

## Keystone XL Pipeline: The Fight Between Progression and Conservation

In today's ever evolving world, most of society's most important decisions have some kind bias towards environmental conservation and the preservation of our land. We have seen the world come together and make great steps to stop the evident ruination of our land, and it is an incredible sight. But it begs the question, is environmental conservation more important than economic progression? Obviously, the easy answer for conservationists is yes. Businessmen would argue no. And this keeps us in a political stalemate. Due to the black and white opinions of extremists, topics concerning preservation and progression are extremely controversial. This is the case with the proposition of the Keystone XL Pipeline.

The Keystone Pipeline is a system of oil pipes running from Canada down to the Gulf Coast. Commissioned in 2010, the Keystone Pipeline currently consists of three phases and stretches about 3,000 miles. Carried from Canada, the pipeline pumps around 1,300,000 barrels of oil per day to numerous pumping stations and refineries across the Midwest United States. TransCanada, the company behind the Keystone Pipeline proposed a fourth phase to the already existing network of pipes called the Keystone XL Pipeline. The Keystone XL Pipeline would originate from Alberta, Canada, traveling down to Steele City, Nebraska where it would connect with already existing pipelines. Phase 4 is essentially a duplication of Phase 1 with larger diameter pipes and a shorter route to Nebraska. But unlike the previous phases, Keystone XL Pipeline has caused major backlash from environmentalists, halting the approval of the fourth phase. Proponents of the new pipeline say the increase in oil revenue may be the jolt start the struggling U.S. economy needs. While pointing at the economy, advocates also draw attention to the unemployment rate, which could be nursed with the influx of new jobs phase 4 would create. While an economic boost could be essential to the U.S., the environmental impacts the Keystone

XL Pipeline could have are significant and cannot be overlooked. Is the boost in our economy worth the potential pollution of the Ogallala Aquifer, a major source of drinking water for the U.S.? Is the increase in jobs worth the increase in greenhouse gas emissions, which we have been diligently working on to decrease? No. The Keystone XL Pipeline poses many risks that could be detrimental to not only ourselves but our environment.

Before we can even look at the positive and negative effects the Keystone XL Pipeline could have in the long run, we must consider the construction process and the ramifications that come along with it. The construction of the pipeline would run through numerous biomes, disrupting these ecosystems and the area around them. Croplands, grasslands, upland forests, developed lands, and wetlands would all be disrupted throughout the construction process since the pipes run primarily through these areas. For pipes to be placed into the ground, the ground must be dug up, destroying any of the grass and trees with it. To contradict this, TransCanada has said, "After construction, topsoil slopes, contours, and drainage patterns would be restored to their original condition and disturbed areas reseeded, when possible." (Palliser). The key words in that sentence is "when possible". Since there are no specifics behind the words, TransCanada could ultimately say that it was "impossible" for them to restore the land to its original condition, leaving the land with its post-construction deformities. Without the land being repaired to its original condition, habitats could potentially never be restored, leaving species without a home. One specific biome that construction would interfere with is lowland floodplains. "Clearing bottomland hardwood trees such as bald cypress, water oak, water hickory, and swamp tupelo in lowland floodplains can result in long-term to permanent impacts because forests require decades to reestablish." (Palliser). Without trees, the ecosystem around and within the floodplains can be destroyed. Tree's provide habitats for numerous species including insects, birds, and rodents.

When these animals die, they are decomposed and their nutrients travel down the flood plain into the river, providing fish and other amphibious creatures with nutrients they need to live. With the absence of nutrients, the concept of natural selection comes into play, the overall population of the biome will decrease and species could go extinct. The Keystone XL Pipeline could also be destructive for already endangered species, such as the whooping crane. The whooping crane is a migratory bird that travels “2,400 miles from Texas to central Canada each year” (Blrd). In order for the pipeline to operate, there would need to be power lines that “...cut directly through the whooping crane’s remaining 170-mile wide migration corridor, and in Nebraska, nearly the entire pipeline route will be constructed within this corridor” (Blrd). Since the whooping crane is so lanky, the chances for a collision are only increased. “The Department acknowledged that these power lines are collision hazards to migrating cranes and recent studies have shown bird mortalities from collisions with existing transmission lines.” (Blrd). If TransCanada were to go through with this without even considering alternate energy methods, it would show how focused they are on economic prosperity over the conservation of our land. We need to acknowledge that we are not the only creatures on this earth. We are blessed enough to have the ability to think rationally and logically and we should use this blessing to help others, instead of being selfish. And by doing nothing while we kill off an already endangered species is ignorant and selfish. Another environmental impact is the construction of stream crossings which could negatively impact aquatic ecosystems. “Fisheries resources might also be affected during the construction of stream crossings. Impacts include siltation, sedimentation, bank erosion, sediment deposition, short-term delays in fish movement, and transport and spread of aquatic invasive species.” (Palliser). Out of the possible impacts given, siltation can be viewed as one of the most detrimental. When construction vehicles and equipment are in use, the toxic particles that they

give off can be deposited onto the soil. When it rains, the runoff can cause these particles to travel to the nearest river, polluting the water, and potentially poisoning its inhabitants.

