

Water: A Fundamental Right for All

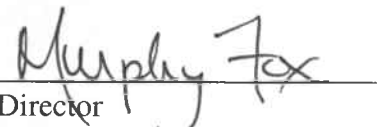
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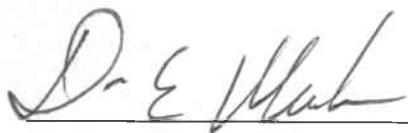
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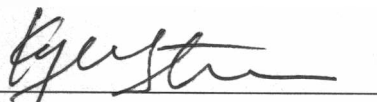
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Abstract:

Water is synonymous with life. From it, life is created, and in it, life exists. It is a great equalizer and a common good of the earth, as neither the wealthiest human leader nor the simplest green algae could survive without its essential properties. Unfortunately, the world's intimate relationship with water is at a breaking point, in need of substantial repairs. Whereas the 20th century was dominated by the search for oil, the 21st century will be characterized by fierce battles over water – unless change begins now. This document offers the reader insight into the battle for Earth's freshwater, including a thorough argument for why water must be advocated as a human right. Moving sequentially, the chapters focus on the spiritual justifications for the proper stewardship of water, the contemporary problems instigated by privatization and pollution, followed by an encouraging discussion of solutions to the problem and specific organizations that are ardently fighting to protect the quality and availability of water sources. Finally, a reflection on two water-related internship experiences, which were made possible through the Environmental Studies program at Carroll College, offers a personal account on the importance of protecting and preserving water, the foundation of life.

Introduction:

Growing up nestled along the banks of the Minnesota River in the “Land of 10,000 Lakes,” water was a part of life. Summers were spent swimming, canoeing, and fishing, as everything of interest seemed to occur near the water. The moist air enriched fertile, green fields, transforming the otherwise modest landscape into an exotic jungle. The winter months were dedicated to ice-skating and immeasurable hours in cramped fish houses, waiting for the ‘big one’ to bite. Everyone shared the abundant treasures of the lakes, rivers, and marshes, as the water was an equalizing force that bridged relationships and fostered community.

Unfortunately, the peaceful qualities of water have been skewed, manipulated, and contorted to fit the modern day economic matrix. The zealous quest for power, in the form of saturated profit margins and political clout, has been used as justification for the disrespect and over-consumption of the world’s limited freshwater. The impending water crisis has motivated leaders such as Dr. Wally N’Dow, known as the “world’s foremost specialist on cities,” to forthrightly warn that the next world war will be over water (Simon 6). Whereas the 20th century was dominated by the search for oil, the 21st century will be characterized by fierce battles over water – unless change begins now.

In the Bible, the book of Revelation contains a passage where John describes a vision of “living waters flowing beneath and nurturing a tree of life that provides fruit for food and leaves for medicine, for all peoples” (21-22). This hopeful message can be transformed into reality when each person welcomes his/her responsibility to the earth commons, working cooperatively to protect the world’s vital water sources. The spiritual teachings of diverse faith communities are connected through their awe of the cleansing

and purifying nature of water. Whether one is Christian or Crow, the message is clear – water is a gift of life to be shared by all. Concerned citizens must merge together and insistently pressure their governments to acknowledge water as a human right. No longer can private conglomerates and industrial polluters be allowed to prohibit an individual's right to safe, clean water. The proactive efforts undertaken by responsible governments, non-government organizations, religious communities, and common citizens, reinforced with international dialogue, is an encouraging step towards patching the intimate relationship between living beings and water. Pure, flowing water is the ultimate gateway to an enriched, satisfying existence, allowing the mind and body to flourish. Water is life, and it is unjustifiable to deny someone his/her existence.

This document offers the reader insight into the battle for earth's freshwater, including a thorough argument for why water must be considered a human right. Moving sequentially, the chapters will focus on the spiritual justifications for the proper stewardship of water, the contemporary problems instigated by privatization and pollution, followed by an encouraging discussion of solutions to the problem and specific organizations that are ardently fighting to protect the quality and availability of water sources. Finally, a reflection on two water-related internship experiences, which were made possible to me through the Environmental Studies program at Carroll College, offers a personal account on the importance of protecting and preserving water, the foundation of life.

Chapter One: *Spiritual Perspectives*

Water is synonymous with life. From it, life is created, and in it, life exists. It is also an equalizer, as all life forms rely on water for nourishment and strength. Neither the wealthiest human leader nor the simplest green algae could survive without water. Most assuredly, water is a common good of the earth, indiscriminately ordering the ebb and flow of reality. The power and mysticism of water has transcended cultures, as many of the world's oldest religions regard it as a source of spiritual strength and purity. Myths, parables, and traditions from Indigenous Peoples of North America, the ancient Egyptians, Hinduism, Islam, Judaism, and Christianity incorporate water as a significant keystone of their faith vision. Despite diverse cultures with unique creeds, codes, and cults, water has traditionally been respected for its metaphysical and physical properties. The contemporary debate regarding whether access to clean, safe water is a human right without political or socioeconomic boundaries is overtly disrespectful of the world's religious disciplines. Most assuredly, humanity in the 21st century is not superior to past eras, meaning reflection and revelation for the Creator's life-sustaining gifts must be acknowledged, not disregarded.

Indigenous North American World Views:

The Crow (Apsaalooke) Indian world view uses the strength and unpredictability of rivers as a metaphor for the complexities of life. For countless generations the Crow have been cognizant and open to the lessons of the natural world, realizing that human beings are an integrated link in the web of creation (Frey 4). The tribe understands the challenges of life cannot be avoided or mustered alone, and are overcome through embracing the cooperative nature of the community (3). The inspiration for their world

view originated by observing the violent, turbulent journey of driftwood as it travels the course of the river. The pieces that intermingle in a complex bundle are able to collect along the banks, finding reprieve from the flowing waters. Just as a lone piece of wood cannot withstand the spontaneous turns of the river, an individual cannot successfully navigate the challenges of life without the support of others. A community cemented in strong relationships, like the tightly bound driftwood, can withstand the rush of life. Specifically, the Crow term for clan is translated to mean “as driftwood lodges” (3). The Crow incorporate the philosophy of driftwood lodging into their everyday actions, as reciprocity is a fundamental part of Crow society (4). The unavoidable collisions with the boulders in the river can be withstood with unity.

The Wishram, another tribe of the Inland Northwest, also interlace the lessons of rivers into their traditional lore. The story *Coyote and the Swallows* is a tale designed to remind the people to share the bounties of the earth. In it, Coyote discovers two sisters who have hoarded fish in their personal pond, preventing them from traveling down the Columbia, the Great River (Rodney, ed. 45). Coyote uses his trickery to gain access to the pond, and frees the fish from the sister’s clutches. Naturally, the two women are upset by Coyote’s actions, believing he left them with a life of poverty. But, as Coyote said to the sisters, “now by what right did you two keep these fish to yourselves?” (48). As punishment for their selfishness he turns the sisters into Swallows, and notes that “whenever a fish will be caught, you two will come” (49).

The lesson of *Coyote and the Swallows* is that it is immoral to selfishly collect resources designed for the greater community. The private interests of one can never trump the best interests of the common good. This Wishram story is universally relevant

in contemporary times, reminding societies that water and the resources associated with it are here for all citizens. By selfishly polluting or privatizing water, the global community suffers.

Ancient Egyptian Traditions:

Nothing is more symbolic of the power of water than a catastrophic flood. Six thousand years ago the Egyptian civilization, which flourished due to the resource-rich Nile delta, regarded the annual flood of the Nile a work of the gods (Rothfeder 27). During the despairing heat and dust of the Egyptian summer the stubborn snow in the Abyssinian Mountains would melt and flow into the Nile, creating a torrent that spilled over the rivers banks, inundating the neighboring farmland. The delta, saturated with the nutrients brought by the flood, was fertile enough to support the food needs of nearly 97% of Egypt (27). Naturally, the Egyptians respected the power behind the annual flood, recognizing it as a sign from the heavens.

In Egyptian mythology the flood symbolized rebirth, as it restored the desert to a place of bounty. Therefore, the people considered the cyclical event a gift from the goddess of rebirth, Isis (Rothfeder 28). The lore surrounding Isis and her connection to the Nile was that she resurrected her husband, Osiris, from his untimely death, and that the floodwaters were Isis' tears shed for her beloved partner (28). This powerful myth encouraged the Egyptians to respect the intricate patterns of the ecosystem, as "they saw floods not as nature out of control – let alone as nature in need of control – but as a gift to be treasured" (30).

Hinduism:

Like the ancient Egyptians, followers of Hinduism respect rivers for their divine properties. According to Hindu beliefs there are seven sacred rivers, including the Ganges, Yamuna, Godavari, Sarasvati, Narmada, Sindhu, and Kaveri (Abrams 4). The flowing water symbolizes both physical and spiritual cleansing. A significant teaching of Hinduism is that water from the sacred rivers is a “great equalizer . . . the pure are made even more pure and the impure have their pollution removed . . .” (4). The waters accept both rich and poor, without distinction, as impurities exist independent of status. The significance of this Hindu belief is that it supports the argument that water is a fundamental human right, as all should be given the opportunity to seek spiritual cleansing. Hinduism fosters a sense of respect and devotion to the powers of water, as the peoples’ spiritual and physical well-being is intrinsically connected to clean water sources.

