



44th Annual Essay Contest Winning Essay – FIRST PLACE

The Want for Water

My old earth science teacher hated Blue Diamond almonds. Not because he didn't care for the taste, or because he's allergic to them, but because it takes about one gallon of water to grow a single almond. In a drought-stricken area like California, where Blue Diamond almonds are grown, that's a heavy price to pay. To this day I can still hear him complaining about the idiocy of growing a water-exhausting crop in the middle of a desert. I thought it was funny then—the passion that one person could express over a nut—but the more I learn more about water scarcity, the more the viewpoint doesn't seem all that ridiculous anymore.

Water scarcity has been an issue on the news for many years. From the Flint water crisis in 2014, where drinking water was contaminated with dangerous levels of lead, to the even more recent issue in Ukraine, whose water infrastructure has been damaged from war, the signs of water stress are all around the globe (“Water”). In the West, drought has been a prevailing issue for years. Just this past year, California had its driest January, February, and March months since one hundred years ago (California). How do these drier states relieve the immense amounts of water stress that they are experiencing? Some experts might have a solution, but it won't be one we'll all like. They've set their sights on the east; on the water cache that accounts for 20% of the earth's surface freshwater—the Great Lakes (Service).

Jay Famiglietti, the chief water scientist at NASA's Jet Propulsion Plant in California, considers the possibility of a pipeline that would span across the country, pumping water from the Great Lakes into the West, saying the water crisis is an "unsolvable problem" (Matheny). Is this the inevitable fate of the glorious Great Lakes, being drained and shipping off to other areas? This very dispute has been at the forefront of the water scarcity debate in the United States for years. Is it fair for us to "hoard" our water when drought is such a prevalent issue in other parts of our country? Do we not have a responsibility to our fellow citizens to help them in their time of crisis? We are no less guilty than those living in western states of over-consuming our water. Families in Michigan are just as guilty of taking long showers, watering their lawns, and running small loads of laundry as those drought-stricken families in Arizona. The difference is we live in a water-wealthy state, where we don't have to put restrictions on these actions because a drought occurs.

If a giant pipeline project were to help out thousands in the West, does our moral obligations to those in need force us to share our water? Experts in the Great Lakes states would have to disagree. In the past forty years, three diversions have been denied, a permit for the exportation of water has been revoked, and legislation has been passed, all to protect and keep the water residing in the Great Lakes ("Great"). For example, the Great Lakes Compact was signed into law by George W. Bush in 2008, which bans large-scale diversions and withdrawals from the Great Lakes that would harm the ecosystem ("Great"). All of this fight against a so-called solution for the West seems to point to the conclusion that the vast majority of the Midwest is unwilling to consider this option. But why? Because once this water is diverted outside of the Great Lakes Basin, it's never coming back.

Watersheds are areas of land that share the same ending point for all of their water. For example, all of the water that falls onto land in the Great Lakes watershed will eventually drain into the Great Lakes. Removing the Great Lakes' water from this watershed and transporting it to the West, across the continental divide (that separates the land where water drains into either the Pacific or Atlantic Ocean), will ensure that the water enters a different watershed, one that will never make it back into the Great Lakes, effectively draining the Great Lakes.

In addition, the energy and money needed to create this draining system would be enormous. To create a pipeline from the Great Lakes to areas in the West, over the continental divide, would cost tens of billions of dollars (Matheny). At this huge cost, is it really the most efficient solution to this ongoing problem? At that rate, it might be more valuable to put that money into other conservation practices; even large-scale desalination of the Pacific Ocean, a much closer water source, might be more affordable and feasible than the pipeline (Matheny).

So, does this simply boil down to an “us against them” situation? We're refusing a possible solution because the costs are too high for us and we have to put ourselves first. Not necessarily. Even if we were to divert water to the West, ignoring all of the issues already mentioned, it still would not solve the problem. Erica Gies, the author of the book *Water Always Wins*, explains that long-distance water transfers would “impart a false sense of water abundance, leading to burgeoning populations and new uses that suck up all the new water and restart the cycle of scarcity” (Wilson). Essentially, the water diverted would simply give the West a new source to exploit. If the water sources out there are already being depleted, how will giving them more water fix their over-consumption? It won't, not long term, and we will only end up prolonging the real issue—the misuse of our water. The answer is not siphoning more and more water to the West until our sources in the East are drained too. We must learn how to

implement conservation practices in drier areas, so all regions can live within their water means (Wilson).

