

Palmetto



Pollinators & Corridors

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Bee on *Coreopsis leavenworthii* along SR 20, outside of Gainesville; Gulf fritillary butterflies nectaring on *Asclepias tuberosa* (photos by Jaret Daniels).

Pollination is an essential ecosystem service. By conservative estimates, 75% of the earth's flowering plants rely on animal pollinators, primarily insects such as bees, ants, flies, beetles, and wasps, to ensure reproduction (www.xerxes.org). This includes the vast majority of the fruit, vegetable, and seed crops that humans consume, as well as many other plants that provide fiber, animal forage, medicine, and fuel. Beyond the direct economic value to humans, insect pollination provides essential maintenance of the structure and function of a wide range of natural communities. It sustains native and introduced plants that control erosion, provides food and other resources for game and non-game wildlife, increases property values, and enhances the aesthetic, recreational, and cultural aspects of human activity.

Alarmingly, managed and wild insect pollinators have suffered declines in recent years prompting calls for proactive strategies to help bolster their populations. Continued declines could adversely affect agricultural systems, result in increased vulnerability of some plant species to extinction, and increase overall ecosystem disruption. Habitat degradation and loss are leading factors driving the downward trend of pollinator populations. While much recent attention has been placed on alternative management approaches in agricultural systems, it is clear that effective pollinator conservation must comprehensively be incorporated into the larger landscape, with overall efforts involving locales well outside of the basic farm margin.

Luckily, most insects require smaller remnants of available habitat to thrive compared to larger organisms. Roadsides,

utility easements and canal margins, often overlooked as waste areas and seldom mentioned in the larger conservation conversation, offer many valuable resources for pollinators. They support a wide variety of flower-rich forage habitat for access to pollen and nectar; and unlike agricultural landscapes, remain unplowed, therefore providing potential nesting sites for ground nesting bees. These same areas offer food (nectar, pollen, host plants and/or prey) and cover for other beneficial insects such as predators and parasitoids, colorful butterflies and moths, and other wildlife including songbirds.

Across the state, the Florida Department of Transportation (FDOT) is responsible for management and care of some 186,000 acres or 1/2 of one percent (one of every 200 acres) of the entire land area of Florida. Unlike a contiguous parcel of land this size, state roadsides are a network of living edges, touching and linking nearly every natural and agricultural resource in the state – including some 9 million acres of farmlands responsible for contributing billions of dollars to the state's economy each year. As a result, these extensive linear habitat strips also act as effective corridors facilitating local organism movements, population connectivity, and longer distance migration thereby effectively supporting the larger service of pollination.

Just like with other conservation lands, the management of vegetation along roadsides and easements is a dynamic process. It needs to satisfy and integrate a variety of considerations including public safety, infrastructure preservation,

and basic vegetation control with protection and preservation of the natural environment and enhancement of scenic quality. Not surprisingly though, the impact of such management decisions extends far beyond the target zone, often for several hundred yards, and influences nearly twenty times that amount of land in the surrounding environment.

Despite the rapidly growing national attention on insect pollinator conservation, relatively little detailed information is available on best management practices appropriate for the Southeast; methods aimed at conserving, augmenting, restoring or creating pollinator habitat on both agricultural and environmental lands. This includes even basic knowledge about the flower preferences of many native bees and other flower-visiting insects.

The Florida Wildflower Foundation is working to help fill this gap by developing and sharing best practices for establishing native Florida wildflowers across our landscapes. They are also working with numerous partners including the Florida Department of Transportation to promote, protect and increase roadside wildflowers through measures like reduced mowing during peak bloom to enhance right-of-way beautification and facilitate seed set, as well as the publication of guides featuring specific viewing routes and wildflower destinations. FDOT and the University of Florida have also teamed up on a multiple year study to investigate how roadside vegetation management and wildflower augmentation effects native pollinator richness and abundance. The vast majority of directed pollinator research though is tied to agriculture with efforts to help growers enhance or restore habitat on their farms for native bees, while considering the economic and ecological benefits of such conservation buffers. UF is actively involved in several such research initiatives intended to evaluate regionally appropriate seed mixes and associated site preparation and maintenance activities for establishing pollinator habitat in commercial farm settings and determine the impact of such plantings for enhancing the pollination service to adjacent target crops. The lessons learned have broad application to agriculture, ecological restoration, integrated vegetation management, and even commercial and home landscaping.

While much remains to be learned, several important factors are somewhat universal when it comes to maintaining or establishing pollinator-friendly habitat. First, select a mix of plants that bloom throughout or in succession during the growing season, so that pollinators have consistent access to food resources and can readily build up their local populations. It is important to also include larval host plants if you want to attract and maintain butterflies. Second, provide a diversity of flower colors, shapes, and sizes in order to appeal to a wide range of different pollinators. Whenever possible, utilize native plants and source local or regional Florida ecotypes – especially important when purchasing seed. While this may seem obvious, it is not always easy. Current wildflower seed production in Florida falls far short of demand. Seed for native restoration

and large scale naturalization or beautification projects often have to be purchased from major seed producing states such as Texas, North Carolina or Colorado. Next avoid tilling the soil during establishment or regular maintenance. Not only will this disturb the dormant seedbed and unleash a flurry of noxious weed growth but it can destroy the nests of ground nesting native bees. Mowing is a great alternative to control vegetation or aesthetically clean up areas. Lastly, avoid extensive use of pesticides and herbicides. As most pollinators are insects, they are extremely sensitive to a variety of direct chemical applications and drift.

Pollinator-Friendly Native Florida Wildflowers for Naturalizing

COMMON NAME	SCIENTIFIC NAME
Spotted beebalm	<i>Monarda punctata</i>
Partridge pea	<i>Chamaecrista fasciculata</i>
Firewheel	<i>Gaillardia pulchella</i>
Goldenmane tickseed	<i>Coreopsis basalis</i>
Lanceleaf tickseed	<i>Coreopsis lanceolata</i>
White wild indigo.....	<i>Baptisia alba</i>
Butterflyweed	<i>Asclepias tuberosa</i>
Blackeyed Susan.....	<i>Rudbeckia hirta</i>
Giant ironweed.....	<i>Vernonia gigantea</i>
Swamp sunflower	<i>Helianthus angustifolius</i>
Starry rosinweed.....	<i>Silphium asteriscus</i>
Ohio spiderwort	<i>Tradescantia ohiensis</i>
Musky mint	<i>Hyptis alata</i>

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Wildflowers grace the median of Hawthorne Road, near Gainesville, Florida (photo by Jaret Daniels).



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We welcome articles on native plant species and related conservation topics, as well as high-quality botanical illustrations and photographs. Contact the editor for guidelines, deadlines and other information.

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The purpose of the Florida Native Plant Society is to conserve, preserve, and restore the native plants and native plant communities of Florida.

Official definition of native plant:

For most purposes, the phrase Florida native plant refers to those species occurring within the state boundaries prior to European contact, according to the best available scientific and historical documentation. More specifically, it includes those species understood as indigenous, occurring in natural associations in habitats that existed prior to significant human impacts and alterations of the landscape.

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