Prison Inmates as Firefighters: California's Controversial Policy

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

Using Social Construction of Technology, this paper will analyze two potential solutions for California's wildfire issue. Wildfires pose a risk to both human life and the environment in terms of extent of damage as well as contributing to the climate emergency. Researchers have studied the increase in wildfire frequency recently. According to Blach (2017), by compiling data from the US Forest Service Fire Program it was found that from 1992 - 2012 84% of wildfires nationwide were human caused. The length of the fire season caused by humans is triple that of the lightning caused fire season (Blanch 2017). This data was collected three years prior to California's record-breaking wildfires in 2020. After the outbreak of these wildfires, more research was conducted into the environmental and monetary impact they have. According to Wang (2020) these wildfires have a significant impact on the economy of California. For 2020 this cost was roughly $148.5 billion with 22% of that estimated as health costs. Lelieveld (2020), has shown that increase in air pollutants like smoke can lead to a lower life expectancy. They labeled wildfires as an avoidable pollutant as they can be limited or prevented if handled properly. This of course is a difficult task given the range these fires can cover.

California in 2020 experienced around 6,861 wildfires that burned an approximate 1.5 million acres. The total forest acreage in California is only 1.6 million for comparison. These fires constituted just over 79% of the fires across the nation that year. While they originate within forests, if left unchecked, fires will spread to developed areas as well. These fires last anywhere from a few days to a few months. The largest and one of the longest fires for this season was the August Complex. Beginning August 17th, this system of wildfires burned well over a million acres and lasted until mid-November. As of 2022, this wildfire still remains the

record holder for largest in California's history. The range of the August Complex was thankfully an outlier for the season as it was an order of magnitude greater than the second largest fire that year. However, the containment of it took almost three months, and at the same time more wildfires would break out. This shows that the current methods of fire suppression must be improved upon to prevent such an outbreak in the future (CAL FIRE, 2021).

STS Framework

The development of new technologies to fight fires falls within the Social Construction of Technology (SCoT) STS framework. The SCoT theory states that society is what shapes technology. This theory stands in direct opposition to technological determinism, which suggests that it is technologically that shapes societies structure and culture. A better way of expressing SCoT is that it is society that chooses which technologies get adopted or rejected rather than the adoption of technology shifting society. This adoption is based upon the discretion of the stakeholders on an issue a tool or technology is designed to help solve (Pinch and Bijker, 1984).

With the frequency of wildfires increasing, man-power is limited in its ability to contain these fires. This means new methods and technology will be necessary to adequately address these disasters. One such avenue would be the development of more cost-efficient firefighting aircraft. Aerial firefighting can be extremely expensive but cover a large area of a wildfire with only a few missions. However, there is another solution in the form of increases in man-power devoted to forest conservation. For the state of California, this man-power comes in the form of an inmate labor force. This poses a difficult situation for the participants surrounding this problem of wildfires. Additionally, the intricate relationship between the stakeholders must be

examined carefully.

Those Involved

The major participants include the Californian Department of Correction (CDCR) and the prisoners they employ at the Fire Camps. The CDCR has enlisted 1,600 prisoners to aid in Total Fire Suppression efforts in 2021. These inmates must be non-violent offenders and are not assigned to the Fire camps, they must volunteer (CDCR, 2021). A third participant, the ACLU, advocates for better prison conditions, and they recognize these Fire Camps as a potential form of exploitation as prisons are kept at high capacity to keep these Fire Camps running. While many prisoners want to work, there is a vast power difference which could lead to abuse (Fathi, 2018).

No inmate is forced to take the Fire Camp assignments, but the alternative is to sit in a cell. However, the prisoners may not feel as though they're being exploited. The Guardian quotes former prisoner, Amika Mota, in saying, "I am proud to have served on my firefighting crew." The individual speaking was a lead engineer for her squad and was earning 37 cents an hour (Mota, 2020). As a second opinion on the situation, The Atlantic interviewed a female inmate, Alisha Tapia. When asked, in 2017, about how it feels to be on a fire line she was quoted saying, "You just feel zapped; it drains you. The heat, the smoke, everything. But then there's that adrenaline because you're cutting." The cutting she referred to is the cutting of timber and brush in order to prevent the spread of a wildfire (Lowe, 2021). While the full accounts from both of these women is beyond the scope of this paper, it can be seen that they have a positive view of the program. The work they do is highly dangerous at times; however, the benefits include: paid labor, potential time off of sentence, and the potential for future

employment with Cal Fire after expungement. The potential for employment is actually a recent benefit as it is a result of A.B. 2147 passing.