Of the seven sacred rivers, the Ganges in northern India is considered the most holy among Hindus. It has been anthropomorphized into the spiritual goddess *Ganga Ma*, an entity whose purity cleanses human sin and safely transfers the dead into the next realm of existence (“The Ganges River” 1). A significant Hindu ritual involves dumping the ashes of the dead into the Ganges, making it easier for *Ganga Ma* to deliver the spirit into the next life. Among the faithful who are still living, morning prayers are accompanied by water, preferably from one of the sacred rivers, in order to begin the day spiritually refreshed (2). For practicing Hindus who do not live on the water, sacred pilgrimages to cities like Allahbad are important yearly rituals, as millions of people gather annually for a time of spiritual cleansing and reflection.

Ironically, the Hindu symbol of purity and salvation, the Ganges, is alarmingly polluted. The exploding Indian population has forced excess demand on the river, as it can no longer cleanse itself through natural cyclical patterns. The majority of the pollution is from organic sources, including sewage, trash, and even human remains ("The Ganges River" 2). There is also a significant amount of effluent released from industrial sources, such as oil refineries, textile manufacturers, and fertilizer companies, which have led to serious health problems. The unregulated pollution has undoubtedly contributed to the shocking statistic that 80% of health issues arise from water-borne diseases (2).

Since it is impractical to expect faithful Hindus to sacrifice their traditional rituals because of polluted water, the people must be motivated to actively clean the Ganges, restoring the physical presence to match the purity of Her spiritual force. A non-government organization known as the Sankat Mochan Foundation has adopted the cause and is striving to connect the spiritual importance of the Ganges with the dire need to physically cleanse the water. The leader of the organization has cried to his fellow Hindus that "we are allowing our mother to be defiled" ("The Ganges River" 3). The organization's strategy for rallying the country behind the cleaning efforts is to remind the faithful that the dumping of pollutants into the river is a direct attack on their venerated spiritual mother.

Islam:

Islamic laws contain no ambiguity regarding the universality of water, as *shari'a*, the name given for the religion's laws, originates from a word translating into "the sharing of water" (Rothfeder 53). A brief historical overview of Islam aids in the

understanding of why the sacred teachings of the religion emphasize sharing resources, such as water. Islam is a relatively new religion, appearing in the 7th century amidst Christianity and Judaism (53). To keep the Muslim followers of Islam united in comradeship, the leaders advocated cooperation, which included sharing resources with other Muslims. The Islamic leaders used water as an instrument of diplomacy and peace, since life in the desert was predicated upon adequate freshwater. As the religion gained support and strength, the stance on water rights did not change, as is illustrated by several Islamic precepts.

For example, one Islamic rule states that if an individual digs a well, he/she does not own the water, and must willingly share the resource with both humans and animals (Rothfeder 53). Another law relating to wells is that “a man lowering a container into a well will have full possession of only the amount of water that fills it at that precise moment” (53). The sacred principles of water flow into the everyday rituals of Muslims (as is similar to Hinduism) with water being used to cleanse the body and spirit (Abrams 4). Ritualized purification, exercised by washing oneself with pure water, must be done before prayer or the use of the Koran. Islamic tradition includes five daily prayers, with the symbolic cleansing occurring before each; as is stated in the Koran 5: 7/8, “O you who believe, when you prepare for prayer, wash your faces and your hand to the elbows; rub your head and your feet to the ankles” (Abrams 5).

Islam flourished in a hostile desert with limited sources of freshwater due to principles of cooperation and respect. In the 7th century Islamic leaders intuitively realized water was too precious to hoard or pollute, as humans do not have the insight or divine privilege to dictate who is worthy of life. All cultures and every religious sect can

learn from the Islamic laws regarding water, as they are universally applicable. Water is the common equalizer, with physical and spiritual powers that can humble even the most resilient being.

Judaism:

Water is a major focal point of Judaism, a religion that, like Islam, originated in a harsh climate with limited freshwater. Judaism incorporates water into many of its' significant teachings, as the life-sustaining properties of the resource are associated with the grace and power of God. In particular, the Hebrew Scriptures (the Old Testament of the Bible) symbolize God as "living water," as He is the source of "spiritual cleansing" for the people ("The Columbia River Watershed: Caring for Creation and the Common Good" 8). The Scriptures do not use the term living water indiscriminately; rather, only water that is clean and flowing is symbolic of the gifts from God (8). The importance of living water to the physical and spiritual well-being of humanity can be interpreted as a direct message from God to protect and cherish His generous gifts.

The Hebrew Scriptures contain important parables that teach of respecting water as a living entity flowing with the power of God. In Genesis: 6-8 God displays his fury by sending the Great Flood to scour the impurities of the earth, sparing only Noah, his family, and two of each creature. The Great Flood is a renowned Biblical story that emphasizes God's desire for humanity to follow an ethical path. In this scenario the power of water is used to punish the immoral, reinforcing the concept of water being a divine resource beyond human control. Conversely, Hebrew Scripture also uses water to portray a loving, generous God who replenishes the earth and cares for His creation. For example, in Isaiah 41: 17-18 it is written:

When the poor and needy seek water, and there is none, and their tongue faileth for thirst, I the LORD will hear them, I the God of Israel will not forsake them. I will open rivers in high places, and fountains in the midst of the valleys: I will make the wilderness a pool of water, and the dry land springs of water.

The book of Isaiah also includes scripture that portrays water as an equally important element of physical and spiritual life, with the living water supporting both forms of existence. As the Scriptures state, “I will pour out water upon the thirsty ground, and streams upon the dry land; I will pour out my spirit upon your offspring, and my blessing upon your descendants” (Isaiah 44:3).

Beyond scripture, Judaism also incorporates water into traditional rituals to symbolize spiritual purity and the presence of God. Jewish practices include washing in a source of living water (clean, flowing water such as from a river or the sea) as a means of returning to a state of purity (Abrams 5). The traditional forms of ritual washing include complete immersion in a *mikveh* (a special tub), hand and feet washings before entering Temple, and daily hand washings (Birnbaum 239). Jewish customs highlight the importance of cleanliness because it is believed that “the human body reflects the divine image of God” (239). Judaic traditions such as these, that emphasize the spiritual properties of clean water, support the argument that the world’s water sources must be protected from pollution and private interests, as water is a fundamental symbol of life and the divine spirit.

Judaism teaches its followers that life is shallow and diluted without a strong sense of spirituality, and that sources of living water can replenish and cleanse a polluted soul. The faith vision urges humanity to respect the bountiful gift of water, as all people rely on it for physical and spiritual sustenance. The teachings of the Hebrew Scriptures

are important reminders that no matter how invincible humans may feel, water is a greater force that can take life just as easily as it can give.

Christianity:

The Christian faith is based on the teachings of Jesus, who remains a symbol of unconditional love, stewardship, and care for other beings. Jesus wanted his followers to understand that God is present in every aspect of life, as He cares for all creation, not just humans. For instance, in the Gospel according to Luke Jesus explains "God cares for the birds of the air and the flowers of the fields as well as for people" (Luke 12:24-28).

Based on this scripture Christians should feel a sense of responsibility and companionship with the entirety of God's earth, mindful that humans are expected to share the world's resources with the complete biotic community. Jesus teaches individuals to revel in God's creative genius, not to squander it.

"Living water" is a concept that weaves throughout the Bible, fusing human physical and spiritual needs into one. As it was discussed in the section on Judaism, the Hebrew Scriptures provide a literal description of living water. In the Christian Scriptures, Jesus expands the definition of living water to "refer to himself as the source of genuine spiritual life" ("The Columbia River Watershed: Caring for Creation and the Common Good" 8). Jesus, like water, provides the necessary elements for survival, uplifting and fulfilling all forms of life. God showered the earth with water so that life could flourish and, according to Christian doctrine, He did the same by sending Jesus to quench spiritual needs.

In the Book of John there is the story of Jesus and a Samaritan woman, to whom Jesus explains, "no one who drinks the water that I shall give will ever be thirsty again;

the water that I shall give will become a spring of water within, welling up for eternal life" (4:14). This story reinforces the concept of Jesus providing spiritual sustenance to those who ask, promising a future without thirst and filled with the love of God.

Water is used in Christian rituals to symbolize a renewed, purified spirit. Baptism is a ceremony that signifies the redemption from sin and a commitment to the teachings of Christ (Abrams 3). Traditionally, the person experiencing baptism would stand in a source of clean water and have water poured over the body, while in contemporary churches the person often has water sprinkled over just the head. No matter the form of the ritual, the water itself must be considered pure and worthy of symbolizing spiritual cleansing. Before it is used the water is blessed by the church's spiritual leader, which marks it as holy water (3).

Sadly, the rapid deterioration of the world's water is not in concordance with the prophetic teachings of Jesus. Christian Scripture holds that God presented Jesus as living water to quench humanity's spiritual needs, just as literal water sources were provided to nourish physical needs. Christians should be motivated to protect the earth's water by remembering Jesus' lesson that God favors all creatures, expecting humanity to flourish *with* the biotic family instead of dominating it. A fundamental aspect of Christianity is the importance of respecting God's life-sustaining gifts, including freshwater, just as Jesus is worshipped for His promise of spiritual rebirth.

