Nutria (*Myocastor coypus*) are a herbivorous, semi-aquatic invasive species present in Washington state and listed as such in the state's legal code[Nutria WDFW]. A member of the order Rodentia, they display characteristic traits such as high fecundity and destructive gnawing[Boersma et al., 2006], and are implicated in the spread of many parasites and diseases including T. gondii, responsible for toxoplasmosis[Ferroglio et al., 2014] and bacterial infections such as *Aeronomas*-borne gastroenteritis[Lim et al., 2019]. They cause significant economic, agricultural and ecological damage (Boersma et al., 2006) such that controlling their populations in the absence of a means of eradication is highly desirable.

One means by which control of their population has been attempted in other locations is the drawing public attention to nutria as nutritious[Tulley et al., 2000] and as a desirable[Nuñez et al., 2012] food source for human diets. Louisiana is perhaps most famous for this effort, with numerous cookbooks and other resources researched and made available by the state since at least the 1960s[HNOC, 2021]. Significant barriers to attempts to replicate these efforts in Washington exist, which can be summarized to three categories: cultural, regulatory, and added value. These categories, while distinct, share overlap.

Cultural barriers in play

Many Americans are reluctant to eat animals which they regard with sympathy. Those unfamiliar with nutria (and some with familiarity) may regard nutria as attractive[Clark, 2014], engendering

a reluctance to consider consuming them, similarly to a pet rabbit. Even where this is not the response, the target populations of nutria, being semi-aquatic, requires entering their environment for hunting or trapping purposes and as such holds challenges for the would-be hunter in comparison to exclusively land-based species. With the significant cultural shift away from hunting in recent decades, even established hunters can be reluctant both for the difficulty in hunting nutria and due to issues relating to regulations and added value.

Even experienced hunters can find catching nutria difficult. In 2014, the state hired professional hunters to remove up to 40 nutria from around Capitol Lake in Olympia[Drew, 2014]. At the end of the predetermined hunt period, approximately one month, only four nutria had been caught[Provenza & Spencer, 2014]. Once caught, a carcass must be processed in accordance with state regulations and sanitation, then cooked to be made both safe and desirable to consume. This presents a significant barrier to the novice hunter.

Regulatory barriers toward removals

There are numerous state regulations pertaining to the legal wild harvest of nutria. The appropriate licenses (hunting, trapping) must first be obtained and compliance with all regulations must be followed. It can be difficult to find public land where hunting is permitted and where nutria are present and active in sufficient numbers for a successful hunt, and while live trapping of nutria is permitted without a license, the captured animals must then be

exterminated without first being removed to a second location (Nutria WDFW). Any lethal trap requires specific licensing with the appropriate issuing state authorities.

As well, nutria begin their period of greatest activity at twilight and continue through the hours of darkness[ICWDM, n.d.]. Hunting at night is restricted in Washington state, further reducing the probability of a successful harvest. Regulations add to the confusion, with a lack of clarity as to whether catch limits apply to nutria (as an invasive species under state regulations), and new hunters may well feel discouraged from pursuing this course of action.

Even should a significant number of nutria be successfully removed from the population in this fashion, there is no real method by which they can be formally assessed for safe individual or home consumption. Short of the inclusion of an experienced individual or individuals in the hunting party or at the point where the meat is to be prepared, would-be consumers are reliant upon the skills and experience of the hunter and food-preparer for the safety of the meat. This regulatory aspect has implications for the value of the meat itself.

Reduction in added values as a barrier

In Louisiana, where the hunting of nutria has been positioned by the state as a cultural value, the most successful years of wild harvest have coincided with higher pelt prices in combination with the payment of a bounty paid per nutria tail received[Mach, 2002]. As the price of pelts has fallen so that the combined price and bounty is below the cost of pelt processing, hunting of

nutria has diminished substantially(Mach, 2002). The perceived value of the meat is inherently not sufficient to motivate hunters.

While a bounty system has been rumored in Washington state, it has yet to come to fruition[Nutria Bounty, 2021]. As demands for pelts has dropped and processing costs either remained steady or increased, this has a lowering effect on the perceived value of hunting nutria. As well, the administrative costs to hunting and trapping add to this reduction in perceived value(Mach, 2002). At the time of this writing the cost of a small game hunting license for instate residents such as is required for nutria is listed at \$40.50[WDFW Small Game] and a trapping license is \$41.60¹[WDFW Trapping], and while a trapping license will allow the licensee to sell the pelts, the low value of pelts has a deterrent effect there as well. A commercial pest control license may allow an individual to trap pest species including nutria for recompense for the act of trapping after having obtained and held a standard trapping license for at least two years, but a commercial license forbids the holder from selling the pelts so collected[WDFW Wildlife Control].

Analysis

It has been posited that a sufficiently charismatic movement or spokesperson could alter the perception of an invasive species such as nutria so that people would actively seek to consume the target species. An example given is that of the celebrity chef Paul Prudhomme, whose

¹ It is worth noting that the information on commercial trapping licenses is not available without a direct search of the site. In other words, users of the site must already know about the possibility and seek it in order to find the information. Otherwise the only available information is on temporary permits for pest removal purposes only.

blackened redfish recipe in the 1980s led to an alarming reduction in redfish numbers[Sweenie, 2024]. However, this effect is unlikely to come into play for nutria (despite Prudhomme's own efforts to the contrary)[Cooper, 1997]. Unlike redfish, commercial harvest of nutria is not feasible due to the locations of their dens and burrows, due to the inability to mechanize harvest of nutria, and due to legal restrictions on the commercial sale and transport of nutria, live or in processed form(Nutria WDFW).

Whereas nutria were successfully eradicated in Great Britain under a ten year program of targeted trapping by use of live traps(Mach, 2002), the more varied landscapes and inaccessible wilderness areas of Washington present a scaling difficulty and cost to similar efforts. While cold aids in reducing population numbers and breeding potentials[Gosling & Baker, 1987], it is not a reliable vector for overall population control in Washington due to these geographic differences. Containment rather than eradication is a more attainable goal, and one to which the assistance of the public could prove substantially useful.

Conclusions

While nutria are farmed in some places for their meat and fur (and indeed, nutria arrived in Washington state originally for that purpose[Link, 2006]), the paradox of their wild existence places them beyond the pale for the average consumer and human consumption of nutria under current circumstances cannot be sufficient to maximally affect wild population numbers. To hold

the line against any invasive species requires the use of as many resources as feasible, as inexpensively as possible, and present conditions indicate that the public is a resource which is currently greatly underused.

To attract existing hunters, addressing the financial and regulatory burdens will be necessary. The proposed bounty system would need to address market failures so that there is flexibility in the offered bounty schedule to compensate for low pelt prices. As such, there is a necessity for a reexamination of course materials and regulations around hunting and trapping to retool and streamline the process to offer returning or new hunters incentive as well as a vigorous campaign to build public awareness around nutria and invasive species in the interests of management. While specific means of addressing this problem lie beyond the scope of this paper², any proposal must address PIE – policy, incentive, and education. And the pie must not be half-baked any more than the nutria half-cooked.

² It would be remiss not to look to other fields, however, to consider emulating their own methods; in the field of criminology, for instance, playing card decks with pictures of wanted criminals or cold cases are often distributed in prisons or to the public. A 'hit list' deck of invasive species could be produced at comparatively low cost and distributed in sporting good stores etc., with a card with explicit instructions as to permissions and directives.

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