Secondary participants would include Cal Fire, Californian fire department, and FEMA. Cal Fire is the main firefighting department for 36 of California's 58 counties. They are also responsible for 31 million acres of privately owned land. Additionally, Cal Fire, with their air program, are the main fliers of aerial firefighters (CAL FIRE, 2021). Another organization working alongside Cal Fire and Inmate Firefighters is the California Conservation Corps. While not technically a part of Cal Fire, the CCC is an alphabet organization dedicated to conservation and protection for wilderness all over California (CCC, 2022).

While Cal Fire focuses on containment and fire prevention, payment for damages must come from another agency. When disaster strikes, and an individual's property is destroyed, the Federal Emergency Management Agency (FEMA) supports them. After historic fires erupted in 2020 FEMA issued a press release stating, "More than $103 million in federal disaster assistance has been disbursed to help homeowners, renters, and businesses recover." Majority of this assistance, $76.2 million, came in the form of low interest disaster loans to homeowners and businesses. The remaining $26.8 million came as direct assistance for temporary relocation and housing of displaced people. FEMA also provides grants for fire prevention. The Assistance to Firefighters Grants (AFG) are designed to help prevent injury and death from fires for high-risk populations. While this is not specifically designed for wildfires, grants can still be applied for forest conservation if it's within close proximity to a high population area (FEMA, 2020). These grants aid organizations like Cal Fire and the CCC in their efforts to prevent property destruction during wildfires.

Origin of the Fire Camps

It is important to discuss the historical context and origins of one of the major stakeholders of this topic. The California Conservation Department has been using firefighting inmates since 1915, where volunteers would be located in temporary camps for training. These camps became even more important during WWII as much of the Division of Forestry's workforce was involved with the conflict. During this period, as many as 41 camps were created to support Total Fire Suppression policy. The first permanent camp, Rainbow Conservation Camp, was created in 1946 as an all-men station. In 1983 Rainbow Camp was converted to the first women's fire camp (CAL FIRE, 2021).

From the 1980's to 2020 there were as many as 43 active fire camps in active operations. However, in September of 2020 Governor Newsom passed Assembly Bill 2147 which provided a pathway for expungement of incarcerated persons who participated in the fire camp system. Additionally, in October of that year Governor Newsom ordered the depopulation of 8 camps to cut costs for a new 2020-21 state budget plan (CAL FIRE, 2021). Today, there are still 35 of these camps active. While ground crews have been the main force of Cal Fire for over a century, the introduction and historical use of firefighting aircraft provides context to the situation.

History of FFA

The first firefighting aircrafts were deployed in the 1950s by the U.S. Forestry Service. These first tankers were mostly repurposed WWII aircraft designed to drop water on or around wildfires (Wyckoff, 2007). Today, there are three classifications of firefighting aircraft: Tactical Aircraft, Helicopters, and Tankers. Tactical aircraft are small, light aircrafts that can both guide

tankers to drop zones as well as provide intelligence on fire spread and containment. Helicopters are used for both rescue, transportation, and small scale drops via a bucket system. However, the bulk of a firefighting fleet is the tanker class aircrafts.

The Tanker classification can be broken down into three categories: single engine tanker (SEAT), large tanker (LAT), and very large tanker (VLAT). SEATs consist of smaller planes that can be refilled quickly for reduced time on the ground. A good example of a SEAT would be the Tractor AT-802 as its capacity is only around 800 gallons, but it can do multiple runs before having to be refueled. LATs are much larger planes capable of holding more than 2,000 gal of retardant, and are typically converted passenger planes used to target perimeters of burning zones. An example of a LAT would be the C-130H which is capable of carrying 3,000 gal with the Modular Airborne Firefighting System (MAFFS). Finally, there is the VLATs, which are capable of carrying more than 8,000 gal of retardant. There are only two planes under this classification, which are the McDonnell DC-10 and the Boeing 747 Supertanker. In terms of volume, the DC-10 can carry 12,000 gal and the Boeing 747 can carry 19,600 gal of retardant (US Forestry, 2021).

