

# Building a Better Monarch Butterfly Waystation

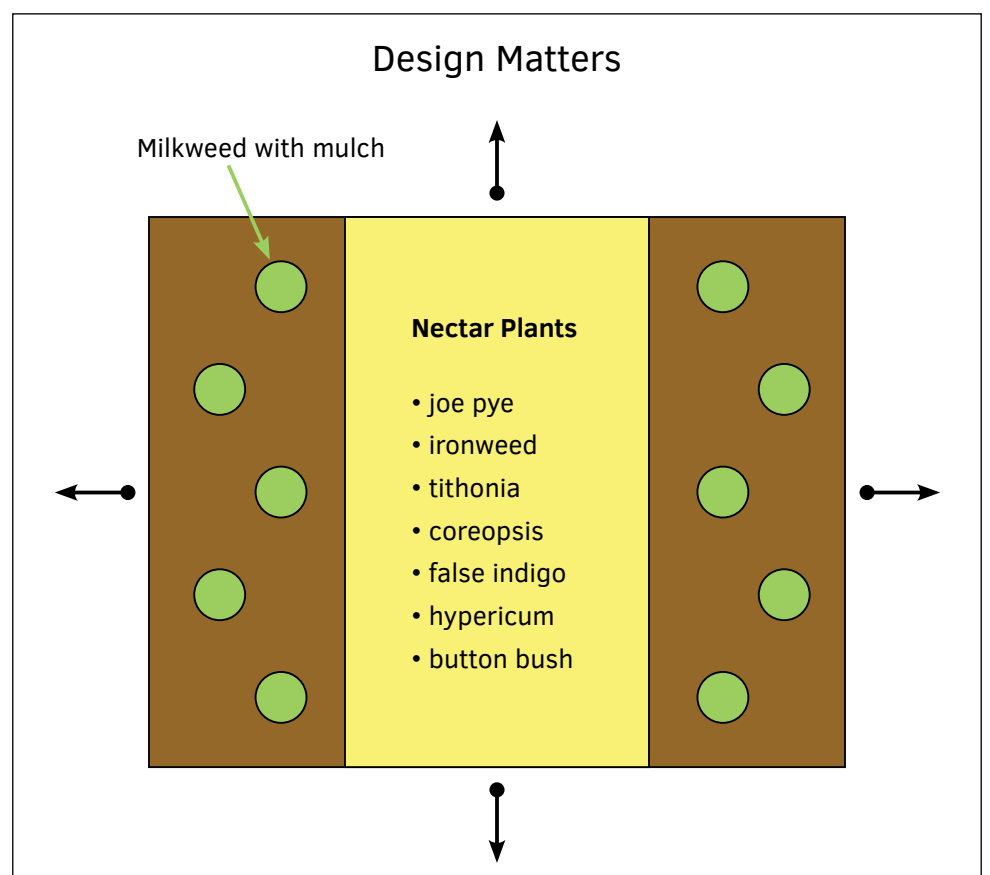


*Concern for pollinator health continues to gain public interest. How can growers take part in restoring habitats for monarchs and other pollinators?*

BY ADAM M. BAKER AND DANIEL A. POTTER

**T**he iconic monarch butterfly has been in steady decline over the past few decades. This is in part due to environmental pressures including habitat loss and fragmentation, and the dwindling availability of milkweed and nectar plants. Milkweed is not only important to monarchs because of the chemical protection it provides, but it also is the only group of plants on which the caterpillars can develop.

Restoration of populations to historical recorded levels is one of three main objectives of the National Pollinator Health Strategy (NPHS), initiated in 2015 by President Obama. Because of this, the plight of the monarch butterfly has received media attention and increased public awareness. The conservation efforts spurred by the NPHS and non-profit organizations such as Monarch Watch and The Pollinator Partnership provide business opportunities for native plant producers, nurseries and garden centers to meet the growing demand for milkweed and other pollinator-friendly annuals and perennials.