Ultimately, construction of the Keystone XL Pipeline could have detrimental effects on the environment, such as the destruction of ecosystems, the loss of habitats, and the pollution of nearby rivers. But proponents of the pipeline state that the economic benefits the construction process can have on the economy is much needed. The construction process of the Keystone XL Pipeline is said to create "...up to 20,000 direct jobs and 118,000 spin-off jobs during the overall construction" (Palliser). This increase in jobs would greatly benefit isolated communities where the unemployment rate is high. Also, State and Federal revenue would increase since more jobs equals more money in the economy. Overall, the construction process seems to benefit the economy in the short run, but what about the long run. Well, these construction jobs are if anything temporary. What happens to the construction workers once their job is complete? Is the little jolt in the job market worth it even though the jobs would be gone in 2-3 years? In the long run, I feel these jobs would not be worth it. When you think of jobs that we want to be created, we want jobs that will last for a while, A job that will provide benefits and a retirement plan. Permanent jobs like this could be created in areas that oversee the operation of the Keystone XL Pipeline but it would not be anywhere near the amount of jobs from the construction process. The little construction jobs will only help families for a couple of years and then they are right back to where they started.

When listing the negative effects the Keystone XL Pipeline can have on the environment, greenhouse gas emissions is one the most significant. Science has proven that global warming is real, and without changing our ways of life now, we will deeply regret it. Since we have been working diligently to decrease our greenhouse gas emissions in order to mitigate global

warming, why would we ever want to set ourselves back. This is exactly what we would be doing if we were to allow the operation of the pipeline. The main issue with the Keystone XL Pipeline compared to other pipelines, is the Keystone XL Pipeline is set to carry Tar Sands Oil. “Tar sands (also known as oil sands or bitumen) are a naturally occurring heavy crude oil mixed with sand, clay, and water.” (Bradshaw). Bitumen, compared to conventional oils, is very thick and because of this it must either be broken down by a chemical solvent or be heated to very high temperatures in order to be transported by pipeline. This makes the transportation of Bitumen extremely energy demanding. “Compared to other types of crude oil imported, refined and consumed in the US, Canadian Oil Sands have greater greenhouse gas emissions per unit of energy produced. Oil sands are heavier and more viscous compared to other types of crude oil, thus more energy and resources are required to extract them.” (Bradshaw). Economically, tar sands are the cheapest oil we can come by but that is why they require the most energy. So, would we want cheaper oil at a higher environmental cost? Not when we also need more work to make oil sands consumable fuels. Oil sands are deficient in hydrogen and have a higher carbon, sulfur, and heavy metal content when compared to crude oils, so more processing is needed to turn it into consumable fuel. Oil sands are also extremely close to the surface, “less than approximately 75m below the surface” (Bradshaw) to be exact. Since the oil is so close to the surface, there are two ways to extract them, strip mining and in-situ. In-situ and strip mining both negatively affect the environment, but the in-situ method of extracting oil sands is linked to higher greenhouse gas emissions. In order to extract the oil sands, the bitumen is heated up by injecting steam into an oil sands reservoir, lessening its viscosity, and making it suitable to be collected. “This type of mining is associated with higher greenhouse gas emission (excluding land use impacts) than conventional mining due to the significant amount of energy required to

create steam.” (Bradshaw). Greenhouse gases are one of the leading cause of global warming which leads to the melting of glaciers as well as ice sheets. This melting is shown to have harmful effects on the ecosystems in these areas, leading many species to the brink of extinction. Along with the harmful effects on the ecosystems, the melting of the glaciers also cause sea levels to rise. Now, this may not seem like such an issue, but when the owner of TransCanada goes to his summer home on some tropical island and finds the sea level has risen to his front door, he might have second thoughts about the extraction of this cheap, energy demanding oil.

The Middle East currently has a strong hold on the world’s oil. To say the least, this is a problem. The United States has not had good relations with Middle Eastern countries, and now that the Islamic State has, and plan to take over oil fields, the need to rely on ourselves for energy is clear. “It is beneficial to the American consumer to import less oil from unfriendly and unstable countries by replacing that oil with Canadian oil” (Slade). With less reliance on Middle Eastern countries we could increase our national security by only having to deal with Canada for oil and making the Middle East more reliant on us for protection and economic relief, rather than us begging for oil. In this aspect, I do agree that increased national security and decreased foreign dependence would be beneficial to the United States, but we still cannot overlook the extreme environmental risks.

Now say we were to build the Keystone XL Pipeline on the basis that national security and economic prosperity were more important than preserving the earth. What if the pipeline were to leak, or worse burst? What if the pipeline were to burst where it runs over or even when it runs through the Ogallala Aquifer, one of the world’s largest aquifers? The Ogallala aquifer provides drinking water for more than two million people and is a major source of the country’s groundwater for irrigation. If the pipeline were to burst and contaminate the Ogallala Aquifer,

what would we do? I assume we would have to find alternate ways of getting safe drinking water to millions of people throughout the nation. This could lead to us becoming dependent on another nation, such as Mexico or Canada for our water. While the construction of the Keystone XL Pipeline made ourselves independent on energy, this hypothetical yet very possible disaster caused us to become dependent on the most important resource our planet has to offer, water.

This staple of the fight between economic prosperity and environmental conservation ultimately ended in January 2012 with the rejection from the Obama administration. Although TransCanada is still pursuing their mission, they will have to wait till a major advocate of business over environment, President Elect Donald Trump comes into office. While sufficient energy and the potential increase in the United States economy seems promising, the negative environmental impacts the Keystone XL Pipeline poses are overwhelming. In a time when conservation is the topic of most discussions, allowing for the construction and operation of the pipeline would be a major setback to global efforts and a slap in the face to environmental activists everywhere.

## Citations

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