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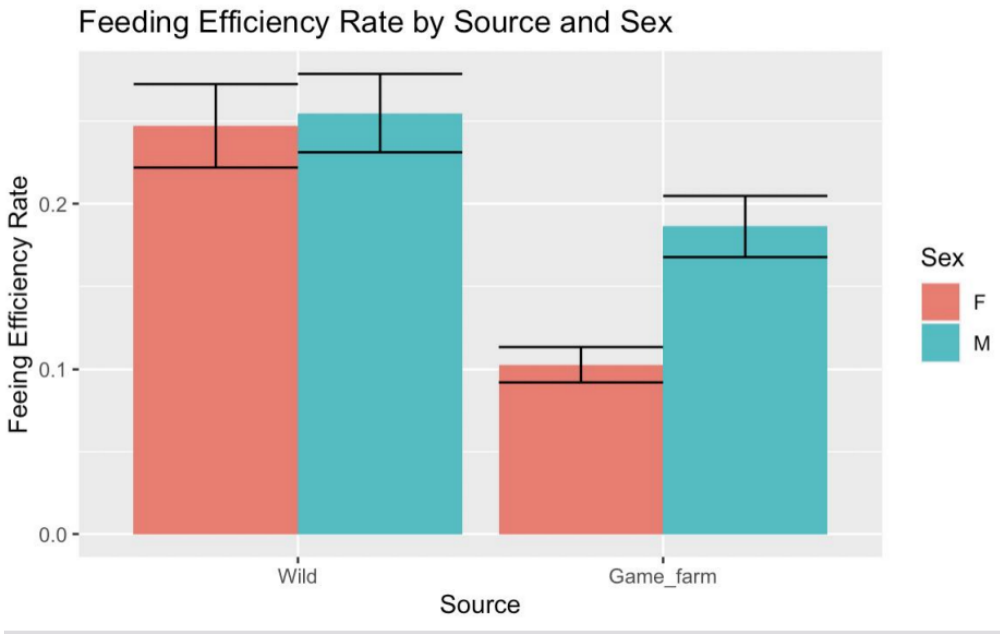
EFB390

Final Essay

Controversy of Game Farms for Wildfowl

The controversy of game farming wildfowl has become an increasingly important topic of discussion among many hunters, conservationists, and animal rights supporters. Game farms are used to breed and release species of birds that are used to hunt and harvest. This introduction of captive-bred species of bird into wild populations causes genotypic changes when these populations interbreed. Releasing captive-bred species into the environment to succumb to high mortality rates raises many ethical concerns as well. Contrary to the ecological and ethical concerns, game farm hunting can be a source of food, income, and tradition for many hunters. Duck stamps contribute significant funding to ecological restoration.

The introduction of domestic waterfowl into wild waterfowl populations results in interbreeding, which modifies the genomes of wild populations required to survive. Taking on inferior genomes of captive bred waterfowl will result in a lower survival rate. Animals that are bred in captivity are largely subject to genotypic change, which results in a different survival capability, appearance, and behavioral traits than wild populations. Inbreeding of captive populations is possible, and frequent within confined spaces. Captive bred mallards and other dabbling ducks are susceptible to morphological changes such as altered digestive organs and change in beak lamellae structure, which is critical to be able to sieve food particles through the beak without ingesting mud or sediment. (Söderquis et al. 2014) Champagnon et al. found that lamellar density of the bill was 10% lower in farmed French mallards compared to wild mallards, because domestic mallards are fed large food pellets, corn, or wheat. The populations of surviving game birds that carry this ‘goose - like’ bill genome has in fact altered the wild mallard populations. Lamellar density in mallards has decreased in the past 30 years (Söderquis et al. 2014)



Halligan, obtained from Dr. Schummer's *Manky Mallards*.

There is about a 50% decrease in game farm mallard feeding efficiency compared to wild game farm efficiency. Female wild mallards have shorter beak lengths compared to male mallards, so when mixed with a 'goose-bill' genotype, it can even result in a decrease of surviving females. Changing the evolutionarily significant appearance of wild waterfowl is critical for Mallard populations. On the other hand, other pen-raised species are raised to die, either from genetic failure or being released into the environment where they cannot survive. This raises many ethical questions about game farming wildfowl. Monitoring of Brown Teal releases at four sites in 2001 and 2002 found that 23% of those released starved within 6 weeks of release. Wild Brown teals possessed larger small intestines and caeca used to break down mollusk shells and cellulose than captive-bred Brown teals. Captive-bred Brown teals possessing smaller organs is directly related to being fed cheap corn and grain pellets. (Moore et al. 2006) Releasing pen-reared pheasants showed similar results. "Pen-shock" affecting captive bred birds causes a lack of wild food foraging and predator avoidance behaviors. This leads to high mortality rates as these birds are released into the environment. In fact, wild female pheasants were seven times more likely to survive from Spring to October than pen-reared female pheasants. (Musil et Conelley, 2009)

Gender/	Pen-Reared			Wild			
Year	Survival	95% CI	N	Survival	95% CI	N	P[a]
Females							
2000	0.04	0.0-0.11	49	0.40	0.26-0.54	62	<0.0001
2001	0.08	0.0-0.18	40	0.43	0.27-0.59	40	0.004
P[b]	0.5407			0.7901			
Males							
2000	0.0	0.0-0.0	8	0.20	0.0-0.55	6	0.2636
2001	0.0	0.0-0.0	10	0.70	0.42-0.98	10	<0.0001
P[b]	1.0			0.03			

[a] χ^2 comparisons between stocks within same year and gender.
[b] χ^2 comparisons between years within same stock and gender.

