. As can be seen on the map, these ramps are not only in different towns but also a fair distance apart on the actual lake.

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<sup>55</sup> Doucette, video conference interview by the author.





*Map of public and private boat launches, does not depict personal boat launches or docks*

This quote from the Little Sebago Lake Association website in the milfoil section exemplifies the qualms residents have with the public interacting with the lake; "The boat ramp activity has increased day tripper usage and there are several fishing tournaments on the lake. It will always be a challenge when boats from infested lakes visit and it is important to make sure the variable milfoil from our lake is not transferred. It is important to have the Courtesy Boat Inspection program to educate those who want to use the lake of the impacts of milfoil"<sup>57</sup>. Residents are increasingly frustrated with the day trippers and non-property owners on the lake. In most of my interviews with lake shore residents, they say that noise and activity have increased dramatically since they were kids on the lake. They also say it's not safe to boat on

<sup>56</sup> Lake Stewards of Maine, "Little Sebago," Lakes of Maine.

<sup>57</sup> Little Sebago Lake Association.

weekends due to the sheer amount of people on the water<sup>58</sup>. This disdain about day trippers comes from the belief that they do not care about the lake or their impact on it. Many residents believe that the milfoil issue was caused by the opening of the public ramp. There is no way of knowing for sure how the variable leaf milfoil came into Little Sebago, only that it hurts the residences rather than the day trippers. Carol Ann Doucette gives a clarifying statement on the subject. She explains, “Well, as you know there are many private boat launches on the lake. We always like to blame it on the one on one hunger shore road (public boat launch), but not necessarily happened I mean, it could have come from the little seago lodges they have their own private boat launches people just launch in their own yard so it could have come from any of those. I mean I think that would be when I was monitoring the boat launch to see how many boats came in, who's in front of them and we used them. Way, way back we used to monitor what state they were from. But again, that the courtesy boat inspector wasn't there all the time. And it's not closed so who's to say, you know, it's like, oh good you're gonna say well, where did that come from. But, you know, the public launch is always a good thing to blame it on”<sup>59</sup>.

Perhaps it is because there is a need to blame someone for this environmental crisis that the public boat ramp comes under such scrutiny, not to mention the underlying issues residents have with it. However, Carol Ann is correct in saying that we can not ever prove or disprove that milfoil was introduced by non-residents, we can only acknowledge who this issue affects more severely. The issue then becomes about the role residents have in protecting and cleaning out the lake. Is it now the residents moral duty to fix the milfoil issue? Is it their responsibility as homeowners to solve the crisis happening a couple hundred feet away from their houses? These

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<sup>58</sup> John Vozella, telephone interview by the author, Gray, ME, May 12, 2020.

<sup>59</sup> Doucette, video conference interview by the author.

questions lead us to thinking about our role as factors in our environment. We constantly shape the world we live in and for the most part on Little Sebago, it is a positive thing. But it begs the question of who decides what is a positive interaction with the lake and what is a negative one? Who decides that fish stocking in the lake is good but milfoil is bad? Is it dependent on who benefits from these interactions, such as residents who want to fish want the lake to be stocked but do not want milfoil because it affects their swimming and boating activities? How do we then deal with a negative interaction with the natural world caused by our participation in it? I wish to explore our interactions with nature in terms of responsibility and morality to a place we see ourselves as a part of. However, we must first understand a crucial point of this issue, that Little Sebago Lake is not a natural space.

### The Historic Meaning of Wilderness and the Literature of its' Construction

In order to understand the construction of Little Sebago Lake as a man made space and our role in its protection, we must first explore the history of wilderness literature in the United States. The following will discuss how famous environmentalists realize the changing role of wilderness over time and the rhetoric used to convey such explanations of humans' role in the wild spaces of North America. These authors include Aldo Leopold, Roderick Nash, and William Cronon. I will give a brief abstract of their arguments and what these points mean for the rhetoric of wild spaces and how modern environmentalism is framed.

One of the most famous early environmentalists was Aldo Leopold, who wrote *A Sand County Almanac* and specifically *The Land Ethic* section where he describes the journey humans must take in order to become a part of the land, rather than the ruler of it. He states "In short, a

land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow members, and also respect for the community as such”<sup>60</sup>. The main argument Leopold proposes is that we must shift our view of the environment from something in need to taming and subduing, to one of respect and moral consideration. He further explains that by vaulting the land, we will become better citizens of the world<sup>61</sup>. He explains, “A land ethic then, reflects the existence of an ecological conscience, and in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity”<sup>62</sup>. Although he does not specifically outline how to do this his final thoughts are “It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than most economic value; I mean value in the philosophical sense”<sup>63</sup>. Leopold wishes for humans to stop valuing land a resource for exploitation and instead for the intrinsic nature it has simply by “being”. This one of the first literary shifts from the historical view of wilderness to one of modern times, where recreational value takes place of economic value.

The premodern view of wilderness was not one of adoration or even curiosity. As Roderick Nash explains in his book *Wilderness and the American Mind*, wild spaces were to be feared due to their mysterious qualities and religious connotations. Europeans were raised with folktales passed through generations of the woods; “One was the tendency of the folk traditions of many cultures to associate wilderness with the supernatural and monstrous. There was a

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<sup>60</sup>Aldo Leopold, "The Land Ethic," in *A Sand County Almanac* (New York, NY: Oxford University Press, 1987), 204.

<sup>61</sup> Leopold, "The Land," 221.

<sup>62</sup> Leopold, "The Land," 221.

<sup>63</sup> Leopold, "The Land," 223.

quality of mystery about the wilderness, particularly at night, that triggered the imagination”<sup>64</sup>.