Currently, the B747 Supertanker is no longer in service. This means the VLAT still in use is the DC-10. With forestry services already struggling to contain wildfires additionally, this means there is a need for improved technology or an increase in man-power to deal with these more severe wildfires.

Analysis of SCoT

The current adoption and use of both of these solutions comes in the wake of record-breaking wildfires of 2020 and in fear of another fire season that's just as devastating. There is a

clear need to expand one or both of these solutions to better mitigate future wildfires. However, given the recent pandemic, it would seem the future of prison work programs is uncertain. When it comes to the overpopulation of prisons the clear decision for lawmakers is to depopulate them as much as possible. Along with this fact, there have been budget cuts to the fire camp system that resulted in the closure of 8 camps so far. Despite this, the passing of A.B. 2147 seems to show a growing support for these inmate firefighters. Inmates also stand in support of this system as it provides a worthwhile job with pay while serving their sentences. Unfortunately, expansion of the program seems unlikely as governor Newsom must decide to expand the budget to accommodate more camps.

On the other hand, the design and construction of a purpose-built aircraft could provide some advantages over the currently used firefighting aircraft. However, the cost of R&D to bring something so specific may not be worthwhile in the long run as it is hyper-specialized. This would be an increase in expense for the Californian government as well. Additionally, there would be a significant time investment into development of a novel aircraft. For the design competition it is assumed the entry to service date will be 2030 at the earliest. At the time of this paper, that would mean eight more fire seasons that could be potentially devastating. However, an expansion of the inmate firefighter system would take significantly less time. Training and paying of new firefighters would also cost significantly less. Ground crews, unfortunately, cannot cover as large of an area compared to an aircraft retardant drop. It is the monetary cost and short development time that may make them more worthwhile.

Discussion

The adoption of a potential solution is crucial in order to prevent more destruction by

wildfires across California. Of the two solutions mentioned, each has some sort of cost associated with its development or expansion. Through interpretive flexibility, both solutions can be seen as a better solution. For the fire camps, the cost of paying, housing, and feeding prisoners so they may continue to serve. There are also the ethical arguments to consider when it comes to paying prisoners or having them risk their lives. In the case of aerial firefighting, the cost of research, development, and deployment of newer purpose-built aircrafts. Additionally, there are some calls for concern when it comes to the increasing use of ammonia based retardant formulas. Ultimately, it will be the people of California that must choose which solution to adopt.

For the fire camps, only inmates serving a sentence for non-violent crimes are permitted to join. These volunteers are paid for their work, but depending on the job the pay can vary. In the article from The Guardian discussed previously, Mota (2020) states she received, "37 cents an hour: $56 a month," while she worked as an engineer. However, The Atlantic states inmates are paid $2 - $5 dollars a day with $1-$2 dollars while being actively on a Fireline (Lowe 2021). The specific position which determines if a prisoner would be on the higher or lower end of the scale is not discussed. This figure has been corroborated by other news sources and the ACLU. Additionally, a source at the CDCR did provide a more recent figure of $2.90 - $5.12 in an email reply. The determining factor is the skill level of the position.

Part of handling wildfires in California involves using one social group, inmate workers, as a cheap source of labor. Bird (2020) has shown that California's overpopulated prisons hold a large number of non-violent offenders because of drug related crimes. California's Proposition 47, was intended to reduce this number by converting a drug offense from a felony to a misdemeanor. Bird's findings were an overall decrease in rearrests for people sentenced for

drug possession, but a small increase for person-related offenses like assault. The other aspect to consider is the mental health of prisoners. Laura Wallis (2015) discusses the lack of care for prisoners' mental health and quotes Lorry Schoenly, “Research clearly shows a link between mental illness and repeated incarcerations.” The study she references involved a survey for 18,000 inmates, 18% of which were taking medication for mental health before their sentence started. The environment prisoners are held in certainly does not help inmates with severe mental illness (Wallis, 2015). The passing of A.B. 2147 was designed to help on both of these fronts. The expediting of the expungement process was to help reduce the overpopulated prisons and provide a pathway for future employment to prevent relapses and thus further incarceration.

