

# The Pearl of Siberia: The Emerging Threat to Lake Baikal

*Blake Donithan\**

## INTRODUCTION

“Baikal is a unique lake and all mankind will suffer from its desecration. Nonetheless the struggle to preserve the purity of this wonder of the world runs smack against man's penchant to improve on nature.”<sup>1</sup>

Nestled in the mountains of southeastern Siberia rests Lake Baikal (“Baikal”), the world’s oldest and deepest freshwater lake.<sup>2</sup> The massive lake spans an area of over 12,200 square miles and holds approximately 20 percent of the world’s unfrozen freshwater.<sup>3</sup> Lake Baikal is known for having the clearest water out of any lake on Earth.<sup>4</sup> The splendor of Lake Baikal is so grand it cannot be truly appreciated unless experienced firsthand. However, the pristine quality of the lake is under attack. Unless swift action is taken to stop the destruction of Lake Baikal, the “Pearl of Siberia” will turn to a muddy waste and lose its future value.

The Russians were not the first people to discover the beauty of Lake Baikal.<sup>5</sup> The first mention of Lake Baikal can be found in Chinese historical texts dated to approximately 110 B.C.

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<sup>1</sup> MARSHALL I. GOODMAN, *THE SPOILS OF PROGRESS: ENVIRONMENTAL POLLUTION IN THE SOVIET UNION* 178 (1972) (emphasis in original).

<sup>2</sup> Grigory Ivanovich Galazy, *Lake Baikal*, ENCYCLOPÆDIA BRITANNICA, <https://www.britannica.com/place/Lake-Baikal> [<https://perma.cc/8HZ3-KWL7>] (last viewed Sept. 25, 2020).

<sup>3</sup> *Id.*

<sup>4</sup> Ken Jennings, *The Russian Lake that Holds One-Fifth of the World's Freshwater*, CONDÉ NAST TRAVELER (Aug. 26, 2013), <https://www.cntraveler.com/stories/2013-08-26/lake-baikal-russia-maphead-ken-jennings> [<https://perma.cc/6JUA-4NKT>].

<sup>5</sup> PETER THOMSON, *SACRED SEA: A JOURNEY TO LAKE BAIKAL* 22 (2007).

with discussion of the “Northern Sea” or “*beihai*.”<sup>6</sup> During the twelfth century, an Arab scholar described Lake Baikal as “a sea of remarkably transparent and tasty water,” suggesting Arabic exploration of the area.<sup>7</sup> However, Lake Baikal likely derived its name from the Yakut word *baigal*, which is translated as “sea,” “plenty,” “ocean,” or “Lake Baikal.”<sup>8</sup> The Russians likely first came in contact with Baikal in the seventeenth century while exploring Siberia for the illustrious sable.<sup>9</sup> This quest led to the discovery of one of the Empire’s most revered landmarks, often referred to as the “Pearl of Siberia” and the “Sacred Sea.”<sup>10</sup>

Lake Baikal is more than an expansive body of water to the people of the Russian Federation.<sup>11</sup> Baikal is a spiritual and cultural center “bathed in mystery” and deeply appreciated by the surrounding inhabitants.<sup>12</sup> The majority of Lake Baikal’s shoreline lies within the Republic of Buryatia.<sup>13</sup> The Buryat people are not only dependent on the lake for food and water, but Baikal is also a sacred site.<sup>14</sup> Lake Baikal is treasured in the hearts of the Russian and local indigenous people.

Lake Baikal is at its most vulnerable point in modern history.<sup>15</sup> Baikal is experiencing “an increasingly grave environmental crisis, due to climate change and human activity.”<sup>16</sup> Siberia is experiencing the effects of global warming three times faster than average.<sup>17</sup> The increase in the lake’s temperature has proven to be detrimental to the flora and fauna,

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<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> *Id.* at 22–23. (The Russians heard of an animal—the sable—that had lustrous fur. The expeditions to Siberia were to find the animal as fur was a “soft gold” in the empire at the time).

<sup>10</sup> *Id.* at 23.

<sup>11</sup> See generally Danielle Ryan, *Letter from Olkhon: is Baikal’s ancient shamanic island under threat*, THE CALVERT JOURNAL (Sept. 12, 2017), <https://www.calvertjournal.com/features/show/8944/letter-from-olkhon-is-lake-baikals-ancient-shamanic-island-under-threat> [https://perma.cc/X7A3-UQSW].

<sup>12</sup> *Id.*

<sup>13</sup> Tatyana Sinitsina, *Buryats Want Reservations by Lake Baikal*, Sputnik (May 18, 2005) [https://perma.cc/Y9PY-V83P].

<sup>14</sup> *Id.*

<sup>15</sup> See generally Phoebe Sleet, *Lake Baikal Crisis: Chinese Activity a Handy Scapegoat for Russian Government Inaction*, FUTURE DIRECTIONS INT’L (Oct. 23, 2019), <https://www.futuredirections.org.au/publication/lake-baikal-crisis-chinese-activity-a-handy-scapegoat-for-russian-government-inaction/>

[https://perma.cc/ACJ2-A279].

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

including the Nerpa population.<sup>18</sup> Human activities such as fishing, industrial pollution from Baikal's water sources, and increased tourism are worsening the crisis.<sup>19</sup> While many Russians blame the influx of Chinese tourists and businesses,<sup>20</sup> the real blame should fall upon the Russian Federation's lack of governmental action.

This Note explains the emerging environmental threat Lake Baikal faces, the recent legislation regarding the protection of Lake Baikal, and possible solutions to preserve Lake Baikal. Part I describes the past and current threats to the ecology of Lake Baikal. This section will explore the effects of industrialization and tourism, including the Baikal Pulp and Paper Mill, inadequate wastewater treatment, and the emergence of hotels and infrastructure.

Part II will discuss the legislative environmental protections of Lake Baikal throughout history, the recent 2019 amendments to the Russian Federation's Law "On Concerning the Protection of Lake Baikal," and current proposed legislation. This section addresses the shifting levels of protection provided by Soviet and Russian government officials and potential factors affecting the intensity of protection. It also explains the way the Russian legal system redresses environmental violations of Lake Baikal. Finally, Part III explains how the Russian Federation could effectively change legislation and international treaties to provide enhanced protection to the lake. This section argues a revitalized international treaty with Mongolia and a reworking of existing Russian Federal law would be effective solutions to the Baikal crisis.

## I. THE HISTORY OF ENVIRONMENTAL POLLUTION THREATS TO LAKE BAIKAL

As aforementioned, Lake Baikal was only discovered by inhabitants of the Tsardom of Russian in the seventeenth century.<sup>21</sup> Lake Baikal's long history of environmental threats

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<sup>18</sup> *See id.* (The decrease in diatoms have threatened the food source of the fish and thus led to a food scarcity for the freshwater seals known as Nerpas).

<sup>19</sup> *See id.*

<sup>20</sup> *Id.*

<sup>21</sup> *See Jennings, supra* note 4, at 22–23.

finds its root in the rise of industrialism during the former Union of Soviet Socialist Republics (“Soviet Union”).<sup>22</sup> Part A of this section will explore the environmental threats Lake Baikal faced during the Soviet Union. Part B will then discuss threats to the Baikal during the time period after the collapse of the Soviet Union and during the modern-day Russian Federation.

