**Managing small natural areas in light of climate change

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 **Abstract:**Considerable efforts have been made in recent decades to enlarge or connect many natural areas to include more complex, heterogeneous landscapes based on the premise that greater size, connectivity, and habitat diversity may allow many species to move to suitable sites as climates change. While protecting key linkages and rewilding natural habitats may be feasible strategies in some areas, in others, these options do not exist. Urban sprawl and development, conversion to farmland and production forestry, and road construction may have irrevocably severed corridors and preclude increasing the size of natural areas and surrounding habitats. This presents enormous challenges and questions regarding the long-term viability of many small, often isolated natural areas that were set aside at a time when conservation paradigms were less aware of the importance of size and connectivity in maintaining ecological functionality. In this talk, I propose an alternative for managing such sites by reconsidering their overall goals. Rather than focusing on trying to maintain unsustainable ecological functionality, I suggest that such sites might be more suitably managed as refugia or 'lifeboats' for maintaining populations of a high diversity of both rare and common species. On the continuum that describes the management of assemblages of native species, with largely untrammeled wilderness at one end and arboretums, gardens, and zoos at the other, this perspective nudges these small natural areas more forcefully towards the latter. Such a shift runs counter to how many such areas have been traditionally managed and is certain to be regarded with skepticism if not outright hostility by many. Yet, I suggest it presents a number of advantages and opportunities both for significant conservation benefits as well as for learning through experimentation. First, many species could be sustained through intensive and proactive management that is often impossible at larger scales on more extensive sites. Such practices could help sustain unique genotypes and add redundancy to populations of rare species that could serve as sources for restoring other sites as needed. Equally important, these sites could ably serve as locations for experiments with assisted migration. It is imperative that conservation practitioners begin to learn how to deliberately transport species that may be threatened in their current habitats due to changing climates and introduce them in a responsible manner to new, more suitable sites that maximizes learning opportunities. This talk will illustrate these ideas with examples from natural areas in the Pacific Northwest.