NIH GREEN ZONE NEWSLETTER

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The Role of Native Plant Species

Native plants form a significant foundation for local ecosystems throughout the world. These plants have evolved side-by-side with native animal species over thousands of years. Native plant species often develop beneficial relationships with native fauna. One of the most well-known examples is the monarch butterfly and the milkweed plant. Milkweed leaves are poisonous to many insects and animals; however monarch caterpillars have evolved to digest these leaves.[1] The caterpillars are afforded protection from predators due to the milkweed plant they consume, so monarch butterflies lay their eggs exclusively on this plant.[1] In return, monarch butterflies act as pollinators, spreading pollen among local plants to enable their reproduction. Native plants sustain insects and other herbivores, which in turn sustain birds, carnivorous mammals, reptiles, fish and more, forming a balanced food chain.

Native plant species must be distinguished from non-native species and invasive species. Native plant species are plants that occur naturally in a particular region, ecosystem or habitat without human introduction.[2] These are plants that are a part of the balance of nature that has developed over hundreds or thousands of years in a specific area.[3] Non-native plant species are introduced with human help (intentionally or accidentally) to a new place or new type of habitat where they were not previously found.[3] These species are not necessarily beneficial or harmful to their new environment. Invasive species are a subsection of non-native plants able to establish on many sites, grow quickly and spread to the point of disrupting plant communities or ecosystems.[3] Whereas non-native plants can sometimes become naturalized as contributing or neutral pieces of an ecosystem, invasive plants threaten to upset the balance of nature and reduce biodiversity. Invasive species should be avoided as plant options and removed whenever possible.

Native plant species offer a variety of benefits over non-native plant species. Native plant species have evolved to form symbiotic relationships with other native plants and animals, while non-native species have evolved independently of their new ecosystem. Many non-native species are unable to contribute to the food chain or cannot survive and reproduce without human assistance. Even the non-native plants that become naturalized (able to survive on their own within the new ecosystem) are often less adapted to their new growing conditions. Native plants are adapted to the local soil conditions, weather patterns, native plant and animal threats and more. Non-native species often require more care or resources to thrive in the same way as native species. As an example, a non-native grass may require watering during summer months, fertilizer to establish a healthy root system, or pesticides to control insects. For these reasons, native plant species should be prioritized over non-native species.

Perhaps the greatest threat facing native plant species is climate change. The climate conditions that these species have adapted to over thousands of years are changing. With enough change, native plant species may be overcome by non-native or invasive species that are better suited by the new climate. They could also be forced into new locations to find more suitable growing conditions. Climate change could remove the foundation of many food chains, causing a cascade reaction where other species are forced to relocate or adapt to new conditions. The threat of climate change to native species could jeopardize ecosystems all over the world.

SPOTLIGHT

Native Plant Species on NIH Campuses

NIH campuses prioritize the planting of native plant species for their various benefits over non-native species. This article describes a few projects on the Bethesda and Research Triangle Park campuses that utilize native plant species.

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TAKE ACTION

How Can We Promote Native Species?

The easiest way to promote native plant species is simple: plant them where they have naturally grown! Read the full article for a few tips to help you with planting and growing native plant species.

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NEMS TRAINING

Did you know? Native plant species have evolved over thousands of years to thrive in the places they grow naturally and to benefit the local ecosystem. To learn more about green practices at the NIH, please visit the NEMS Training webpage to view a short (20 minute) NIH environmental awareness training video.

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