*A. Environmental Threats under the Soviet Regime*

Industrialization during the Soviet Union ramped up during World War II and large-scale exploitation of the forests spiked at the end of the war.<sup>23</sup> The Soviet Union had “an insatiable appetite” for timber to aide in construction projects.<sup>24</sup> The logging industry transported the harvested timber by “floating” the logs down rivers and across bodies of water to lumbering sites.<sup>25</sup> Lake Baikal was not spared from the practices of floating timber.<sup>26</sup> Lake Baikal began being used for floating in the 1930s but the demand increased significantly at the end of World War II.<sup>27</sup> “Between 1958 and 1968, an estimated 1.5 million cubic meters of timber sank to the bottom of Lake Baikal and in nearby rivers ... destroying important feeding and spawning areas.”<sup>28</sup>

The growing forestry industry in Siberia was accompanied by the State Planning Committee’s program to develop the other natural resources in the area.<sup>29</sup> Under this plan, over fifty factories were built in the Lake Baikal basin.<sup>30</sup> One of the largest dangers to Baikal was the untreated waste flowing from the factories into the lake’s water.<sup>31</sup> The greatest polluter of Baikal was the Baikalsk Pulp and Paper Combine on the southern shore of the lake.<sup>32</sup>

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<sup>22</sup> See generally PAUL JOSEPHSON ET AL., AN ENVIRONMENTAL HISTORY OF RUSSIA 1–5 (2013).

<sup>23</sup> *Id.* at 155.

<sup>24</sup> *Id.* at 156.

<sup>25</sup> *Id.* at 159.

<sup>26</sup> *Id.* at 160.

<sup>27</sup> *Id.*

<sup>28</sup> JOSEPHSON, *supra* note 22, at 226.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> *Id.* at 227.

*i. The Baikalsk pulp and paper mill*

The military and aerospace industries were in need of bleached pulp for the production of aircraft tires.<sup>33</sup> Lake Baikal proved to be the only suitable location given the large amount of water needed and the minimal treatment required to make high quality bleached pulp.<sup>34</sup> The Ministry of Defense previously relied on imports from Canada and Sweden for aircraft bomber tires.<sup>35</sup> The Baikalsk Pulp and Paper Mill's construction began at the end of the 1950s.<sup>36</sup> The Baikalsk Pulp and Paper Mill began operations in September 1966<sup>37</sup> and discharged "torrents of sludgy water" into the Lake Baikal.<sup>38</sup>

The process to create the bleached pulp required chlorine which "discharged as much as 100,000 m<sup>3</sup> (4 million cubic feet) of wastewater into Lake Baikal annually."<sup>39</sup> The government and plant officials claimed the wastewater was treated and the emissions were not harmful, but this claim has been proven false.<sup>40</sup> The Baikalsk facility refused to complete finance waste treatment and control at the plant which led to a "1969 government decree that spelled out steps necessary to clear up the lake."<sup>41</sup>

The decree, titled "About Measures on Conservation and Rational Utilization of Natural Ecosystems in the Basin of the Lake Baikal," laid out several requirements for the "Ministry to complete in the same year a complex of purification installations at the plants."<sup>42</sup> The Ministry officials did not comply and another decree similar to the 1969 order was issued 1971.<sup>43</sup> The 1971

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<sup>33</sup> *Id.*

<sup>34</sup> JOSEPHSON, *supra* note 22.

<sup>35</sup> *Id.* at 226.

<sup>36</sup> Alexander Panin, *Polluting Baikal Paper Mill Finally Shuts Down*, THE MOSCOW TIMES (Oct. 13, 2013), <https://www.themoscowtimes.com/2013/10/13/polluting-baikal-paper-mill-finally-shuts-down-a28543> [<https://perma.cc/ZH38-3MRR>].

<sup>37</sup> *Id.*

<sup>38</sup> Marc Ambrose-Rendu, *Conquering the USSR's Wild East: Ecology versus the Needs of Industry*, THE GUARDIAN WEEKLY (Oct. 17, 1982) [<https://perma.cc/HNV9-K758>].

<sup>39</sup> WWF Campaign, *Polluting the sacred Lake Baikal: A case study from Siberia, Russia*, 1 (2020-11), <http://awsassets.panda.org/downloads/russiabaikalskcasestudy.pdf> [<https://perma.cc/N6HB-7EKS>].

<sup>40</sup> *Id.* at 1-2.

<sup>41</sup> JOSEPHSON, *supra* note 22, at 227.

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

decree required the Baikalsk Pulp and Paper Mill to complete the pulp water purification project within the year and prohibited the floating of timber.<sup>44</sup> In fact, “[s]everal Soviet publications indicated that pollution of the lake had increased, not decreased, so it is doubtful that the 1971 decree would have any greater success in opposing entrenched power of industry and military.”<sup>45</sup>

Lake Baikal suffered decades of pollution from Baikalsk Pulp and Paper Mill.<sup>46</sup> The Soviet Academy of Sciences issued a report in 1975–1976 concluding the mill should be shut down and reequipped for environmentally safe production because of the threat to the Epishure – an endemic crustacean.<sup>47</sup> The Epishure “formed the first link in a food chain that supported all the fauna of the lake, including omul, grayling, and seals” and also acts as a biological filter extracting 250 thousand tons of calcium a year from the water flowing into the lake.<sup>48</sup> This increased pollution sparked public concern and one of the first movements for environmental protection of this natural treasure.<sup>49</sup>

Outrage regarding the pollution led to the Baikalsk plant using over 40 percent of the budget to install a “costly filtering system” making the wastewater drinkable.<sup>50</sup> However, the Baikalsk Pulp and Paper Mill could not manage to restore the lake’s ecology to its once pristine condition.<sup>51</sup> The Baikalsk plant stayed in operation until 2008 when it shut down for financial reasons.<sup>52</sup>

## *ii. Other pollutants during the Soviet regime*

While the Baikalsk Pulp and Paper Mill was the most problematic and noticeable source of pollution to Lake Baikal,

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<sup>44</sup> *Id.* at 228.

<sup>45</sup> *Id.*

<sup>46</sup> *See generally id.*

<sup>47</sup> JOSEPHSON, *supra* note 22, at 228.

<sup>48</sup> *Id.*

<sup>49</sup> *See* John Stewart, ‘*The Great Lake is in Great Peril*’, *New Scientist* (June 30, 1990), <https://www.newscientist.com/article/mg12617234-600-the-great-lake-is-in-great-peril-siberias-sacred-sea-bigger-than-belgium-and-older-than-any-other-lake-baikal-is-threatened-by-pollution-from-industry-and-agriculture/#ixzz62YcDaKr8> [<https://perma.cc/NN5C-U4M6>].

<sup>50</sup> JOSEPHSON, *supra* note 22, at 228.

<sup>51</sup> *Id.*

<sup>52</sup> Tom Parfitt, *Deripaska mill that polluted Lake Baikal closes*, *THE GUARDIAN* (Nov. 11, 2008), <https://www.theguardian.com/environment/2008/nov/12/pollution-water-russia-deripaska> [<https://perma.cc/36JF-D7SF>].

other sources only added to the environmental crisis. The industrialization of the nearby Angara River Valley intensified the pollution of Lake Baikal.<sup>53</sup> The Angara River does not flow into Lake Baikal, but it is the only river flowing directly out of Baikal's basin.<sup>54</sup> The Angara River Valley, however, is located less than 100 miles from Lake Baikal.<sup>55</sup> A chemical plant in Angarsk, only sixty miles from Lake Baikal, "produce[d] almost as much airborne pollution as the whole of Moscow, which ha[d] been declared an environmental crisis area."<sup>56</sup> The smoke from the factories in the Angara River Valley blew "back up the valley and eastward over the lake by the prevailing winds."<sup>57</sup>

Evidence of the pollution from the industrial cities was clear in the smaller bodies of water. Eduard Zhbanov, a local geologist, discussed the effects merely two years after the collapse of the Soviet Regime and stated a "small shallow lake near there is heavily polluted by mercury, phenols and oil byproducts" flowing into Lake Baikal.<sup>58</sup> He further stated how were it not for Lake Baikal's depth, it would no longer exist.<sup>59</sup> Residents complained of breathing problems and acid rain due to the strength of the pollutants.<sup>60</sup>

Along with the Soviet's factory frenzy, the government also became focused on building trans-Siberian railways to increase industrialization in Siberia.<sup>61</sup> In the 1970s and 1980s, the Baikal-Amur Magistral railway was built, to the detriment of the local environment.<sup>62</sup> The Baikal-Amur Magistral was designed to stimulate "the development of coal, steel, oil and natural gas, chemical, hydroelectricity, and forestry industries in Siberia connected with the territorial-production complexes."<sup>63</sup>

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<sup>53</sup> Will Englund, *Modern ills threaten ancient, wondrous Lake Baikal*, THE BALTIMORE SUN (Oct. 31, 1993), <https://www.baltimoresun.com/news/bs-xpm-1993-10-31-1993304003-story.html> [<https://perma.cc/R4DM-R79B>].