Conclusion:

The mismanagement of water stifles our spiritual health. From ancient to contemporary times cultures have been uplifted by the healing and renewing properties of water, recognizing its unexplainable force. Water allows the revelation of the Creator to

blossom and flourish in all forms of life, from the banks of the Nile River to the face of a healthy child. However, polluted and exploited water does little for the spiritual or physical well-being of the biotic community, as is warned by various faith visions. In fact, the mismanagement of water is a direct contradiction to the lessons of many sacred stories and texts, including Indigenous worldviews, the Bible, and the Koran. By reflecting on the spiritual guidance of one's religion, it will become possible to regain a sense of responsibility towards the earth commons. Water is a humbling force that is not only essential for life, but that also cleanses and purifies in both a literal and spiritual context. The significant role of water in religion suggests that each person has an intrinsic right to the resource, as life without it is impossible. Finally, as a Catholic Bishop remarked, "reverence for the Creator present and active in nature, moreover, may serve as ground for environmental responsibility" (Hart 6).

Chapter Two:
Privatization and Pollution – Culprits of the Water Crisis

Water Privatization:

It is not surprising that in an era where globalization, international business conglomerates, and powerful corporations influence the world's economic systems, there has been a push to privatize water supplies. In an academic sense, the Pacific Institute of California defines 'privatization' as "transferring some or all of the assets or operations of public water systems into private hands" (Gleick, et al. 14). Private investors are keenly aware of the sweet smell of profits resulting from water sales, and are engaged in cutthroat battles to secure a percentage of the precious resource. A basic argument for water privatization that follows a neo-liberal market ideology is that local governments are often too overwhelmed and under-funded to adequately provide safe water for their citizens, meaning that if responsibility was transferred to private hands, water distribution would be better managed and consistently distributed (5).

In addition, the World Bank, the World Trade Organization, and the International Monetary Fund all support water privatization under the premise that if water is transformed into an economic good rather than left as an inherent right available to all, it will be conserved instead of taken for granted (Mann 2). In this way, privatization can be studied as a basic economic exercise in supply and demand, where the price for water will continue to rise as the supply dwindles and the demand skyrockets. Private companies argue that "sticker shock" (increased water fees) will be beneficial in the long-term, as people will conserve water to save money. If the world were an ideal economic model immune to outside variables, then certainly the reduction in water consumption would allow supply to increase, demand to fall, and prices to reach equilibrium. This

“free market” solution to the water crisis is the most popular among private corporations ready to break into the water market (Rothfeder 107). While these opinions may seem valid, a shallow scratch below the surface uncovers the problems and complexities of water privatization, proving the scenario does not follow the simple model of Economics 101.

One of the inherent problems with water privatization is that by transforming the resource into an economic good, the social and spiritual aspects of freshwater are ignored. Another flaw of privatization is that it commodifies the world’s water supply, dictating where the water is to be disbursed and who is worthy of its consumption. There has never been a time when water, the life source of the earth, was not revered for its nourishing and spiritual properties. Religious leaders often speak of water as being a “common good” given by the Creator to indiscriminately provide benefits for all life forms (Hart 9). Citizens around the world view water privatization as being inherently immoral, as it allows individuals and/or corporations to capitalize on one of the most basic gifts from the Creator, thereby “. . .(negating) the environmental and sacramental benefits of water” (9). In fact, only recently did Egypt allow the term ‘water price’ to be used in government affairs, as the country’s culture refused to think of water as anything other than an essential element of life, a gift from God not to be marginalized (James 2).

Beyond the philosophical objections to water privatization, a tangible and significant risk of transferring the water supply to a private entity is whether the company can be trusted to act in an ethical manner, with the best interests of the community in mind. It must be remembered that the primary goal of any corporation is to make a profit, regardless of whether it is selling vacuum cleaners or water rights.

The explosion of companies dabbling in the water sector illustrates the significant profit potential lurking in the emerging industry. During the late 1990's, as world leaders were becoming increasingly concerned with the condition of freshwater resources, several multibillion-dollar corporations began to buy the rights to the shrinking water supply. Powerful firms, including the now-infamous Enron, strived to engulf small water companies in order to become profitable, transnational business elites (Rothfeder 101). In fact, Enron paid 2.2 billion dollars for the UK's Wessex Water (101). The water tycoons involved in this maddening fight to dominate the lucrative water industry includes the European corporations Suez, Vivendi, and RWE-Thames (Mann 3). By 1999 these three companies had gained a strangling grip on the United States water industry, as Suez purchased United Water Resources on the west coast and Vivendi overwhelmed USFilter on the east coast (Rothfeder 101).

Undoubtedly, these corporate giants will continue to increase their stronghold on the world's water supply, as each business deal proves more and more lucrative. Take for example the fact that in 2002 Vivendi earned 12 billion dollars, more than double its profits from a decade earlier (Mann 3). If the privatized water industry is allowed to continue along a path of exponential growth, it is predicted that the top three European corporations will control over 70 percent of the water in Europe and North America in a mere decade (3). The world is witnessing the rapid growth of a monopoly that will have dire consequences if it is not managed and controlled. The international community must seriously consider whether the fate of a precious, irreplaceable resource like freshwater should be manipulated and controlled by international corporations that are ultimately focused on saturated profit margins.

Sadly, the explosion in new companies has left the international community reeling to find enough experienced regulators to monitor the business practices of the large water corporations (which, of course, are pushing for self-regulation) (James 5). An unfortunate irony of water privatization is that developing third world nations in desperate need of water-related aid tend to have the weakest governments and public regulators, which makes them prime targets for manipulative water conglomerates (Gleick, et al. 6). Institutions such as the World Bank have abandoned the efforts of the governments in these developing nations, asking instead that private companies responsibly manage the water services, providing equitable distribution to all citizens ("Water for All" 2). The World Bank is making a serious mistake by placing substantial faith and trust in the private sector, as it is fostering the growth of a monopoly. Inevitably, this will usher in corporate inefficiency and irresponsibility. Too often, a city or nation does not realize it has opened a Pandora's box of water management nightmares by succumbing to powerful water tycoons until it is too late, as Wenonah Hauter explains.

Hauter, director of the non-profit organization Public Citizen's *Critical Mass Energy and Environment Program*, fears that accountability and local influence will be lost under the shadow of transnational companies, as these corporations ". . .fail to deliver on lofty promises, delivering instead rate hikes, inferior service, and an erosion of accountability" (Hauter 12). In 1998, when the city of Atlanta signed the largest privatization contract in America (worth \$428 million) with United Water, city leaders could not have imagined the problems that lay ahead. While the deal was marketed as a

model for other cities seeking to adopt privatized water systems, it can only be hoped that Atlanta's troubles will instead serve as a template for what *not* to do in the future.

United Water exemplified what it means to be unethical, as the company blatantly lied about how much money Atlanta would save, the effort it would take to get the new system operating, and the number of individuals promised employment (Hauter 13). The company also continuously asked local leaders for more money while simultaneously over-billing the city for simple water-related tasks. And, as the reader can undoubtedly predict, the citizens of Atlanta did not avoid a rate increase (13). Atlanta's disaster acutely illustrates the substantial risks that accompany the privatization of water systems, as corporations can blatantly ignore public interests and shamelessly avoid social and environmental responsibility.

Fiscal irresponsibility is also synonymous with the private water industry, as can be explained from the corporate history of Vivendi/USFilter. This transnational corporation's track record officially begins in 1997, at which time executives were "convicted of bribing the mayor of St. Denis to obtain a water concession" (Hauter 15). In 1999, Puerto Rico accused USFilter of failing to provide running water for all of its citizens, and of neglecting basic maintenance issues. In 2000 the company added to its illustrious reputation by ignoring a raw sewage leak into the Mississippi River from one of USFilter's plants (15). Within the last several years USFilter and the parent company, Vivendi, have continued to increase profits and cut costs while sacrificing ordinary citizens' rights to clean, affordable, and safe water supplies.

As the reality of losing freshwater to private monopolies becomes palpable, citizens and communities around the world are emboldened to fight for their inherent

rights to clean water. A poignant source of inspiration for small, isolated countries with little economic or political clout comes from the quiet town of Cochabamba, Bolivia. Nestled on the edge of the Andes Mountains along the Rocha River, it is the type of place where prosperous tourists would pass through on whirlwind trips of South America. The people of Cochabamba have always been known for their quiet dispositions, patience, and satisfaction with a simple lifestyle. However, in the year 2000, the force and zeal behind the peaceful faces was revealed, as the citizens were ardently opposed to compromising their water rights.

Until the 1980's tin mining had been the main economic vein in Cochabamba, providing substantial jobs and wages. The collapse of the industry severed the peoples' livelihoods, and there was little more to do than watch the city sink into despair. Without adequate funding the water system was neglected, allowing the supply to be wasted and contaminated. Under such dire circumstances it is understandable that the Bolivian government was enticed by the lofty promises offered by the private water corporation Bechtel (Rothfeder 108). In 1999 the government signed a forty-year contract with the firm, in which Bechtel outlined a plan to improve the water supply of Cochabamba. However, it did not take long before this façade was broken and the truth behind the deal was exposed.

To increase profits, Bechtel coerced the government into allowing the firm to increase water rates every year in order to match the U.S. Consumer Price Index (Rothfeder 108). Another stipulation in the contract was that Bechtel would receive a 16 percent annual return on investment, meaning the citizens of Cochabamba were expected to pay higher rates to ensure the company received a sizeable profit (108). By 2000, the

same year in which the water deal was finalized, rates were hiked two to three times higher than the monthly bill had been twelve months earlier.