For example: in Rwanda, they have created a way to get more drinking water from their existing resources, with a little help from people in our own community back in West Michigan. 20 liters is an organization in Grand Rapids that builds water filters to send to Rwanda, so villages there can filter their river water to use for drinking and cooking, effectively tapping into a resource they couldn't use previously—much like the proposal of desalination mentioned earlier. To add to the benefits further, the filters are not hard or expensive to make. I've volunteered there myself, and building the filter parts is easy and not time or effort-consuming. This practice helps them access their own resources, instead of having to rely on other sources; they are finding ways to live within their water means.

The fact is that in the United States, we are not used to having to find these creative solutions. We are so used to just consuming as much as we need because we are under the impression that we have enough resources to do so. If everyone on the earth lived the way we did, the earth would be long depleted and destroyed. The only reason it isn't is because there are people like those living in Rwanda, who do not have a large ecological footprint on this earth and live far more sustainably than us. If we plan to live sustainably and give our future generations a healthy earth that they can thrive on, then we must be prepared to either find a creative solution to our problems or heavily cut down on our water privileges.

The United States has a lot of affluence, which is what allows us to consume such a large volume of resources. Instead of using this affluence to overconsume, we should be using it to find more sustainable solutions to our ecological issues. Imagine if we used our wealth to

establish clean energy programs instead of using it to extract more oil. We are more capable of making this a reality than many other poorer countries because of our circumstances.

In a similar way, Michigan is a water-wealthy state. We are privileged to have access to large amounts of fresh water—a luxury many states out west do not have. It may not be our responsibility to divert our water resources to provide them with that luxury, but that does not mean we have no responsibilities when it comes to water conservation. It is Michigan's responsibility to carve the path to sustainability and lead the rest of the nation into a greener future. We need to be leaders in education over these issues for people in and out of our state. We need to design group studies to monitor water pollution and improve our practices, and create partnerships with the West for innovation, because we are in a position of great affluence when it comes to water.

As the West dries up, and people face more droughts and restrictions against their water use, what are they going to do? Most will likely grow tired of the constant battle for water and move somewhere where they won't have to worry about droughts. Where will that bring them? Straight to the water wealthy states—straight to Michigan. When these people arrive, will we be able to support the growing populations with our freshwater? We need to be prepared for this migration and implement policies that ensure we can conserve and recycle our water to support a larger population.

So what can we do in our areas? Hearing about these issues may motivate people to cut down on their own water supply, perhaps by taking shorter showers, or watering their lawns less, but are those actions enough to stop the over-use of our precious freshwater sources?

Only 11 percent of the world's freshwater is used for domestic purposes, with 19 percent used for industrial purposes, and a whopping 70 percent used for agriculture ("Water"). Even if we cut down our personal water consumption, which is still a valuable solution to put effort into, the problem is not entirely solved. In order to save our water we must address our agricultural practices that use up the bulk of our water, and see how we can make those practices more sustainable. For example, farmers that use gravity sprinkler systems save way more water than farmers who flood irrigate crops, as it changes their water usage from 2400 to 3000 acre-feet of water to 1200 acre-feet of water (Cross). Similar changes to save water through irrigation can be made by reducing the evaporation of water while growing crops. Using drip irrigation systems, where crops are watered directly at the roots through pipes, is a great way to achieve this as the water used isn't even exposed to the sun. Even watering earlier in the morning can prevent copious amounts of water loss through evaporation, and even solve other agricultural issues like salinization.

These present solutions will be the seed for future technologies and innovations. We have caused too much damage to our freshwater systems, and we must be the ones to pay the price to fix it. However, diverting and damaging the largest freshwater source the United States has is not the answer. When we are focused on conserving the water we already have available to us, along with supporting the larger migrating population we create the ideal win-win solution. But no matter what path we decide to take, something needs to be done about our freshwater. We cannot sit idly by and hope that nature will fix itself; we can still find other sustainable solutions to solve our issues. After all, scarcity coupled with creativity leads to innovation. Maybe this way we can have our almonds and eat them too.