<sup>54</sup> *Id.*

<sup>55</sup> Michael Dobbs, *Russians Fight to Save Lake Baikal*, THE WASH. POST (Oct. 11, 1990), <https://www.washingtonpost.com/archive/politics/1990/10/11/russians-fight-to-save-lake-baikal/f3aaa075-3ac9-4c33-917e-b484e64945fb/> [<https://perma.cc/U9DR-CDL2>].

<sup>56</sup> *Id.*

<sup>57</sup> Englund, *supra* note 53.

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> Dobbs, *supra* note 55.

<sup>61</sup> JOSEPHSON, *supra* note 22, at 78.

<sup>62</sup> *Id.*

<sup>63</sup> *Id.* at 235.

During the construction of the Baikal-Amur Magistral, workers “discharge[d] dangerous petrochemicals [with] every spike and rail,” and left fuel and oil dumps on riverbanks spilling into the groundwater.<sup>64</sup>

The many dams built on the Angara River during the Soviet era further destroyed Lake Baikal. The damming of the Angara River began in 1955 with the construction of the Bratsk High Dam.<sup>65</sup> The Soviets hailed this project as the largest and most powerful dam in the world.<sup>66</sup> The dam diminished fish populations and caused irregular water levels of Lake Baikal.<sup>67</sup> The creation of the dam and its reservoir caused severe flooding of surrounding towns.<sup>68</sup> The flooding of local villages sparked outrage and led to Valentin Rasputin’s fictional work titled, *Proshchaniye s Matyoroy (Farewell to Matyora)*, about a village faced with destruction to make room for a hydroelectric plant.<sup>69</sup>

Throughout the decades of the Soviet Union’s rule, Lake Baikal faced severe environmental threats. In 1968, physicist and founder of the Russian hydrogen bomb Andrei Sakharov, stated the sad fate of Lake Baikal was due to “local, temporary, bureaucratic, and egotistical interest[s].”<sup>70</sup> The Baikal crisis led to environmental activism by the Soviet public and writers such as Valentin Rasputin.<sup>71</sup> Rasputin “regarded the struggle to preserve the lake and its environs as a fight to save Russian culture.”<sup>72</sup>

### B. *Modern-Day Threats to Lake Baikal*

While the threats to Lake Baikal started with the Soviet’s push for industrialization, there are still many heavy environmental concerns to Lake Baikal today. Some Russians

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<sup>64</sup> *Id.* at 236.

<sup>65</sup> Z. Martin, *The Soviets Didn’t Give a Dam*, RUSSIA’S 20TH CENTURY (Nov. 3, 2014), <https://blogs.lt.vt.edu/zmartin/2014/11/03/the-soviets-didnt-give-a-dam/> [<https://perma.cc/9HJ5-ZTEA>].

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> Gary Saul Morson, *Russian Literature*, ENCYCLOPÆDIA BRITANNICA (Mar. 12, 2019), <https://www.britannica.com/art/Russian-literature/The-Stalin-era#ref399852> [<https://perma.cc/P2YH-SV4Q>].

<sup>70</sup> JOSEPHSON, *supra* note 22, at 241.

<sup>71</sup> *Id.* at 249.

<sup>72</sup> *Id.*



claim the influx of Chinese tourists and Chinese businesses are the cause of the recent worsening of Lake Baikal's conditions.<sup>73</sup> The concern for Lake Baikal has prompted activism from the Russian people, who have successfully stopped some threats to the lake.<sup>74</sup> Part I will examine the threats created by an increasing demand for tourism to Lake Baikal. The emergence of tourist accommodations and activities along Baikal's shores is the biggest concern to many Russian people. Part I will also examine the Chinese business interests in the Baikal basin, specifically the proposed construction of a water bottling plant called Aquasib. Part II takes a look at the effects of the Selenga River on Lake Baikal. The city of Ulan Ude's industrial waste flows into the Selenga causing thousands of tons to end up in Lake Baikal.<sup>75</sup> Part III examines proposed projects such as a uranium enrichment plant and oil pipelines.

Lake Baikal is experiencing its "gravest crisis in recent history."<sup>76</sup> Lake Baikal's native fish, the omul, is disappearing, accompanied by accelerated growth of algae killing endemic species.<sup>77</sup> In 2017, The United Nations Educational, Scientific and Cultural Organization ("UNESCO") noted with concern "the ecosystem of the lake is reported to be under significant stress."<sup>78</sup> Oleg Timoshkin, a biologist at the Limnological Institute in Irkutsk, recently stated how "the bottom does not look like Baikal anymore."<sup>79</sup> What is contributing to the rapid deterioration of Lake Baikal? Part B explores the more recent threats to Lake Baikal and the environmental threats most at issue.

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<sup>73</sup> Sleet, *supra* note 15.

<sup>74</sup> Stroitel'stvo zavoda po proizvodctbu pit'evoi vody v Kultuke prioctanoveleno [Construction of drinking water plant in Kultuk suspended], IRKUTSKAYA OBLAST' OFITSIAL'NYĬ PORTAL [IRKUTSK OBLAST OFFICIAL PORTAL] (Mar. 15, 2019), <https://irkobl.ru/news/676755/> [<https://perma.cc/C8C9-LXH4>] [hereinafter "IRKUTSK"].

<sup>75</sup> Kasimov, N., Karthe, D. & Chalov, *Environmental change in the Selenga River—Lake Baikal Basin*, 17 REGIONAL ENVIRONMENTAL CHANGE 1945, 1945 (2017) <https://doi.org/10.1007/s10113-017-1201-x> [<https://perma.cc/3W99-GVEL>].

<sup>76</sup> Agence France-Presse, *World's deepest lake crippled by putrid algae, poaching and pollution*, THE GUARDIAN (Oct. 19, 2017), <https://www.theguardian.com/world/2017/oct/19/lake-baikal-russia-crippled-algae-fish-poaching-pollution> [<https://perma.cc/9447-DP76>].

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*

*i. The Chinese “Crisis”—tourism and development*

One would not typically consider a remote location in Siberia as a popular tourist destination. While Lake Baikal has long been known to the Russian people, the cross-country Trans-Siberian Railway has opened the doors to Lake Baikal’s role in international tourism.<sup>80</sup> A quick visit to the small fishing town of Listvyanka on the western shore of Lake Baikal reveals the impact tourism has yielded. Upon arriving in Listvyanka, one is greeted by kiosks and food stands selling trinkets of Lake Baikal’s *nerpas*, smoked *omul* hanging from the rafter, and the overwhelming aroma of Uzbek migrants cooking kebabs and *plov*. Surrounding the marketplace, charter buses line the roads of the beach, creating a diesel haze along the once pristine beaches.