Beyond folk tales, religion also warned against the dangers of the wild. In many religions lesser gods and deities inhabited the forest and would bring great misfortune and even death to those who entered their domain. The bible specifically brings contrast to Eden and the wilderness; “If paradise was early man’s greatest good, wilderness, as its antipode, was his greatest evil”<sup>65</sup>. Nash explains that for European settlers, the wilderness of America was a fearful place that needed to be conquered in order to become closer to the paradise man had lost. “The driving impulse was always to carve a garden from the wilds; to make an island of spiritual lights in the surrounding darkness”<sup>66</sup>, as Nash explains the wild was seen as something to be tamed as God intended for mankind and his children. The main point of this argument is that early white settlers saw evil not purity in the wilderness and took it upon themselves to dominate this evil in the name of their creator because it was what God had intended. Furthermore, the use of such wilderness was elementary to its conquest and resources it provided were there for the taking. There was never any moral code with extracting these resources because they came from a place that not only needed to be ruled by men but also because that was God’s original intent for the wild. We are in fact forgetting this history of the first meanings of wilderness and seeking to preserve it for recreational purposes was never in the minds of early United States settlers. The frontier was a great motivator for male white colonizers who believed that they could prove their manhood by conquering the wilderness for the sake of God and Country. As Nash stated in his essay *The Value of Wilderness*, “National pride arose from transforming wilderness into civilization, not

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<sup>64</sup> Roderick Nash, *Wilderness and the American Mind* (n.p.: Yale University Press, 1965), 10.

<sup>65</sup> Nash, *Wilderness and the American*, 9.

<sup>66</sup> Nash, *Wilderness and the American*, 35.

preserving it for public enjoyment”<sup>67</sup>. Believing the early views of the wild were anything other than this is a blurring of truth and forgetting of history.

The largest form of preservation of wilderness in the United States are our nation parks. Nash explains that these parks are what helped the American people shift their view of the wild from the frontier, which needed to be tamed, to the expanses of pristine land in which animals and plants inhabited. The creation of national parks was in a way a replacement for the national identity we gained from having the frontier. We now have large spaces of land that are “untouched” which gives us status as a country, going back to the country’s European roots. In the feudal times of Europe, gardens and forests were privatized for those wealthy upper class who sought to show their affluence through this ownership. They had the ability to put aside large allotments of land and not use them for farming or any other work related purpose. The same is essentially true for the national parks; “Besides a favorable attitude towards undeveloped nature and a democratic political tradition, the final factor explaining the American invention of national parks was simply affluence. The wealth of the United States subsidized national parks. We were and have remained rich enough to afford the luxury of setting aside some land for its non-material values”<sup>68</sup>. Not only can America show its wealth through these parks, but relating back to Europe, it shows the very foundation of the U.S., the idea of freedom. Nash states, “The genius of American land policy and the fact making possible the creation of Yellowstone National Park was the existence of public domain. The roots of common ownership of the land extend back to the seventeenth century. Perhaps in reaction against the monopolistic landholding practices of feudalism and the enclosure system, the first Americans acted to protect society’s

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<sup>67</sup> Roderick Nash, "The Value of Wilderness," *Environmental Review* 1, no. 3 (1976): 16.

<sup>68</sup> Nash, “The Value”, 20.

interest in the environment”<sup>69</sup>. These parks are not privatized and any person who wishes to, can visit and see the nature which has been preserved there. The early American writers began to advocate for the exposure of people to wilderness as something that was good for their person. This further popularized the parks. Henry David Thoreau was one of the most famous proponents of this movement and Nash cites “Thoreau believed that a certain amount of wildness (which he regarded as synonymous with freedom, vigor, and creativity) was essential to the success of a society as well as an individual”<sup>70</sup>. Nash argues that these were all factors that helped change the American psyche from one of domination over wilderness to the modern day wanting to preserve it as a form of national pride.

Roderick Nash describes the different argument for the preservation of wilderness and natural spaces in *The Value of Wilderness*. The following are his eight different arguments summarized. The first of these arguments is that nature is able to teach us morals and provide the truth to what nature is and should be. He explains that Leopold laid out these very ideas in the *Sand County Almanac*; “What Leopold meant was that wilderness is a model of healthy, ecologically balanced land”. Essentially untouched natural spaces provide the groundwork for how we should treat spaces we interfere with<sup>71</sup>.

The second argument for wilderness preservation is simply that these spaces provide biodiversity and that they are now under threat. Nash explains “More species have been exterminated in the last three hundred years than in the previous three million. Many other species, including some of the most awesome life forms on earth, are threatened”. Nature should

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<sup>69</sup> Nash, “The Value”, 17.

<sup>70</sup> Nash, “The Value”, 16.

<sup>71</sup> Nash, “The Value”, 21.



be preserved because it is home to the other creatures on this planet and if we do not want to see our fellow animals disappear, then we should protect their environment<sup>72</sup>.

The third and fourth arguments have to do with what nature in the United States of America has provided us with. The first of these is a national identity of experiencing the landscape. The idea of the frontier is distinctly American and the idea that this environment gives equal opportunity based on how hard you work in the wilderness. The fourth point is that the natural world gives us our culture in terms of arts such as paintings, written word, and collective heritage. The wilderness in this sense defines us as Americans and gives identity to those who live in a certain place. Therefore in order to preserve our identity and heritage, we must protect the land on which it was born<sup>73</sup>.

Point five of Nash's argument is that wilderness, as previously mentioned, connects humans to God. Beyond personal religious affiliation, all can find meaning in the religion of the wild. "In nature, as in a church, they attempt to bring meaning and tranquility to their lives. They seek a sense of oneness, of harmony, with all things. Contact with the natural world shows man his place in systems that transcend civilization and includes reverence for those systems. The result is peace". As spiritual beings, we find meaning in the nature world and that pursuit of this brings peace while drowning out the details of society<sup>74</sup>.

Mental health is a large part of society's struggles which Nash claims is helped by wilderness. As mentioned in his previous argument, nature gives a sense of connection with the larger world and provides meaning. It also simplifies the monotony of everyday life and allows one to distance themselves from "the bewildering complexity of events and ideas with which

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<sup>72</sup> Nash, "The Value," 21.

<sup>73</sup> Nash, "The Value," 21-23.

<sup>74</sup> Nash, "The Value," 23.

civilization obliges [us] to deal”<sup>75</sup>. Nature in this sense is a respite from everyday life, which is commonly cited as one of its greatest attributes by residents of Little Sebago.

