Dam Demolitions and its Positive Impact on the Environment

The era of large-scale dam building went on for decades, lasting from the 1930s, all the way until the 1960s. The whole era started with the erection of the Hoover Dam in 1931. However, the federal involvement in dam erections can be dated all the way back to the 1820s at least (Yale). Which is when the U.S Army Corps of Engineers built wing dams to attempt to improve navigation amongst the Ohio River. As long as dams have existed, people have viewed dams as something skillful and clever, but studies revealed a new outlook on the structures. In the American Southwest dam erections challenge the riparian ecosystems, (Kennedy et al, 2016) alters erosion resistance (Mueller et al, 2018), and allows for invasive species to develop stabilized populations (Healy et al, 2022). Demolitions of these structures have been proven to improve the quality of life for the ecosystems. It will restore the ecosystem, improve the water quality, increase the biodiversity and revive the riparian habitats.

When dams are erected, they shock the downstream aquatic life with the low-temperature water, creating a foreign environment to the native fish. Subsequently, dam releases are filtered through penstocks– which removes any potential sediment that would have previously filtered through. Due to the altered sediment content and heightened water temperatures, non-native species now have the ability to thrive in the dammed river, increasing competition for the native aquatic species. Sediments trapped behind these dams have the possibility of containing pollutants, which if released during removal, will have detrimental effects on the downstream water quality and ecosystem (Evans et al. 2000). The damming of rivers also impacts the Indigenous cultures in the region, drowning cultural sites and compromising access to sacred areas (Pederson & O'brien, 2014). These structures can flood large areas of land, which has the ability to displace indigenous people from their ancestral land.

80 million people worldwide have been forcibly displaced due to dams. Many of them from these indigenous communities, leading to the loss of homes, cultural sites and their livelihood (World Commission of Dams, 2000).

The dam demolition debate is sophisticated and contains a range of perspectives that reflect differing views and concerns. It involves environmental restoration, biodiversity benefits, and community interests. Anti-dam demolition views in terms of the economy are centered around local businesses and agricultural interests. Their argument is that dams provide economic benefits through hydroelectric power and water for irrigation. The stakeholders with this opinion view dams as providing economic benefits through said hydroelectric power, irrigation, and even recreational activities (USBR, 2017). For pro-dam demolition views there seems to be 3 main points that these stakeholders in support of demolitions have. Environmental restoration, biodiversity benefits, and cultural justice. For restoration, dam removals are critical for restoring the river's ecosystems, improving the water quality, and saving the native fish populations (American Rivers, 2016). Speaking of fish populations, removing fams can significantly enhance biodiversity by restoring habitats for various species like salmon and other migratory fish (WWF, 2018).

Articulating my position on dam removals and demolitions was very easy, I am in total support of dam demolitions. This is another reason why I am so grateful to be privileged enough to attend university for my undergraduate study, it educated me on issues just like this one. I had no opinion, or even knowledge on this subject until my ecology class in the spring semester of 2023. Me and two other young women wrote a literature review on dam demolitions focusing on the Glen Canyon Dam in Arizona, which is where I completed my undergraduate years. Through that class and further research, I have multiple reasonings for my support.

Dam demolitions would help remedy cultural problems associated with impeded river flow. Native wildlife habitats, sacred sites to tribes will have a chance to recover by dams being demolished. Demolitions have also demonstrated their ability, when controlled safely, to reduce the abiotic complications in an ecosystem. Controlled demolitions have avoided the increased release of sediments and floods, which are the biggest abiotic concerns. The long term ecological benefits of dam removal have been measured in the improvement of one's water quality, transportation of sediments, and improvement of the native and migratory species.

The demolition of these structures has emerged as a groundbreaking strategy in uplifting the quality of life for these natural ecosystems. The multifaceted approach contains a wide variety of benefits, starting with the restoration of ecosystems to their natural state which facilitates the revival of native flora and fauna. Demolitions have also led to improved water quality due to the elimination of pollutants allowing for the purification of aquatic systems. Through strategic demolitions, these ecosystems have experienced significant enhancements when it comes to quality of life and revitalization of riparian habitats.

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