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SWS 205

16 February 2026

Examining the Response to Human-Introduced Invasive Species

I. Introduction

Growing up on six acres in rural Pennsylvania exposed me, at a very young age, to the unique set of natural challenges associated with maintaining both flower and food gardens outdoors. The most distinctly relevant and therefore memorable lesson is this: there is always something trying to eat your plants. I worked alongside my grandfather daily to plant traps for the rabbits that frequented my grandmother's geraniums and spent years constructing nets around his blueberry trees to deter several species of bird whose instincts to harvest were just a bit sharper than his own. Perhaps the most difficult gluttons to subvert, though, were the invasive Japanese beetles that infested and devoured every rose, marigold, and fruit tree on the property to the point of bare nakedness—and as a result it comes as no surprise that my amateur horticulturist grandmother had no tolerance to spare for the creatures. She simply instructed me to crush them on sight, and I did so without a second thought.

Alongside our regular maintenance of my grandparents' property, I also occasionally worked with my grandfather as a groundskeeper for several golf courses in the area. It was on the fourteenth green of one establishment that I first encountered philosophical difficulty following the eradication of a particularly large population of my most dastardly enemy—the Japanese beetle. I felt a foreign guilt that made me question what gave me, a nine year old human being, the right to kill other living creatures, even if they are small or invasive. At the time, I was not

yet aware of the Rights of Nature (RoN) movements that proposed similar questions, nor was I truly capable of understanding the greater effects of an invasive population like the Japanese beetle. Now, I would argue that no one person is fully capable of understanding the complete range of any species' ecological relevance, and that as a result we must place limits on ourselves as humanity that protect nature's cycles and restrain our tendency toward establishing authority without recognizing unseen consequences.

Sheergojri notes in "Invasive species services-disservices conundrum" that invasive alien plants produce both benefits and harms and therefore should not be treated uniformly in policy decisions (Sheergojri et al.). This alone complicates the instinct I had as a child that eradication is inherently justified. If invasive species generate both services and disservices, then framing them as purely destructive oversimplifies ecological reality. Viewing ecosystems through a Rights of Nature framework further destabilizes the assumption that invasive species should always be eradicated. If nature possesses legal standing independent of human utility, then we must recognize that we have a responsibility to uphold its protections, not the authority to make uninformed governing decisions over one part of its "body" for the perceived benefit of another.

II. Responsibility vs. Authority

It feels almost obvious to say that if humans introduced the problem of an invasive species, then humans should fix it. That instinct appears repeatedly in environmental policy: we disrupted balance, so we should intervene to restore it. The problem, though, is that while responsibility implies action, responsibility is not synonymous with authority. Robert Macfarlane describes a radically different relationship between people and water in southern India, where ancient Tamil cultures treated water not as a resource to command but as something sacred and socially central (Macfarlane). Tamil rulers marked victories not with stone pillars but with lakes,

and entire landscapes were structured around networks of *eris*—human-made tanks that gathered monsoon rains and redistributed them through carefully engineered channels. These were human constructions, but they were built in response to climate patterns rather than in defiance of them. The model highlights the possibility of participation rather than domination.

Alves et al. explain that Rights of Nature theory proposes that natural elements possess inherent rights comparable to human rights and that the biosphere holds moral standing independent of its utility (Alves et al.). This Earth-centered perspective challenges human exceptionalism and asks not what nature is worth to us, but what obligations we owe to it. If ecosystems are rights-bearing entities, then invasive species management becomes ethically complicated. An eradication campaign is no longer merely technical; it is an action taken within a rights-bearing system that privileges one ecological outcome over another. Weis and Mullins argue, however, that rights-based legal structures often frame environmental disputes as competing claims to be balanced through “proportionality analysis” (Weis and Mullins). This adversarial structure risks fragmenting ecological relationships into isolated interests: the river’s right, the farmer’s right, the public’s right to development. While Rights of Nature initiatives may shift cultural narratives about authority, they may also struggle to capture interdependence within these separate actors and ecosystems.

III. Disturbance, Design, and the Illusion of Correction

The assumption that eradication is inherently responsible becomes more unstable when examining how invasions unfold within managed landscapes. Research on designed urban meadows suggests that disturbance itself—rather than mere non-native presence—is often the primary driver of invasion (Xie and MacIvor). Newly restored sites with homogenized soil create what ecologists call a “window of opportunity” for invasive establishment. In these cases,

invasive plants function less as malicious invaders and more as passengers of disturbance. Xie and MacIvor found that higher native seed density can suppress invasion risk by saturating available resources and strengthening competition. Resistance, then, may be achieved not through aggressive removal, but through strategic cultivation of native resilience.

Rend observes that many species framed as enemies thrive in environments already transformed by agriculture, urbanization, or climate alteration, and that warfare metaphors obscure the human role in creating favorable conditions for spread. Invasion is frequently a predictable response to human-modified landscapes rather than an independent act of ecological aggression. If invasive species proliferate because of disturbance patterns we maintain, simple eradication addresses symptoms rather than causes. Responsibility may require redesigning restoration practices, reducing disruption, and strengthening native ecological networks. Authority assumes we can isolate and eliminate a species without restructuring the conditions that enabled its arrival. Without systemic adjustment, removal risks becoming cyclical rather than corrective.