The seventh argument for protecting the wilderness is that it allows human diversity. Simply put, each person has the ability to experience different parts of nature and express themselves through their interactions with it. Much like the previous two points, Nash says that nature simplifies the world around a person and allows them to become individualized rather than part of a pack working towards one goal in society<sup>76</sup>.

The final argument is that nature gives us knowledge, context, and humility in a human dominated world. Nash states that “Wilderness can also instruct man that he is a member, not the master, of a community that extends to the limits of life and the earth itself. Because wild country is beyond man’s control, because it exists apart from human needs and interests, it suggests that man’s welfare is not the primary reason for or purpose of the existence of the earth”. Nash is telling us that we are not the center of our world and that the wilderness is able to remind us of that. It helps us remember restraint and humility and perhaps even morality simply because of our relationship with it. The final point of his argument is this; “But to maintain an area as wilderness is to put other considerations before material growth. It is to respect the rights of non-human life to habitat. It is to challenge the wisdom and moral legitimacy of man’s conquest and transformation of the entire earth. This acceptance of restraint is fundamental if people are to live within the limits of the earth”. Summarized, nature gives us our morality because it does not need us, but we need it<sup>77</sup>.

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<sup>75</sup> Nash, "The Value," 23.

<sup>76</sup> Nash, "The Value," 24.

<sup>77</sup> Nash, "The Value," 25.

William Cronon wrote *The Trouble With Wilderness* as a means of conveying his beliefs that humans must accept their place in the natural world and their effect upon it. He also states that we must take responsibility for the wilderness as beings who interact with it and provides a way to change our mindset about such things. Cronon shares Nash's argument about the first settlers' view of wilderness as a dangerous space but uses similar themes as Leopold for why we should acknowledge our history with the wild. One of the major themes brought up in his essay is that wilderness has been manipulated by man for centuries and in that light, can no longer be seen as "pure". We have made contact with the natural world and changed it whether we want to think this or not. The wilderness is a place of human intervention and the belief of it as an untouched is dangerous; "Wilderness gets us into trouble only if we imagine that this experience of wonder and otherness is limited to the remote corners of the planet, or that it somehow depends on pristine landscapes we ourselves do not inhabit. Nothing could be more misleading"<sup>78</sup>. Similar to Nash's argument, Cronon highlights the change in attitude towards wilderness in the American frontier. He states that people have a nostalgia for the frontier in terms of its "untouched" and open qualities. Cronon explains, "This nostalgia for a passing frontier way of life inevitably implied ambivalence, if not downright hostility, toward modernity and all that it represented. If one saw the wild lands of the frontier as freer, truer, and more natural than other, more modern places, then one was also inclined to see the cities and factories of urban-industrial civilization as confining, false, and artificial"<sup>79</sup>. This negative outlook towards civilization is different from the first settlers' thoughts of the need to civilize the wild, rather than find comfort

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<sup>78</sup> William Cronon, "The Trouble with Wilderness," *Environmental History*, o.s., 1, no. 1 (January 1996): 24.

<sup>79</sup> Cronon, "The Trouble," 14.

in it. However, Cronon explains that this is also a problematic way of thinking, since it separates the man-made and the natural as two completely different spaces, rather than ones that interlock.

Cronon argues that we must understand there is no difference between a tree growing in a man made garden and a tree growing in the woods. They are both beings we did not create but are both part of the world. The main reason why we must understand and protect all wilderness is because; “Learning to honor the wild- learning to remember and acknowledge the autonomy of the other- means striving for critical self-consciousness in all of our actions. It means the deep reflection and respect must accompany each act of use, and means too that we must always consider the possibility of non-use”<sup>80</sup>. Essentially Cronon is making the same argument as Nash and Leopold, that by caring about our wilderness, we will in turn become better moral citizens of the natural world. The wild shaped man and in turn, we shaped it. The moral code we then must abide by towards nature is as follows; “It means practicing remembrance and gratitude, for thanksgiving is the simplest and most basic of ways for us to recollect the nature, the culture, and the history that have come together to make the world as we know it. If wilderness can stop being (just) out there and start being (also) in here, if it can start being as humane as it is natural, then perhaps we can get on with the unending task of struggling to live rightly in the world- not just in the garden, not just in the wilderness, but in the home that encompasses them both<sup>81</sup>”. We must acknowledge the world around us as natural and that our actions affect that world. Unfortunately, historically speaking, “In all of its manifestations, wilderness represents a flight from history”<sup>82</sup>. We like to think that the wilderness is untouched, which is why the tree in the woods is so different from the tree in the garden. But it is not, not only do we need to accept our

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<sup>80</sup> Cronon, "The Trouble," 25.

<sup>81</sup> Cronon, "The Trouble," 25.

<sup>82</sup> Cronon, "The Trouble," 16.

total contact with nature but we need to allow ourselves the responsibility of caring for that. Cronon says that "...we need to discover a common mild ground in which all of these things, from city to wilderness, can somehow be encompassed in the word "home". Home, after all, is the place where finally we make our living. It is the place for which we take responsibility, the place we try to sustain so we can pass on what is best in it (and in ourselves) to our children"<sup>83</sup>. If we are to do this, then our care and responsibility for nature will come naturally as we are going to protect it just as we protect our homes.

These three authors do well to uncover the changing meaning of wilderness and what moral code we must abide by to make our relationship with the environment positive and sustainable. It is important to our relationship with our surroundings that we recognize the human caused changes and the history of contact with nature. Cronon, Nash, and Leopold all argue to an extent that acknowledging this history of interference will allow the moral process of valuing the wilderness to begin. Therefore, in the next section I am going to prove that Little Sebago Lake is a man made wilderness with a long history of human interaction. We must not forget our role in changing the natural world around us. In order to understand our moral role in the world, we must acknowledge our place in the wilderness.

