**Game Farms for Waterfowl. Are They Ethical?**

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EFB 390

December 7, 2022

Game farms have been on the rise and growing exponentially for many decades now. The main purpose of these game farms is to boost the population of wildfowl and huntable birds to then release them further into the wild for hunters to shoot. The rise of game farms started approximately 500 B.C. in Eurasia when the mallards were beginning to be domesticated. Today, there are now more than 3 million game farm mallards released per year and this number continues to grow. A little over a two-thousand years later, areas of the South Pacific such as New Zealand and Hawaii began to import mallards. Hawaii began importing the birds during the 1850s for the sole purpose of food. Over some time, this progressed into the species being commercially farmed from the 1930s through the 1940s. Shortly after Hawaii started to import the birds, New Zealand went ahead and imported them from Europe in the following years of the 1860s. Over time New Zealand imported over 30,000 game farm mallards but ended their release of the birds during the 1970s. The mainland of North America started to release game farm mallards sometime during the 1920s, and approximately 500,000 birds were released annually until the 1960s. Since then, this number has been steadily decreasing and has nearly cut itself in half, resulting in the number now being 250,000 releases a year. (Schummer 2022).

Waterfowl birds were once plentiful and sparsely scattered all around North America before the middle of the 1800s. Towards the end of the 1800s and throughout the beginning of the 1900s, there was a significant decline in the population number of waterfowl. The cause of this was perhaps due to habitat loss and excessive hunting of the birds (Nichols et al., 1995). Once this was noticed the United States Government created the Migratory Bird Act in 1918 which assisted in restoring the wild population of birds. The act prohibits the take (including killing, capturing, selling, trading, and transporting) of protected migratory bird species. It has been over a hundred years since this law was put into effect and has since saved many migratory birds of multiple different species. Over the following years since, the management of waterfowl in North America has had a fairly consistent pattern. It is noticeable that the population drops and increases continuously with frequent spikes. While this act does its best job at protecting birds from being illegally hunted, which could cause a decrease in numbers once again, many other outside occurrences can have the potential to affect the population of waterfowl.

Although the farming and releasing of wildfowl have been occurring globally for hundreds of years now, there are also a handful of ecological and ethical concerns that are being brought to our attention. Some of these observations include the interbreeding of mallards. The birds that are being released from the game farms have been breeding with the wild population of mallards, which mixes their genetic components, and this can cause detrimental effects. The wildfowl species that are being released like the pheasant has been shown to have almost a zero percent chance of surviving in the wild (Musil and Connelly 2009). In pen-raised mallards and pheasants, there is an ecological concern through interbreeding and an ethical concern through the fair chase and survival rates.

While there are many known downsides to game farms for wildfowl, there are also beneficial sides to releasing game farm wildfowl. All the pheasants in New York State are grown by the Department of Environmental Conservation (DEC) on game farms and are released for stocking and hunting purposes. By releasing the pheasants, it allows new hunters to become introduced to hunting and allows them to become interested. It costs $12 a pheasant in New York State from the DEC to grow them and that does not account for what it cost to stock the bird. Schummer talked about his memories of hunting pheasants with his father and how he still runs his dogs every year to get the pheasants released (Schumer, personal communication 2022). I have gone on pheasant hunts in the past with my family on state land where the pheasants are released, and we have had opportunities to hunt them. Youth waterfowl hunts are important for the next generations of hunters because they are allowed to hunt one week before the regular season which gives them an advantage that leads to memories and makes them want to hunt for years to come. For one of the years of my waterfowl youth hunts my family when to Perch River where my brother and I were able to hunt for one of the first times, since then we have participated in hunting every year since. Up and down the Atlantic coast, states like Maryland put out hundreds of ducks for youth hunts and this gives people quality hunting experiences, which causes them to be in the activity the rest of their lives and contributes to environmental conservation (Schumer, personal communication 2022). In the United States, there are 11.5 million Americans that are active hunters and 2.6 million were waterfowl hunters, and another 1.9 million were upland game bird hunters (Kearns 2021). The duck stamp first came into use in 1934 when the Migratory Bird Hunting and Conservation Stamp Act was passed. Duck stamps cost $25 and over 98 percent of the funds from the sales are used by the Migratory Bird Conservation Fund for purchasing and enhancing habitats for breeding waterfowl and waterbirds. More than $850 million has been generated since 1934 and more than 6 million acres of critical habitat have been protected (Miller and Ahlers 2017). While game farm wildfowl generates interest in the younger generations to purchase hunting licenses and duck stamps which go towards environmental conservation; it also contributes to genetic problems in wild populations.

