Invasive Species Language Guide

Just Language

Just Language in Ecology Education (Just Language) was created out of hope – hope that exclusionary scientific language and practices frequently used and taught by environmentalists could be changed. Just Language is a collective of scientists, educators, gardeners, and artists that strive to help people connect to the natural world in positive, meaningful ways while spreading the message of conservation. This goal is difficult to accomplish when the language traditionally used to teach some concepts, such as invasive species management, immediately triggers people who have heard that same language used against themselves or their families.

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Why This Guide?

“Invasive” describes two very different aspects of an individual organism, species or population: (1) an organism is introduced to a new environment it did not evolve in, and (2) the organism can dominate or harm part of an ecosystem. There is no **one** word to replace this term; as a result, we offer a suite of terms to consider. Many terms used to describe these species have been critiqued for decades for being violent, outdated, simplistic, and sometimes, actively harming and alienating people and groups. This guide offers suggestions to these problems but is not intended to be prescriptive. It invites you to consider your language choices with your team, your community, and for your specific context. The guide allows one to “try on” new terms in daily conversations and forge a deeper connection to non-human nature, language, and fellow humans.

To those of you actively involved in the stewardship of nature, which can include removal of overabundant species, these recommendations do not negate the impact of species introductions. Instead, this guide is an invitation to be intentional about the words and frameworks we use when communicating about our work.

Table of Terminology

Common Terms	Alternative Terms	Usage Example	Significance & Best Practices
Invasive[1] Weed Noxious[2]	Displaced Introduced Overabundant Impact on biodiversity Alienated[3]	"Due to its ability to spread both through root suckers and seeds, *Ligustrum sinense* is a displaced species that has become overabundant in this ecosystem. This causes a reduction in biodiversity." "Humans introduced *Pueraria montana* as an ornamental plant in 1876. Due to its ability to proliferate in the new environment, it quickly became overabundant."	Calling a species "invasive" suggests that the species **decided** to "invade" an area when these species are most often brought to new places by humans, either on purpose (e.g., for ornamental value, food, or livestock), by accident (e.g., in ship ballast or soil) or other ways (e.g, wind, ocean currents, or bird dispersal). By using other words like overabundant (there are a lot of them) or displaced (they are not in a familiar place), we focus attention on the plant's entanglement with humans and human activities, namely increased global trade and land-use change. We can ask questions like "Who introduced it? When did they introduce it? Why did they introduce it? Do people still like it or use it? How did it become overabundant?"

Common Terms	Alternative Terms	Usage Example	Significance & Best Practices
Alien Non-native Exotic Foreign Names with place of origin	Newly arrived Neobiota Displaced Newcomer Introduced	“Butterflyfish are considered neobiota in New York waters, as they were not historically found here, but there is currently no evidence of them causing negative impacts on the ecosystem.”	We know that introduced species have increased potential to cause harm because they no longer have the checks and balances from their ecosystem of origin. However, focusing on the origin of a species can incorrectly emphasize that origin causes impact. Using terms that focus on origin can further xenophobic biases and can leave audiences to understand things through their social-political lenses as opposed to the evidence presented. Further, the timeline of a species becoming “naturalized” is not agreed upon in scientific literature; some species we consider beneficial and wild were brought to the U.S. by Europeans in the 15th–18th centuries (e.g., *Plantago major* or Broadleaf plantain).

Common Terms	Alternative Terms	Usage Example	Significance & Best Practices
Native[4] Indigenous[4] Wild[5]	Locally evolved Integrated in the ecosystem Long-resident (adj.); long-time resident (n.)	"The American persimmon evolved locally in the New York region but you won't find it in supermarkets because it doesn't keep well on shelves, so this is a forager's specialty." "Oaks, or trees in the genus *Quercus*, are long-resident species we choose to plant; they're valued because many other species, including hundreds of insects, depend on oaks for food, shelter, and nesting."	Native species have long-held relationships with the soil, water, air, and species they interact with; and native species are vital to many beings. The focus on distinguishing between "native" and "non-native" is a colonial artifact; Indigenous peoples in North America did not categorize themselves as "Native" until European colonization began. Though species considered native support (are in relationship with) other species they co-evolved with, and support specific cultural connections (human relationships with non-humans), only valuing species that used to live in a place can diminish the benefits and relationships that new species may add to an ecosystem. Focusing on calling a species "native" or "wild" can also obscure the diverse roles that humans play in maintaining their habitat.