**Figure 1.** Illustrates what a productive monarch waystation might look like. Have the nectar plants (many to choose from so feel free to mix and match), but most importantly you want to choose plants that will provide season long bloom coverage. Keep open lines of site in all directions whenever possible. Isolate milkweed with mulch to make them more apparent to foraging monarchs and reduce the chance of predation.



The monarch butterfly is well known for its long distance annual migrations to and from overwintering sites in Mexico, a voyage reaching upwards of 2,000 miles. The journey north

may take four or five generations, with the final generation making the long trek home. These long distance flights take a tremendous amount of energy and require many stops to replenish weary butterflies.

Not only is food important, but the monarchs also need breeding sites to sustain their successive generations along the way.

There are two main initiatives aimed at restoring and protecting

monarch populations: 1) protecting the butterflies' overwintering sites in the mountains of Mexico from logging and other habitat degradation and 2) reestablishing a network of milkweed and flowering plants throughout the flyways of North America to support migrating butterflies. Our research is largely focused on generating information to help landscape managers at golf courses, parks, horse farms, commercial and institutional landscapes, and other urban areas to convert unused spaces into low-input pollinator sanctuaries. It is also aimed at helping to support growers, home gardeners, garden groups and others interested in monarch conservation.



## Q&A with Mark Seguin

**2006 was a pretty memorable year.** Google purchased YouTube for a reported \$1.65 billion in stock. NASA launched the New Horizons probe. Barry Bonds hit his 715th homerun to break Babe Ruth's long-standing record.

Perhaps the most memorable, at least for the horticulture industry, was Sakata Seed America's commercial introduction of SunPatiens, a ground-breaking line of interspecific impatiens.

SunPatiens was – and still is – known for its continuous flowering, adaptable features and consumer-friendly performance.

That brings us to 2017, where SunPatiens is one of the most award winning and recognized series of flowering annuals in the world.

We sat down with Mark Seguin, global marketing manager of vegetative products, to talk about the past, present and promising future of SunPatiens.

**GPN:** Can you shed a little light on the origin of SunPatiens?

**Mark Seguin:** SunPatiens has a very interesting history of development. The original species, which serves as the basis for the bloodline, was discovered by Sakata breeders in Indonesia in the 1990s.

In 1993, Japan was one of 168 countries to sign the Convention on Biological Diversity (CBD). This multilateral treaty serves to develop conservation and sustainable use of indigenous plants, as well as fair and equitable sharing of benefits arising from a country's genetic resources.

Sakata Seed Corporation and the Indonesian government signed an agreement based on the principles of the CBD for commercial development of these unique plants; a first for the flowers industry. After years of refinement, research and development, SunPatiens was launched in 2006. A portion of the royalty collected for each SunPatiens cutting sold goes back to the Indonesian government to support their conservation efforts.

**GPN:** How does SunPatiens differ from other interspecific impatiens on the market?

**MS:** While initial appearance resembles a typical New Guinea Impatiens, SunPatiens genetics feature a more complex genealogy. Years of breeding work resulted in a more aggressive root system, thicker leaves, flower petals and stems, which provide greater tolerance to stressful conditions. Plus, unlike a mutation process, the traditional breeding techniques utilized by Sakata allows for new characteristics



Mark Seguin

from other species to be incorporated into new varieties and future generations of SunPatiens.

**GPN:** What is contributing to the extraordinary growth of SunPatiens in the marketplace?

**MS:** The product delivers on the expectations of consumers. It's easy to grow and provides continuous color for three seasons. Given its full-sun to shade versatility, natural disease resistance and ability to thrive under the most stressful conditions, the end results are happy gardeners making repeat purchases year after year and a higher sell-through at retail.

It's nearly impossible to sustain the incredible sales growth SunPatiens has enjoyed without strong customer satisfaction. Our market research indicates that 8 out of 10 people who grow them would recommend SunPatiens to a friend.


