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Wildlife Ecology and Management Final Project

Question: Fishers are supposed to be old growth obligates, but they thrive in Albany, while reintroductions in the Pacific NW routinely fail. Why?

In 2016, Mount Rainier National Park had the privilege of being the new home for fishers, almost 80 years after they were last spotted in the region (Dussault 2016). Driven to extinction due to overhunting, the Nisqually Indian Tribe was proud to announce the reintroduction of one of the largest members of the weasel family with ceremonial music and crowd fanfare. Although not the first reintroduction effort, this would mark a significant increase in successful attempts at improving ecosystem health which plays a major role in old growth forests (McGee 2018). However, despite successful reintroduction in some areas, the fishers were not successfully reintroduced in the Pacific Northwest despite numerous attempts. Additionally, lower reproductive levels in relation to other furbearers has led management agencies to further regulate trapping and monitor populations (Ruggiero 1994). So, despite being known as old growth obligates, niche compression, low reproductive rates, increased interspecies competition as well as improved management practices have resulted in fishers finding more suitable habitats in the mature forests of Albany, New York. (Manlick et al. 2017)

The Pacific fisher, *Martes pennanti*, plays an important role in the trophic level of their habitats. The furbearers are dependent on forests and are a good indicator of the status of lower trophic levels as they are carnivorous and in the lower trophic level. The fishers naturally occur at lower densities and reproductive levels when compared to their similarly sized competitors such as the coyote, *Canis latrans,* and the American marten, *Martes americana* (Baginski et al. 2015). Baginski et al. also stated other factors impacting the fisher population levels such as largely unregulated trapping and rapid decline in habitat from a combination of fires and agricultural practices. After introducing restrictive harvest regulations, harvest estimates indicated that the fisher population was on the rise. However, as recently as the 2010s the population in the Adirondacks was again on the decline (Baginski et al. 2015). Still, the Adirondacks is adequately suitable to support the furbearers as there are plenty of older, hollow trees and dead trees in the understory and overstory where the trees are predominantly softwoods with a heterogeneous landscape. So, even though forest cover is typically lower in Albany and the trees are younger, the environment still meets the minimum threshold cover that is necessary to sustain the fisher population although the populations are more stable in habitats that are primarily forested (Baginski et al. 2015).

Furthermore, the predators in Albany had the advantage of occupying an unoccupied niche in the Northeast. One of the larger predators on the residential scene, they had the element of surprise and according to Baginski et al. many residents described them as big cats that would kill their domestic fowls and house cats. As these incidents were difficult to investigate, the Department of Conservation would sometimes allow for humane capture and release of pests on private property. With their diet consisting mainly of the abovementioned and a few other small animals such as rabbits and birds, they sometimes ate fruits as well (Saunders 1988). When they were first introduced and people were unaware, they would have had the advantage of getting away with a few kills before being seen or suspected and this is what allowed them to initially thrive and then continue thriving.

Historically, though, fisher populations were consistently high in the Pacific NW where they inhabited coniferous forests across the three states of Oregon, Washington, and California (Aubry and Lewis 2003). Extensive settlement by European immigrants led to a near total depletion of fishers in the region. This was a two-fold process as it affected both predator and prey populations. Fishers primarily feed on low dwelling prey and therefore need a complex forest floor as well as trees and low-lying logs for resting (Buskirk and Powell 1994). With the rapid clearing of obligate forests to make way for residential housing and businesses, both the fishers and their prey underwent significant habitat loss. Rehoming for their prey simply meant moving one town over, for the fishers who dwelled in dense forests that had 150-year-old trees this was a major setback – there were no neighboring old age forests to migrate to. The fishers avoided high elevation forests as they found it hard to navigate the snow-covered grounds synonymous with them. There was also the challenge of being caught in traps set for larger animals, as well as the difficulty their typical prey would have withstanding those conditions. To make matters worse, the fishers that were able to remain in the area were hunted to near extinction for their fur. In the 1920s, their fur retailed for what would be over $2200 today. So, not only were they worth a lot but there was very little effort required on the part of the hunters. Their chosen habitats of low to mid-level forests left them vulnerable in all four seasons. These factors, along with the lack of trapping regulations at the time resulted in an almost 100-year culling (Aubry and Lewis 2003). With nowhere “home-like” to go and nowhere safe in the places they once called home, the Pacific West’s fisher population became a thing of the past.