Common Terms	Alternative Terms	Usage Example	Significance & Best Practices
Aggressive Destructive Dangerous Evil Menace Invader Threat Murderous Wreak havoc Run rampant	Species' specific impact on the ecosystem of focus Ecosystem services/ disservices	"The white-tailed deer, while locally evolved in the Northeastern woodlands, has become overabundant and is often ecologically detrimental to forests. The deer's grazing of young saplings and herbaceous plants prohibits the regrowth of forest ecosystems." "Vines from the introduced porcelain berry can blanket trees and bushes; though they can provide local wildlife shelter, the vines also make it more difficult for plants underneath to access light and grow tall."	Using violent language can oversimplify and obscure important context about a species' history, impact, and value in the environment. Perceptions of harm can vary based on one's observations, belief systems, and worldviews; for example, conservation in the U.S. is often framed around reference states attached to specific historical moments like the arrival of European settlers, with harm occurring when pre-colonization species assemblages or ecosystem functions change. By focusing on the impact a species' presence has (or doesn't have) on neighboring species and its current environment, communicators can discuss ecological management goals that better facilitate multiple perspectives on how shared environments are stewarded. Using violent language to describe species interactions can also unnecessarily disregard audiences that hold spiritual or religious beliefs of non-violence and/or relational values.

Context for Language Change

Use this guide as a starting point. Since species will impact different places in different ways, each place, organization, and/or team will have its own contexts and needs. For example, if you're focusing on maintaining biodiversity in natural areas, pruning street tree plantings, or helping your audience connect to nearby nature, your framing may be different. The audience also matters. Are you speaking to the general public (mass communication), to researchers/practitioners, to young students, or in a small group setting?

The language we use to describe the world around us plays a role in creating the framework we use to understand it. While we share a common connection to the natural world, the way we teach and talk about it can prevent us from having conversations that include all perspectives. Talking, learning, and teaching about environmental change, including the impacts of species movement, can bring up overwhelming emotions including shock, confusion, anger, overwhelm, fear, and grief. It's important to note that we aren't alone in these emotions, and that there are ways we can process them. This guide is an invitation to be intentional on the frameworks we use *in* our various work, not a commentary on the work itself. Changing language also does not discount the serious impacts of species introductions into new environments. The options presented here offer opportunities for educators to adjust the potential emotional charge of these discussions for different audiences.

By questioning how words like "invasive" and "alien" convey cultural concepts that are often perceived as exclusive, we can change our framework, helping the fields of ecology education and species management be more inclusive and just. Educators, gardeners, ecologists, and others who teach and communicate about conservation can use this guide to inform their discussions with the social and historical context of "invasive" species to provide more inclusive educational programming. For more information about the history of "invasive" species terminology and how to have these conversations, please reference our conversation guide.

Other Tips to Consider:

- Avoid using or overemphasizing violent language related to the species itself, or the human approach to controlling it (e.g., "kill and eradicate all the privet")
- Be mindful about anthropomorphizing[6] species. Avoid descriptions that personify a species with negative intent to destroy and kill (e.g., "kudzu is the plant that ate the south").
- Remove words and common names that include the species' place of origin (e.g., Japanese honeysuckle) and use other, more descriptive names