In 2018, approximately 1.6 million people visited Lake Baikal.<sup>81</sup> While most of these visitors were Russian natives, over 186,000 of the visitors were Chinese tourists.<sup>82</sup> This influx of Chinese tourism can be attributed to the new era of friendly Sino-Russian relationship promoted by current Russian Federation President Vladimir Putin.<sup>83</sup> Following the Crimean conflict, Putin turned to the East after the West rejected his annexation of Crimea.<sup>84</sup> While the governments of Russia and China have created an amicable relationship, the local Russian people often have demonstrated resentful emotions toward Chinese tourists.<sup>85</sup> Many local Russians in the Irkutsk region believe in the so-called “Yellow Peril syndrome” (синдром желтой опасности), believing immigrants and tourists from the People’s Republic of China are slowly invading their country with plans to take it over.<sup>86</sup>

While it may not seem like many Chinese tourists are visiting Lake Baikal and the surrounding towns, Chinese visitors between 2017 and 2018 jumped 37 percent and the surge in

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<sup>80</sup> Neil MacFarquhar, *As Chinese Flock to Siberia’s Lake Baikal, Local Russians Growl*, N.Y. TIMES (May 2, 2019), <https://www.nytimes.com/2019/05/02/world/europe/chinese-lake-baikal-tourism-russia.html> [https://perma.cc/KQ7D-9MCS].

<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> MacFarquhar, *supra* note 80.

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> See generally Brophy O’Donnell, *Yellow Peril in the Russian Far East*, THE BALTIMORE SUN (May 13, 1994), <https://www.baltimoresun.com/news/bs-xpm-1994-05-13-1994133065-story.html> [https://perma.cc/24SJ-8U6L].

Chinese tourism is only expected to continue grow rapidly.<sup>87</sup> “The resentment of Chinese businesses and tourists in Lake Baikal and the surrounding towns has only been exacerbated and can be clearly demonstrated by the actions of Andrei Sukhanov, a local Russian business man, who was declared a hero after grabbing his chain saw and chopping down eight (8) pillars supporting a new Chinese owned hotel.”<sup>88</sup> Mr. Sukhanov’s actions sparked “petitions, protest, and court cases aimed at blocking Chinese businesses around the lake and surrounding areas.”<sup>89</sup> Local authorities filed lawsuits against at least ten Chinese-financed hotels for illegal construction and other infractions, resulting in court orders for the demolition of two of the hotels, while other hotels may receive the same fate.<sup>90</sup>

A notable Chinese-backed project in the Lake Baikal region is the AquaSib bottling plant in Listvyanka, which has received national attention and outcry.<sup>91</sup> AquaSib planned to bottle 190 million liters from Lake Baikal starting in 2021.<sup>92</sup> The issue gained national attention in the Russian Federation as more than 1.1 million Russians signed an online petition denouncing the construction of the AquaSib plant.<sup>93</sup> Russians voiced concerns the bottling facility would drain the lake and further contribute to the severe pollution of Baikal.<sup>94</sup> AquaSib responded by vehemently denying the water-bottling plant would cause environmental damage.<sup>95</sup> Despite these denials, the West Baikal Interdistrict’s environmental prosecutor announced the company violated several federal laws.<sup>96</sup> A survey showed traces of oil productions, bulk waste, and illegal excavation work for water pipelines without permits, which led to a regional court ordering the suspension of the plant in March 2019.<sup>97</sup>

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<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Siberian Authorities Halt Construction of Lake Baikal Bottling Plant After Backlash*, THE MOSCOW TIMES (Mar. 15, 2019), <https://www.themoscowtimes.com/2019/03/15/siberian-authorities-halt-construction-of-lake-baikal-bottling-plant-after-backlash-a64818> [<https://perma.cc/78XC-34WQ>].

<sup>92</sup> *Id.*

<sup>93</sup> MacFarquhar, *supra* note 80; see also Siberian Authorities, *supra* note 91.

<sup>94</sup> *Siberian Authorities*, *supra* note 91.

<sup>95</sup> *Id.*

<sup>96</sup> IRKUTSK, *supra* note 74.

<sup>97</sup> *Siberian Authorities*, *supra* note 91.

The projected Chinese constructions have vastly contributed to the pollution of Lake Baikal and many of the surrounding towns have no central water or sewage systems.<sup>98</sup> Environmentalist Marina Rikhvanova commented on pollution caused by construction, stating she would no longer drink lake water as it is a “microbe cocktail.”<sup>99</sup> There are also other environmental concerns the accompany Chinese construction projects on Lake Baikal. The proposed AquaSib plant was located in the wetlands surrounding Lake Baikal, which is a crucial migration stop for protected species.<sup>100</sup> The construction of pipelines and additional human activity would lead to the destruction of important habitats.<sup>101</sup>

*ii. The Selenga River problem*

Environmental issues also come from outside the shores of Lake Baikal; surrounding areas vastly contribute to the increased pollution of the lake. One source contributing to the pollution of Lake Baikal is the Selenga River. The Selenga River is Lake Baikal’s most important tributary.<sup>102</sup> The river contributes 50 to 60 percent of its surface water.<sup>103</sup> Additionally, the Selenga’s watershed covers over 80 percent of Lake Baikal’s water basin.<sup>104</sup> The Selenga river branches into the world’s largest freshwater inland delta just north of the Buryatia capital, Ulan Ude, and this delta serves “as the final geobiochemical barrier before the Selenga discharges into Lake Baikal.”<sup>105</sup> Therefore, pollution along the Selenga River affects Lake Baikal’s once pristine condition.<sup>106</sup>

Mining activities in the Selenga River basin additionally serve as one of the main sources of pollution to the waters

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<sup>98</sup> *Id.*

<sup>99</sup> *Id.*

<sup>100</sup> Eileen Wray-McCann, *Russia’s Controversial Lake Baikal Water Bottling Plant*, CIRCLE OF BLUE (Apr. 18, 2019), <https://www.circleofblue.org/2019/world/russias-controversial-lake-baikal-water-bottling-plant/> [http://perma.cc/4GYU-DAAY].

<sup>101</sup> *Id.*

<sup>102</sup> Kasimov, N., Karthe, D. & Chalov, *Environmental change in the Selenga River—Lake Baikal Basin*, 17 REGIONAL ENVIRONMENTAL CHANGE 1945, 1945 (2017) <https://doi.org/10.1007/s10113-017-1201-x> [http://perma.cc/J8QU-BWLU].

<sup>103</sup> *Id.* at 1945.

<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

<sup>106</sup> *Id.*

eventually flowing into Lake Baikal.<sup>107</sup> Gold mining began in the mid-1800s and used mercury to extract gold from ore.<sup>108</sup> The mercury used in extraction was disposed into rivers, like the Selenga, and dispersed into the atmosphere.<sup>109</sup> While the use of mercury has ceased in Russian mining operations, it still is used in the Mongolian Selenga River basin with gold mining operations along the Selenga having increased in the last decade.<sup>110</sup>

“Recent studies report the Lake Baikal catchment and Selenga River basin to be heavily polluted from these gold extraction activities.”<sup>111</sup> The mercury accumulation is evident in fish from the waters flowing into Lake Baikal and is at such high levels the fish are not safe for human consumption.<sup>112</sup> The rising unregulated mining activity along the Selenga River poses an added source of pollution to Lake Baikal as well as causing problematic climate warming for Lake Baikal and its food web.<sup>113</sup>

Urban wastewater inputs constitute another major source of pollution in the Selenga River.<sup>114</sup> The Selenga River basin contains the three largest cities in Mongolia, which are Ulaanbaatar, Erdenet, and Darkhan, as well as the large city of Ulan Ude, the capital of the Republic of Buryatia in Russia.<sup>115</sup> These large urban centers affect Lake Baikal in several ways. Most significantly, poor wastewater treatment facilities in these areas contaminate the Selenga River and other waterways.<sup>116</sup> These urban areas along the Selenga River basin have a high concentration of industrial facilities contributing pollutants to the water ways.<sup>117</sup> Further, the populated cities have a higher per capita water consumption, affecting water levels in the Selenga River.<sup>118</sup>

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<sup>107</sup> Sarah Roberts et al., *Mercury loading within the Selenga River Basin and Lake Baikal, Siberia*, at 1 (Sept. 26, 2019), <https://eartharxiv.org/u7ax8/> [<http://perma.cc/DC8D-54N9>].