The North American mallard is being faced with a genetic problem due to interbreeding with domesticated game farm mallards that are being released for hunting (Lavretsky et al. 2019). Game farm mallards have about a 5-10 percent difference in their genome from wild mallards. On the other hand, wild mallards have about a 1.5 percent difference in their genome when compared with the American black duck (Schummer 2022). The game farm mallard weighs 300-400 grams lighter than the average wild mallard Lavretsky n.d.). The bills are also different because game farm mallards came from a diet of domestic grains. The mallards have more of a goose-like bill (wider, higher, and shorter) which allows them to eat corn (Söderquist et al. 2014). A graph from Dr. Schummer’s Manky Mallard presentation shows how the feeding efficiencies are different between game farm mallards and wild mallards. It showed that there is a 50% lower feeding efficiency in the female game farm than in wild female mallards. Also, there is a decrease in feeding efficiency for the male game from mallards. Another difference is their breeding behaviors. Game farm males tend to be overly aggressive, and females have prolonged breeding periods, which means they produce a large number of eggs and have poor nest vigilance compared to wild mallards. These traits help game farm mallards reproduce in captive settings but are not beneficial in the wild (Lavretsky n.d.). In an experiment, researchers looked to see if putting wild and game farm male mallards with the opposite strain of females would affect their reproduction. They found that males were successful in pairing with either strain of mallards (Cheng et al. 1980). A study found that about 25 percent of black ducks sampled had mallard DNA present. Research showed that game farm mallards can survive and successfully breed in the wild. In the Atlantic Flyway alone about 92 percent of the mallards analyzed have large amounts of game farm DNA present. Finally, the American black duck is faced with genetic extinction, and the North American mallard is threatened by the hybridization of game farm mallards of Eurasian domestic descent (Lavretsky n.d.). the genetics of mallards are becoming hybridized, and this could be one of the reasons why the population of mallards is on the decline.

Pheasant and mallard populations have been on a decline for over a decade now. A study conducted in Pennsylvania had radio transmitter-equipped pheasants released into the wild to look at their survival rates. It found that there was over a 50 percent decrease in population over the year of study and the main reason was mammalian predators immediately after release. Game farm pheasants were less fearful of human observers, more visible, and often stayed closer to the release site (Kraussk et al. 1987). Another more recent study took place in Idaho where pen-raised pheasants were released alongside wild pheasants. It found that there was a 99 percent mortality rate for pen-raised pheasants and an 84 percent mortality rate for wild pheasants. This study was done with pre- and post-predator removal in the area (Musil and Connelly 2009). Pheasants in New York State and around the country do not have a high survival rate because the birds are conditioned to humans and are less likely to fear humans and other predators. This brings in the issue of fair chase because the pheasants are not afraid of humans making them not run away and causing an easy kill. The mallard populations are on a constant decline also. Graphs from Dr. Schummer’s Manky Mallard presentation show that there is a decline in mallard populations across most of the Atlantic Flyway and Canada. As stated in the paragraph before the breeding differences like prolonged breeding cycles and different bill structures could be playing a significant role in the future of the population. These traits look to be moving west because it is consistent with the east coast where there is a population decline (Schummer 2022). Another reason for the decline of mallard populations could be Avian Influenza virus. Wild waterfowl populations, more specifically dabbing ducks which include mallards are natural reservoirs for the virus. These birds could spread the virus along their migratory flyways (Galsworthy 2011). There is not a lot of data currently on the effect of Avian Influenza on wild waterfowl populations, but this could play a role in the decrease in population.