- Replace outdated and offensive labels (e.g., gypsy, oriental) with more appropriate, alternative, or accepted terms. If you are not sure if a word is offensive, consider how you can communicate more thoughtfully in the future and avoid harmful names.
- Minimize descriptions that parallel “foreign” species to historically and contemporary scapegoated human communities as it can mirror racist propaganda (e.g., Anti-Asian propaganda against Chinese immigrants and Japanese Americans during World War II and COVID-19).
- Find alternatives to eponymous species names (i.e., common names named after humans) and follow professional societies that are renaming these species. For example, the American Ornithological Society decided to change all English common names of birds that were named directly after people; and the International Botanical Congress voted to remove an offensive slur from African-origin species names and is developing a committee to address problematic taxonomic designations. Science communication is changing, but it is slow.

Endnotes

1. The use and impact of the word “invasive” is incredibly context-dependent. The word “invasive” comes from 1450s Latin and French, in which the root “invas” means “go into; attack, invade” and implies ill intent and aggression. The word has since evolved and, when used to describe species, has legal definitions; the U.S. government defines an invasive species as *“an introduced, nonnative organism (disease, parasite, plant, or animal) that begins to spread or expand its range from the site of its original introduction and that has the potential to cause harm to the environment, the economy, or to human health.”* However, many ecological restoration practitioners will refer to both long-resident (native) and newly arrived or introduced (non-native) species as having invasive characteristics (propagating with potential for harm against a chosen goal). All this said: context is important! Defining a species as an “invader” inappropriately personifies a species as having ill intent. A more appropriate use of “invasive” is as an adjective to describe the phenomena or behavior that develops in specific contexts.

2. The term “noxious weed” is often misused interchangeably with “invasive plant,” but “noxious weed” holds a separate legal designation from “invasive”. To be considered a noxious weed, a plant must go through a highly political process that results in it being added to an official list of noxious weeds. This process is done on a local level, and varies by region/state.

3. Lisa Fink proposes the term “alienated species” to signal these species’ alienation from their original life-worlds through the linked processes of colonization and capitalism. For example, colonizers intentionally and unintentionally extract plants and animals from their original locations and forcibly relocate them onto Indigenous lands where they are constructed as “alien.” See Fink, L. 2023. Alienated Species and Unsettled Ecologies: Locating “Redneck” Conservation in the Racial Discourse of “Asian” Carp Invasion. *American Quarterly.* Link.

4. JL members are working to connect with tribes on the use of these words. We acknowledge that the impact of using “native” and “indigenous” will vary from person to person, and tribe to tribe. For example, one JL member does not feel comfortable using “natives” as a noun replacement for native plants, and prefers using “native” as a descriptor; similar to JL members’ unease about the use of “invasives” as a noun. Potawatomi philosopher Kyle Whyte suggests that calling a plant “native” or “indigenous” obscures the diverse roles that humans play in maintaining habitats for “native” species.

5. This term is a complicated one for JL members. For some, it brings up notions of ideas of freedom, autonomy, and agency for the being described as “wild”; many species described as invasive were once brought to new locations for human use in gardens that have “escaped” and become wild (see Emma Marris 2021 “Wild Souls: Freedom and Flourishing in the Non-Human World”). For some, the word is also often tinged in its association with the term “wilderness” which continues to be used as a descriptor of a pristine land untouched by humans, a narrative that justifies the removal and erasure of Indigenous presence and stewardship (see William Cronon 1995 “The Trouble with Wilderness” and Kyle Whyte 2023 “Why Does Anything Need to be Called Wild?”). One JL member expressed that the term “wild” moves away from the ideas of interdependence and inter-agency, that we all affect each other. While another member expressed that “wild” still differentiates a species from being native and/or natural. We offer these reflections as readers make decisions about their own word choices.

6. Anthropomorphizing (e.g. describing non-human entities as having human emotions or acting like humans) is a practice discouraged in most academic and classroom settings in the natural sciences. We acknowledge that describing a species’ agency is a tricky endeavor; as humans ourselves, it may be impossible to entirely remove our human biases that apply human-like attributes to more than human nature.