### Little Sebago Lake as a Created Natural Space

"Nature" is a construct of what we make. Nature is always changing due to human impacts, whether intentional or not. The lake itself is not a "pure nature" but a product of shaping and molding by humans for centuries. The milfoil is just another part of that shaping process but

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<sup>83</sup> Cronon, "The Trouble," 24.

has a drastically different outcome from the norm of this process. Humans create and mold things with the goal of creating a more beneficial product. An famous example of this is the creation of the Panama Canal. At first glance, one would say it is a strict part of nature. The canal is made of water with fauna and flora spread across its banks. It has a distinct ecosystem and environment surrounding it. But it is undeniably a human created “nature”. This example itself is rather obvious, as the canal was dug by human hands and created for the human need of creating a passage from the Atlantic to the Pacific Ocean. There are many less obvious examples of this phenomena in Little Sebago Lake, but no less important. In the following section I will prove how Little Sebago Lake is a human shaped environment; an artificial natural resource. I want to emphasize that in proving such a claim I am not diminishing people’s experiences and love of the lake, only that we can not blame milfoil for tainting the “pure nature” of the lake as it does not have that quality to begin with. Upon proving that the lake is a human changed environment, I will then propose what our role is to protect this environment we have created. However I must first show that the lake itself was never part of an “untouched wilderness” and that it was molded and cultivated ever since humans were spread throughout the globe.

The first people to inhabit North America were the native people who crossed the Russian land bridge and spread throughout the continent. Those who settled in Maine were collectively known as the Wabanaki or “people of the dawnland”<sup>84</sup>. The native people have inhabited northern New England and parts of Canada for 13,000 years. Therefore, there has been human cultivation of the land for at least that long, if not longer as the estimation of 13,000 is based on current archeological evidence and there is the potential for further development in the

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<sup>84</sup> About the Wabanaki Nations, <https://www.abbemuseum.org/about-the-wabanaki-nations>.

known timeline of Native Americans. The Wabanaki people are composed of a handle of smaller nations such as the Maliseet, Micmac, Passamaquoddy, Penobscot, and the Abenaki<sup>85</sup>. The traditional inhabitants of southern Maine were the Penobscot and the Abenaki Nations. These people cultivated the land they lived on through the process of clearing trees for crop fields, fishing the rivers and lakes, and building settlers. The native people were molding their environment long before the first white settlers. One of the greatest examples of Wabanaki people shaping the world around them was their use of fire.

The Native Americans learned to use fire to cultivate the land to better promote their own success. They used fire to clear the underbrush of forests and fields all while promoting the richest of the soil with the ash. The following quote describes how historians understand the impact of these controlled burns, “Krech asserts that deliberate and repeated burning made Native Americans an integral part of the ecosystem and concludes that ‘despite European images of an untouched Eden, this nature was cultural, not virgin, anthropogenic not primeval, and nowhere is this more evident than in the Indian use of fire’”<sup>86</sup>. The shaping of the environment and ecosystem was deliberate and done in order to benefit the native people. Their fires allowed for new growth in the forests and richer soil which helped their harvests. It also made travel and hunting easier. The animals were drawn to the new growth and in turn were easier targets for hunting. These animals included deer, elk, beaver, hare, porcupine, turkey, quails, grouse and many other species Native Americans ate. Furthermore, the soil that was enriched by the burn made healthy crop fields and wild berry bush growths<sup>87</sup>. The people were transforming the

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<sup>85</sup> Maine Historical Society, "Holding up the Sky: Wabanaki People, Culture, History & Art," Maine Memory Network, <https://www.mainememory.net/sitebuilder/site/2976/page/4665/print>.

<sup>86</sup> James Eric Francis, Sr., "Burnt Harvest: Penobscot People and Fire," last modified 2008, PDF, page 7.

<sup>87</sup> Francis, "Burnt Harvest", page 8.



landscape around them in order to create a more profitable outcome for themselves. This is the first known use of humans shaping the environment and thus making an antropogenic nature, not an untouched wilderness. It is clear that Maine itself was never a pure nature due to the presence of Native Americans for 13,000 years before the first European settlers arrived. The land itself was influenced by human hands but more specifically Little Sebago Lake was subject to many impactful human centric changes.

The waters of Little Sebago Lake are hardly untouched. The water composition itself is subject to gasoline, pesticides, and other chemicals knowingly or unknowingly added into the lake. Pesticides themselves allow for the continued and accelerated growth of milfoil and algae, which seriously affect the lake's ecosystem, let alone its recreational worth. Things such as fertilizing lawns and dumping store bought or dug up sand can lead to chemical run off leaking into the lake<sup>88</sup>. There are other more visible pollutants to the lake as well. One resident described the trash he found on the bottom sediment. He brings a mess bag to pick up the trash and has found beer cans, fishing lures, golf balls, and even a toilet<sup>89</sup>. Clearly, there is a negative impact by humans on the lake but what is even more alarming is that the very water that makes up the lake has also been changed by humans. All of the chemicals from the daily lives of humans have been introduced into the lake and transformed the composition of this "natural" resource.

In terms of water, the lake's area itself has been drastically changed by humans. Firstly, the dam built by Pearly Varney (see page 17) changed not only the course of the tributary feeding into the lake, but also contributed heavily to the pollution of the water. The sawmill disposed of its waste directly into the lake and the wood chips and sulfide gas can still be

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<sup>88</sup> Little Sebago Lake Association.

<sup>89</sup> Vozella, telephone interview by the author.

observed at the site. As previously noted on page 18, the waste will continue to root and pollute the lake water, giving it an amber tint around the area<sup>90</sup>. As discussed in the Environmental History section of this thesis, that sawmill was eventually used for the Warren Paper Company. Without a proper disposal system, paper mills are known to pollute the waterways on which they sit; “Pulp and paper mills are sources of nutrients, solids and dissolved matter like lignin in wastewater discharges. There are other agents like alcohol or inorganic materials such as chlorates. These go ahead to pollute the rivers and lakes that they are released into”<sup>91</sup>. There is not a clear timeline for when the paper mill was first opened, but it is known that the company vacated the mill in the early 1900s<sup>92</sup>. The Warren Paper Company is a clear example of humans changing a resource, the composition of the water, in order to achieve their own goals, such as financial gain. Therefore the very entity of the lake, its water, has itself been constantly changed from its original state to that which is dictated by human actions. However, even the constant changing of the makeup of Little Sebago’s water is not the most shocking example of human change.