This “sticker shock” that private companies like Bechtel argue will lower water consumption seemed to be working in Cochabamba; overworked mothers were forced to choose between giving their young children water or food. Take for example Tanya Paredes, a woman whose water bill increased from \$5 to \$17 in a matter of months, forcing her to, as she says, “. . .cut down on my expenses for food, clothes, medicine, and the other things I need to buy for my children” (Rothfeder 109). While innocent people like Ms. Paredes are left struggling to pay their water bills, corporate executives of the private water companies can remain comfortably detached, as they are thousands of miles removed from the people they are affecting.

By the end of January 2000 the citizens of Cochabamba were tired of the fear and desperation synonymous with Bechtel, ready to tackle globalization and regain a sense of freedom. The citizens started with a peaceful four-day strike where thousands marched to the city center in demand of lower water rates (Rothfeder 110). Several weeks later, when it was clear that local leaders remained unwilling to negotiate with the protestors, the city exploded in a series of violent revolts. For months a diverse array of citizens, young and old, rich and poor, fought a civil war against the government to oust Bechtel and regain the rights to their water (110). The battle was bloody and harsh, with lives lost on a daily basis. On April 10th, 2000 the Bolivian government (with the help of international diplomats who finally acknowledged the crisis) abandoned the deal with Bechtel, transferring responsibility for the water supply back to the local citizens and communities.

Cochabamba's fight against water privatization and globalization is significant because it demonstrates the sacred, powerful attributes of water. As a local citizen of Cochabamba reasoned the justification for civil war, "We are proving by protecting our water that we have higher human values. We understand that water is a shared right, and that right is not for sale" (Rothfeder 113). While it is unrealistic to assume the victory in Cochabamba will dissuade future private water ventures, there is hope that the revolution will force corporations to be cognizant of the human aspect of the business, working in conjunction with local communities to adequately and fairly distribute clean water. In turn, it is imperative for a country or city undergoing water privatization to establish specific contractual clauses that will protect disadvantaged citizens from being exploited and over-charged for clean water.

However, given the poor results of private water-management systems, a growing number of communities around the world are choosing to rework ineffective water systems in order to keep control in local hands. One of the most successful water management systems under public control is that of Puerto Alegre, a city in Southern Brazil ("Alternatives to Privatization: The Power of Participation"1). For the last fifteen years the water department has been self-financed, operating with funds collected through water bills. Community members (regardless of income or status) can participate in the process of determining budget priorities, projects, and investments of the department (1). The effects of this participatory model have been that 99.5% of Puerto Alegre's citizens have a consistent supply of clean water, as well as awareness of water/environmental issues and a sense of belonging and importance (1). The successful public water-

management in Puerto Alegre is proof that local citizens are capable of adequately and responsibly controlling their water systems.

There are examples of successful public-owned water departments in the United States as well. Recently, the booming metropolis of Miami-Dade in Florida implemented a program known as "POWER" (the Partnership Optimizing Water and Sewer's Efficiency Reengineering Program) ("Public - Public Partnerships" 2). By 2001, after only four years of operation, the program was able to reduce the water/wastewater department's expenditures by \$52 million. As a result, water rates have remained stable and employees have received several bonuses (2). In Phoenix, a participative water-management program was implemented in 1996, and by 2001 had exceeded the goal of saving \$60 million, saving instead an astounding \$77 million (1). Luckily, cities like Miami and Phoenix do not have a secret formula for successful water-management programs, meaning efficient public programs are possible anywhere.

By keeping water-management under local control a community can witness direct effects from the department's efforts to provide efficient and reliable services to every resident. A major incentive for communities to develop innovative public approaches to water-management systems is that under public control, profits are contained within the community instead of seeping out into private pockets. It is also beneficial for citizens to have a voice in local water-management decisions because it fosters a sense of responsibility and awareness regarding the importance of using water in an effective manner. Cooperation and social activity remain at the center of human nature, as the implementation of a successful water system can create a sense of worth, fulfillment, and equality among citizens. As Barlow and Clarke, two provocative writers

who have contributed opinions on the water crisis remark, “ordinary people can and will save the global water supply” (Hauter 16). With a focused, directed effort it is within reach to wrestle free the world’s water from corporate hands and to reclaim each citizen’s fundamental right to clean, affordable water.

The Pollution Factor:

More than forty-two years ago, a prophetic Rachel Carson aptly stated “in an age when man has forgotten his origins and is blind even to his most essential needs for survival, water . . . has become the victim of his indifference” (Carson 39). It is an inexplicable irony that humans have been unabashedly negligent with the most pure, basic source of life. Without clean, high quality water biotic communities, from minute organisms to keystone species, could not survive. Thus, pollution is a major contributor to the inability of societies to provide citizens with pure, clean water. As the following section will outline, the world’s ecosystems are at a point where water pollution can no longer be ignored; the statistics and examples of disasters caused by water-related pollution are haunting. It is imperative that the natural world be allowed to resurface at a point of cleansed equilibrium, a goal that can only be accomplished if human beings recall their origins and sense of place on the earth. As the Crow would explain, all life is interrelated, meaning it is the duty of each to cooperate within the earth commons to protect and nurture the fundamental, universal right to clean water.

Living in a community where clean water is in constant supply, it is easy to lose perspective on the world water crisis, often ignoring it completely. Unfortunately, for over one-third of humanity, water-related illnesses and deaths are a daunting obstacle to be hurdled on a daily basis. Currently, over 5 million people succumb to water-related

diseases each year, with 4 million of the deaths due to diarrheal diseases caused by contaminated water ("People and the Planet" 1). Within that staggering figure, 60% of infant mortality (worldwide) is a result of infectious and parasitic diseases, which often accompany unsanitary water. On average, 9,500 children die *each day* due to a lack of fresh, clean water (Simon 9). The United Nations has also reported that 2.3 billion people live a plagued existence with debilitating diseases linked to dirty water (1). Finally, consider the overwhelming fact that in China, India, and Indonesia, double the number of people die from diarrheal diseases than from HIV/AIDS ("People and the Planet" 2). Frustratingly, the majority of these water-related diseases, including diarrhea, malaria, and cholera, could be obliterated if people had reliable clean water sources and hygiene education (3). With statistics like those above, why does the world continue to tolerate such preventable nightmares?

Part of the problem is that a significant proportion of pollution is classified as "non-point pollution," meaning the source is not easily identifiable (Simon 155). Agricultural runoff, industrial waste, vehicle emissions, and raw sewage are all examples of non-point pollution that effect water quality. Simply disposing of the harmful chemicals does not mean the substance, and the effects of it, will disappear. The danger of non-point pollution is that harmful waste from one region can adversely affect other places. For example, raw sewage dumped from an industrial hog farm in one location can find its way to nearby rivers and damage the health of citizens miles downstream. Another danger with non-point pollution is that if the contaminant reaches the aquifer, which circulates the water slowly, the pollutant can build up and remain in the water source for years (Gallant 53). A fitting example of this scenario involves the harmful

chemical dibromochloropropane (DBCP) that was used in the first half of the 20th century to “purify” the soil in California. While DBCP was banned in 1977, a full decade later the well water in the region had ten times the amount of DBCP than was considered healthy for drinking (54). Regardless of how conscientious and environmentally responsible the citizens of the San Joaquin Valley (where DBCP was heavily used) are today, their health will be needlessly punished by irresponsible actions of the past.

Governments are often leery about introducing and/or enforcing stringent environmental regulations in the agricultural and industrial arenas because of the potential economic threat. In developed countries like the United States, whose agriculturalists’ rely on bountiful crop yields for their livelihood, pesticides are used to enhance the profitability of the resource. Unfortunately, the heavy fertilizers and pesticides escape the fields and enter the water system, where high levels of nitrates increases the biomass, which decreases the oxygen supply and, eventually, the overall quality of the river, stream, or lake (Simon 154). While the United States has made strides to decrease water pollution, in reality it still takes events like the Cuyahoga River catching on fire due to inexcusably high levels of pollution, or California beach closings due to raw sewage running into the ocean, for people to recognize water pollution has become a part of reality, and will not disappear until proactive policies are implemented.

On a local level, the long-term effects of unadulterated pollution are coming to a head in Montana, as the effects of pollution now blanket the entirety of the state. The freshwater of this once-pristine region has been on a steady, rapid decline for countless years due to misuse and irresponsibility by industry and citizen alike. For example, Butte, which was once a prosperous city producing \$25 billion of copper, is now home to

a festering pool of lethal contaminants known as the Berkeley Pit (Simon 39). While the mine may no longer be operating, the dire effects of company's business practices will haunt the citizens of Butte for an eternity. Another example of environmental degradation due to mining activity is in north-central Montana, where the Zortman/Landusky mine company pillaged the land on a greedy quest for gold, leaving the region with polluted, dangerous water (Hart 4). While the mining company did reach a \$37 million settlement with Montana over its water quality violations, money can never replace the inhabitants' diminished quality of life.

The latest threat to Montana's water supply is coal bed methane drilling, which at this moment is being eagerly pursued by energy corporations in the eastern regions of the state (Hart 4). Coal bed methane drilling, which can be extremely lucrative for the energy profiteers in a short period of time, is a major threat to communities, farmers, and ranchers in the targeted region. Like the name implies, this form of drilling penetrates ancient coal beds, extracting the methane from pockets deep within the earth. As a result of this invasive process the water supply is diverted and contaminated, increasing the salinity (4). Since this form of drilling is often implemented in isolated, rural areas, it may seem harmless on a superficial level. However, if Montanans have learned anything from the consequences of past industrial behavior, it will become obvious that every citizen should fight passionately for the protection of their water sources. The danger of all pollutants, especially non-point sources, is that they are prolific, spreading rapidly throughout the water source.