Many people have formulated their own opinions on game farms and wildfowl hunting and whether it is ethical or not. Positive feelings towards this idea seem to be outweighed by negative ones. Releasing pheasants onto public land in New York State helps spark interest for new young hunters to then have a love for the sport. This leads to them paying into the system throughout the duration of their lives, this is done through buying hunting licenses, equipment, and duck stamps. Which goes towards funding environmental conservation efforts. This has many benefits to it and contributes to a lot of things. On the other hand, it can be frowned upon because if these pheasants are to be released, they have a significantly low survival rate. When these birds are released, it can affect fair chase issues too, this is because they are not going to be as fearful of humans are they typically would be, and it makes them an easy target. It is also noted that the interbreeding within the mallards in the wild and game farm mallards has become a large and prevalent issue throughout genetics. This makes the duck smaller in size, it changes their bill structure, and the breeding behaviors for those raised on game farms are different which doesn’t work in the wild population. Overall, the negatives are looked at more strongly and this leads people to believe that game farms are not ethical and that they have brought up major concerns that people have not noticed previously.

**References**

Cheng, K. M., R. N. Shoffner, R. E. Phillips, and F. B. Lee. 1980. Reproductive Performance in Wild and Game Farm Mallards. Poultry Science 59:1970–1976.

Craig A. Miller & Adam A. Ahlers (2017) Where Does the Money Go? Awareness of Federal Duck Stamp Fund Expenditures Among Illinois Waterfowl Hunters, Human Dimensions of Wildlife, 22:3, 291-294, DOI: [10.1080/10871209.2017.1310960](https://doi-org.esf.idm.oclc.org/10.1080/10871209.2017.1310960)

Galsworthy, ten Bosch, Q., Hoye, B., Heesterbeek, J. A., Klaassen, M. R., & Klinkenberg, D. (2011). Effects of infection-induced migration delays on the epidemiology of Avian Influenza in wild mallard populations. *PloS One*, *6*(10), e26118–e26118. https://doi.org/10.1371/journal.pone.0026118

Kearns, C. 2021, October 8. Field & Stream Won the Auction of John Oliver’s “Duck Hunt” Duck Stamp. https://www.fieldandstream.com/conservation/john-oliver-duck-stamp-auction

Kraussk, Graves, H. B., & Zervanos, S. M. (1987). Survival of Wild and Game-Farm Cock Pheasants Released in Pennsylvania. *The Journal of Wildlife Management*, *51*(3), 555–559. https://doi.org/10.2307/3801268

Lavretsky, P. (n.d.). The Surprising Genetics of American Black Ducks and Mallards. <https://www.ducks.org/conservation/waterfowl-research-science/the-surprising-genetics-of-american-black-ducks-and-mallards>.

Lavretsky, P., N. R. McInerney, J. E. Mohl, J. I. Brown, H. F. James, K. G. McCracken, and R. C. Fleischer. 2020. Assessing changes in genomic divergence following a century of human-mediated secondary contact among wild and captive-bred ducks. Molecular Ecology 29:578–595.

Musil, D. D., and J. W. Connelly. 2009. Survival and Reproduction of Pen-Reared vs Translocated Wild Pheasants Phasianus colchicus. Wildlife Biology 15:80–88.

Nichols, J. D., Johnson, F. A., & Williams, B. K. (1995). Managing North American waterfowl in the face of uncertainty. *Annual Review of Ecology and Systematics, 26(1)*, 177–199. <https://doi.org/10.1146/annurev.es.26.110195.001141>

Schummer, M. (2022). *Manky Mallards and Where to Find Them: The Conservation Paradox of Feral Populations and the Meaning of Wild* [Google Slides]. file:///C:/Users/Alexis%20PC/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/XR61G22H/Manky%20Mallards%20and%20Where%20to%20Find%20Them.pdf

Schummer, M. (2022, November 30). Personal communication [Group Interview].

Söderquist, P., J. Norrström, J. Elmberg, M. Guillemain, and G. Gunnarsson. 2014. Wild Mallards Have More “Goose-Like” Bills Than Their Ancestors: A Case of Anthropogenic Influence? 9:12, DOI: 10.1371/journal.pone.0115143