IV. Redistribution of Ecological Cost

In Spain's Ebro Delta, agricultural authorities responded to the invasive apple snail by implementing post-harvest field drying in rice systems. The intervention reduced methane emissions by 82% in 2015 and 51% in 2016 (Pérez-Méndez et al.), representing a meaningful contribution to climate mitigation. Yet flooded rice fields that once supported migratory waterbirds were diminished, and bird diversity declined sharply. The snail persisted despite years of drying practices. The intervention redistributed ecological cost rather than eliminating disruption. Methane decreased, biodiversity suffered, and the invasive species remained present.

What initially appears as responsible management reveals itself as a shift in ecological priorities. Large-scale mammalian eradications in Northern Europe demonstrate similar complexity. Robertson et al. report success rates approaching 80% in regional invasive removals, though financial and logistical costs increase with scale (Robertson et al.). Rapid intervention may reduce long-term suffering and prevent cascading ecological damage. Yet such campaigns rely on sustained lethal control across thousands of square kilometers. If Rights of Nature theory rejects human exceptionalism, declaring one species expendable for the benefit of others introduces a hierarchy that the framework is meant to resist. Ecological goods frequently conflict: climate mitigation versus habitat preservation, native biodiversity versus animal welfare, agricultural productivity versus wetland integrity. Rights-based adjudication weighs competing claims but may struggle to reflect the interconnectedness of each aspect of an ecosystem.

V. Conclusion

Ecological systems are dynamic and difficult to understand in their entirety, even after long periods of study and scientific prediction. A drying policy reduces methane but diminishes habitat. A trapping campaign protects native mammals but institutionalizes lethal governance. A restoration effort designed to eliminate disturbance may create the very conditions that facilitate invasion (Xie and MacIvor). As a child, I never considered soil conditions, nutrient cycles, or global trade networks that facilitated Japanese beetle proliferation. I knew only that they destroyed our plants. Even so, I killed them. At larger scales—urban meadows, Himalayan lakes, European deltas—such simplification becomes dangerous.

Sheergojri et al. emphasize that invasive species produce both services and disservices (Sheergojri et al.). This duality destabilizes eradication as a default ethical response. Intervention

may be necessary, but it must be justified through careful examination of systemic conditions rather than instinctive hostility toward non-native organisms. Rights of Nature initiatives strengthen standing and challenge human-centric assumptions, yet they also require humility. If ecosystems possess inherent rights, then our role is not unquestioned governance but informed participation. The question is not merely whether we should act when invasive species disrupt ecosystems. It is whether our methods of justification—particularly those grounded in adversarial rights structures—adequately reflect ecological interdependence.

Works Cited

- Alves, F., Costa, P. M., Novelli, L., & Vidal, D. G. (2023). The rights of nature and the human right to nature: an overview of the European legal system and challenges for the ecological transition. *Frontiers in Environmental Science*, 11.
<https://doi.org/10.3389/fenvs.2023.1175143>
- Macfarlane, R. (2025). *Is a River Alive?* W. W. Norton & Company.
<https://wwnorton.com/books/9780393242133>
- Pérez-Méndez, N., Alcaraz, C., Bertolero, A., Català-Forner, M., Garibaldi, L. A., González-Varo, J. P., Rivaes, S., & Martínez-Eixarch, M. (2022). Agricultural policies against invasive species generate contrasting outcomes for climate change mitigation and biodiversity conservation. *Proceedings of the Royal Society B : Biological Sciences*, 289(1985), 1–10. <https://doi.org/10.1098/rspb.2022.1081>
- Putzer, A., Cook, J., & Pollock, B. (2025). Putting the rights of nature on the map. A quantitative analysis of rights of nature initiatives across the world - Second Edition. *Journal of Maps*, 21(1). <https://doi.org/10.1080/17445647.2024.2440376>
- Rend, W. (2026, February 24). *Closing the loop on circular fashion*. Australian Geographic.
<https://www.australiangeographic.com.au/science-environment/2026/02/closing-the-loop-on-circular-fashion/>
- Robertson, P. A., Adriaens, T., Lambin, X., Mill, A., Roy, S., Shuttleworth, C. M., & Sutton-Croft, M. (2017). The large-scale removal of mammalian invasive alien species in Northern Europe. *Pest Management Science*, 73(2), 273–279.
<https://doi.org/10.1002/ps.4224>

- Sheergojri, I. A., Rashid, I., Rehman, I. U., & Rashid, I. (2022). Invasive species services-disservices conundrum: A case study from Kashmir Himalaya. *Journal of Environmental Management*, 309, 114674.
<https://doi.org/10.1016/j.jenvman.2022.114674>
- Weis, L. K., & Mullins, R. (2025). Does Nature Need Rights? *Oxford Journal of Legal Studies*, 45(4), 839–871. <https://doi.org/10.1093/ojls/gqaf021>
- Xie, G., & MacIvor, J. S. (2025a). Evaluating rehabilitation practices to inform invasion resistance in designed urban meadows. *Landscape and Urban Planning*, 261, 105386.
<https://doi.org/10.1016/j.landurbplan.2025.105386>