**GPN:** What advice would you offer to first-time growers of SunPatiens?

**MS:** Rule No. 1 is SunPatiens are not New Guinea Impatiens (NGI), therefore growing practices are not identical. Most growers have vast experience with growing NGIs but if they incorporate these practices with growing SunPatiens their final results are typically less than ideal.

Unlike New Guineas, SunPatiens can tolerate moderate to severe wilting without the loss of emerging flowers or bud abortion, and the water stress helps condition and strengthen the plants for its transition to the landscape or home garden. For this reason, I recommend that growers avoid excessive stem-stretch and minimize the use of plant growth regulators (PGRs) by growing SunPatiens under high light conditions and allow the plants to dry down between irrigations.

By far the biggest concern I share with growing SunPatiens is the overutilization of PGRs. Without proper care and conditions, SunPatiens can quickly grow beyond expectations and growers often react by liberal use of PGRs. SunPatiens are very reactive to PGR applications and aggressive treatments can result in stalled or near zero-growth for the end-user. This highly negative condition runs counter to the aggressive performance consumers have come to expect from SunPatiens. A successful gardening experience is the ultimate goal and it's critical we don't undermine the promise the SunPatiens brand has established in the marketplace.

For information about SunPatiens, visit [www.sunpatiens.com](http://www.sunpatiens.com) or contact your local Sakata distributor.

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## NOT ALL MILKWEEDS ARE CREATED EQUAL

Milkweed comes in many different shapes and sizes.

Species native to North America inhabit everything from swamps to deserts. They exhibit many leaf types, sizes, growth forms and flower displays. Because of the diversity of milkweed species, an obvious question arose, "Which milkweed is best for monarchs?" To answer this, in 2016 we established replicated garden plots containing eight species of native milkweeds: common (*Asclepias syriaca*), swamp (*A. incarnata*), showy (*A. speciosa*), butterfly (*A. tuberosa*), whorled (*A. verticillata*), spider (*A. viridis*), broadleaf (*A. latifolia*) and narrowleaf (*A. fascicularis*). Those species were selected because of their drought tolerance and ability to grow in full sun, traits that are necessary for low-input plantings.

We monitored the plants' growth rates, bloom times and pod production, and their attractiveness to "wild" monarchs based on numbers of eggs and caterpillars found on each plant throughout the summer. We also caged newly hatched caterpillars on the plants and compared their growth and survival on the different milkweed species.

All eight milkweed species attracted monarch butterflies for egg-laying and sustained the



caterpillars to adulthood. Swamp (*A. incarnata*), showy (*A. speciosa*) and common milkweed (*A. syriaca*) were especially attractive. Butterfly milkweed, which has bright orange flowers, was visited by many types of bees. Although butterfly milkweed grew the most robust monarch caterpillars in the cage trial, we found few eggs and larvae on the open plants, suggesting that because of the plant's smaller stature, the butterflies may have difficulty picking it out against a background of taller plant species.

As the season progressed we observed a correlation between level of senescence and monarch choice. As the more favored milkweed species died off, wild monarchs made a shift to the somewhat less favored species. The study will be repeated in the 2017 growing season to gain more information about which milkweed species are best for monarch conservation gardens.

#### **GARDENS FOR MONARCHS: HOW SMALL IS TOO SMALL?**

Monarch Watch, a non-profit conservation organization, encourages citizens' planting of small butterfly gardens (monarch waystations) containing milkweeds and nectar plants. More than 15,000 certified monarch waystations have been planted by schools, churches, garden clubs, nature centers and other groups. Monarch waystations have clear educational value, but are they really contributing to the restoration of monarch populations?

To find this out, our lab initiated efforts to assess the extent to which monarchs actually find and use small butterfly gardens and monarch waystations. Bi-weekly inspections of 22 monarch waystations in central Kentucky were conducted to document the presence of monarch eggs and caterpillars. Waystations were categorized into three types: urban, peri-urban and rural. For each land type we measured structure, area, proximity to buildings, percent hardscape, milkweed diversity, lines of site and nectar plant assemblages.

