

Policy updates drafted by the FNPS Conservation Committee
Conservation Committee Chair: Juliet Rynear
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Conservation \bowtie **P**reservation \bowtie **R**estoration
of the native plants and native plant communities of Florida.

Policy Statements:

Conservation

FNPS resolves that the preservation and perpetuation of the unique genetic diversity within and among Florida's native plant populations and plant communities is our highest priority. Activities that endanger this genetic diversity are in direct conflict with the society's goal of preservation of native plant species in their natural habitats.

Preservation

The preservation and perpetuation of native plant communities is our highest priority. Restoration of disturbed lands and the encouragement of the use of native plants for landscaping are important *secondary goals*. However, restoration must not be considered as a desirable or an equal alternative to preservation. Be it affirmed then: FNPS is, dedicated to the identification, preservation and understanding of native plant communities.

Restoration

The society recognizes that there should be exceptions to our Conservation and Preservation policies that allow the salvage of native plants and germplasm from areas where land clearing activities are *both imminent and assured*. FNPS will require members to obtain all necessary permits, harden-off plants, and reintroduce salvaged material to protected recipient sites using the best available practices for restoration work by partnering with botanical institutions, scientists, universities, local native plant nurseries, FNPS Conservation and Science Committees. Additionally, FNPS will partner with organizations and entities dedicated to the restoration and reintroduction of federally and state-listed plant species onto protected lands within the historical range of each species.

Definitions

Germplasm – 1) An individual, group of individuals or a clone representing a genotype, variety, species or culture, held in an *in situ* or *ex situ* collection. 2) Original meaning, now no longer in use: the genetic material that forms the physical basis of inheritance and which is transmitted from one generation to the next by means of the germ cells (Germplasm 2014).

Infraspecific – at a taxonomic level below that of species, e.g., subspecies, variety, cultivar, or form. In botany, Latin names at this level usually require the addition of a term denoting the rank (Oxford Dictionaries 2014).

in situ – a Latin phrase meaning “on-site” or “in position”.

Natural community – an interactive assemblage of organisms, their physical environment, and the natural processes that affect them. Environmental factors such as soil type, bedrock type, moisture level, slope, slope aspect, climate, and the natural disturbance regime play a key role in determining a species' ability to survive there. The organisms within a natural community include: plants, animals, fungus, and microorganisms. Natural communities occur in patterns throughout the earth and range in size from thousands of acres, such as a Northern Hardwood Forest, to less than one acre, such as a seep. Natural communities change over geological and evolutionary time, and are not static.

Policy “Background Statements”

Background for Conservation Policy

Genetic diversity enables our plants and natural communities to adapt and survive. Because of its unique biogeography and natural history, Florida is home to many native plant species that are locally adapted and genetically distinct (Frankham et al. 2009). Further, some species are adapted to specific microhabitats within a plant community (Hartnett and Richardson 1989; Menges et al. 1999; Richardson et al. 2014). Florida plant species and communities have adapted to extreme shifts in weather (temperature, moisture, and hurricanes), climate, sea level change, and fire. Additionally, many species within Florida's plant communities evolved on isolated islands during interglacial periods leading to a high degree of endemism. In the year 2014, there were 29 federally-listed endemic plant species in the Florida scrub community alone.

Genetic diversity within a species' population is vital to its long-term survival. Diversity is important not only with regard to adaptation over time (Caballero and Garcia-Dorado 2013) but to plant mating systems as well. Small populations (generally less than 100 plants) are at greater risk of extinction and more likely to suffer from inbreeding depression and a build-up of deleterious mutations (Lynch et al. 1995).

Threats to genetic diversity within and among populations include:

- Habitat development and fragmentation (reduction in population sizes, loss of unique genetic adaptations)
- Exotic species invasion (**includes Florida native species introduced outside their natural, historical range or natural community**)
- Hybridization and loss of indigenous species and/or populations
- Outbreeding depression – can occur when individuals of the same plant species, but from different populations are mated. Most likely to occur between populations that are widely separated (i.e. no historic exchange of genes), are from different environments, or have fixed chromosomal differences (Frankham et al. 2011)
- Fire suppression
- Illegal harvest and/or transplantation of native plants and seeds from natural areas

Such human activities incur an enormous loss of genetic material and diversity. This loss of germplasm is permanent and will adversely affect the future health and wellbeing of humanity. For example, many of our Florida native plant species are the wild relatives of important agricultural crops. Food and fiber production, increasingly challenged by the impacts of climate change, is reliant on genetic adaptations to climate extremes, as well as resistance to diseases and insect pests.