Obtained from Musil et Conelley, 2009. *Survival and Reproduction of Pen-Reared vs Translocated Wild Pheasants Phasianus colchicus.*

A figure from Musil and Conelley's 2009 journal reports that from the populations recorded in 2001 and 2002, a total of 0 male pen-reared pheasants survived. Although these pen-reared pheasants are not beating high mortality rates at release to interbreed with wild populations and influence genes, an ethical problem still stands.

Although game-farming is critically affecting genotypic changes in wild populations and can be argued as cruel, hunting game farm waterfowl is beneficial economically and generates significant funding for ecological conservation. The Federal Migratory Bird Hunting and Conservation Stamp, also known as the "duck stamp," coincided with the passing of the Migratory Bird Hunting and Conservation Stamp Act of 1934. The act requires waterfowl hunters above the age of 16 to annually purchase a duck stamp to legally hunt any wildfowl in the United States. (Miller et Ahlers. 2017) About 11.5 million Americans ages 16 and older went hunting in 2016, and about 1.6 million people purchased a duck stamp. 98% of the revenue related to this act is devoted to ecological conservation projects, and has been called a conservation hallmark since its passing. (BirdAcademy, 2015) The hunting of farm-bred game birds supports endangered species of wildfowl and species of birds that reside in wetland habitat. More than $850 million dollars have been produced since passing this act, resulting in protection of more than 6 million acres of critical habitat. (Greene, 2016) Wildlife photographers,

recreationalists, and bird watchers also purchase duck stamps as a way to contribute to conservation of wildfowl. It is ironic that the same way we are contributing to conservation of waterfowl species and their habitats is the same way we are detrimentally affecting their survival. Why are we conserving a species habitat if we are significantly decreasing their chances of surviving in it? Game farming wildfowl privately has been a way of tradition and a supply of jobs for the general public for years. Hunting preserves and game bird producers annually account for more than $500 million in wages, supporting nearly 12,000 jobs. Game farming, in a way, has to exist because of its significance to tradition. Many hunting preserves are supported through a long line of family businesses. A paper by Essen et al., discusses that each hunter has their own basis of motivation for going hunting along the lines of for-the-pot/meat-hunters, leisure-hunters, and trophy hunters. Motivations for hunting can be widespread and individually important. Many game farm hunters use hunting wildfowl as a way of income by selling what they harvest whether it be meat, bones, feathers, and even incorporated in art. Others use wildfowl hunting as means of food. Jerky, stews, or prepared meals are traditional in one's family. Tradition is deep rooted into our way of thinking as a society, and cannot be taken away. Dr. Schummer, a professor at the SUNY College of Environmental Science and Forestry, says "It (game farm hunting) provides a really substantial opportunity for young hunters to be involved and get involved in hunting… As a kid I went with my father all the time and those were really good experiences for me with him and his hunting dogs and friends. It became something culturally for us for years" Growing up with such a tradition is important to who we are, and many hunters say they learn lessons of patience and core life skills. I, myself, am not a hunter, but have attended many hunting trips with my peers. As someone who had never hunted or had the opportunity to, asking my friends to take me hunting was an educational experience I hold very close and reference often in life. Friends of mine, who had been taught to hunt by their fathers, grandfathers, families, or important people in their lives, had the opportunity to teach me the same way they had been taught. I had never considered hunting to be a meaningful tradition until I had an opportunity to be taught a tradition.

Although game farming wildfowl can be beneficial, traditionally and economically, the conservation and ethical treatment of species should be heavily considered. Emphasizing the decline in species, specifically Mallard, health when crossbreeding with pen-reared species is

greatly important for the general public to be made aware of and understood. Duck stamps contribute well needed funding to conservation of habitats that these species reside in, but understanding the health concerns of the species that will reside in that habitat is equally important. In itself, it is a cycle in a way that we are supporting these species, but at the same time putting them in danger.This being said, not just hunters have the ability to buy a duck stamp annually. Hunting and the tradition that it brings cannot be undermined or completely cut out of society. A lot of the products we use are a result of hunting, and even game farming. Ultimately, continuing the game farming wildfowl will only continue to change mallards genotypically and continue to detrimentally affect the species. As long as pen-reared pheasants are released into the environment, they will fail to mature in the wild. The funding of conservation of species should not depend on things like the duck stamp, but rather from an educated general public. Hunting wildfowl can still be passed down as a tradition and utilized for things such as food and marketing, but we need to put the conservation and health of species first.

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Personal Interview with Dr. Schummer

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