

Killing “Nicely”

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Motivation

- I’m interested in how scientists and conservationists think about the notion of genetically engineering entire populations.
- Conservationists have long argued that diverse species should be protected for their own sake, rather than for their utility to humans. But genetic engineering approaches organisms as tools to be adapted for human purposes. How might these value systems intersect?
- What would it mean to create a mammal that functions as its own extermination device? What, if any, obligations would humans owe to such a creature?

Project Description

- I’m investigating the Genetic Biocontrol of Invasive Rodents (GBIRD) project, which aims to conserve endangered birds by eliminating populations of rodents that threaten them.
- Rather than killing the rodents, GBIRD would introduce a gene that makes it impossible for them to bear female offspring.
- I will interview the scientists developing GBIRD and the conservationists and regulators responding to it to refine the focus of a longer term study.

Context

- I forged personal connections with people developing and advocating for this technology while pursuing interdisciplinary doctoral studies.
- Popular accounts of genetic biocontrol liken it to birth control, but early analysis shows its logics also resemble those of eugenics. I want to draw on my relationships with the people involved with GBIRD to offer a more sophisticated account.



What would it mean to use genetic engineering to eliminate unwanted species? This project investigates the uncomfortable pairing of conservation and genetic engineering.



Project Deliverables

- Short term: conference presentations, mentorship opportunities for graduate and undergraduate students, an academic article,, defined plans for a longer-term study, a strategy to solicit outside funding
- Longer term: a book that speaks to both academic and public audiences

Potential Impact

- I want to bring to light perspectives that could otherwise be overlooked. For instance, scientists involved in this project have expressed concerns that field trial plans might not adequately account for the agency of the mice.
- This research will appeal to humanities scholars and social scientists who want to move beyond anthropocentrism.
- Findings will also be relevant to policymakers in the United States, New Zealand, and Australia, which may serve as initial test sites for genetic biocontrol.

Selected References and Acknowledgements

- Leitschuh, C. M., Kanavy, D., Backus, G. A., Valdez, R. X., Serr, M., **Pitts, E. A.**, Threadgill, D., & Godwin, J. (2018). Developing gene drive technologies to eradicate invasive rodents from islands. *Journal of Responsible Innovation*, 5(sup1), S121–S138. <https://doi.org/10.1080/23299460.2017.1365232>
- Valdez, R. X., Peterson, M. N., **Pitts, E. A.**, & Delborne, J. A. (2019). International news media framing of invasive rodent eradications. *Biological Invasions*. <https://doi.org/10.1007/s10530-018-01911-9>
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