

a voice
for the natural
landscaping
movement



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Nativars: Where do they fit in?

Before we state the Wild Ones position on nativars, it is important to consider our definition of a native plant:

"A native plant species is one that occurs naturally in a particular region, ecosystem and/or habitat and was present prior to European settlement."

"Nativar" is one term for a cultivar of a native species. Like all cultivars, nativars are the result of artificial selections made by humans from the natural variation found in species. Nativars are almost always propagated vegetatively to preserve their selected trait, which means they no longer participate in natural reproduction patterns that would maintain genetic diversity.

What are 'Nativars' and Should They Be Used?

Executive Summary:

Due to the loss of genetic diversity and other potential problems described in this position statement on nativars, and because nativars are understood to be very different from native species in the wild, Wild Ones does not encourage the use of nativars. We feel this is the only position on nativars that is consistent with Wild Ones' mission statement.

Nativars, cultivars of native plants, are becoming increasingly popular and are marketed by nurseries around the country. It is important to know more about them when planning your landscaping.

What exactly is the difference between a nativar and a straight species native plant?

A native plant species is one that occurs naturally in a particular region, ecosystem and/ or habitat and was present prior to European settlement. Nurseries that sell specifically native species grow them from seeds or divisions, and don't select a particular form of the species to the exclusion of the inherent variation found in nature.



Rudbeckia nativar 'Cherry Brandy'
Photo credit: Cliff Orstead



Native purple cone flower *Echinacea angustifolia*
Photo Credit: Thomas G. Barnes
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Nativars are the result of artificial selections made by humans from the natural variation found in species. Nativars are almost always propagated vegetatively to preserve their selected trait. Use of these methods of reproduction means the plants thus produced no longer participate in natural reproduction patterns that would maintain genetic diversity.

As a result, a nativar was only truly native when in its original context. But once removed from its natural habitat and propagated vegetatively, it is no longer native in the same way -- since it no longer reproduces naturally as straight species do, through open pollination.

What are the pros and cons of using nativars?

Nativars are selected and perpetuated by horticulturists for many alleged reasons: atypical colors or forms of flowers, compact size, insect or disease resistance, tolerance of certain challenging environmental conditions, and many other reasons – all of which, if true, may be valuable in themselves and for home gardeners.

However, there are a number of important concerns regarding the use of nativars.

The premise behind the use of nativars is to isolate a single genetic sliver from the diversity of the natural gene pool of a native species. Therefore, the use of nativars inherently excludes as much genetic diversity as possible, resulting in nursery stock that is almost always genetically identical to the original selection. The diversity of genes in straight native species gives species more flexibility (and adaptability) when confronting stress such as disease or climate change.

A small percentage of nativars in the nursery and landscape trades may not be a concern. However, the pervasive scale of mass-production, promotion and use of nativars is of concern to ecologists and environmentally-focused gardeners, horticulturists and native plant professionals. The longer we rely on nativars – clones – that are not cross pollinating in natural populations to produce their offspring, the greater the risk that we are left with only diminished selections of native plants – the nativars instead of straight species.

An example from recent history can serve as a cautionary tale: the Irish Potato Famine. The potatoes being grown in the country were almost entirely of a single variety, the Irish Lumper. Economic and political reasons led to the potato becoming a base food of the poor. This large



Native New England Aster
Photo credit: Becky Erickson

Nativar of New England Aster
Photo credit: Janet Allen

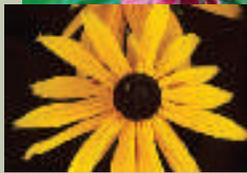
The native New England aster (*Symphyotrichum novae-angliae*), with a nectaring monarch butterfly, appears on the left. On the right is a photo by Janet Allen of a nativar of the New England aster. Janet comments: "The 'improvements' attributed to this nativar is that it's more compact and a bit more intensely colored than the straight species. What is interesting, though, is that I've made a point of observing this plant, not in any organized way, but frequently enough that I have concluded that whatever the New England aster species provides has apparently been lost in this cultivar. While I have literally thousands of bumble bees, honey bees, and other native bees in my yard, buzzing around all my other plants, they seem to consistently ignore this plant."

A close look at the center of each pink blossom shows a diminished quantity or reproductive parts, both male and female. It has been noted by botanists that when a straight species produces a plant with multiplied petals (as this pink cultivar evidently has), it does so at the expense of some of its reproductive parts and likely some nectaries.

dependency on a single crop and the lack of genetic diversity among the plants had catastrophic effects when a disease struck (a blight called *Phytophthora infestans*) killing the potato plants.

