

Refugia Gardening: A Good Anthropocene Begins at Home

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Introduction

Living in the Anthropocene

Our present age is often called the Anthropocene, an era dominated by human activities that erode biodiversity and ecological functions, altering natural systems and cycles. As a result, we are causing climate and mass extinction crises and undermining the ecosystem services that enable human flourishing. Thus, humans have moral and existential obligations to reverse this trend by realigning our relationships with nature.

We are advocating for *refugia gardening* to build places of renewal in our own yards and in our communities. Refugia are pockets of life where species can survive and adapt during ecological crises. Refugia become “seeds” for repopulating the landscape with ecological communities that are adapted to new environmental conditions.

We propose that refugia gardening can lay the foundations for a “good Anthropocene” defined by relational care⁷ between humans and the biosphere in a way that safeguards ecological functions and biodiversity. This will ensure that humans and other species can fittingly adapt to new realities with sufficient resiliency.

Conservation Conundrum

The Anthropocene presents new challenges for conservation. Some contend that a paradigm shift is needed; others want to amplify the historic paradigm, setting aside half the planet.

Table 1: Contrasting paradigms in conservation¹

	Historic Conservation	New Conservation
Key priority	<ul style="list-style-type: none">Prioritize nature for nature's sake (intrinsic value)Human well-being is not a strong priority; however, mutually beneficial outcomes are possible	<ul style="list-style-type: none">Prioritize nature for humanity and nature's sake (win-win)Human well-being (or at least avoiding harm) is a strong priority, and mutually beneficial outcomes are possible
Pristine areas	<ul style="list-style-type: none">Pristine areas should be strictly protected, off-limits to human habitation except for tourism	<ul style="list-style-type: none">Pristine nature does not exist.Promote conservation everywhere, incl. non-natives and highly modified areas
Human impacts	<ul style="list-style-type: none">Reduce impact by reducing human population growthConcern that rich people have a larger impact than poor people	<ul style="list-style-type: none">Reduce human population growth and reform global trade to reduce impactIncome level not a strong determinant of human impact
Role of markets	<ul style="list-style-type: none">Conservation can (needs to) work with capitalism, but market-based solutions are not a high priority	<ul style="list-style-type: none">Some heavily favor market-based solutions in conservation while others are skeptical of capitalism in general

Key points of agreement among conservationists:¹

1. There is value in conserving human-modified habitats, not just the less-disturbed ones.
2. Conserving ecosystem processes is key.
3. Local/indigenous people need to have a voice in conservation efforts.

Refugia Gardening in Human-Dominated Landscapes

	Refugia Gardening Principles	Refugia Gardening Practices
Climate and Biodiversity	Make use of climate projections to plan refugia gardens that enfold biodiversity into your outdoor living, working, playing, and worship spaces ²	Convert lawn spaces into refugia gardens; include native plants; manage weeds by clipping instead of uprooting; use fences to deter deer
Ecological Function	Nurture ecological functions by planting swaths of perennials, shrubs, and trees that attract insects and birds ³	Look for seasonal signs of ecological functions and fluctuations; learn to appreciate chewed leaves, “dead” seed heads, and fallen leaf litter
Creativity and Design	Design four-season refugia gardens with structural and filler/matrix plants; allow these plantings to change and adapt over time ⁴	Plant in layers and clusters that mimic wild ecosystems; ⁵ include plants that foster caring (food, beauty, cultural heritage, memories, etc.)
Landscape Features	Make use of natural landscape features, (wet/dry) microhabitats, and (sun/shade) microclimates within your refugia gardens ⁶	Use lower, wetter areas for rainwater infiltration; manage landscape features for resilience against drought, floods, and fires
Connection and Caring	Create space for humans to interact with the garden, to encounter wildness, and to instill relational caring and stewardship (Fig. 1) ^{7,8}	Create inviting spaces for lingering; collaborate with neighbors to interconnect refugia gardens to provide wildlife corridors and refugia networks

Refugia Gardening Benefits

Through refugia gardening, ordinary people can:

- Sustain biodiversity to ensure ecosystem resilience in the face of climate change and a range of other Anthropocene threats.
- Conserve species and ecological functions by assisting migration and adaptation.
- Instill relational caring and stewardship (Fig. 1),⁷ foster hope, and manage ecological grief.