<sup>108</sup> *Id.* at 3–4.

<sup>109</sup> *Id.*

<sup>110</sup> *Id.* at 4.

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

<sup>113</sup> Roberts, *supra* note 107, at 19.

<sup>114</sup> *See generally* Kasimov, *supra* note 102.

<sup>115</sup> *Id.* at 1946.

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

Mongolian construction projects have posed additional threats in recent years. The Mongolian government “adopted the strategic goal of attaining energy independence from Russia” and has received financial loans in the amount of \$1 billion from China to support this goal.<sup>119</sup> Mongolia is attempting to build several hydroelectric projects that could severely affect Lake Baikal.<sup>120</sup> The largest of these hydroelectric projects threatening Baikal was the Shuren Hydroelectric Plant on the Selenga River and another hydroelectric project on one of the Selenga’s tributaries.<sup>121</sup> These hydroelectric projects “could further reduce the water level of Baikal, which has already reached critically low levels in recent years” and would cause the water temperature to rise, threatening Lake Baikal’s endemic species.<sup>122</sup>

The Shuren project sparked outrage within Russia and caused the World Bank to freeze its funding process.<sup>123</sup> However, this is not a victory, as Mongolia has begun conducting evaluations on hydroelectric projects that could move forward.<sup>124</sup> Vladimir Putin’s expressed concerns resulted in Chinese financiers backing out of their deal to finance the Mongolian hydroelectric projects.<sup>125</sup> While Lake Baikal is currently safe from hydroelectric projects in Mongolia, the Selenga River’s pollution poses a problematic issue for the lake’s future.

### *iii. Other recent threats to Lake Baikal*

In an era where energy has become the key talking point in international affairs, Russia has expanded its presence. As the second-largest oil exporter globally, Russia is almost wholly

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<sup>119</sup> Robert Coalson and Yulia Starinova, *Friends Of Russia’s Lake Baikal Mark Small Victory Over Dam Project, Vow To Fight On*, RADIOFREEEUROPE RADIOLIBERTY (Oct. 19, 2017, 13:32 GMT), <https://www.rferl.org/a/russia-mongolia-baikal-dam-project-activists-environment-/28804304.html> [https://perma.cc/SD3N-HVAH].

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> *Id.*

<sup>125</sup> Kenneth Rapoza, *In Russia, The World’s Largest Lake Takes On The World Bank and Mongolian Power Build-Up*, FORBES (Apr. 7, 2017, 2:14 PM), <https://www.forbes.com/sites/kenrapoza/2017/04/07/in-russia-the-worlds-largest-lake-takes-on-the-world-bank-and-mongolian-power-build-up/#5bea9f194df5> [https://perma.cc/5SFN-SKNE].

dependent on the global oil and gas markets.<sup>126</sup> Russia's leverage in the global oil market has only increased due to Middle East instability, evident by the recent Iran-U.S. conflict.<sup>127</sup> In 2006, Russia attempted to bolster its role in the energy market by announcing plans to construct a pipeline exporting over a million oil barrels per day to Asia-Pacific markets.<sup>128</sup> The East Siberia-Pacific Ocean pipeline's original path was intended to pass within a half mile of Lake Baikal and sparked concerns among environmentalists of an oil spill damaging Lake Baikal.<sup>129</sup> The pipeline was ultimately built twenty-five miles to the north of Lake Baikal to avoid the potential risk.<sup>130</sup> However, Lake Baikal faces a similar threat to the East Siberia-Pacific Ocean Pipeline construction as Russia continues to expand its position in the global energy market in 2020.<sup>131</sup>

The growing nuclear energy industry is another threat to Lake Baikal. In January 2006, the Russian Federation adopted an initiative to set up a system of international nuclear fuel cycle centers.<sup>132</sup> In May 2007, the Russian Federation and Kazakhstan established the International Uranium Enrichment Centre (IUEC) in Angarsk, a city located in the Irkutsk Oblast less than sixty-two miles from Baikal's shore.<sup>133</sup>

The IUEC is the first proposed nuclear fuel supply assurance in the global nuclear industry.<sup>134</sup> The goals of the IUEC are to promote the use of nuclear energy and reduce the

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<sup>126</sup> Alican Tekingunduz, *How oil prices impact Russia's economy*, TRT WORLD (Nov. 29, 2018), <https://www.trtworld.com/europe/how-oil-prices-impact-russia-s-economy-22067> [<https://perma.cc/3SL8-JVBP>].

<sup>127</sup> See Anna Mikulska, *How Russian Oil Has The Most To Gain From Iran-U.S. Crisis*, FORBES (Jan. 8, 2020, 3:13 PM), <https://www.forbes.com/sites/thebakersinstitute/2020/01/08/how-russian-oil-has-the-most-to-gain-from-iran-us-crisis/#728d3018b9bd> [<https://perma.cc/9VKS-YHZC>].

<sup>128</sup> Nick Paton Walsh, *Putin diverts new oil pipeline from Lake Baikal after protests*, THE GUARDIAN (Apr. 26, 2006, 7:12 PM), <https://www.theguardian.com/world/2006/apr/27/russia.oil> [<https://perma.cc/E9YT-RK6B>].

<sup>129</sup> *Id.*

<sup>130</sup> *Id.*

<sup>131</sup> *Id.*

<sup>132</sup> *International Uranium Enrichment Centre*, INTERNATIONAL ATOMIC ENERGY AGENCY, <https://www.iaea.org/topics/international-uranium-enrichment-centre> [<https://perma.cc/X9EC-R5P5>] (last viewed Nov. 8, 2020).

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

risk of nuclear proliferation.<sup>135</sup> While the goals of the IUEC are beneficial to the globe and Russia's goal to become a key member of the energy community, the project poses a continuing threat to Lake Baikal.<sup>136</sup> "After the uranium is enriched [at the IUEC], only ten percent of the radioactive material would be returned to customers abroad, leaving 90 percent in the Lake Baikal region for storage."<sup>137</sup> This project leaves radioactive waste for processing, long term storage, and burial in the Lake Baikal region.<sup>138</sup> The leftover waste poses a risk to both human health and to Lake Baikal itself.<sup>139</sup>

Lake Baikal continues to face risks as Russia asserts itself as a global power. The Russian Federation's stance on nuclear energy and China have created new modern-day threats making it hard to see how Lake Baikal can be protected. The internal pollution problems and climate change only amplify these outside factors.

## II. THE LAWS PROTECTING LAKE BAIKAL

While it may seem Russia is not concerned with environmental protection in general, and of Lake Baikal specifically, a glance at the environmental legislative history of the Russian Empire, the Soviet Union, and the modern Russian Federation reveal how the country has long considered the environment when making policies and legislation. This is not to say Russia has adequate environmental protections. Further legislation is needed to help protect Lake Baikal. Section A will briefly examine the Russian Federation's legal system and the institutional framework of environmental regulation and enforcement of those regulations. Section B will then investigate the specific laws and regulations regarding Lake Baikal.

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<sup>135</sup> Sergey Ruchkin, *International Uranium Enrichment Centre (IUEC) in Angarsk (Russia) and the International Assurances of Supply*, at 1 (Apr. 17, 2007), [http://www.pircenter.org/kosdata/page\\_doc/p1323\\_2.pdf](http://www.pircenter.org/kosdata/page_doc/p1323_2.pdf) [<https://perma.cc/2GBN-V8M6>].

<sup>136</sup> *See id.*

<sup>137</sup> Veronique Mistiaen, *Saving the Sacred Sea*, NEW INTERNATIONALIST (May 2, 2008), <https://newint.org/columns/currents/2008/05/01/environment/> [<https://perma.cc/UCQ9-YU3L>].