In the fall of 2004 the citizens of Montana made a promising, united effort to protect the states water supply by staving off the interests of Canyon Resources, a mining

company hoping to resurrect open-pit, cyanide-leach mining for silver and gold (Save the Blackfoot). This form of mining is extremely risky (which is why Montanans originally passed I-137 in 1998 to ban these mines), with potentially devastating consequences. While the mining industry argues that new safeguards and regulations will sufficiently protect the state's water, the past is proof that even the most stringent regulations are not enough to prevent catastrophic events from happening. Even with triple-layer liners to prevent leaking and pits designed to withstand monumental storms, several of Montana's mines, including the Golden Sunlight and Zortman/Landusky sites, have had accidents that irreversibly damaged both the ground water and surface water ("I-147 Fact Sheet" 1). Canyon Resources demonstrated its' willingness to gamble with Montana's environment, particularly its water, by adding Initiative-147 (I-147) to the 2004 ballot, a measure that would reinstate open-pit cyanide-leach mining in the state. In order for the initiative to pass Canyon Resources needed the citizens to support the high-stakes gamble, as I-147 could not pass without the consent of the people.

The company severely underestimated the memories and spirit of Montanans. An overwhelming number of citizens banded together to make their voices heard on November 2nd. I-147 was forcibly voted down, leaving the mining industry with the unequivocal message that Montana is not ready to make the same mistake twice. The campaign against I-147 illustrates the power of unity, as citizens joined in cooperation to halt the abuse and exploitation of the water. Hopefully, society will not forget victories like the one against open-pit cyanide-leach mining, and will use the momentum to transition into a era where the environment, especially water, is given the respect it

deserves. The effects of pollution illustrates that the earth is an integrated, communal network, where all life forms are touched by the actions of one.

Similarly, on a college campus “the commons” is a neutral gathering place where all are welcome to join in fellowship. The commons belongs to everyone, and as such there is not one particular caretaker. Instead, the unwritten code is that everyone be cognizant of the good of the commons, and treat it with respect. Unfortunately, it is easier to rely on the next person to recycle the discarded newspaper or to remove the sticky soda can. Too often, individuals take the gifts of commons for granted, forgetting the pleasure that a clean space can bring to the day.

Just like busy students on a college campus, the citizens of the world have neglected and abused the earth commons, expecting to receive the gifts of the planet without reciprocating. The adverse result of abusing the commons is that each strand in the complex web is affected. While a mining company may consider a small leak in a holding tank insignificant, or a farmer may think it is harmless to apply slightly more pesticide than necessary, these acts of irresponsibility will eventually weaken the entire biotic community. To the detriment of the earth commons, humans (especially in contemporary, post-industrial society) act immune to the fragility of the natural world, ignoring their intuitive sense that all life forms are interdependent.

As Dr. John Hart poignantly states, “the earth commons is not intended solely for humans’ use and enjoyment, although as part of the biotic community they share in its goods. Earth provides for all creatures as they live related to and dependent on each other in integrated bioregions” (Hart 7). Following this logic it is clear that the earth commons cannot adequately nurture and protect the biotic community with continued

degradation. The carelessness, indifference, and power-lust of the human species has clouded eyes and shortened memories, leaving individuals overindulged with greed and selfishness. Long before a constant, universal supply of pure freshwater is available for all creatures to enjoy, humanity must remember its place within the earth commons.

As Rachel Carson would consent, water can no longer be the “victim of our indifference” if life is to continue on earth. It is criminal to know that while over 9,500 children die each day due to a lack of clean water, industrial waste, agricultural runoff, and littered waterways still exist. It is time for governments and common citizens to band together in a united effort to clean the commons, as the gifts of earth are not ours alone. The passionate campaign against Initiative 147 is a local example of hope, suggesting people are ready to exchange environmental complacency for responsibility.

Chapter Three: *Solutions*

The world's intimate relationship with water is at a breaking point, in need of substantial repairs. It is unrealistic to assume that contemporary water crises plaguing the world, including pollution and privatization, will naturally disintegrate without significant collaboration and cooperation on international and local levels. Proactive efforts are needed to ensure citizens of every nationality have perpetual access to clean water. Fortunately, the cry to protect the world's water sources is being heard by a growing number of organizations from international to local levels, including non-government organizations (NGO's), governmental agencies, and faith-based organizations. This wave of active participation has been building for several decades, as people slowly recall that water – the essential element for all life forms – must be respected and protected if life is to flourish. This section will systematically focus on several major groups involved in the fight to protect water as a human right, moving sequentially from international to local levels, and from NGO's to governmental agencies, and includes personal actions that can be taken by individuals who are ready to join the battle.

Non-Government Organizations:

The United Nations, established in 1945 with 51 participating countries, has developed into a symbol of hope for small nation states with limited political clout or monetary funds. The UN was established to create international cooperation and unity in an effort to protect the rights of all citizens (un.org). There are currently 191 countries represented by the United Nations, with each vowing to accept the universal principles of

the UN Charter (un.org). While the UN has done remarkable work for over half a century, it was not until 2002 that the organization formally recognized water as a human right.

By officially distinguishing water as a human right, the UN brought water issues to the forefront, challenging each nation state to reflect upon its duty to provide clean, accessible water to all citizens, both rich and poor. The formal “right to water” document was expressed in “Articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights,” during the November 2002 Economic and Social Council at Geneva (United Nations Economic and Social Council 1). The document is both straightforward and precise, noting on line one that “The human right to drinking water is fundamental for life and health. Sufficient and safe drinking water is a precondition for the realization of all human rights” (1). Later in the document the Committee outlines fundamental factors that must be considered as preconditions to any water supply, including that the water is “safe, sufficient, affordable, and accessible” (2).

Perhaps the most important aspect of the UN’s formal declaration of the right to clean water is that it pressures governments to address the issue, as Article 2.1 of the Covenant expressly notes, “. . . realization of the right should be feasible and practicable, since all States parties exercise control over a broad range of resources, including water, technology . . .” (3). This type of statement pointedly calls for governments to take responsibility in protecting citizens’ rights to clean water, as it is a *public* crisis that needs addressing, with no room for interference or manipulation by private interests. Over the past two years the UN has remained resolute in addressing water issues, even marking 2003 as the “International Year of Freshwater” (“International Year of Freshwater”).

Throughout 2003 the UN collaborated with other non-government organizations as well as private interests to highlight the issues of freshwater sustainability, distribution, and sanitation to the general public. It was a positive step forward, recognizing that the only way to combat the impending water crisis is to fight it head on, with no illusions as to the severity of the problem. The United Nations made it convenient for the general public to learn more about the world's water problems by developing an attractive, user-friendly website (www.wateryear2003.org) for the year, which provided simple ways for the average citizen to get involved in the fight for freshwater. Another major accomplishment of the year was the World Water Development Report, a comprehensive document outlining contemporary water issues as well as providing possible solutions. The report was distributed on March 22, 2003 in recognition of the international World Water Forum ("International Year of Freshwater 2003").

The World Water Forum (WWF) was created by the World Water Council, another non-government organization known as the "international water policy think tank" ("About WWC" 2). The Council is a unique blend of over 300 agencies (including UN committees) representing 50 countries that offers a neutral atmosphere for international strategizing on how to develop environmentally sound, sustainable water-management programs that protect the right to freshwater ("About WWC" 3). The World Water Council is an aggressive political player, pressuring high-level leaders to take action on water issues.

A great accomplishment of the World Water Council has been the World Water Forum, an international conference that unites political leaders, policy makers, and the water community in a series of discussions focused on finding solutions to water

problems (“About WWC”). For example, during the third Forum, hosted by Kyoto in March 2003, the specific goal was to establish working tactics that could be implemented in communities around the world. The World Water Forum is a crucial thread that ties together international political leaders to create a tapestry of solutions for the persistent water problems plaguing the world today.

The International Indian Treaty Council is another NGO that uses the power of international unity to fight for the rights of the underprivileged and misrepresented. More specifically, the IITC is a coalition of Indigenous representatives from North, Central, and South America working to protect the heritage and freedom of all Indigenous communities (“International Indian Treaty Council 1”). The organization understands that local problems are often solved with global efforts. The IITC embraces the power of unity, and strives to gain Indigenous participation in the UN and other international committees. Naturally, the IITC is concerned about native peoples’ rights to clean water, and have consistently sent representatives to the World Water Forum to voice Indigenous opinions regarding the protection of water sources (1).

During the 2003 WWF the International Indian Treaty Council presented a report entitled *Indigenous Water Vision and Rights: A New Perspective for Better Water Management* (“Indigenous Water Vision and Rights...”). Some of the key issues expressed in the report included the “central and primordial role of water in the spiritual and physical relationship of Indigenous Peoples to the earth. . .,” the “negative impacts of expropriation by governments and the privatization of water sources. . .,” and the importance of recognizing “an Indigenous ethic of respect and reverence for water as life and life giving” (“Indigenous Water Vision and Rights...”). The final recommendations

urged the participating organizations in the Forum to strive for ethical water policies that respect water as a giving life force and that recognize the rights of Indigenous Peoples to clean water sources.