The great dam collapse of 1861, which devastated the entire town of Popeville, was one of the most drastic human caused changes to Little Sebago. This is because the event itself caused the water table of Little Sebago and Big Sebago to be significantly leveled<sup>93</sup>. A first hand account of the disaster states, “The entire body of water from Little Sebago Pond which is nine miles long by two broad was instantly poured forth into the surrounding countryside... Many from this city went out to view the mighty rush of water ... The total damage is probably not less

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<sup>90</sup> Limnological and Sociological, 57.

<sup>91</sup> Maureen Shisia, "What Is The Environmental Impact Of Paper?," World Atlas, last modified May 14, 2018, <https://www.worldatlas.com/articles/what-is-the-environmental-impact-of-paper.html>.

<sup>92</sup> Limnological and sociological, 58.

<sup>93</sup> Dole, Windham in the Past, 232-234.

than \$30,000 (it was later reported to be in excess of 35,000 dollars)''<sup>94</sup>. Since then, Little Sebago's shore's are drastically lower than what they once were. Again, this means that houses built on the shores are sitting on what was once lake bottom. At both homes I've lived at on the lake, in order to get there you must drive down a steep slope to the actual land the house is on. The two homes are on opposite ends of the lake but share this distinct feature. Even from driving around the lake, this somewhat uniform slope can be seen. The total shift of the coverage of Little Sebago would not be possible without the building of the dam, and the eventual neglect of that dam causing its fall. Therefore, the very topography of the area surrounding the lake and the body of water itself are not natural and in fact the product of human action.

The water level of the lake is heightened and lowered by the existing dam on the lower basin. Water level is determined by the Department of Environmental Protection and then the process is carried out by the dam keeper. The current dam keeper is Bruce Micucci and the position has been passed on since the dam was created back in the 1800s. Micucci says that the DEP gives the keeper the agreed upon height for the lake in October and April to coincide with the ice formation and melts. In between those dates it is up to the keeper's discretion if the lake's water level needs to be adjusted. Things like excessive rain, storms, or drought are what mostly dictate the need for adjustment<sup>95</sup>. The height is dictated by the dam keeper and the EPA so there is very little "natural" fluctuation to the water levels. This means that the water levels are controlled and therefore mostly unnatural by definition. Furthermore, the actual organisms in the water itself are also unnatural due to human intervention in the ecosystem.

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<sup>94</sup> Walter Lunt, "The Story of Windham's Massive Freshet of 1861," The Windham Eagle, last modified July 24, 2020, <http://lifestyles.thewindhameagle.com/2020/07/a-matter-of-historical-record-and-great.html>.

<sup>95</sup> Micucci, telephone interview by the author.



*Little Sebago Lake Dam<sup>96</sup>*

Fish stocking has taken part in Little Sebago Lake since 2002. The fish are distributed by the Maine Department of Inland Fisheries and Wildlife and raised in their hatchery in New Gloucester. Brown and Rainbow Trout are released into the lake and its inlets every year in the spring. The following table shows the fish stocking report for Little Sebago<sup>97</sup>:

Year	Species	Quantity	Size (in)
2019	Brown Trout	1100	11
	Rainbow Trout	700	9
2018	Brown Trout	1000	11-12
	Rainbow Trout	725	13-19
2017	Brown Trout	1000	12
	Rainbow Trout	602	11
2015	Brown Trout	500/500	12/13
	Rainbow Trout	700	13
2014	Brown Trout	500/500	12/13
	Rainbow Trout	700	13
2013	Brown Trout	1100	12
	Rainbow Trout	700	14
2012	Brown Trout	1100	13
	Rainbow Trout	700	14
2011	Brown Trout	1100	13
	Rainbow Trout	700	14
2010	Brown Trout	1100	14

<sup>96</sup> Little Sebago Lake Association

<sup>97</sup> Little Sebago Lake Association

	Rainbow Trout	700	14
2009	Brown Trout	1100	12
	Rainbow Trout	700	14
2008	Brown Trout	1100	13
	Rainbow Trout	700	14
2007	Brown Trout	1100	12
2006	Brown Trout	1100	14
	Rainbow Trout	700	8
2005	Brown Trout	1100	12
	Rainbow Trout	500	12
2004	Brown Trout	1200/75	14/20
	Rainbow Trout	500	14
2003	Brown Trout	1500/10	14/24
	Rainbow Trout	150	16
2002	Brown Trout	1500/30	14/24
	Rainbow Trout	150	14

*\*Information for 2016 was not available and no Rainbow Trout were released in 2007.*

From the information provided, we can see that over the course of 17 years, a total of 28,942 individual fish have been stocked in the lake. That means that for almost two decades Little Sebago's ecosystem has been artificially transformed. A quote from the Maine Department of Wildlife and Fisheries website states that "These programs provide a supplement or substitute for natural reproduction in cases where it is insufficient or completely absent. This can happen where there isn't a suitable spawning and nursery habitat, or when there's an overwhelming presence of predator or competitor fish. We continuously monitor the biological impacts of stocking, and never stock waters that naturally produce healthy numbers of wild fish"<sup>98</sup>. This statement suggests that the fish populations of Little Sebago would either be far lower than they are today or completely gone if the lake was not re-stocked annually. We have come to the point where the very environment of the lake has now come to rely on human intervention. The fish populations were lowered by fishermen and presumably homes going into the lake. The

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<sup>98</sup> Maine.gov, "Hatcheries," Maine Department of Inland Fisheries and Wildlife, <https://www.maine.gov/ifw/fish-wildlife/hatcheries/index.html>.

ecosystem, thanks to fish stocking, has now become a part of the human made environment of the lake.