<sup>138</sup> *Id.*

<sup>139</sup> *Id.*



A. *Russian Federation's Environmental Institutional Framework*

The Russian Federation aims to manage its natural resources and prevent environmental quality degradation while maintaining a balance between economic interests and environmental interests.<sup>140</sup> As the Soviet Union collapsed during the latter part of the 1990s, the regulations and environmental institutions expanded and were largely guided by the international community's environmental agenda.<sup>141</sup> During this time period, non-governmental organizations ("NGOs") were encouraged to have a role in environmental planning.<sup>142</sup> However, this did not last long as the Russian Federation became an established system.<sup>143</sup> In the early 2000s, Russia's need for economic stability "totally eclipsed environmental goals" and the government's agenda often ignored NGOs.<sup>144</sup>

Since Russia transitioned from the Soviet system to its current federal semi-presidential republic, the institutional framework regarding environmental regulation has been subject to numerous and contradictory changes and restructuring.<sup>145</sup> The government's legislative branch has been the most stable law-making segment in the Federal system.<sup>146</sup> However, the executive branch has undergone significant reorganizations since 1999, making it difficult to determine the agencies responsible for environmental regulation.<sup>147</sup>

In 2000, the most significant reorganization of the executive branch took place and delegated many of the powers related to environmental management to the oblast governments "without strengthening the federal-level capacity to coordinate environmental policy development and to ensure effective regulation."<sup>148</sup> This reorganization of the executive branch led to

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<sup>140</sup> *Environmental Policy and Regulation in Russia*, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, at 7 (2006), <https://www.oecd.org/env/outreach/38118149.pdf> [<https://perma.cc/5BBV-9NRC>].

<sup>141</sup> *Id.*

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> *Id.*

<sup>145</sup> *Id.* at 10.

<sup>146</sup> *Environmental Policy and Regulation in Russia*, *supra* note 140.

<sup>147</sup> *See id.*

<sup>148</sup> *Id.* at 11.

decreased inspection and enforcement of environmental regulations and further ambiguity regarding the institution responsible.<sup>149</sup> In 2004, the new administrative reform clarified the goals of each of the three types of executive bodies.<sup>150</sup> These three executive bodies are the Federal Ministry, the Federal Services, and the Federal Agency.<sup>151</sup>

The Federal Ministry, which is the policy-making body, is responsible for “conduct[ing] the problem analysis, develop[ing] and evaluat[ing] of policies in their domains, as well as draft[ing] new legislation...coordinat[ing] and monitor[ing] the activities of federal services and agencies within their jurisdiction.”<sup>152</sup> The Federal Services’ powers include “permitting, inspection and administrative enforcement functions.”<sup>153</sup> Federal Agencies “provide public services and manage state proper [and] maintain various type of registers.”<sup>154</sup>

Today, the *Minpriody* (Ministry of Natural Resources and Environment) is responsible for drafting and instituting policies and regulations regarding Lake Baikal and other natural resources.<sup>155</sup> The enforcement of the federal laws and regulations, however, is left to the regional executive agencies.<sup>156</sup>

### *B. Legislation Regarding Lake Baikal*

The legislative protection of Lake Baikal originated during the period of the Soviet regime.<sup>157</sup> In May 1960, a law went into effect with the goal of preserving Lake Baikal by addressing the difficulties created by the Baikalsk Pulp and Paper Mill.<sup>158</sup> The law also called for an enlargement of a national preserve around the shores and timber bans to protect Baikal from erosion.<sup>159</sup> However, the law was not enforced by government officials as it

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<sup>149</sup> *Id.*

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> *Environmental Policy and Regulation in Russia*, *supra* note 140.

<sup>153</sup> *Id.*

<sup>154</sup> *Id.* at 11.

<sup>155</sup> *Id.*

<sup>156</sup> *Id.* at 10.

<sup>157</sup> Goodman, *supra* note 1, at 189.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.* at 190.

clashed with the interests of the Soviet's political and economic agenda.<sup>160</sup>

Public outcry led to a new law regulating Lake Baikal's use in February 1969 with provisions establishing a water conservation zone where timber could not be cut and strict regulations for constructing new factories.<sup>161</sup> Further legislation was issued in September of 1971 that "implicitly acknowledge[d] that conditions [were] in a deplorable state and that the previous two laws were largely ignored or at best, had little impact."<sup>162</sup>

In December 1996, the UNESCO World Heritage Committee recognized Lake Baikal as a World Heritage site.<sup>163</sup> This gave the Russian Federation a legal, economic, and moral responsibility to preserve Lake Baikal's value.<sup>164</sup> Thus, in 1999, the Russian Federation adopted the first federal law aimed at protecting Lake Baikal titled "Concerning the Protection of Lake Baikal."<sup>165</sup> Today, Lake Baikal is the only natural feature in the Russian Federation with specific legislation for protection.<sup>166</sup>

The law determines the legal basis of Lake Baikal's protection by defining the boundaries of three territories of Lake Baikal.<sup>167</sup> The Central Ecological Zone comprises Lake Baikal and its islands and includes the lake's water protection zone and other protected areas.<sup>168</sup> The second zone, The Buffer Ecological Zone, consists of the territory beyond the Central Ecological Zone containing the catchment area of Lake Baikal within the Russian

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<sup>160</sup> *Id.*

<sup>161</sup> *Id.* at 205–206.

<sup>162</sup> Goodman, *supra* note 1, at 208 (The new law addressed sewage treatment plants. It also addressed timber cutting and shipping procedures and outlined steps that must be taken to ensure the high quality of the water is maintained and procedures for compliance with the law).

<sup>163</sup> Igor Bychkov et al., Water Protection Zoning as an Instrument of Preservation for Lake Baikal, 10(10) *Water* 1474, <https://www.mdpi.com/2073-4441/10/10/1474/htm> [<https://perma.cc/6GVR-ZKWS>] (last viewed Nov. 9, 2020).

<sup>164</sup> *Id.*

<sup>165</sup> Federal'nyi Zakon RF ob Ohrane Oзера Baikal [Federal Law of the Russian Federation on Concerning the Protection of Lake Baikal], SOBRANIE ZAKONODATEL'STVA ROSSIYSKOI FEDERATSII [SZ RF] [RUSSIAN FEDERATION COLLECTION OF LEGISLATION] 1999, No. 94, Item 3.

<sup>166</sup> Fred Weir, *At Asia's heart, Lake Baikal stirs Russians to protect nature*, THE CHRISTIAN SCIENCE MONITOR (Aug. 31, 2018), <https://www.csmonitor.com/World/Europe/2018/0831/At-Asia-s-heart-Lake-Baikal-stirs-Russians-to-protect-nature> [<https://perma.cc/J997-A4W6>].

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

Federation's border.<sup>169</sup> The third zone, The Ecological Zone of Atmospheric Influence, extends 200m outwards to the west of the lake and includes industrial objects negatively impacting the unique ecological ecosystem of Baikal.<sup>170</sup> The water protection zone located in the Central Ecological Zone of Baikal is perhaps the most significant piece of legislation as it protects against pollution and provides for the preservation of the area's natural resources, flora, and fauna.<sup>171</sup> The boundaries of the Central Ecological Zone were adopted in 2006, and the boundaries of the Lake Baikal protection zone were set in 2015.<sup>172</sup>

While official legal protection has been in place since 1999, it has been ineffective in stopping the threat to Lake Baikal. Vladimir Putin mentioned Lake Baikal twice in his May Presidential decrees outlining his plans for economic and social change during his next presidential term.<sup>173</sup> However, in the last year the *Minprirody* has proposed legislation that would allow more dangerous substances to be dumped into Lake Baikal.<sup>174</sup> Steps must be taken immediately to strengthen the existing legislation to preserve the "Pearl of Siberia."

