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Source: Natural Areas Journal, 36(4) : 363-365

Published By: Natural Areas Association

URL: <https://doi.org/10.3375/043.036.0403>

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National Seed Strategy: Restoring Pollinator Habitat Begins with the Right Seed in the Right Place at the Right Time

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Natural Areas Journal 36:363–365

INTRODUCTION

In 2012, more than two million acres of important sage-brush habitat burned in four Western States. In the East, Hurricane Sandy caused not only widespread damage to homes and businesses, but also to native plant communities that stabilize soils and filter water. Three years later, many of these eastern and western lands are still in need of basic stabilization, rehabilitation, or other restoration treatments.

In June 2014, participating agencies at a Seed Conference in Washington, DC, agreed to work together on a national strategy to be better prepared to respond to such events. The resulting National Seed Strategy for Rehabilitation and Restoration 2015–2020 is designed to provide a more coordinated approach among tribal, state, federal, local, and private entities to restoring native plant communities. Increasingly, plant communities are being altered by natural and human caused events such as the spread of invasive plant species, altered wildfire regimes, habitat modification, and climate change.

This National Seed Strategy provides guidance for, and implements a number of, major national initiatives such as the President's Climate Action Plan, National Fish, Wildlife and Plants Climate Adaptation Strategy (NFWPCAP 2012), the National Strategy to Promote the Health of Honey Bees and Other Pollinators (Pollinator Health Task Force, 2015), Interior Department Secretarial Orders 3330 on mitigation and 3336 on rangeland fire, and Executive Order 13112 on invasive species.

DISCUSSION

Natural areas are becoming increasingly degraded by both natural and human caused disturbances, which threaten native plant communities and the ecosystem services they provide for pollinators. Because of intricate webs linking flowering plants and their associated species, more holistic habitat level efforts are needed for pollinator conservation (Kearns, Inouye and Waser 1998). If native plants disappear, so do the native wildlife (Tallamy 2007).

Native plants are the foundation of healthy, resilient ecosystems, and central to natural area restoration efforts, a stable supply of appropriate seed and the knowledge to successfully utilize the seed is essential. With its vision of the right seed in the right place at the right time, the National Seed Strategy for Rehabilitation and Restoration is creating a more coordinated effort for ensuring the availability of appropriate seed to restore viable and productive plant communities and habitat for wildlife, such as pollinators.

The National Seed Strategy outlines four goals for accomplishing its mission:

Goal 1: *Identify seed needs and ensure the reliable availability of genetically appropriate seed.*

Goal 2: *Identify research needs and conduct research to provide genetically appropriate seed, and to improve technology for native seed production and ecosystem restoration.*

Goal 3: *Develop tools that enable managers to make timely, informed seeding decisions for ecological restoration.*

Goal 4: *Develop strategies for internal and external communication.*

The National Seed Strategy builds on the work that began in 2001 with the inception of the Bureau of Land Management's Native Plant Materials Development Program, including Seeds of Success. This program has made over 120 native plant species commercially available and developed germination and propagation protocols for more than 300 native plant species (Oldfield and Olwell 2015). Even so, native seed production cannot keep up with increasing demand, especially that of fire rehabilitation and restoration on Federal lands. Federal agencies are responsible for managing nearly 30 percent of this country's landmass. To successfully restore

NATIONAL SEED STRATEGY FOR REHABILITATION AND RESTORATION

VISION

The right seed in the right place at the right time.

MISSION

To ensure the availability of genetically appropriate seed to restore viable and productive plant communities and sustainable ecosystems.

For more info: www.blm.gov/seedstrategy

habitat for pollinators, interagency cooperation and coordination with non-Federal partners is essential. The National Seed Strategy is working towards establishing a national network of native seed collectors and researchers, a network of storage facilities, a network of farmers and growers to develop seed, and a network of restoration ecologists who know how to use the seed effectively. Once in place, the National Seed Strategy and its networks will increase communication and the sharing of science-based research to accelerate seed production and habitat restoration.

Native, locally adapted seed sources are necessary for restoration and management because they reflect the evolutionary and adaptive capability of plants in an area. All pollinators, including birds, bees, bats, and butterflies, require those plant communities in which they evolved over millions of years to thrive. Ecologists are becoming increasingly aware of insects' physiological need of, or preference for,

native plants and how a lack of such suitable flora can affect higher trophic levels such as birds (Tallamy 2007). There is estimated to be more than 18,000 species of native plants in the United States, but only 1949 of these are commercially available and often times sold by only one producer (Oldfield and Olwell 2015). Currently, the US is coordinating with Canada and Mexico to restore and manage milkweed (*Asclepias*) communities for monarch butterfly larvae. The US Fish and Wildlife Service estimates a billion milkweed plants are needed to meet the goals of the North American Monarch Conservation Plan. Of the 76 species of milkweed native to the US, less than one third are available in large enough quantities for restoration (Nabhan, Warren and Taylor 2015). It can take 10–20 years to develop sustainable supplies of seed from the time of wild collection until commercially available crops are developed. The National Seed Strategy provides a framework for working with private and public partners to shorten

this process when possible and increase our capacity for habitat restoration when and where it is needed.

CONCLUSION

Collaboration is the key to protecting pollinators and their habitats – native plant communities. Successful implementation of the National Seed Strategy will require the active participation of a diverse set of public and private partners, including the commercial seed industry. Increased coordination is vital to accelerate the pace and scale of restoration and provide native plant materials when and where they are needed. There is a cadre of plant ecologists and botanists across the country conducting plant research and working to develop crops of locally adapted native seed. If our native plant communities thrive, wildlife, including pollinators and ultimately humans, will thrive.

For more information on the National Seed

Strategy, visit www.blm.gov/seedstrategy. If you are interested in getting engaged in implementing the National Seed Strategy, please write to SeedStrategy@blm.gov.

ACKNOWLEDGMENTS

The authors wish to thank Dr. Sara Oldfield for her thoughtful review and comments on earlier drafts. We also thank all the members of the Plant Conservation Alliance's National Seed Strategy drafting team who worked tirelessly to develop the National Seed Strategy and to all the partners who commented on the Strategy.

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