Beyond the inmate firefighters, Cal Fire also deploys aircraft as a high-tech solution to the wildfire problem. With the use of firefighting aircraft, controlling the spread of a wildfire becomes much easier. The area in which an aircraft can cover with one run of retardant drop is greater than the area in which a fire crew could cover. Despite this, aerial firefighting still requires ground crews to go in and extinguish the burning area. This is mostly because retardant, or water, drops typically are used to prevent the fire from spreading and thus are not dropped directly on a burning zone but around it. Based on data from the U.S. Forestry Service, for the DC-10 and the P2V, costs of such runs range from around $4.90 - $7.50 per gallon (National Interagency Fire Center, 2014). Additionally, the C-130 has an operating cost of approximately $7,000 per hour. However, with purpose-built aircraft this cost in theory would be reduced. Unfortunately, each solution comes with its own set of drawbacks and thus counter arguments can be made against them.

Counter arguments

There are two main objections to the fire camp system. Firstly, given they are risking their lives, the pay for such a dangerous job seems far too low. As mentioned previously, the ACLU does this a potentially exploitative situation as these prisoners typically have no say in the conditions, they're kept in. There is also the issue of whether or not the prisoners should be paid in the first place.

The claim that the pay is too low is a valid opinion. However, when compared to all other jobs offered to prisoners, the pay these inmates firefighters receive is exceedingly high. Comparing the hourly rates directly, the highest skill level, and thus highest pay, available to inmates is around 37 cents per hour according to Title 15 of the California Code of Regulations (CCR). Meanwhile, if an inmate is on active duty on a Fireline, they are entitled to at least $1 per hour, according to the CDCR. Additionally, the highest monthly pay for other prisoners is $56, but the highest a skilled member of the fire camps can receive is around $150. As for the idea that prisoners should not be paid at all, there are two variations. There is an ethical argument to be made that prisoners should not be used as a source of cheap labor; however, that discussion is beyond the scope of this paper. The other side of this argument is that inmates should not be paid as they have committed crimes and thus should not be compensated. In a study conducted by Skardhamar and Telle, it was found that the association between employment and reduction of reoffending was, "Strongest for those who were sentenced for property or economic offenses (Skardhamar & Telle, 2012, p.646-647)." These are specifically non-violent offenses and the only ones who qualify for the fire camp system. These jobs provide skills and experience which helps prevent released prisoners from reoffending.

On the other side of this is the aerial firefighter. The main objection comes from the

Californian community which has to deal with the large amount of retardant being released into the surrounding environment. Phos-Chek is an ammonium polyphosphate-based compound that is widely used as a flame retardant for aerial firefighting. During an active fire season hundreds of thousands of gallons of water and water-diluted retardant will be dropped on a wildfire. The residual ammonia compounds then get mixed into the soil and eventually the water system. In a study conducted by Joseph Dietrich, it was found two Phos-Chek versions, 259F and LC-95A, did negatively impact the local salmon populations (Dietrich, et al., 2014). While it is hard to justify the use of these specific versions of Phos-Chek, it can be reasoned that investments into improved variants can help solve both the issue of fire spread and protection of the salmon population. Additionally, the use of these chemicals is done in order to protect not only human property but also habitats for other animals.

Conclusion

There are pros and cons for both solutions for fire prevention. For the fire camp system, it provides a worthwhile job for prisoners, and with the new assembly bill it provides the potential for future employment. There is also the risk of death or serious injury along with necessary increases in expense to expand the program. For aerial firefighting, it's less risky for ground teams as it helps prevent wildfires from spreading. However, the expense of researching, constructing, and deploying a new type of aircraft may prove to be too expensive. There is also the issue of what is being dropped by the planes. With high levels of ammonia compounds, the environment could be negatively affected. The best solution may in fact be a combination of both of these in the event that another fire season like that of 2020

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