Guidance for Conservation Policy

FNPS, its chapters, and members will therefore:

- Advocate for preservation of native plants and natural communities *in situ*.
- Advocate for quality land management and restoration policies.
- Advocate for restrictions, control and removal of potentially invasive and known invasive species.
- Provide scientifically accurate information on the natural range and natural communities of plants we describe online or in print, identify on field trips, use in landscapes, or sell at plant sales.
- Promote landscapes that incorporate plants native to the local region and whenever possible, the original plant communities of the site.
- Promote scientific research on plant and population genetics that will inform restoration, land management, and landscaping practices.
- Support research that identifies the invasion and hybridization potential of native plants when taken out of their natural range and community.
- Provide educational materials and programs identifying and documenting known ecological impacts resulting from the use of native species outside their historical range and natural community.
- Support research related to nursery production and landscape use of less well-known, less available native plant species. Work with partners to bring more native plant species to market.

Background for Preservation Policy

The Florida Native Plant Society (FNPS) was organized by people concerned with the preservation and perpetuation of a vanishing resource - our native plant communities. It is generally understood that plants provide the energy conversion that drives the earth's major ecosystems; however, plant communities perform other functions which are also crucial to ecosystem viability. Unfortunately community functions are imperfectly understood and often neglected.

It is a major role then for environmental organizations to promote understanding of the ecological consequences of humankind's actions. It is the specific role, for FNPS to promote understanding of the dependency the people of Florida, the nation, and the world have on native plant communities. Preservation and perpetuation of native plant communities are important in part because:

1. Native plant communities protect clean water resources. For example: Upland forests stabilize soil preventing erosion and the consequent degradation of receiving waters. Wetland plant communities purify water by filtering particulates and assimilating nutrients contained in run-off.
2. Native plant communities help protect air quality. Plants, especially forests, remove carbon compounds from the air and store them in woody plant tissue;
3. Native plant communities provide genetic diversity. The continued production of food for humanity depends on seeking out disease and pest resistant native plant strains related to agricultural crops. Medicines to combat pestilence must come in the future, as in the past, from plant species which may not be there when we need them.
4. Native plant communities provide habitat and forage for pollinators and are therefore, essential to food crop production.
5. The wildlife and fishery resources which provide a substantial portion of humanity's protein and recreation depend on the primary productivity and habitat quality of native plant communities.
6. Disruption of native plant communities leads to invasion by exotic pest plants. Exotics proliferate away from natural controls and reduce habitat value for wildlife, recreation and resource management.
7. Native plant communities stabilize our fragile barrier islands which buffer the mainland from cyclonic wind and -storm surge.
8. Native plant communities provide aesthetic enjoyment and recreation to millions of our countrymen who in turn support a vast outdoor recreation industry.

FNPS resolves that the preservation and perpetuation of native plant communities is our highest priority. Restoration of disturbed lands and the encouragement of the use of native plants for landscaping are important secondary goals. However, restoration must not be considered as a desirable or an equal alternative to preservation. Be it affirmed then: FNPS is, dedicated to the identification, preservation and understanding of native plant communities.

Background for Restoration Policy

By promoting the use of native plants in landscaping, FNPS has helped create a demand for native plants. This demand, combined with limited market availability has driven many to introduce and cultivate plant species outside their natural communities and/or outside their historical range. This type of cultivation constitutes the planting of "exotic species" which could become future pests. "Florida" is a geopolitical boundary and "native to Florida" should not be a rubberstamp to plant native species outside of their historical range or natural community. Additionally, demand has prompted some individuals and companies to sell native plants dug from the wild. Selling harvested plants avoids the time and expense of growing the plants under nursery conditions. The introduction of plant species outside their historical range/natural community and the harvest of native plants from the wild are not practices that are sustainable in the long run, can damage wild plant populations by altering genetic structure, risk the spread of disease or insect pests, and risk the loss of millions of years of environmental adaptations, which are a prerequisite for most stable plant populations.

Very little policy has been implemented on cultivated native plants with limited ranges within the state of Florida. A severe example of this is the cultivation of Beach dune sunflower (*Helianthus debilis*). *Helianthus debilis* has two subspecies native to peninsular Florida. The subspecies on the eastern coast is *H. debilis* ssp. *debilis*, while *H. debilis* ssp. *vestitus* occurs naturally on the gulf coast. Over the past twenty years or so, *H. debilis* ssp. *debilis* has been cultivated as a native plant along Florida's gulf coast. Over time it has hybridized with the west coast variety, degrading the local indigenous germplasm (Bradley et al., 2004). Optimally, these cultivated plants along with the hybrids will need to be removed, allowing *H. debilis* ssp. *vestitus* to recover. Well-intentioned, but poorly planned native plant landscaping has caused severe disturbances within natural plant communities, and has artificially altered the genetic structure of indigenous species.