While the horticulture industry promotes the use of nativars, our natural areas where species live, in the wild,

Color is one of the most frequently seen variations from the typical native species. One has to wonder what it is that our pollinators see, and if they are attracted to these different colors. Colors are perceived, by flying pollinators, from a distance and are the primary attractants. Senses of smell and taste come into play when the animal has been attracted by sight. How the nativars vary in taste and nutritional value, while very important, are not subjects that have been widely explored.



Rudbeckia hirta
nativar 'Cherry Brandy'

Photo Credit:
Cliff Orstead

Native black-eyed susan,
Rudbeckia hirta Photo
credit: Wikimedia

are under constant pressure. By propagating from seed, promoting and using straight species of native plants, gardeners and professionals alike can support a form of horticultural conservation—or at the very least, can avoid taking part in the continuing loss of genetic diversity.

A less obvious concern with nativars is that, because they are by definition genetically un-diverse, any stress that kills a particular nativar could have the 'Irish potato famine' effect — killing that same nativar in many places, quickly and at once. Just as the industry claims cultivars are better or improved, they could easily be considered inferior once a threat begins to affect them — pest, environmental stress, changes in climate, etc. They could be considered more vulnerable by virtue of their sameness. Genetically they are deprived of a variety of 'tools' necessary to adapt to change.

Renowned environmentalist Aldo Leopold advised: "keep every cog and wheel is the first precaution of intelligent tinkering," (A Sand County Almanac with Essays on Conservation from the Round River. 1966. Oxford Univ. Press). By planting straight native species instead of nativars, we will be preserving the amazing genetic diversity found in nature.

Other Concerns or Unknowns Regarding Nativar Usage

- Loss of wildlife habitat
- Loss of pollinator habitat
- Increase in allergies to pollen or other impacts on human health
- Invasiveness potential
- Unpredictable response as climate changes
- Maintenance costs to gardeners
- Economic loss to native species growers

There are too many unknowns and not enough research results regarding these other concerns to make the decision to use or not use nativars. But like decision makers before us, we prefer a precautionary principle approach, because we intuitively know these losses are possible and a proactive and protective stand is needed until research demonstrates otherwise.

Bottom Line:

Due to the loss of genetic diversity and other potential problems described above, along with the fact that nativars are not the same as native species in the wild, Wild Ones does not encourage their use. As stated in our mission statement, our goal is "to preserve biodiversity through the preservation, restoration and establishment of native plant communities."

Nativars should certainly never be used in restorations to replicate native plant communities. Individual gardeners, on the other hand, are free to make their own decisions when landscaping their own yards and larger properties.

One of the major difficulties gardeners experience is that desired native plants may not be commercially available for landscaping. However, we can't allow the traditional nursery industry's marketing strategies to undermine our environmental and ecological goals. Only by customers' asking for straight native species plants will growers and garden centers begin to tune in to the environmental concerns presented here, and on the minds of countless ecologists and native plant gardeners all over the country.

To make your decisions, we urge gardeners to follow the advice of Douglas W. Tallamy, Ph.D., chair of the Department of Entomology and Wildlife Ecology at the University of Delaware and author of Bringing Nature Home: How You Can Sustain Wildlife with Native Plants: "It IS a bad idea to load the landscape with cultivars that have no genetic variability. I would go that route only if it



is a choice between a nativar and a plant from China. I think the safest policy right now is to encourage the use of straight species. Ask for them at your local nursery encourage nurserymen to start stocking more straight species. The nursery industry has not embraced the message that native plants are more about ecosystem function than about looks. We have to convince them that there is a market for plants with high function.”

In a time of climatic uncertainty, it is important to protect the natural environment we live in. Without it, we cannot survive. Part of that protection strategy is to create our own native gardens to:

- connect corridors for songbirds, pollinators, etc.;
- incorporate species of our natural heritage;
- reduce use of potentially invasive garden plants;
- reduce water, fertilizer and chemical usage;
- educate our family and neighbors; and
- support local native plant growers.

Submitted for approval to the Board of Directors of Wild Ones by a committee of member- volunteers: Co-Chair Mariette Nowak, Co-Chair Dan Segal, Loris Damerow, Cindy Eack, Bonnie Harper- Lore, Trish Hennig, Scott Leddy, Tim Lewis, Shey Lowman, Amy Redfield, Lynn Steiner, Donna VanBuecken, Rick Webb, Maryann Whitman, Laurie Yahr.