Towards the end of the fishers culling, the niche would have slowly become occupied by the American Marten. Similar to the fishers, the martens occurred in low densities and were of a similar conservation status. As both small carnivores thrived in similar habitats and had the same prey, there was eventually interspecific killing (Manlick et al. 2017). As the food pyramid is disproportional and there are more predators than prey, the more prevalent species at the time – the fishers – forced the marten to forgo foraging, change their active hours and relocate altogether. At the turn of the century when the fishers were driven from the Pacific NW, there was no longer any interspecies competition, and the martens were left to thrive. There, they had grown accustomed to living among humans as more land was cleared to further develop residential areas. Therefore, when the reintroduction of fishers was attempted, it was not successful. Their role in the habitat had been filled, and they were now facing predation from bobcats and mountain lions (Hiller 2015). Also discovered by Hiller is the fact that interspecies killing was more prevalent in translocated fisher populations as opposed to resident ones. This was almost directly the result of the small number of fishers being introduced when compared to the large populations of apex predators already present. Still, protection from over trapping has not made a significant impact on reviving the fisher population in the Pacific North-West so even without the added competition from marten it’s unlikely that they will thrive there in the near future (Fogarthy et al. 2022). For now, they exist in that region in small, isolated groups as there is greater ease in escaping predation (Hapeman et al 2017).

In present day, furbearer management is more advanced, and often times more prompt, than what it was in the 1920s. Scientifically based programs are used throughout the United States to prevent the further decimation of the already limited fisher populations. For example, placing an emphasis on the importance of underharvesting fishers despite the potential financial gain plays a major role in balancing economic gain and maintaining the current conservation status (White et al. 2015). Still, White also states that the economic value of raw fur cannot be ignored, so compromises are made where those furs that are more readily available, or animals with higher abundance, have higher quotas so that a middle ground for the conservationists, trappers, and general public suffering from animal overstepping can be reached. This is not the case for the majority of wildlife in the US, though. According to experts, three main principles are followed when it comes to the successful management of furbearers and implementation of conservation plans. The species cannot be under conservation watch, the fur must be humanely harvested and such a harvest must fulfil a purpose (White et al. 2015). This is to limit the amount of wasting that would be done if the fishers were simply hunted for sport and not for fur, no matter how subjectively vain the purpose is. Lofroth et al. (2010) also argued that the management approaches be relevant on an ecological scale. So, the proposals should be specific to the region that the fishers being conserved are in. An emphasis on the future impact of climate change on management efforts should also be noted.

On the contrary, the management methods of the past focused mainly on stopping the overall mass trapping of the fishers in the Pacific Northwest. In fact, a petition that proposed the listing of the “Pacific Coast and Rocky Mountain fisher populations” as endangered was rejected as there was nothing to be gained from listing only certain populations of fishers are endangered, as there needed to be genetic exchange across the continent. (Aubry and Lewis 2003). While the exchange of genetic information is indeed necessary, in a time where the populations were so drastically reduced there needed to be deeper consideration for the idea. So, although the ban on fishers was first introduced in the late 1900s, it wasn’t until recently that traps that cause bodily harm were banned in states such as California and Washington to eliminate the risk of injury or death (Aubry and Lewis 2003).

The interview with Dr. Lewis (2022) revealed why management itself is necessary as he stated that he “trapped muskrats and raccoons for fur when growing up”. This is the case for most people who grow up in areas where the forest was slightly cleared to build housing. Here, there would still be animals right in the backyards and hunting and trapping became an easy pastime. This personal hunting and trapping continued until the doctor continued until he was able to fully realize the summation of individual trapping on the overall population of fishers in Washington. When there, as a form of atonement along with genuine interest, research was conducted on the fishers and the moment of revelation manifested as “It’s mysterious. It’s gone. We can bring it back. We know how to do it!” Having personally indulged in the sport, he was now determined to be the change that was needed in the world. Still, it was highlighted that the process is indeed difficult as there has already been four failed reintroductions. In order to improve future results, extensive research and hypothesis testing should be done as continued failures would “give reintroduction a bad name”. Lastly, he inferred that the protection of fishers from trapping and the limited number of predators has allowed the fishers “time to adapt to urban fringes and suburban habitats… in urban Albany and Eastern New York”. So, their adaptation was not immediate but prolonged efforts and perseverance.

The North American fisher population has undergone significant changes in the past 100 years. From overcoming a near total depletion in the Pacific Northwest to now thriving in Albany, albeit in different overstory coverage, it is nothing short of quick adaptation that allowed the furbearer to survive the fur trade. An initial lack of aggressive management, which led to the fishers’ demise, was recently overcome as more strict guidelines were put in place to protect the reproductively selective mammals. Still, a reintroduction in the Pacific Northwest could still be possible. For it to be successful, though, there would need to be extensive revision of the methods which have failed so far. Washington and California was once the home of the fisher, so it’s not far-fetched to hope for a successful revival in the area. Adopting the levels of management present in New York would not be enough, and certainly there would need to be more than the 10 that were unveiled in 2016 especially considering the takeover of their niche by the American marten. Facing less interspecies competition, as well as a wider range of forest canopy to roam, the animals have found a new home in Albany – one in which they will hopefully remain indefinitely.

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