### III. SOLVING THE THREAT TO LAKE BAIKAL: SUGGESTIONS TO SAVE THE PEARL OF SIBERIA

Lake Baikal is protected by a variety of Federal laws and regulations. The recent trend in moving away from protecting Lake Baikal in sacrifice of the Russian Federation's goal to become even more of a dominant political force in the world threatens the longevity of Lake Baikal's survival. This section explores potential, practical solutions to help protect Lake Baikal from current threats and likely threats potentially emerging in

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<sup>169</sup> *Id.*

<sup>170</sup> *Id.*

<sup>171</sup> Vodnyi Kodeks Rossiiskoi Federatsii [Water Code of the Russian Federation], SOBRANIE ZAKONODATEL'STVA ROSSIISKOI FEDERATSII [SZ RF] [RUSSIAN FEDERATION COLLECTION OF LEGISLATION] 2006, No. 74-FZ.

<sup>172</sup> Bychkov, *supra* note 163.

<sup>173</sup> Fred Weir, *At Asia's heart, Lake Baikal stirs Russians to protect nature*, THE CHRISTIAN SCIENCE MONITOR (Aug. 31, 2018), <https://www.csmonitor.com/World/Europe/2018/0831/At-Asia-s-heart-Lake-Baikal-stirs-Russians-to-protect-nature> [https://perma.cc/5CRA-LWU2].

<sup>174</sup> Yulia Starinova & Farangis Najbullah, *Lake Baikal Faces New Crisis As Russia Lowers Eco-Standards*, RADIO FREE EUROPE/RADIO LIBERTY (Mar. 27, 2019), <https://www.rferl.org/a/lake-baikal-environmental-crisis-russia-lowers-eco-standards/29845099.html> [https://perma.cc/P693-B2H3].

the future. Section A will examine proposed changes to the current set of laws protecting Lake Baikal. Section B explores how Russia can utilize international agreements to minimize the threat to Lake Baikal coming from outside influences such as a renewed treaty between Mongolia and the Russian Federation.

### A. *Proposed Legislative Changes to Protect Baikal*

Lake Baikal is the only natural feature with specific legislation protecting its environmental quality.<sup>175</sup> However, the law “Concerning the Protection of Lake Baikal” is constantly facing proposed new amendments under the Russian Federation’s current government.<sup>176</sup> The current condition of Lake Baikal is not unknown to the Russian government.<sup>177</sup> President Vladimir Putin, known for being an outdoorsman, went fishing on Lake Baikal in 2017 and “complained that ‘significant areas around Baikal have suffered extremely high pollution.’”<sup>178</sup> This led Putin to call for officials to pay attention to the lake and prevent further damage, declaring Lake Baikal’s preservation is “undoubtedly a government priority.”<sup>179</sup>

Putin claims environmental issues are his passion,<sup>180</sup> yet under his government the laws protecting Lake Baikal are weakening. In March 2019, the *Minpriody* published draft amendments to part of the legislation protecting Lake Baikal.<sup>181</sup> Under current legislation, there are strict requirements on the quality of water discharged into the lake for wastewater-treatment plants.<sup>182</sup> The *Minpriody*’s proposal would vastly increase the permissible amounts of toxic materials allowed to be

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<sup>175</sup> Weir, *supra* note 173.

<sup>176</sup> Federal’nyi Zakon RF ob Ochrane Oзера Baikal [Federal Law of the Russian Federation on Concerning the Protection of Lake Baikal], SOBRANIE ZAKONODATEL’STVA ROSSIJSKOI FEDERATSII [SZ RF] [Russian Federation Collection of Legislation] 1999, No. 94, Item 3.

<sup>177</sup> Agence France-Presse and Charlotte Krol, *Vladimir Putin goes fishing and warns of high pollution levels in Russia’s Lake Baikal*, THE TELEGRAPH (Aug. 5, 2017, 12:06 AM), <https://www.telegraph.co.uk/news/2017/08/04/vladimir-putin-goes-fishing-warns-high-pollution-levels-russias/> [<https://perma.cc/YGK7-J8PB>].

<sup>178</sup> *Id.*

<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

<sup>181</sup> Starinova, *supra* note 174.

<sup>182</sup> *Id.*

dumped into Baikal.<sup>183</sup> “For example, the maximum allowable amounts of nitrates and anionic synthetic surfactants increase 14 and 10 times, respectively. The upper limit of oil products in wastewater dumped into the lake increases 1.8 times.”<sup>184</sup>

So why are the protections being weakened? The simple answer is greed. The *Minprirody* chose to potentially lower the environmental standards instead of requiring the wastewater treatment plants to implement new purification technologies.<sup>185</sup> The Russian Federation is faced with a crucial decision—do they protect Lake Baikal at the expense of economic expansion? It seems the government has decided environmental protection is not as important as the growth of the Russian Federation into an economic power.

Aleksei Yablokov, president of the Center for Russian Environmental Policy, stated the “ideology in Russia is that environmental protection is only for rich countries, and that when Russia is rich, it will be time to solve environmental problems.”<sup>186</sup> Nevertheless, the Russian Federation’s economy is the 11th largest economy in the world and 6th in the world for gross domestic product based on purchasing-power-parity.<sup>187</sup> It is time for the Russian Federation to act to save the “Sacred Sea.”

The biggest issue is how to save the sea. The Russian Federation already has legislative framework in place to protect Lake Baikal. This legislation should not be weakened under current proposals but should be strengthened. In 2018, UNESCO’s World Heritage Committee addressed the state of conversation submitted by the Russian Federation regarding Lake Baikal and adopted the decision 42 COM 7B.76.<sup>188</sup> In their decision, the World Heritage Committee urged the Russian Federation to stop “introducing further changes of the limits on

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<sup>183</sup> *Id.*

<sup>184</sup> *Id.*

<sup>185</sup> *Balancing act in Lake Baikal*, CONTROL RISKS (June 18, 2019), <https://www.controlrisks.com/our-thinking/insights/balancing-act-in-lake-baikal> [<https://perma.cc/X8C2-ANSM>].

<sup>186</sup> F. Joseph Dresen, *Economic Growth and Environmental Security in Russia*, WILSON CENTER (July 7, 2011), <https://www.wilsoncenter.org/publication/economic-growth-and-environmental-security-russia> [<https://perma.cc/7GFQ-YSVA>].

<sup>187</sup> Caleb Silver, *The Top 20 Economies in the World*, INVESTOPEDIA (Nov. 19, 2019), <https://www.investopedia.com/insights/worlds-top-economies/> [<https://perma.cc/JHQ6-TZEX>].

<sup>188</sup> UNESCO Dec. 42 COM 7B.76 WHC/18/42.COM/7B 42d Sess. 24 (July 4, 2018).

fluctuation” of minimum and maximum water levels of Lake Baikal.<sup>189</sup> The Russian Federation could easily investigate the impacts on the existing water use and management regulations before changing the law. The guidelines need to be stabilized before further amendments are passed.

Another concern of the World Heritage Committee is the significant increase in the algal blooms and decrease in fish stock. The World Heritage Committee requested the Russian Federation “develop a property-wide ecological monitoring system in order to identify the scale and causes of such changes and the responses required to preserve the ecological integrity of the property.”<sup>190</sup> The Russian Federation indicated in its state party report “there is no need to introduce any additional restrictions on the regime of levels close to those observed under natural conditions.”<sup>191</sup> However, the claim by the Russian Federation that additional restrictions are not needed are unfounded.