Transitioning from the international to the national level, Public Citizen is a fierce watchdog that works diligently to protect the rights of Americans from political corruption and injustice from its headquarters in Washington, D.C. Founded in 1971, Public Citizen is a non-government organization intent on representing the average consumer's best interests in social, economic, and environmental policy ("Public Citizen"). The organization is purely nonprofit, accepting no support from the government or private interests, which makes it possible for PC to take a critical, objective stance on hot-button issues such as water rights.

One of Public Citizen's major programs, the *Critical Mass Energy and Environment Project*, tackles water issues under the premise that "water is a common resource and we all have an equal right to this precious resource and a responsibility to protect it" ("Public Citizen"). Public Citizen has used the United Nation's stance that water is a human right to reinforce the importance of ensuring each citizen has access to clean water sources. The organization's *Water For All* campaign, organized under the Critical Mass Energy and Environment Project, has been an effective means of informing the public on current water issues, including ways for individuals to voice their concerns about water rights ("Water For All" 1). Through informative newsletters and "action alerts" the campaign educates Americans about pressing water issues, with the hope that the people will pressure their political representatives to make responsible, ethical decisions regarding water policies. Public Citizen and its' *Water For All* campaign is a

refreshing example of the benefits of democracy. The organization empowers and encourages average citizens from across the country to get involved with water issues, much like a local nonprofit organization does here in Montana.

The Montana Environmental Information Center (MEIC) is a powerful, uncompromising organization that is unwavering in its fight for a healthy environment. Concerned by the deteriorating state of the environment, Montana citizens founded MEIC in 1973 (just two years after Public Citizen was established) to protect and revitalize the land ("History" 1). The organization remains in existence due to heavy member support and contributions, as it is well known throughout the state that MEIC is "Montana's environmental watchdog" (1). Like Public Citizen, MEIC is focused on advocacy, outreach, and education, as well as monitoring the activities of the state legislature. For thirty-two years the group has significantly influenced Montana's environmental policies and increased the public's understanding of crucial environmental issues, including (but certainly not limited to) mining practices, energy conservation, urban sprawl, hazardous waste, and water quality (2).

As it was discussed in the previous chapter, MEIC was at the forefront in the battle to defeat Initiative 147, which would have reinstated open-pit cyanide-leach mining, and is closely monitoring legislative policies regarding coalbed methane development in Montana. Another landmark decision heavily influenced by MEIC's work involved "total maximum daily loads" (TMDLs), which are guidelines that limit the amount of pollutants allowed to enter already polluted water bodies in order to restore the river, lake, etc. to a point where it can support its designated use (Montana Department of Environmental Quality 3). TMDLs were developed in federal water laws in 1972, but by

1997 Montana had still not completed the necessary surveys, which prompted MEIC to sue the state for its shortcomings in the program (“Victory in TMDL Lawsuit” 1).

Despite appeals from the state Department of Environmental Quality, the court upheld the decision to force the department to complete all outstanding TMDLs by 2007 (1).

The success stories of NGO’s like MEIC are important to outline because they prove that through diligent, resolute work citizens can make a difference in water quality policies, which can ultimately affect international water sources and protect the right to clean, living water everywhere.

Governmental Agencies / Policies Promoting Water Quality:

Blame the government! While political systems are often the scapegoat for deteriorating water quality, limited access, and corrupt business deals with private contractors, a balanced examination of solutions to water issues must include the positive activities of governmental agencies. Without structured, formal policies and the means of activating specific programs, the passionate campaigns waged by non-government organizations would be in vain. The 20th century witnessed great strides in water quality policies at both national and state levels, which will be outlined briefly to give the reader perspective on the current status of water policy in the United States, as well as Montana.

At the turn of the 20th century, as America was booming with economic success, the population in major urban centers like New York was also growing exponentially. Consequently, the heavy concentration of people, coupled with neglectful sanitation habits, lead to outbreaks of devastating diseases like typhoid and dysentery (“The History of Drinking Water Treatment” 2). At this time the only drinking water treatment systems were infantile at best, as cities like Philadelphia implemented filtration procedures that

were designed to reduce turbidity for aesthetic reasons more so than for health concerns. As waterborne diseases continued to haunt the lives of citizens, in 1908 New Jersey became the first state to finally use chlorine for disinfectant purposes (2).

The remainder of the 20th century is speckled with various federal water quality regulations, beginning in 1914 when the U.S. Public Health Service standardized acceptable bacteriological levels in drinking water (“The History of Drinking Water Treatment” 2). Then, in the 1960s, increased agricultural and industrial wastes entered drinking water sources, contaminating the water with newer, deadlier chemicals. As the public became increasingly nervous and agitated about the unknown health consequences of consuming contaminated water, Congress was pressured to focus on water quality issues during the 1970s (3). A significant result of Congress’ investigation into the safety of drinking water was the Safe Drinking Water Act of 1974, which substantially increased the number of treated water systems throughout the nation.

Since the act has been initiated there have been developments and refinements in water treatment facilities that can now more effectively provide clean water. The seemingly archaic techniques of filtration and chlorination remain successful water treatment strategies, while improved methods of disinfection have also been effective (“The History of Drinking Water Treatment” 3). In addition, there are now treatment techniques that implement reverse osmosis filtration, ozonation, and granular activated carbon (4).

Today, the U.S. Environmental Protection Agency is responsible for the oversight and enforcement of the Safe Drinking Water Act. Cities have responded cooperatively, as indicated by the statistic that by 1995 69% of communities with 100 people or less had

implemented water treatment systems, while in 1976 only 33% of communities with under 100 people had a treatment system (“The History of Drinking Water Treatment” 3). It is still discerning that 31% of the small/disadvantaged communities are lacking adequate water treatment plants, but fortunately there is now a “state revolving loan fund” to support the installation of water quality facilities in underprivileged communities (4). The Safe Drinking Water Act is an example of how the United States government, by working through the EPA, is making important strides in protecting each citizen’s right to clean drinking water.

No matter how strong the federal government’s water quality policies, they would be virtually irrelevant if state governments were unwilling to recognize the importance of protecting personal rights to clean, safe water sources. Fortunately, the Montana Supreme Court has decided that a healthy environment with clean water is imperative for citizens to maintain a high quality of life. In 2000 Montana’s high court agreed with environmental advocacy organizations, including National Wildlife Federation (NWF), that the state constitution “guarantees Montana’s citizens a *fundamental right* to a clean and healthful environment” (“Citizens Have Right to Clean Environment, Montana Court Says” 1). The controversy leading to this decision revolved around the question of whether certain polluting activities, primarily from mining practices, should be allowed to continue despite their failure to meet state water quality standards (1). Essentially, the Court was asked to decide whether or not private mining corporations had the right to indiscriminately plunder Montana’s water sources.

The magnitude of the court’s decision to protect each person’s “fundamental right” to a healthy environment cannot be overstated, as it sent a direct message to

legislatures, industry, NGOs, and private interests that water is too precious to be tampered with and exploited. The National Wildlife Federation praised the court for setting a precedent for courts around the country to follow, as Montana made it clear that industry rights should never trump the rights of the people.

The Montana Supreme Court reflected on the state Water Quality Act, as it appears within the state constitution. In Chapter Five, entitled *Water Quality*, the constitution expressly notes under *Part 1 – General Provisions* that “it is the public policy of this state to: conserve water by protecting, maintaining, and improving the quality and potability of water” and to “provide a comprehensive program for the prevention, abatement, and control of water pollution” (*Montana Water Quality Act 75-5-101*). The direct language expressed in Montana’s constitution regarding water quality rights was designed to safeguard the public’s interests in water-related issues, as was put to the test when the Supreme Court ruled in favor of the peoples’ rights in the landmark 2000 decision.

While the legislative and judicial processes can be arduous and frustrating, it is important to remember that the nation’s democratic institutions are designed to serve and protect the interests of the people. It is naïve to think that the world’s complicated water issues can be effectively combated without the help and support of policy makers and judicial oversight. Instead of battling governmental institutions locally, nationally and internationally, citizens must work *with* the legislators; the potential for unique ideas and innovative solutions developed through collaborative efforts are unrivaled.

Individual Contributions:

A warning to the reader: do not be lured into complacency by assuming that the effective actions taken by various organizations (both non-governmental and governmental) can provide adequate solutions to the water crisis. Restoring the world's freshwater to a clean, healthy, bountiful source of life will not be possible without individual acts of responsibility and stewardship. Remember, earth is the commons that binds the biotic and abiotic communities together, meaning there is an obligation to respect the sacred communal space. The power of individuals' actions is overwhelming, for only when it becomes clear that everyday citizens are passionate about protecting the water will substantial changes be possible.

There are different avenues for action that can easily be accessed by all citizens. A wonderful advantage of living in the United States is that people are encouraged to voice their concerns and desires regarding public policy by contacting Congressional leaders and state legislators. As the discussions regarding the Safe Drinking Water Act and the Montana Water Quality Act illustrate, this country's policy makers can decide the fate of crucial issues, including water rights. Therefore, individuals need to dive into the political arena, using the democratic process to pressure elected officials to represent the public's voice. Since leaders cannot accurately represent their constituency without adequate feedback, it is time for Americans to take advantage of their abounding political opportunities.

