

# North Carolina Plant Conservation Program Introduction, Reintroduction, and Augmentation Policy for Practices on Plant Conservation Preserves

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## Background/Introduction

**Under § 106-202.18 the Scientific Committee has a duty** ‘to develop and present to the Board management and conservation practices for preserving endangered or threatened plant species.’

The Program is responsible for permitting collections as well as the propagation of imperiled plants (species listed as endangered, threatened or special concern, vulnerable), in areas outside of garden settings within the state of North Carolina.

The first priority of the Program’s preserve system is to protect wild populations of imperiled plants in their natural habitats. Each Preserve is intended to support one of the best known populations for at least one imperiled plant species in the ecoregion in which it occurs. Therefore, sustaining this target population as well as its supporting habitat and inherent ecological processes are the core conservation goal for the PCP Preserve.

Secondary conservation goals for each Preserve include sustaining other imperiled plant species present, recovering other imperiled plants which may have been lost from the site, and maintaining or improving populations of other important plant species and habitats (including significantly rare, candidate, keystone, etc.) to preclude or minimize the need to take additional conservation action on behalf of these species.

Augmentation, reintroduction, and introductions of any plant species on a PCP Preserve should be completed with great care and sensitivity to genetic, ecological, and other factors. Rare and imperiled plant species should receive extra scrutiny in this context.

## Scope

This policy applies to augmentations, reintroductions and introductions of imperiled plants and all plant materials (such as cuttings, roots, fruits, seeds, propagules) on Plant Conservation Program Preserves only and is not intended to serve as a guide for decision making in other contexts.

## Terms

The following terms adopted by NC PCP are modified from Maschinski and Haskins (2012) and IUCN (2001).

- **Assisted migration:** (or managed relocation) The deliberate introduction of organisms outside their native ranges to counteract negative effects of climate change. This process applies to novel species–site combinations, typically outside documented range. Goals of managed relocation include reducing extinction risk, increasing evolutionary potential, and enhancing ecosystem services.
- **Augmentation:** The addition of any individuals or propagules to an existing population with the aim of increasing population size or diversity and thereby improving viability.

- Documented range: The extent of element occurrences at the county level based on the NC Natural Heritage Program, NatureServe, other reliable database or sources, including any specific modifier for unusual substrate or habitat conditions; not simply an envelope connecting the dots (locations).
- Imperiled: Any species listed as endangered, threatened, special concern-vulnerable, or special concern-historical in North Carolina. The presence of species listed as special concern-historical may not have been verified in the past 20 years, but there is some expectation that it may be rediscovered.
- Introduction: Traditionally, the intentional or accidental dispersal by human agency of a living organism outside its historically known native range. For PCP Preserves, introduction also applies to any novel species–site combination either within or outside the documented range, where specific documentation of occurrence is lacking or theoretical at best.
- Invasive Exotic: An introduced species that increases in abundance at the expense of native species.
- Management: Any practice to improve habitat, e.g., prescribed burning, invasive exotic plant control and related herbicide use, woody plant removal etc.
- Metapopulation: A system of connected, spatially distinct subpopulations.
- Population: A group of individuals of the same species that have the ability to genetically interact and inhabit a defined geographic area.
- Propagule: A reproductive structure that can become detached from a plant and give rise to a new plant, e.g., a bud, seed, sucker, or spore.
- Rare: Any species without a regulatory listing but is listed as ‘significantly rare’ by the NC Natural Heritage Program. Such species are rare in North Carolina, generally with 1-100 populations in the state, frequently substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease).
- Species enhancement: An umbrella term for reintroduction, introduction, assisted migration, augmentation, and transplantation.
- Subpopulation: Geographically or otherwise distinct groups in the population between which there is little exchange (typically one successful migrant individual or gamete per year or less).
- Reintroduction: Traditionally the release of individuals into a formally occupied area after the native population has been lost or become extinct. For PCP Preserves, reintroduction applies only to species–site combination which can be historically documented, and specifically confirmed as lost.
- Restore/restoration: A descriptive term used only in context of reintroduction & augmentation.
- Transplantation: (or translocation) The deliberate and mediated movement of whole wild individuals or populations from one part of their range to another. This term refers to whole plant movement, as such this term may best be used as a modifier to any of the above.

- Unlisted: Any species without a regulatory ranking.

#### **Augmentation of Imperiled Plant Species Policy**

##### **PCP must meet and document the following criteria:**

- Basic documentation of extant occurrence is available and documented in NHP database
- Detailed documentation of population status (monitoring data) is available and documented under Preserve tenure
- PCP staff have well developed understanding of population trends and site-specific management requirements, if any, related to target species, and can document both a reasonable need for augmentation effort AND show that necessary management has been ongoing and is likely to continue
- Staff level approval – for when plants or plant parts are derived from on-site material
- Scientific Committee approval – for when plants or plant parts are derived from off-site collections

#### **Reintroduction of Imperiled Plant Species Policy**

##### **PCP must meet and document the following criteria:**

- Basic documentation of former occurrence is available and documented in NHP database
- Basic documentation of extirpation is available and documented in NHP database
- PCP staff have well developed understanding of site-specific circumstances related to above, can document a reasonable hypothesis explaining the species loss, and can provide supporting evidence that the “loss factor” has been abated or controlled
- Project proposal must be reviewed and approved by NCPCP Scientific Committee, and applicable regulatory partners (if any)

#### **Species Introduction and Assisted Migration of Imperiled Plant Species Policy**

##### **PCP must meet and document the following criteria:**

- PCP staff and partners can adequately document that in-situ protection of the intended species is either impossible or insufficient to reasonably guarantee the species’ continued existence in North Carolina given the current and reasonably projected status, trends, and threats
- Project proposal must be reviewed and approved by NC Scientific Committee, applicable regulatory partners (if any), and NC PCP Board

**Plant Conservation will utilize North Carolina Plant Conservation Program Rare Plant Reintroduction, Augmentation, and Transplantation Guidelines dated March 2005 to document activities initiated under this policy.**

**Cited Sources:**

IUCN 2001. Categories and Criteria, V3.1. In: IUCN Red List of Threatened Species. [www.iucnredlist.org](http://www.iucnredlist.org).

Maschinski J. & Haskins K. E. (Eds.) 2012. Plant Reintroduction in a Changing Climate: Promises and Perils. Washington, DC: Island Press. 432 pp.