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44th Annual Essay Contest Winning Essay – SECOND PLACE

Great Dilemmas for the Great Lakes

The Great Lakes are home to 3,500 species of plants and animals and supply water to more than 30 million people, which is 30% of the United States (US) population and 10% of the Canadian population (NOAA Great Lakes). These places' economies benefit greatly from the resources the lakes provide. With water scarcity being a continually increasing problem all over the US, (especially on the Western coast), Michigan and the other Great Lakes basin states could help slow or solve the water scarcity problem. However, there are costs and benefits to sharing the Great Lakes resources. The costs outweigh the benefits. Michigan and other Great Lakes states and provinces do not have the responsibility to share the water resources with the rest of the country in large quantities.

Water is becoming more and more scarce in the US; millions are already facing repercussions from daily unmet water demands. Water scarcity affects everyone around the world, not just third-world countries. The US is already facing fresh water scarcity, especially in the Southwest. As recently as 2019, there was plentiful precipitation all across the US, but even since then, rainfall has been limited and water consumers' demands are too great for available resources (NCEI). Scarcity is unlimited want and need from limited resources. Water scarcity is a

very relevant topic to the people of the US. The bodies of water in the Southwest are going through drastic changes. For example, rivers, such as the Colorado River, are starting to run dry and lakes are drying up, as well. Lake Mead is a major reservoir on the “main stem of the Colorado River” and is a major water supplier to over 22 million people (National Park Service). Lake Mead currently is not an abundant source of water due to the Colorado River drought. As the population increases, the need and use for water increases too. Americans each use 80-100 gallons of water a day on average, and the average nationwide daily usage is 345 billion gallons. (Heggie). Around 165 million Americans depend on fresh groundwater and farmers rely on it for irrigation (Heggie). Other reserves of water in the US are being used up. We are already going into our reserves. “Aquifers, porous rocks and sediment that store vast volumes of water underground, are being drained” (Heggie). Water scarcity is an example of the future consequences count principle, because people are using more water than the amount that is sustainable for the future. It is important to consider the effects this could have for future generations. Water resources are being used faster than they can be replenished and water scarcity in the US is a bigger problem than expected.

The Great Lakes states and provinces’ economies benefit greatly from the lakes. Although the Great Lakes aren’t just Michigan’s, the state’s economy still has impactful benefits from the lakes. The Great Lakes are larger than you would think. The basin is a 295,200 square mile area (Clark). All the surface area that drains into the basin includes eight US states (Illinois, Indiana, Michigan, Ohio, Minnesota, New York, Pennsylvania and Wisconsin) and two Canadian provinces (Ontario and Quebec) (Great Lakes Fast Facts). The Great Lakes are a really significant source of freshwater for these places. In Michigan, 163 million tons of cargo are

transported more efficiently by lake vessels as compared to trucks, mining, and manufacturing vessels (Vaccaro, Read). The coasts also provide great places for power plants. Coal, natural gas and nuclear plants are often located there for the benefit of having the water close by for facility cool-downs (Vaccaro, Read). Another way the lakes and their beaches support Michigan's economy is by providing an attractive environment for tourism. Some activities include boating, fishing, camping, swimming and bird watching. The Michigan Sea Grant Study published in 2018, surveyed all the statistics of the employment sectors of the eight surrounding states. The study found that “the Great Lakes support more than 1.3 million jobs that generate \$82 billion in wages annually.” This study also gathered information about industry data. It stated that industries in these eight states rely on the lakes for water resources and fish for their economic gain. The Great Lakes are crucial natural resources that support the region’s economy.

The eight Great Lake states need to look for ways to conserve and replenish the lakes’ fresh water. Types of water sources differ: surface, ground, and recycled water. Ground and surface water is the main place where US tap water comes from (CDC). Examples of surface water are lakes, rivers or reservoirs. One ground water source is an aquifer. Recycled water is reused water. In the US, 148,000 public water systems provide water for 9/10 people. (CDC). Because the water in the US is becoming more and more scarce, states in a drought need to find a way to provide those resources. One way to get some increase in freshwater is to collect rainwater and/or recycle more waste water. A benefit of collecting rainwater is that it takes pressure off ground water and natural bodies of water to fully meet demand. A drawback of this is that not all the states who could use this idea have plentiful rainfall. California, currently in a drought, does not get as much rainfall as Michigan does. So, it would not be as beneficial to

them. Another solution to water scarcity is to sanitize, treat and reuse water. This is good because it can provide use for the used water and supplement fresh water's security and sustainability. A reason to not do this is because of the potential expensive cost it would be to provide a steady supply of clean, safe drinking water. Also, industries using recycled water would have to pay for that sanitized, filtered water. Therefore, there could be many solutions to water scarcity, but they each have their pros and cons. Michigan and other Great Lake states have access to fresh water in the Great Lakes. These states could share with other places struggling with droughts or water scarcity, but that may not be the best solution.