We found that monarchs do find and use monarch waystations regardless of their size. The most important factors seemed to be orientation within the landscape. Rural waystations yielded (64 percent) of all monarchs observed,

whereas urban sites surrounded by hardscape and traffic, and obstructed by buildings, yielded relatively few. In general, rural and peri-urban waystations tended to be larger, with a more substantial assemblage of nectar plants, so

they are probably more apparent to the butterflies as they fly over the landscape. Mulched gardens, and ones in which the milkweeds stand out from the surrounding nectar plants, seem to attract more monarchs.



## Celebrating 40 Years With 40 Acts of Kindness!

This year marks the 40th Anniversary of Sakata Seed America! Sakata's passion for seed extends far beyond breeding top quality genetics. We are most motivated by the fact that through pioneering exceptional flower varieties and vegetables, we are contributing to the overall betterment of life.

Inspired by our history of fair trade with the Indonesian government and the spirit of contribution through our SunPatents® brand, we are celebrating this milestone with our 40 Acts of Kindness initiative. We've committed to support forty organizations in the nutrition, health and environmental arenas that aim to improve life, community and culture throughout the United States, Canada and Mexico.

To learn more about the organizations we are supporting, visit [SakataOrnamentals.com](http://SakataOrnamentals.com)



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We also are studying ways to help landscape managers establish large tracts of land with milkweed and flowering plants. For example, we are partnering with the United States Golf Association (USGA) on research to help golf course superintendents

to become involved with conservation of the monarch butterfly and other native pollinators.


The 15,500 U.S. golf courses, which occupy about 2.7 million areas of land, represent a large urban and peri-urban land type, portions of which could be used

for pollinator conservation plantings. Golf courses, by design, are fragmented, with patches of tall grasses, wetlands, early successional native plants and woodland separating the fairways, tees, greens and mowed roughs. A typical facility covers 150 to 200

acres, 40 to 70 percent of which is out of play. Most U.S. courses are looking to increase their proportion of naturalized areas that not only provide habitat for pollinators, birds and other wildlife, but also can lower maintenance costs by reducing the need for mowing,



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and for inputs of water, fertilizers and pesticides.

Establishing large stands of milkweed and nectar plants in naturalized roughs on golf courses could have greater conservation value than urban butterfly gardens do and Monarch Waystations that may be hard for migrating monarchs to find, and too small to support breeding populations. If half of the U.S. golf courses along monarch flyways established milkweed in out-of-play areas, that could have real conservation value by providing habitat corridors for the migrating butterflies. Stands of milkweed and nectar plants beside cart paths or around backs of tees, with interpretive signage, would offer opportunities for conservation education while providing interest while waiting to play. This could help showcase a club's environmental stance through activities such as naturalist-led pollinator walks, or engaging with citizens involved with censuses of monarch populations.

For monarch restoration, naturalized roughs would need preferably two or three species of native milkweed as food for larvae, and a mix of early, middle and late blooming wildflowers to fuel adult breeding and migration. If desired, those areas could be mowed in early spring or late autumn, before or after the monarch migrations. Indeed, mowing can spur regeneration of vegetative shoots which can in turn increase monarch reproduction. Currently we are evaluating protocols for how best to establish large milkweed plots, and hope to encourage the USGA to put together an accreditation for participating golf courses.

#### OPPORTUNITIES FOR GROWERS AND GARDEN CENTERS

The public's growing interest in pollinator conservation is spurring sales of flowering plants (e.g., [www.millionpollinatorgardens.org](http://www.millionpollinatorgardens.org)). That includes demand for milkweeds and nectar plants for use in butterfly gardens and larger restoration

plantings. We are studying best methods for propagating milkweeds from seed, and which species are easiest to grow, including resistance to thrips and other greenhouse pests. We'll share those results in a future article. Conservation

of monarch butterflies, and pollinators in general, provide new opportunities for growers and gardens centers to produce the plants needed to help restore the pollinator habitat already lost to degradation and urbanization. [gpn](http://gpn)

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