References for definitions of a native plant species and a nativar

Cregg, Bert. September 27, 2010. Can cultivars be considered native plants? <https://sharepoint.cahnrs.wsu.edu/blogs/urbanhort/archive/2010/09/27/can-cultivars-be-considered-native-plants.aspx> (online)

Freckman, Robert. Jan. 13, 2013. Personal communication. Freckman is professor emeritus of biology at the UW Wisconsin Stevens Point.

Kelly Kearns, Wisconsin DNR. Personal communication.

MacKenzie, Jim. Personal communication. Dec. 20, 2012. MacKenzie is nurseryman at Octoraro Native Plant Nursery

Swink, Floyd and Geroud Wilhelm. 1994. Plants of the Chicago Region. Indiana Academy of Science, The Morton Arboretum, Lisle, IL.

National Invasive Species Information Center. U.S. Department of Agriculture. 1999. Executive Order 13112. <http://www.invasivespeciesinfo.gov/laws/execorder.shtml> (online)

U.S. Forest Service Native Plant Materials Policy. 2012. <http://www.fs.fed.us/wildflowers/nativeplantmaterials/policy.shtml> (online)

Wisconsin Department of Natural Resources. 2012. NR 40, Invasives rule.

References for evaluation of nativars

Allendorf, Luikart, Aitken. 2013. *Conservation and the Genetics of Populations*

Antilla, Carina K., Cutris C. Daehler, Nathan E. Rank, and Donald R. Strong. 1998. Greater Male Fitness of a Rare Invader (*Spartina alterniflora*, Poaceae) Threatens a Common Native (*Spartina foliosa*) With Hybridization. *American Journal of Botany* 85(11): 1597–1601.

DeLong-Amaya. Dec. 6, 2012. Personal communication. DeLong-Amaya is Director of Horticulture, Lady Bird Johnson Wildflower Center.

Diboll, Neil. October 17, 2012. Personal communication. Diboll is owner of Prairie Nursery in Wisconsin.

Falk, Donald A. Eric E. Knapp, Edgar O. Guerrant. November 2001. An introduction to restoration genetics. Prepared by the □ Society for Ecological Restoration for the □ Plant Conservation Alliance, □ Bureau of Land Management, US Department of Interior, U.S. Environmental Protection Agency.

Gordon, Doria. November, 2012. Personal communication. Gordon is Director of Conservation, The Nature Conservancy, Florida

Grese, Robert E. 2013. Personal communication. Grese is Director, Matthaei Botanical Gardens and Nichols Arboretum Professor, School of Natural Resources and Environment

Longcore, Travis. December, 2003 . Terrestrial arthropods as Indicators of Ecological Restoration Success in Coastal Sage Scrub (California, U.S.A.) *Restoration Ecology*.

Longcore, Travis, Rudi Mattoni, Gordon Pratt and Catherine Rich. April 18-91997. On the Perils of Ecological Restoration: Lessons from the El Segundo Blue Butterfly. 2nd Interface Between Ecology and Land Development in California. J.E. Keeley, Coordinator. Occidental College.

Magney, David. International Botanical Congress Code

Mattoni, Rudi, Tsrvis Longcore and Vojtech Novotny. 2000. Arthropod Monitoring for Fine-Scale Habitat Analysis: A Case Study of the El Segundo Sand Dunes Environmental Management Vol. 25, No. 4, pp. 445–452.

Policy on Living Collections. June 2008. Lady Bird Johnson Wildflower Center.

Powers, Joyce. December 3, 2012. Personal communication. Powers is the former owner of native plant nursery in Wisconsin.

Sun, Youping. May 2010. Genetic Diversity, Micro Propagation and Cold Hardiness of *Ilex Glabra* (L.) A. Gray. PH. D. Thesis, University of Maine.

Tallamy, Douglas W. November 30, 2012. Personal communication. Tallamy is chair of Department of Entomology and Wildlife Ecology at the University of Delaware.

Tenczar, Emily G. and Vera A. Krischik. 2007. Effects of New Cultivars of Ninebark on Feeding and Ovipositional Behavior of the Specialist Ninebark Beetle, *Calligrapha spiraeae* (Coleoptera: Chrysomelidae). *Hortscience* 42(6):1396–1399.

Wilhelm, Gerould. December 6, 2012 and March 13, 2013. Personal communication. Willhelm is co-author of *Plants of the Chicago Region*.