It is evident that the environment of Little Sebago Lake has been and continues to be altered by humans for their own goals. This is especially true in the context of leisure on the lake; because we use the lake for recreation, we shape it to fulfill that goal better. The lowering and heighting of the lake is done to protect homes from flooding, boats from hitting the bottom of the lake, and to control seasonal fluctuations. Fish are released into the water to ensure an enjoyable and plentiful fishing experience for visitors. The lake itself has been transformed into an artificial landscape manipulated for human utilization. Little Sebago is not a pure natural resource because it is constantly molded by our actions. It could be more closely characterized as “man-made” than it could be a “wilderness”. Milfoil and snails are simply another product of human action but the difference is that they do not serve a positive purpose for residents, therefore they are seen as “invaders” and “unnatural”. But are the fish that are stocked in the lake not invaders as well? They are not naturally born in Little Sebago but hatched and raised inside large barrels till its time for their release. Are the chemicals and physical waste in the water not detrimental to the ecosystem just as milfoil is? The difference between these changes and milfoil is that now the negative impacts of this change outweigh the positive ones. We care about milfoil because the negative impacts it brings but do not acknowledge that other aspects of the lake are also man made. Perhaps it is because we can not control milfoil, like we can control the water table or the fish stocking, that we despise it. The plant is not of our dominion such as most other aspects of the lake and it is frightening because this milfoil alone can destroy the environment humans have worked for 13,200 years cultivating. The forgetting of wilderness and our historical

role in it contributes to this sense of destruction of the pure. But as I have argued, there is no pure nature therefore what we truly fear from milfoil is the destruction of our cultivated garden.

Following my argument, If Little Sebago Lake is not a pure natural resource but in fact the product of humans, then the next step is to consider what our responsibility is to the place we have created. If Little Sebago is man made, what moral code do we have to protect it from milfoil and other negative human impacts? In order to consider this question, we must first examine what the lake itself means to residents and how they feel about their own moral responsibility to this place.

### The Meaning of Little Sebago Lake

Residents voiced their love and appreciation for Little Sebago Lake as a place where they can relax, spend time with their family, and form strong bonds with those around them. This importance of memories surrounding the lake can be explained by how we have traditionally seen nature; “The very idea of “landscape” refers to the symbolic environment constructed by human acts of assigning meaning to nature, space, or environment. Throughout history, natural landscapes have represented places to live and extract a living; places to play and appreciate; places to define self, community, and nation; and places within which to contemplate one’s spiritual and biological status in the world”<sup>99</sup>. Keeping this quote in mind, we can understand the fundamental purpose for forming tight bonds with the environment they are in. In many of my interviews, residents explained that the lake provided them with a respite from the stressors of everyday life. The importance of family was also a common theme with the interviews, where

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<sup>99</sup> Daniel R. Williams, "Personal and Social Meanings of Wilderness: Constructing and Contesting Places in a Global Village," n.d., PDF.



the lake provides a center for valuable memories. My grandparents, who have had a house on the lake for 25 years, explained their fondness experiences on the lake. My grandfather states; “I would say the thing that stands out most to most prominently, would be the friendships that we made on the lake. We lived in an area called Hall's point, and it was an area of roughly 40 to 50 homes and it was almost like a development and we were able to form our own little association. And that little road association became a social situation for us”<sup>100</sup>. My grandmother on the other hand explained it was family that made the experience on the lake special. She said her favorite thing about the was; “Again, it's basically with the kids learning how to swim, running off the dock and trying to kill each other basically. Nate, our grandson, learned how to use a boat correctly. And he's very good at it. He knows what to do. Well, and of course, our granddaughters in the same way. The only one thing that I used to love to do is to look out my kitchen window and see the water. So I had to do work. But I could see that so it was great<sup>101</sup>”. The connections formed through the community of the lake are some of the greatest experiences people have here. The following is a paragraph taken from the interview with Carol Ann Doucette, one of the former presidents of the lake association. I asked her about the community of the lake and what Little Sebago itself meant to her. The following is her response;

“When 911 happened, I'll never forget the skies usually had trails of planes going over and that day there was nothing there, it was just quiet. And we went down and sat on the dock, and I thought, how can the whole world come apart. And we're sitting here, and it's completely serene, there's nothing happening here you would never know that all of this world is under attack and things are things are happening and I just think that people, when I bring people to

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<sup>100</sup> William Nussbum and Eunice Nussbum, interview by the author, Gray, ME, October 10, 2020.

<sup>101</sup> William Nussbum and Eunice Nussbum, interview by the author, Gray, ME, October 10, 2020.

little Sebago, I always I always sell with a passion, not just to sell because, because that's not the only reason I come in as a person who wants to educate, because I don't want them to bring bad things to the lake to impact it negatively. I always say to them you know you come here and you come here because you love this lake. Don't ruin it you know don't impact it so that you're sorry that you came, or that if you intend to pass this on to your grandchildren, that by the time you leave this earth, it's a muck hole. The ladies of little Sebago do know about that group? [No I don't]. It was just a little bit of a, an idea of getting together once a week in the summertime or once a month in the winter time for conversation. A drink and getting a chance to go to different people's houses, to see what it's like in different parts of the lake. And you go around and you talk about knowing where you live on the lake and how long you've lived there. You know what the lake means to you was amazing. You really get a sense of community and helpfulness to the lake. And I always would tell people it's kind of cool when you're out on the lake and you make friendships and you're able to go to people's houses on your boat and pull up, or you see somebody that you know when you wave. It's like a small town. But there is a spirit, I think, or at least the way I look at things. I have felt that the lake was female for some reason was a female entity, it's a very nurturing entity. And as I said to people when you come here. You're going to look younger. Because, because you're relaxed and you're taking in the beauty. And that has a positive effect and so many have said, Oh, this is really good because I want to look younger. But I also believe we've got several people, or at least two people on the latest of level Sebago that are going through really tough times with chemo, and they come to the lake to do just what

we're talking about to absorb it to see the beauty. I have to believe that that is a healing entity. Both mind and spirit”<sup>102</sup>.