Sharing Great Lakes water resources in large quantities with the droughted nation is not sustainable enough for eight states and two provinces' own economies and environments. The Great Lakes are highly beneficial and important to the surrounding eight states and two provinces, for reasons including: providing water, boosts to the economy, supporting tourism. If large quantities of water resources are shared, the water levels could potentially go down and this could complicate environmental sustainability. It would be unlikely for the water levels to drastically change unless large amounts of water are transported at a time or continuously. Additionally, shipping lots of water out would not completely damage or get rid of the lakes. There is a possibility of lowering the water levels and amount of water being evaporated and put back into the lakes. This would not be benefiting the Great Lakes economy as much as it would keeping the water in place. The reason why large quantities of water would be problematic is because of the amount of water it would take to lower an inch of the water levels. The Chicago River already takes in two billion gallons of water a day from the Great Lakes (Lowe, Ewing). This water flows into the Mississippi River and Gulf of Mexico. Consequently, massive amounts

of water are already leaving the lakes reduced, and supplying water to Western states would mean even more. To remove major amounts of fresh water from the Great Lakes would need resources, money and time that do not exist. The Great Lakes Compact passed in 2008 stops “new or increased diversions outside of the Great Lakes basin with limited exceptions” (Seely). Knowing this, future changes in water withdrawals will have to be approved by all the Great Lakes basin states and Canadian representatives. Gallons in the millions are already being taken out for Chicago (Torregrossa). This does not have much impact on the water levels now, but increasing the amount of water to billions of gallons for additional states, could change the lakes as they are known.

A major drawback to sharing a lot of Great Lakes water would be the cost involved in transportation of it. If pipelines were used to relocate the water, it would be very expensive. Large diameter pipeline costs around \$2 million dollars per mile for construction (Markowitz). Hypothetically, a pipeline made for fresh water transportation from Grand Haven, Michigan to Los Angeles, California would cost around \$4,340,600,000. Now, imagine the additional cost of pipelines for more cities and states currently going through droughts and water scarcity. The cost would add up fast. This is also not accounting for possible complications in the construction process, the pipelines breaking after construction or other maintenance costs. The pipeline idea would be quite expensive. The execution of it would also depend on the Nation’s and the basin states’ economies considering the financial readiness or possible budget for the project.

Another reason why Michigan and basin states should not share Great Lakes water in large quantities is because it cannot last forever, and thus, is not a permanent, sustainable solution. The Great Lakes are a nonrenewable resource. Water from the lakes can go away due to it being used in producing goods and services, draining elsewhere and water constantly being withdrawn faster than it can be replenished. The Great Lakes are great in size and great in importance. They are one fifth of the freshwater on Earth (NOAA). Once we start depleting those resources faster, it will no longer be proportionately evaporated, recycled and put back into the environment anymore. If the basin states do allocate a lot of water to the other states in need too fast, then the nation will have to resort to other water scarcity solutions which are very limited. It is not sustainable enough for the Great Lakes states to allot big quantities of water at once or continually. One alternative solution for US fresh water scarcity could be to install desalination plants in various states. This would cost less than cross-nation fresh water pipelines from the Great Lakes. One desalination plant would cost \$692,000,000 (The Cost of Desalination) compared to construction of just one pipeline across the nation, costing \$4,340,600,000. Water scarcity is a growing problem in the US and every possible solution will have its costs and benefits.

In conclusion, the Great Lakes basin states do not have responsibility to share the Great Lakes fresh water resources in substantial amounts at a time. This is as a result of the amount of resources that would need to be used, the effects it would have on the states' economies and environments, and problematic costly transportation. Our nation should invest in water recycling as a method of decreasing demand from fresh water sources. An alternative solution states in drought could use would be installing desalination plants, as there are more ocean water

resources than freshwater resources. There is no one perfect solution to water scarcity. Each possible approach to solving this problem has advantages and disadvantages. Unlimited sharing of fresh water from the Great Lakes is not a responsibly sound or sustainable answer. The Great Lakes are a nonrenewable resource and they need to be protected and made to last as long as possible.