Oleg Timoshkin, a biologist at the Russian Academy of Sciences’ Limnological Institute in Irkutsk, stated the increase in algal blooms and the decreased fish population can be attributed to wastewater runoff from sewage treatment plants not properly equipped.<sup>192</sup> The Russian Federation needs to increase the requirements on wastewater plants and provide additional funding for proper treatment facilities. This is the opposite of the *Minprirody’s* new draft amendments.<sup>193</sup> The Russian government began funding the cleanup project of Lake Baikal in 2012 with \$452 million and intentions of funding treatment facilities.<sup>194</sup> However, local officials say this money is being wasted and ineffectively used to build failing plants.<sup>195</sup>

Increased government funding is drastically needed to save Baikal. It is not the time for the Russian Federation to weaken the laws or waste allocated money in order to give the façade that it is addressing the crisis. The Russian Federation

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<sup>189</sup> *Id.*

<sup>190</sup> *Id.*

<sup>191</sup> Report on the state of conservation at the UNESCO World Heritage Site at Lake Baikal (Russian Federation, No. 754) in the year 2017. <https://whc.unesco.org/en/soc/3756/> (link to report found at the bottom of the website under SOC Report by the State Party).

<sup>192</sup> France-Presse, *supra* note 76.

<sup>193</sup> *Id.*

<sup>194</sup> *Id.*

<sup>195</sup> *Id.*

has the legislative framework in place, but the regulations need to be amplified to address the seriousness of the environmental issues facing Baikal.

*B. Working with Mongolia: A Treaty to Reduce the Risk to Baikal*

Mongolia and Russia have a long history of friendly relations, dating back to 1921 when the Soviet Union helped secure Mongolian independence from China.<sup>196</sup> The two countries have renewed their financial ties in the recent years to counter China's growing influence over Mongolia and resist the United States' influence in the Eastern sphere.<sup>197</sup> Russia has even established a \$1.5 billion fund to finance projects in Mongolia.<sup>198</sup> Lake Baikal may rest solely within the Russian Federation, but just beyond the border lies Mongolia.<sup>199</sup> Mongolia is a key to reducing the risk to Baikal.

The environmental future of Baikal cannot be ensured exclusively within the framework of the Russian Federation's national legislation. The Russian law "Concerning the Protection of Lake Baikal" in Article 1, section 2 is consistent with international policy, providing if Russian Federal laws and regulations conflict with international treaties of the Russian Federation, then the rules of the treaty prevail.<sup>200</sup> As discussed above, Mongolia's Selenga River is Lake Baikal's most important tributary and a major source of pollution for the lake.<sup>201</sup> Effective preservation of Lake Baikal is impossible without Russian-Mongolian cooperation regarding the field of protection and the utilization of cross-border waterways. Increasing the effectiveness of legal interaction between Russia and Mongolia

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<sup>196</sup> Dimitri Simes, *Russia renews interest in Mongolia to counter Chinese influence*, NIKKEI ASIAN REVIEW (Oct. 3, 2019), <https://asia.nikkei.com/Politics/International-relations/Russia-renews-interest-in-Mongolia-to-counter-Chinese-influence> [https://perma.cc/68VF-G6FM].

<sup>197</sup> *Id.*

<sup>198</sup> *Id.*

<sup>199</sup> Jessie Szalay, *Lake Baikal: World's Largest, Deepest Lake*, LIVESCIENCE (Jan. 27, 2017), <https://www.livescience.com/57653-lake-baikal-facts.html> [https://perma.cc/5K9Q-4XZT].

<sup>200</sup> Federal'nyi Zakon RF ob Ohrane Oзера Baikal [Federal Law of the Russian Federation on Concerning the Protection of Lake Baikal], SOBRANIE ZAKONODATEL'STVA ROSSIISKOI FEDERATSII [SZ RF] [Russian Federation Collection of Legislation] 1999, No. 94, Item 3.

<sup>201</sup> *See* Kasimov, *supra* note 102.



presents an increasing importance of ensuring the safety of Lake Baikal as a UNESCO World Heritage Site.

The first treaty of transboundary water resources between Mongolia and the Soviet Union was adopted on July 3, 1974 regarding the rational utilization and protection of the basin of the Selenga River.<sup>202</sup> This treaty laid the framework for the strategic partnership between Mongolia and Russia's cooperation in transboundary water resources by creating joint efforts to protect cross-border water conservation, biodiversity conservation, early warning and information exchange during the occurrence of transboundary natural and man-made emergencies.<sup>203</sup>

Upon the collapse of the Soviet Union, the Russian Federation signed a treaty on February 11, 1995 with Mongolia regarding the protection and management of transboundary waters.<sup>204</sup> The treaty states:

The Parties have agreed to cooperate in the following fields: (a) rational management and protection of transboundary water resources against exhaustion and pollution; (b) study of hydrochemical, hydrobiological and channel operation of waterbodies, water resources and quality thereof; (c) exchange of hydrological information and forecasting with a view of prevention of floods and negative consequences thereof; and (d) ensuring natural migration of fishes and other aquatic animals in transboundary water. Cooperation shall be carried out in the following forms: (a) joint water monitoring programmes; (b) distribution of water resources between the Parties; (c) exchange of information; (d) research; (e) exchange of experts; and (f)

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<sup>202</sup> GEORGE GINSBURGS, CALENDAR OF SOVIET TREATIES (LAW IN EASTERN EUROPE) 474 (1987).

<sup>203</sup> Oleg V. Khyshiktuev and Elizaveta L. Badmatsyrenova, *Problemy zashchity ozera Baikal: mezhdunarodno-pravovye i natsional'no-pravovye aspekty* [Problems of the protection of Lake Baikal: international and national legal aspects], 7 (2A) VOPROSY ROSSIISKOGO I MEZHDUNARODNOGOPRAVA [Matters of Russian and International Law] 139, 144 (2017) [hereinafter Khyshiktuev].

<sup>204</sup> Agreement between the Government of the Russian Federation and the Government of Mongolia on protection and management of transboundary water, Mong.-Russ., Feb. 11, 1995, LEX-FAOC081870.

compliance of water quality indices with international standards.<sup>205</sup>

However, the treaty does not provide for the legal framework for ensuring the goals of the agreement are carried out.<sup>206</sup> Neither does the Russian law “Concerning the Protection of Lake Baikal” provide a way for the international treaty to be enforced.<sup>207</sup>

The Russian Federation needs to implement a new treaty specifying the policy and regulatory framework in Russia and Mongolia. There is a need to address Mongolia’s growing urbanization and the mining and agricultural industries actively polluting Lake Baikal. The new treaty between Russia and Mongolia should address stricter environmental monitoring, controlling and licensing of mining and processing of minerals, and a waste management agreement in areas near the Selenga River. In an age of renewed commitment to Mongolia, the Russian Federation should provide funding to help Mongolia implement effective treatment and mining facilities to save Lake Baikal.

#### CONCLUSION

It is possible for the Russian Federation to preserve the world’s oldest, deepest lake despite the threats coming from inside and outside the country. Lake Baikal is not just one of Russia’s greatest treasures, but with its unique species and breathtaking blue waters, it is one of the true wonders of the world. Russia can advance its economy and preserve the lake simultaneously. They are not exclusive.

Lake Baikal is more than a beautiful lake. It could also add potential economic value to the Russian Federation should its quality remain pristine. Baikal contains one-fifth of the earth’s unfrozen freshwater reserves.<sup>208</sup> Should the world face a global water crisis in the future, Lake Baikal could be crucial to supplementing the world’s water supply. The Russian Federation should capitalize potential monetary gain by saving the “Pearl of

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<sup>205</sup> Agreement on Rational Management and Conservation of River Selenga, Russ.-Mong., Feb. 11, 1995, TRE-151017.

<sup>206</sup> *Id.*

<sup>207</sup> Russian Federal Collection of Legislation, *supra* note 207.

<sup>208</sup> Galazy, *supra* note 2.

Siberia” today by strengthening the legal protections around the Lake.