In addition to the dangers of polluting the gene pool of wild indigenous plants, the cultivation of Florida native plants outside their historic range within Florida may have other unforeseen consequences. In South Florida, indigenous populations of West Indian Mahogany (*Swietenia mahagoni*) are found in a narrow range including the upper Florida Keys and the coastline along Florida Bay. This species has been cultivated from Palm Beach County westward across to Lee County, and south through the Lower Florida Keys. It has been observed invading intact natural plant communities outside of its range in areas of The Big Cypress National Preserve, Mainland Miami-Dade County, and the Lower Florida Keys including Big Pine Key, where it is altering native plant community structure (personal observations, Steve Woodmansee). This species has been in cultivation for more than half a century and it may have taken a long time for it to begin showing these impacts. So impacts of cultivation of native plants outside their historical range may not be observed for several years.

Guidance for Restoration Policy

FNPS will continue to strive to provide to its members all the resources necessary to successfully implement these policies. These resources include, but are not limited to,

educational materials on Florida native plant species and natural communities, guidance on plant salvage, information on the historical range of Florida native plant species, field trips to natural areas, and access to a network of experts in the fields of botany and plant conservation.

Cultivation (Preserving a sense of place)

With few exceptions, FNPS does not advocate the cultivation of native Florida plants outside their historical range within the state of Florida. For all restoration activities, Florida native plants should, at a minimum be native to the county in which they are being cultivated. County nativity can be referenced using the *Atlas of Florida Vascular Plants*¹ (Wunderlin and Hansen, 2008) in combination with any additional scientific data that may be available (check with FNPS Education, Conservation and Science Committees, publications and herbarium specimens). Plants with limited ranges in the state (either localized, or found in only a handful of counties) are only advocated for cultivation in the counties for which they are found or historical to. Plants subject to hybridization due to their limited ranges should also be restricted to those areas and not be sold at FNPS or FNPS chapter sales events (eg. *Lantana depressa* complex, *Helianthus debilis* complex, and *Dicerandra* complex). When cultivating Florida plants outside their historical range at educational facilities and gardens, care should be maintained to educate the public on the native ranges of these species. FNPS chapters will be encouraged to promote or sell plants native to their area, and discouraged from selling plants native outside their area.

Members of the Society are asked to abide by this policy as a matter of ethics. Specifically, members are asked to inquire about the origins of plant material and not buy plants that have been transplanted from the wild. Landscape architects and designers are asked, when writing plant material specifications, to specify only nursery-grown native plants. Government agencies with jurisdiction over landscaping, mitigation, and restoration projects are asked to require those projects to use only nursery-grown native plants or those from on-site or nearby salvage operations.

Plant Salvage and Transplantation

Where land clearing activities are *both imminent and assured*, salvage and transplantation saves plants and genetic resources that would otherwise be lost. It is expected, however, that salvage activities not take place until all possibilities for preservation have been exhausted and all planning approvals for the site and collection permits have been obtained. Salvage and plant rescue operations should be undertaken only in compliance with all state and local native plant protection laws. Prior to salvage, FNPS will work with a team of conservation partners (including land managers, government representatives, botanists, and local native plant nurseries) to identify an appropriate recipient site and to ensure that salvaged material can be hardened-off and/or prepared for introduction to the recipient site. In addition, salvaged rare and/or endangered plants should either be taken to an institute involved in the research and preservation of listed plant species or there should be a plan in place for their introduction to a

¹ Please note that the *Atlas of Florida Vascular Plants* does not differentiate nativity of Florida plants which have become naturalized outside their native range, but fortunately at this time there are few examples.

protected site. Threatened and non-threatened salvaged plants should be taken to a habitat-appropriate recipient site that is protected and managed, such as a Preserve. In addition, care should be taken to ensure that cross pollination of similar species is avoided.

While it is unrealistic to think that FNPS can totally stop the practice of transplanting from the wild, it can supply needed leadership on this issue and, with the support of its members, help dry up the market for such plants. It is critical that native plant communities remain as undisturbed and undamaged as possible.

Policy Implementation

The Science and Conservation grant and Landscape award applicants will be made aware of this policy before applications are requested.

Regarding plant sales:

- A prohibited sales list of plants subject to hybridization with species or infraspecific taxa will be provided by the FNPS science committee.
- For each annual FNPS conference, a plant-sale committee shall be formed to work with vendors on signage and public education during the sale.
- Prior to the opening of native plant sales at the annual conference or at FNPS chapters, the annual conference committee or local chapter shall inspect species to be sold to ensure that plants on the “prohibited sales list” are not being offered.
- Chapters will work with local vendors at local/regional sales to promote the use of locally-sourced plant material.
- Chapters and the Annual Conference Committee are encouraged to work with FANN members to promote the availability of suitable plant material. One option is to make arrangement for nurseries to “contract grow” specific plants for sales events.
- At each sale, range and habitat information will be provided for each species being sold.

Education:

- A brochure addressing this issue will be published by FNPS by 2015.

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