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44th Annual Essay Contest Winning Essay – THIRD PLACE

Obligations of the Great Lakes Region: Understanding the Tensions and Complexities Behind Combating Water Scarcity

As the world's largest watershed, the Great Lakes-St. Lawrence River Basin serves as the primary water source for more than 40 million people (*Glscompactcouncil.org*). However, that number may soon increase as those outside the Great Lakes Region eye it as a potential solution to combat the rising water crisis. In the West, after straining the Colorado River and connecting reservoirs, states are struggling to compromise in mutually decreasing water extraction. Negotiations, as one former general manager of a water supplier punned, are “not going swimmingly” (Partlow). Similarly, farming practices are draining the Ogallala Aquifer in Great Plains states, prompting some to search for innovative methods to obtain more freshwater. Dave Dempsey, a Great Lakes policy expert, cautions that this situation may encourage Great Lakes water diversion to the Great Plains (*Great Lakes Now*).

Fears that Great Lakes water resources will be commodified or extracted outside of the watershed are not unwarranted. In the 1980s, a coal company advocated to pipe water to Wyoming (*Great Lakes Now*). A Canadian Company made steps to export Great Lakes water to Asia in 1998. Currently, bottled water plants, including the brand Ice Mountain, extract water from the Great Lakes.

However, accompanying questions about Great Lakes water as a disaster mitigating and economic resource are questions concerning surrounding states' obligations to the rest of the

United States. The legal and moral bindings placed on the region are complex, and they play a central factor in their ability to continue regulating Great Lakes water.

From a legal and political perspective, Michigan and Great Lakes Basin states have little to no obligation to distribute water. The basis for United States Great Lakes resource protection is the Public Trust Doctrine, which mandates that the Great Lakes are for the public's enjoyment and use. This inhibits privatization in and along the lake (*FLOW*). Additionally, several regional and international agreements generated this legal outcome.

Signed in 1972, The Great Lakes Water Quality Agreement (GLWQA) established a framework of binational priorities between Canada and the United States to conserve the Great Lakes water. Similarly, Michigan and the Great Lakes states formed the 1985 Great Lakes Charter with Canada's two Great Lakes Provinces (Ontario and Quebec) to manage the Basin's water supply (*US EPA*). This was later built upon by all signatories into the Great Lakes–Saint Lawrence River Basin Sustainable Water Resources Agreement, and as a subextension of the Resources Agreement, the eight Great Lakes states signed the legally binding St. Lawrence River Basin Water Resource Compact (Great Lakes Compact) to manage Great Lakes Basin water supply (*MSU.edu*).

Because the Agreement and Compact are signed into federal law, all states must adhere to its principles, including its ban on diverting Great Lakes water to areas outside of the basin, with a couple location exceptions due to county and city technicalities (*Alliance for the Great Lakes*). Within the basin, water diversions are regulated for public water supply use, and organizations seeking to withdraw excessive amounts of water must obtain approval from all Great Lakes States, Ontario, and Quebec. To oversee follow-through within the agreement's and compact's conditions, the Great Lakes–St. Lawrence Water Resources Regional Body and Great Lakes–St.

Lawrence Water Resources Council were created respectively. Additionally the International Joint Commission (IJC), consisting of United States and Canadian officials, also monitors the Great Lakes Basin's conditions (*International Joint Commission*).

As a case study, the city of Waukesha, Wisconsin, applied to withdraw Lake Michigan water after the city measured dangerous levels of radium in its aquifers. Though Lake Michigan watershed boundaries ended a couple miles outside of the city, the city's county was a part of the watershed, and the city qualified under the contract. Nevertheless, it took several years to obtain approval with several conditions: the city has to return the water, prove that there will be no adverse environmental impact on the Great Lakes, document there is no alternative water supply, and propose a conservation plan (Brush). If a city barely outside of the basin line must adhere to such stringent requirements for access, the potential for a Western state, for example, to obtain Great Lakes water is close to none.

However, these legal agreements are not unerring. In 2019, the Wisconsin Department of Natural Resources approved a proposal by Foxconn, a Taiwanese electronic manufacturer, to divert 7 million gallons of water a day from Lake Michigan in a basin-straddling community. Environmentalists protested that the creation of jobs was insufficient to justify this diversion as public use. Furthermore, the amount requested was insufficient to require approval from all Great Lakes states and Canadian provinces. The Great Lakes Compact is not absolute either. Because it is under federal law, it is susceptible to amendments or being revoked.