Fortunately, contacting legislators can be a simple process, not an arduous task. It may be less intimidating for the novice to begin at the state level, where representatives and senators are neighbors and acquaintances rather than enigmatic figureheads. In the

first four months of odd-numbered years, such as 2005, it becomes increasingly convenient to express concerns or support for public policies, as this is the time of the state legislative session. In Montana, educating oneself on crucial water-related issues requires no more than a saunter up to the State Capital building in Helena, where local citizens can attend committee hearings, collect free informational packets regarding the legislators and bills under consideration, and find phone numbers/email addresses/fax numbers for all senators and representatives in the *Guide to Montana's (59th) Legislative Assembly*. This guide also includes contact information for Montana's Congressional representatives, who are elected to represent the best interests of Montanans on a Federal level. With minimal effort one can become educated and involved in crucial water policy, which will ultimately be a fundamental step in affecting state, national, and eventually international water laws.

Another opportunity for individuals to express support for the protection of water sources is by promoting the cause to service and volunteer organizations. Since access to clean water is a fundamental right all are entitled to, the cause could be advocated at environmental, social, and religious organizations, among others. For example, as it was detailed in Chapter 2, the Montana Environmental Information Center welcomed volunteer efforts to combat Initiative 147 in the fall of 2004. During the campaign local citizens concerned with the state's water sources banded together to inform their peers about the dangers of cyanide-leach mining. On one blustery autumn morning in Helena, for instance, local college students and residents traveled door to door, distributing informational flyers regarding the initiative.

Turning to civic organizations, former Senator Paul Simon, author of *Tapped Out*, notes that the Rotary Club has been an advocate for discovering working solutions to the water crisis (178). Throughout the 1990s the organization tackled water issues by making the topic a cover story for their magazine, supporting an international conference on water issues, and sponsoring water efforts in underprivileged nations (178). If a person does not belong to a Rotary Club, but to a different social organization, the examples of water-centered projects undertaken by the Rotary could most assuredly be used to encourage other groups to tackle water projects.

The spiritual context of water, as it was discussed in Chapter One, explains why many religious organizations support water related projects and foster a sense of respect for the natural world. For example, the Catholic Church has taken a proactive approach to water issues, with the church's highest leader, Pope John Paul II, stating ". . . An education in ecological responsibility is urgent; responsibility for oneself, for others, and for the earth" (Kautza 33). In addition, The Catholic Bishops of the United States have said, "the fundamental relation between humanity and nature is one of caring for creation" ("The Columbia River Watershed: Caring for Creation and the Common Good"). This progressive attitude by the Church should encourage individuals to suggest water-related projects and discussions to the leaders of their religious organizations.

The National Catholic Rural Life Conference (NCRLC) is an all-encompassing organization "grounded in a spiritual tradition which brings together the Church, care for creation and care for community" (*Catholic Rural Life* 2). Through the publication of its' periodical, *Catholic Rural Life*, the NCRLC offers guidance for religious leaders to promote socially and ecologically responsible congregations. Regarding water issues, the

Spring 2003 (Vol. 45, Number 2) edition of Catholic Rural Life was devoted to water ethics and the Church's role in the fight to protect the earth's freshwater (3). Bringing works of the NCRLC to the attention of a pastor/priest/religious leader would be a great way to implement thought-provoking discussions among religious communities.

Another resourceful publication designed to encourage a spiritual reawakening among individuals and their perception of humanity's role within the ecological community is *The Columbia River Watershed: Caring for Creation and the Common Good*. In the winter of 2001 an international group of Catholic bishops from the northwestern United States and Canada published this document, regarded as an "international pastoral letter," to guide congregations through ecologically-grounded services that focus on human responsibility to care for God's creations (1). The letter directs participants to specific passages in the Bible as well as traditional teachings of the Catholic Church regarding stewardship and the common good, while emphasizing the beauty of the Columbia River Watershed and the importance of preserving the resources of the region. The bishops involved with the project were motivated by a desire for ". . . all people of good will to work together to develop and implement an integrated spiritual, social and ecological vision for our watershed home. . ." ("Reflection Guide" 1). Despite being designed by Catholic bishops, the pastoral letter can be used as a guide for any denomination desiring to protect the earth.

Perhaps the most powerful, yet simplest solution to the looming water crisis is for people to become aware - aware of their place within the biotic community, aware of the repercussions of their actions, aware of the needs of fellow citizens, and aware of the abounding beauty of the earth. Striving to abort the water crisis is futile if individuals do

not acknowledge their responsibility to the common good, which includes protecting the universal right to a safe, equitable supply of freshwater. Polluters will not change their ways, and private water industries will continue to bombard governments until societies acknowledge the severity of the issue.

There *are* solutions to the ever-mounting water crises plaguing the international community, with different avenues contributing to the common goal of revitalizing earth's water sources. It is encouraging to see that the United Nations, a staggering number of non-government organizations, government agencies, and faith-based coalitions have undertaken the daunting task. The invaluable work of these groups has allowed the average citizen in modest communities like Helena to rally behind a campaign devoted to the protection, preservation, and restoration of the world's freshwater sources. In order to combat the unabashed pollution and privatization that continues to negatively impact the earth and its water, the universal efforts undertaken by aware, responsible citizens must persevere.

Chapter Four:
Case Study – From Statewide Water Quality Monitor to Legislative Aide

While the previous chapters have provided a scholarly exploration of contemporary water issues, this chapter focuses on my personal efforts to protect water, a fundamental necessity of the earth commons as well as a human right, through two unique internship experiences. First, in May 2003, I ventured into the public sphere by working with the Montana Department of Environmental Quality (DEQ) as a statewide water quality monitor, followed by a shift to the non-profit arena in January 2005, where I assisted the Montana Wildlife Federation (MWF) as a legislative aide. As an interdisciplinary Environmental Studies major at Carroll College, the internship experiences proved invaluable, as they reinforced the importance of viewing complex issues (such as water rights) from broad perspectives. Throughout the internship opportunities I witnessed the fusion of science, politics, and moral beliefs in an attempt to protect the quality and availability of water sources. This chapter will progress in chronological order, moving from an explanation of the DEQ Statewide Monitoring Program to the endeavors of the Montana Wildlife Federation during the 2005 legislative session.

Statewide Monitoring:

In 2001 Randy Apfelbeck, an employee of the Montana Department of Environmental Quality, initiated the Statewide Monitoring program (referred to as SWM) to provide a long term “status inventory” of various rivers and streams across Montana. A unique feature of SWM is that it encompasses the entire state rather than focusing on the water quality of just one area. The project is much like a helicopter tour, providing a broad, panoramic view of the health of Montana’s rivers. The ultimate goal of the

program is to use the compiled data, gathered over three to five years, to uncover any trends that have developed in the multiple watersheds.

Each year, two monitors such as myself work in conjunction with Randy Apfelbeck to survey a minimum of forty fixed sites, which allows the current data from a specific waterbody to be compared to data gathered from the exact location in previous years. The fixed stations are recognized as "integrator sites" because they are often near the mouth of the streams, and therefore tend to reflect the entire watershed. In addition, a process known as "bracketing" is incorporated, meaning that two or more sites on a particular waterbody are sampled to further study the trends. For example, several sites are visited on the Powder River to give an overall picture of the river's quality, from the head to the mouth. To ensure that the monitors work at the exact location of previous years, detailed GPS readings are recorded in a field notebook, and several digital pictures of the site are archived, as well as any defining features of the landscape or unique characteristics of the site.

Sampling a minimum of forty sites (forty-four were visited in 2004) within three months is a challenging puzzle, making it imperative for each piece of the schedule to fit snugly against the others. To alleviate some of the stress and to foster efficiency, the monitors first complete comprehensive training conducted by Mr. Apfelbeck and other DEQ personnel. In 2004, the first phase of training commenced on a blustery morning in mid-May, along the banks of Ten Mile Creek downstream of Rimini. Even though the second SWM monitor and myself had completed a similar training exercise on a equally bone-chilling morning prior to the 2003 field season, it was helpful to review proper technique, since flawed data cannot be used in the final assessment of the watersheds.

The May training sessions provided instruction on how to use SWM equipment, including a Horiba Meter, GPS unit, digital camera, and E. coli incubator, as well as the proper procedures for conducting the various biological and chemical tests. The monitors are responsible for completing macroinvertebrate, periphyton, chlorophyll A, E.coli, and water chemistry procedures, and must be versed in the techniques for each activity.

After the pre-season field training the monitors focus on preparing detailed equipment inventory lists and field schedules. The project is funded on a fixed budget, so it is necessary to anticipate the amount of each supply needed for the entire season. There are specific bottles and solutions that correlate to each test, such as the ethanol used for the macroinvertebrate samples and the Lugol's solution used to preserve periphyton. It is also important to test each piece of equipment before the first day of sampling, when the team may likely be hundreds of miles away from DEQ headquarters. For example, the Horiba Meter requires calibration to ensure its accuracy. Completing a detailed, complete equipment list for three months and forty-four sites was harrowing. However, the arduous task did improve my organizational skills and ability to anticipate future needs.

An equally, if not greater, challenge than the monstrous equipment list was the field schedule. The intimidating aspect of this task was that once the schedule was implemented there was limited flexibility in the sequence of the summer. The schedule was determined, in part, by considering the water levels of the rivers. It seemed most appropriate to sample the eastern rivers in early summer, before the water levels dropped under the scorching sun of July and August. It was also impractical to sample the western streams before July, as the waterbodies would be too saturated with mountain

runoff to allow for a thorough sampling. Fortunately, the field schedule created by my partner Jolene Berscheid and myself for the 2003 season was comprehensive enough to serve as a template for future field seasons.