Pam Wilkinson, the current president of the lake association, responded to the same question of what the lake means to her; “Everything. It is my piece of paradise. I have always been an environmental person who wants to balance usage of the lake with protection of the lake, any lake for that matter. I am blessed to have served as president of the lake association and be involved with various committees. Volunteering is rewarding working with the members of the lake association who also carry the torch of caring and protection”<sup>103</sup>. She was also asked what our moral responsibility is to protect the lake, she stated the following: “To keep their property from allowing native and invasive plants from growing out of control. This summer I assisted with the operation and in areas that had dense milfoil I would look to the shoreline to see what may be causing increased run-off carrying nutrients into the lake. Many times I would see new sand on beaches which contain phosphorus. It is like buying fertilizer and throwing it into the lake thinking nothing is going to happen. One area this year was at the bottom of a steep hill. The other thing lake residents can do is create a vegetative buffer to allow run-off to be absorbed prior to entering the lake. This can be done so it actually is aesthetically pleasing and has benefits. Keeping the tree canopy is another tool to keep the rain for creating rivets into the lake carrying nutrients. There are several state agencies that have suggestions on how to do this”<sup>104</sup>. In her first interview, Wilkinson had described the residents response to the milfoil removal project as follows; “They are extremely pleased and glad that their piece of paradise on the lake has not been compromised by not being to be comfortable swimming, boating and probably just as

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<sup>102</sup> Doucette, video conference interview by the author.

<sup>103</sup> Wilkinson, interview by the author.

<sup>104</sup> Wilkinson, interview by the author.

important their property values have not declined”<sup>105</sup>. Wilkinson repeatedly states that she sees the lake as a paradise and that that sentiment is shared with many other residents.

Finally, I interviewed a Bowdoin professor who has been coming to the lake her entire life. Barabara Sawhill owns an island on Little Sebago called Crescent Island located in the middle basin. I asked her the same question about what her favorite part of the lake is and she explained the following: “Well, and this goes back to what things have changed. We never in the summer, it's not always the quietest place in the world but most times midweek, it can be very very quiet and very very tranquil, and the only thing you hear are the loons, which. So the sound of loons. I mean, memories for me as a little kid going out and fishing with my dad and learning patience. And you know sort of fortitude as you are getting eaten by mosquitoes and dealing with worms and things. Swimming, learning how to swim there, and that's been a lifelong activity of mine from the get go, kind of thing. Yeah, it's just always been a very pleasant peaceful place, and our island is fairly small so you know when you bring people there, it tends to be pretty intimate gathering. So, you know, choosing your friends well, choosing your family members. And don't vote people off the island, I do remember that was a seventh or eighth grade I invited a friend. And at one point I decided we lived in Connecticut at that time. And I decided, you know what I'm done with you I think you can go home now it's like that doesn't really work. Yeah. Really. Yeah, so it's sort of adjusting and you can't just send her home. Oh my God”<sup>106</sup>.

In response to the question of residents responsibility towards the lake she exclaimed: “Say I think everybody needs to [take care of the lake] you know it's not like living in the suburbs. The environment is so completely different and we're all there because of the body of

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<sup>105</sup> Wilkinson, telephone interview by the author.

<sup>106</sup> Barbara Sawhill video conference interview by the author, Gray, ME, October 16, 2020.

water that Little Sebago is. That being said, as nice as it might be to have a beautiful green lawn in front of your house on the lake, that is not the best thing for the lake. And you know this because of phosphorus and all the things that it's incredibly bad and that's what leads to algae blooms and it feeds the milfoil and all sorts of good things. It also attracts pests and such. So it's kind of like you want to have your vacation. There are so many people who want to have their vacation homes be almost a carbon copy of their, their full time residence and all the you know the way you call it the comforts of home little kind of thing, and yet there's a cost to that. It can be detrimental to the place that you want so badly to where you so badly want to be, because of the water because of the water table because of the length of all these things. And, I think it is our responsibility to educate ourselves as to what, what does being surrounded by water require of us. You know, for us to wait one of the first things I did when I think I told you that for my parents to give us the island was I got rid of the outhouse. Because I was just convinced and, you know, thankfully, the water, the water reports were not saying anything terrible but, you know, going into the ground and on an island when there you know there's a fairly high water table to begin with, probably not the best thing for the environment. So we moved to a composting toilet and have never had any problems. That being said, I know there are septic tanks on some of the islands and they also work on the theory of leaching be much slower hopefully I'm more contained kind of thing but I can't help but think that that that's not that's not too many steps above, having a hole in the ground that you've pooped into. So all of this and just in sort of plumbing drainage, a lawn lands in a land currently meant for maintenance and fixing all of that is completely different. We live here in Woolwich near a river, and there are rules put in place as to how you know how much you can cut back and where you can reside. And that's there for a

reason. It's there to protect the water, but I don't think you know when there are renters and such. I don't think that information gets passed over, they go because of the beauty of the place they don't understand that they have an obligation to sustain and maintain that place through their actions”<sup>107</sup>.

There were a few commonalities between the interviewers I conducted. Firstly, all the participants who gave direct quotes above value the lake for its aesthetic beauty in one form or another. They appreciate the tranquility and respite the lake provides from everyday life as well as certain life lessons they can glean from their experiences there. This is a reflection of Nash's sixth argument, that nature and wilderness help us de-stress and promote mental health. Overall the view of the lake is a positive one where people value this place and want to continue enjoying the experiences it provides. In terms of responsibility and morality, those interviewed agreed that residents do have an obligation to do what they can to protect the lake. However the question remains, how should we protect the lake and how much time, money, and effort, do we morally have to put into that process? In the following section I will suggest what our role as citizens of the environment is and how we are expected to be good stewards of Little Sebago Lake.

### What is Our Role in Protecting Little Sebago?

If the environment of Little Sebago Lake is in fact a man made construct of nature, then what do we, as the creators of such, owe to the lake? What is our role in protecting the environment we shaped? In order to consider these questions we must first revisit the different

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<sup>107</sup> Sawhill, video conference interview by the author.

arguments for why we should protect nature specifically from *The Value of Wilderness* by Roderick Nash;

1. Wilderness provides us with what the normal ecological processes are
2. Wilderness sustains biodiversity
3. Wilderness gives Americans their national identity
4. Provides us with a muse for our arts and literature
5. Nature is a church and helps us connect with religion
6. Wilderness helps with mental health
7. Wilderness allows for human diversity
8. Wilderness provides us with humility, teaches us respect and restraint, and shows humanity its place in the world<sup>108</sup>

Keeping these points in mind, each of us values nature and the environment for different reasons, but it is valued. Therefore, the ultimate reason for trying to protect the environment comes from within and therefore, so does what each of us are willing to do for that environment. In short, there is no concrete rule or moral code for how we should treat the environment. It is important that we as humans acknowledge the things nature provides us with, much of that stated above, and the meaning it brings to our lives. I can only propose how one might change their thinking about their involvement with the environment and how one may strive to be a better individual who is a part of the earth.