Since the legal obligation is nearly nonexistent, some appeal to the inherent moral responsibilities citizens and states have. However, the moral question is far more complicated than "sharing is caring," and there are many intricacies to disentangle. How do we decide between the right of Great Lakes citizens to protect their resources and the right of others to

access fresh water? Do we tell West Coast Americans to pack their bags if they want Great Lakes resources? What rights do ecosystems and animals have?

Regardless of the policy decision, broadening or narrowing access to Great Lakes water inevitably infringes upon someone's or something's rights. Instead, perhaps it would be wiser to educate ourselves from a population that is actively sharing their freshwater resources and has a more extensive, successful history caring for the Great Lakes region.

“Michigan's indigenous population,” Dave Mengebier, President and CEO of the Grand Traverse Regional Community Foundation, explained to me, “hold a very different perspective.” When working alongside local tribes and attending an indigenous-led conference session, he learned that while Western cultures emphasize rights, indigenous people emphasize duties—duties to the environment, their tribal members, and neighboring populations.

Utilizing this mindset, the question pivots from whether or not other states should access Great Lakes water to how can Michigan support other states' needs without neglecting its population and ecosystem.

First and foremost, Dave asserts, it is clear that Great Lake water diversion is infeasible. Believing that it would be a sufficient solution to water scarcity is a prominent misconception.

“People often question why freshwater cannot be shared from the Great Lakes when they are Earth's largest, accessible freshwater source. What they don't realize is that only one percent of the water is replenished every year, and that percentage is growing smaller with global warming. The Great Lakes ecosystem is incredibly fragile, and the last thing we want is more water diverted on top of decreased rain and snowfall.”

Previous analyses determined that the economic cost of diverting Great Lakes water to the Great Plains and the West Coast far outweighed the benefit. An early 1980s study, led by Jonathan Bulkley, still cited today determined that a pipeline from the Great Lakes to North Dakota would require \$60 billion (adjusted for inflation) and seven 1,000 megawatt power plants (Brush). California is four times the distance.

Alternatively, Great Lakes conservationists like Dave Mengebier and indigenous peoples advocated for extending a concept to the Great Lakes called the blue economy, which is defined by the United Nations World Bank as the “sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems.” The idea is Great Lakes Basin States can help spearhead research into sustainable water use whether it’s for consumption or industry use in agriculture, sanitation, manufacturing, etc.

In Michigan, local businesses and the government have kickstarted a Blue Economy campaign in order to replenish the region’s water. Tracy Young of DOW Chemical oversees technological developments that support efficient use of industrial resources, especially water treatment.

“Innovations to reduce the cost to treat water and in being able to operate manufacturing processes with less water and energy are very important” (*Michiganblueeconomy.org*).

Young also notes that developing treatments for impaired water is essential for regions facing water scarcity.

Benefits of ecological restoration are not limited to water access. Vision and Voices, a process to invest in Grand Rapids’ local water systems, especially the Grand River, saw “a 3:1 to

6:1 return on investment, in the form of increased property values and local economic development from restoring water quality and shoreline habitat” (*Michiganblueeconomy.org*).

If Michigan and other Great Lakes Basin States can continue to pioneer implementing sustainable practices into every component of the Great Lakes Basin Watershed: streams, aquifers, ponds, rivers, marshes, estuaries, and lakes, the state can share these strategies with officials across the nation to decrease inefficiency, over extraction, and the need for the Great Lakes. All of the moral duties required of the Great Lakes Basin States– duties to other states, duties to local populations, and duties to the environment– can be fulfilled.

As the impacts of climate change continue to heighten, the pressure to solve water scarcity is rising, and so will contention over what obligations Great Lakes States have to the rest of the country. Michigan and Great Lakes States currently have no legal obligation to divert Great Lakes water to drought-stricken areas. In fact, the numerous regional and international agreements pose a legal obstacle to water diversion. Comprehending Michigan’s moral obligation, on the contrary, is far more challenging. The Great Lakes Region not only has an ethical duty to support fellow citizens but also its populations and environment. Our greater obligation to both current and future United States citizens and the environment, then, is to create a blue economy in our own borders and support sustainable actions elsewhere to prevent depleting a fragile, treasured ecosystem.

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