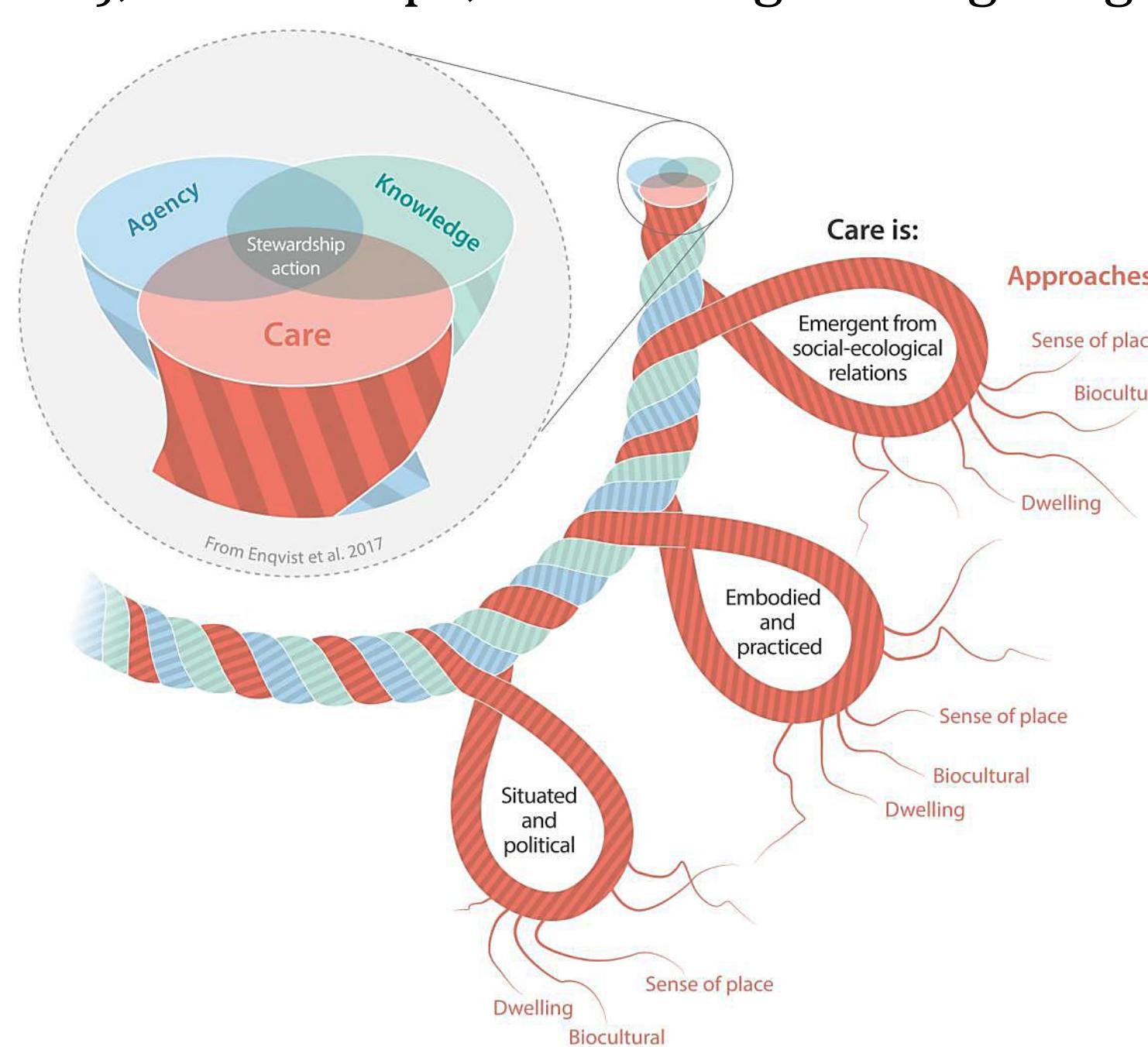


Figure 1: Refugia gardening strengthens relational caring and stewardship (from West et al. 2018)⁷

Beyond Native vs Non-Native

In *Nature's Best Hope*,³ Douglas Tallamy calls for homeowners to conserve species with a long history in a place. Based on this, many people advocate for “natives only” gardening, but there is no ubiquitous standard for defining ‘native.’ Furthermore, most of our food species are non-native, and all species face new challenges:

- Climate change is altering suitable ranges.
- Frequent/extreme stresses affect fitness.
- New biotic and abiotic conditions also affect evolution, creating novel ecosystems.

Thus, a natives-only approach is too restrictive.

Focus on Ecological Functions

It is better to focus on ecological functions and interactions that support a desired biodiversity. Important ecological functions include:

- *Habitat*: safe shelter, adequate water sources
- *Food webs*: good food sources, biotic soils
- *Reproduction*: suitable hosts, pollinators
- *Biodiversity*: sufficient species and genetic diversity to buffer against disease, stress, etc.



Vlinderhof: a model refugia garden in Utrecht, Netherlands

Conclusions

Refugia gardening can cultivate a good Anthropocene by providing places, even in human-dominated areas, where clusters of species can adapt to new ecological conditions brought about by climate change. It can also foster relational caring and hopefulness in the face of mass extinction and ecological grief.

References

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