I can also not tell you how we should treat the environment without acknowledging my own shortcomings and biases. I am a citizen of the United States who uses land that was stolen

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<sup>108</sup> Nash "The Value," 21-25.

from the native inhabitants of North America. I use fossil fuels everyday and other toxic chemicals that harm the world around me. I have no right to tell you how you need to sacrifice your time and resources in order to be a steward of the world around you. I can simply propose solutions to the questions I have listed below and suggest ways in which we can all be better stewards of the environment.

I do not believe these questions will be life altering or cosmically intelligent, but I would ask that you try, in any capacity, to reflect on them and allow them to reflect on your life and the choices, however intentional, you have made.

The first question I would like us to consider is what do we owe the land we use? Do we simply owe it to future generations who may use this land to preserve it?

What value does the environment have beyond whatever use we have for it? Is it intrinsically valuable or does it need to serve some purpose to use in order to be valued?

How much or how little should we “sacrifice” of our own time, money, resources, and energy towards protecting the environment?

Is it our role as the ancestors of those who harmed the natural world to help undo those negative actions?

If the previous is true, do our children and grandchildren have to also atone for the negative impacts we have on our environment?

These are incredibly complex and broad scale questions, many of which can not be distinctly answered, but I would now like to re-direct our thinking back to the idea of invasive species. It is humans who bring plants and animals from other areas and continents to different parts of the world. It is us who carry these harmful things into our own properties and



waterways, even if we do not know it. These natural resources are disturbed by invasive species which destroy the environment. We are the ones who manipulate and destroy the natural environments we use, so then what is our duty to solving this issue? The bare minimum I can propose is the moral responsibility of those who use nature is to educate themselves on what their actions are doing to that environment. The information is already out there and in many cases readily available, such as it is on Little Sebago Lake Association website. The main blockade in the way of environmental stewardship is education. If you do not know what you are doing is wrong, how are you supposed to know you need to stop? We as a society can no longer afford the luxury of being ignorant about our effect on the environment, it is time to work towards personal betterment as a citizen of the environment. We have long used the earth for our own personal goals but now we must also give thanks for the provisions it has given us. We must adopt a give and take relationship with the world rather than one of take and manipulate, at least if we wish to continue our lives as they are currently.

In the context of Little Sebago, we can achieve this goal. We can wash off our boats and drain the bilges before entering the water. We can research what chemicals we use on our lawns and gardens and how that could affect the lake. We can find better ways to dispose of our trash rather than tossing it in the lake. The Little Sebago Lake Association has done much of the work for us by providing resources and workshops for how to have less of an impact on the lake. The information we seek is already out there in various books, lectures, and so much more on the internet, we only have to look for it. There is a wide range of possibilities for betterment of oneself as a lake resident and even a Maine vacationer. Education is where sustainability starts. Without awareness of our actions, we will not be able to continue enjoying these natural spaces,

as soon, they will cease to exist. The luxury of ignorance is something we must give up in order to protect the places we claim to value. One can not truly love or value something without putting its needs first, and the needs of Little Sebago are clear. We must put forth effort into our love and prove to this place that we deeply care about it. By educating ourselves about our own impacts and actions and making a conscious change to those actions, we will begin to truly value the lake. We created, molded, and manipulated this place and now it is time to not only take responsibility, but to become conscious of our place in the natural world.

### Conclusion

The history of Little Sebago Lake is one filled with human interaction and environmental struggles. But through this history, we are able to see the greater implications of the role of nature and human interference in the United States. The idea that milfoil is one of the only human caused disasters in the natural world is simply not true. As we have seen since the beginning of the colonization of North America, people believed that nature was to be cultivated and dominated. The forgetting of this history and the forgetting of human interference throughout the making of this country is unacceptable. If we are to be better stewards of the environment, we must first acknowledge our role in shaping it. Invasive species are plainly the most recent human actions that have affected the natural world, and the fact that it is quantifiable with clear records also leads to its visibility. But spaces like Little Sebago are made man in the sense that they have been shaped since the first people inhabited Maine. We have created this place and we have quantifiably threatened it through our actions, so what is our role in protecting it? We as a people must accept responsibility for these landscapes and work towards preserving

them, if not for their intrinsic worth, than for the sake of the worth we assign to them. We value Little Sebago Lake for its beauty, recreational activities, memories, life lessons, and much more. These should be the main motivations we find in order to preserve the lake that we claim to love. As I have stated, one of the most basic things we can do to better ourselves as stewards of the land is to educate ourselves on how our actions affect the environment. By doing this, we are acknowledging the history of contact we had with the land and the manipulation of such land, and taking steps in order to start to change the environment in positive ways, rather than continue our historically negative impact on it. Furthermore, once you understand the impacts you are having on the environment, you must start to change those actions which are negative to the land you love. This means that through education, one will not only become conscious of their footprint on the land, but hopefully start to change their ways to ones that will sustain the environment. I hope that by acknowledging our impacts on the environment, people will begin to understand what it truly means to love the land they inhabit. That they must do more than “appreciate it” in their mind but make active steps in protecting the environment if they wish to see it continue for not only themselves but for their families, friends, and any who may be so lucky to have come into contact with this land. Objectively, Little Sebago Lake is not an anomaly as many Maine lakes are tourist attractions and have year round residents, but as anyone who has visited this lake will say a part of it stays with you always. It helps shape you as a person and connects you to the bigger picture of life and all the entanglements that come with it. In that sense the lake has given each of us something, and it is about time we give something back.

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