The field season officially begins in the first or second week of June, once the spring thaw has occurred and the threat of high water and winter weather retreats. The summer is divided into weeklong trips, with each week focusing on a different region of the state (i.e. northeast, southeast, southwest, northwest, and central). Between two and four sites are sampled each day, depending on factors such as travel time, stream access, and weather conditions. The monitors work in tandem to complete the various sampling and assessment protocols, which greatly decreases the time spent at each site. Before testing begins, the exact site location is verified by comparing current GPS readings to previous records, and by studying the archived photographs of the site.

Accuracy and precision are crucial aspects of this field position, and the monitors must strive to habitually use proper technique and diligence while in the field; self-responsibility and a strong work ethic are required if the data is to be viable. Each form must contain uniform information, including the date, a site visit code, a specific station identity, the waterbody name, and personnel. In addition, each type of sample has specific needs for its preservation. Macroinvertebrate samples require a liberal dousing of ethanol, the water chemistry bottles call for chemical preservatives like nitric acid, and Lugol's solution must be added to the periphyton containers. At the end of a trip the rear of the large Dodge truck used for travel was brimming with coolers, samples, and melting ice.

Upon arrival to Helena the samples are delivered to various outside contractors and state laboratories, where the data is analyzed in an objective manner. After the data from each trip has been processed the contractor delivers the results to Mr. Apfelbeck, who studies the data and formulates conclusions regarding the health of the waterbodies, based on empirical facts and general trends gathered over the span of several years. Comparisons are made between chlorophyll A levels, macroinvertebrate and periphyton abundance and species diversity, E.coli levels, and water chemistry factors such as metals and nutrients.

The fieldwork was not glamorous, with the weather disagreeable, the flies abundant, and the red Dodge truck becoming a dusty, monotonous prison cell, but I am proud and satisfied with my two summers dedicated to Statewide Monitoring. Randy Apfelbeck's innovative study is a worthwhile program that provides long-term, unbiased data that can be used as a measuring stick to evaluate the overall health of Montana's rivers and streams. From the rolling hills of the Judith River to the overwhelming peaks surrounding the Yaak River there were often citizens enjoying the bounty of Montana's waters, reveling in the spiritual and physical joys brought by the comforting lull of the river on a lazy July afternoon. Their curiosity surrounding two young women relentlessly scrubbing rocks and collecting algae often lead to a conversation regarding the goals and purpose of SWM. The common respect and love for clean, bountiful water flowed through strangers, as I was reminded that the resource is a fundamental right all are entitled to experience. Water has the exceptional ability to link the physical and spiritual realms, creating a sense of interconnection between the lively stoneflies, the relaxed canoeist, and the sublime Creator.

Montana Wildlife Federation:

In 1935 the citizens of Montana had the foresight to establish the Montana Wildlife Federation (MWF), an organization dedicated to the preservation of the state's unique, bountiful resources. It is currently the "oldest, largest . . . conservation organization in Montana – a collection of men and women from all walks of life," representing the desires of over 7,000 members and collaborating with twenty-four affiliate clubs (Montana Wildlife Federation). As a non-profit organization MWF relies on the support of its members, who consistently rise to support efforts aimed at protecting the land, water, and wildlife of the state. MWF continuously strives to work towards the mission statement, which reads:

Montana Wildlife Federation is an organization of conservation minded people who share a mission to protect and enhance Montana's public wildlife, lands, waters and fair chase hunting and fishing heritage¹

At the beginning of 2005 I began my work with MWF, having been selected for an internship as a legislative aide for the approaching political session. The shift from working with the Department of Environmental Quality, where I was focused on quantitative, empirical data to a non-profit genre focused on environmental advocacy was an exciting transition. The opportunity to interact with lobbyists, state policy makers, and common citizens brimming with passionate opinions was an educational gift that significantly enhanced my experience as an Environmental Studies major.

For the four intense months of January – April 2005 I collaborated with MWF staff, including Craig Sharpe and Nathan Birkeland, as well as Robert Throssell, a local

1. The mission statement and other goals of the group can be found on the MWF website (www.montanawildlife.com) or in the February/March 2005 volume of the organization's publication, *Montana Wildlife*.

attorney hired to lobby on behalf of MWF during the legislative session. Responsibilities of being a legislative aide included daily updates of committee hearing schedules, with a particular focus on the activities of the House Fish, Wildlife, and Parks committee and the Senate Fish and Game committee, as these committees made critical decisions regarding environmental issues. A bi-monthly legislative update, which included the status, description, and sponsor of the 124 bills of interest to MWF, was also organized and distributed to affiliate clubs and interested members throughout the session. It was a constant scramble to keep myself, Robert, and Nathan updated on the most recent, ever changing activities at the capitol.

The calculated political strategy encapsulating the legislative process was fascinating to witness, as the human elements of passion and frustration melded into the "noble" democratic process, determining the fate of countless bills. The partisan aspect of the political arena was despairing, as countless hours of preparation and testimony often proved fruitless because of undisclosed political objectives that swayed the legislators in varying directions. Organizations such as MWF, with vested interest in state policy, attempted to establish working relationships with supportive legislators who were willing to cooperate on particular issues. For example, MWF worked diligently throughout the session on a number of bills, some of which were created directly by the organization, which then needed to be sponsored by legislators who supported MWF's conservation-oriented goals.

House Bill 515 was a piece of MWF legislation that, had it passed, would have provided the Department of Fish, Wildlife, and Parks with the authority to acquire water rights to protect the instream flow of Montana's rivers and streams. It was encouraging

to see MWF embracing the battle to protect the quality and sustainability of the state's water sources, as I was deeply immersed in research for this paper. The ambitious bill, sponsored by Representative Gail Gutsche of Missoula, specifically stated that the department could "change an appropriation right for instream flow to protect, maintain, or enhance streamflows to benefit the fishery resource" (HB 515, line 27). Had the bill been signed into law it would have been a major victory for all Montanans, protecting the valued waterways of the state, as well as the fish and wildlife that rely on plentiful water for a means to an enriched existence. Frustratingly, the bill was tabled in the (H) Fish, Wildlife, and Parks committee on February 16, 2005, meaning organizations like MWF had to revise their strategies and work towards successfully passing other water rights legislation.

Working with MWF significantly enhanced my final semester as an undergraduate student, especially with an interdisciplinary major at a liberal arts college, because it illustrated the complex nature of reality. A non-profit environmental advocacy group must have a wide focus with a breadth of relationships, as the best way to change the paradigm of society is to unite and collaborate with known friends as well as potential foes. The heat surrounding issues like water rights is scorching, but after witnessing the dedication of MWF's staff and members I strongly believe that state policy will eventually migrate towards water conservation and protection, which can influence national water policy, which in turn may influence international precepts regarding the importance of maintaining vital, living water. The experience at MWF strengthened my belief that change often occurs on the individual level, and that perseverance is the only way to accomplish large-scale goals.

Conclusion:

On Earth Day in April of 2000, former secretary of state Madeleine Albright presented a speech that emphasized the importance of water, both physically and emotionally, to the well being of all peoples. She eloquently remarked, "From history's dawn to this morning's, wells and streams, rivers and lakes, have meant life . . . the history of rivers is the history of us. And there is no more unifying or naturally democratic force" (Rothfeder 156). Water is the essence of life. For those blessed with access to unlimited water sources, it effortlessly flows through the daily routine, making it tempting to take for granted. However, with the next luxurious bath or frivolous watering of the lawn, remember the struggling mother in Gambia, or the infant suffering with dysentery on a street in India. Instead of letting these images flood the senses with guilt, allow them to spark action.

Americans must shrug off their complacency and become involved in the world discussion on the impending water crisis. The lush, manicured lawns of suburbia are dangerous facades that mask reality; even as the tap automatically provides a bountiful supply of clean drinking water, the aquifers of North America are being rapidly depleted. For example, the High Plains Ogallala Aquifer, which spans from South Dakota to Texas, is being drained eight times faster than it can be replenished (Rothfeder 8). If that sobering fact is not enough to spark interest in contemporary water issues, then contemplate the fact that six billion people currently share the same amount of freshwater that was available to less than one billion citizens at the dawn of the 19th century (8).

Already, there are a disheartening number of examples demonstrating that civilization's relationship with water is at a breaking point. One third of the human

population attempts to meek out a dissatisfying existence with severe water shortages. Peter Gleick, cofounder of the Pacific Institute, created a formula to determine the minimum daily water requirements of people, incorporating the needs for drinking, sanitizing, cooking, and bathing (Rothfeder 4). Gleick concluded that for a “minimum quality of life” one must have fifty liters of water per day. Explain that to a poverty-stricken young mother in Gambia, forced to live on a mere three liters per day for drinking, cooking, and providing for her children (4). Unsafe water, which is often polluted and unsanitary, remains the primary cause of infant mortality. In an era where billions of dollars are poured into increased national security measures, it is unacceptable that one third of the human population lacks access to freshwater, which is *life* security.

The international community has responded to statistics such as those above with passionate debates on whether water is a fundamental human right or simply a need. The distinction between ‘right’ and ‘need’ appears slight, but the implications of the terms are necessarily different, with the power to change the fate of millions of citizens. As author Jeffrey Rothfeder explains, “a right is an entitlement; it cannot be denied without sanction. A need, by contrast, is something that is both necessary and desired but by no means guaranteed” (78). If water is not protected as a human right, then there is no assurance or motivation for governments to provide citizens with adequate supplies of clean, safe water. Contemporary atrocities of water commodification by private interests and rampant pollution by agriculture and industry will continue until the world demands a paradigm shift in water management.

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