



# A FLY-BY- Night Garden

Left: White flowers that remain open in the evening, such as this moonflower, support moths and other creatures that feed—and pollinate—outside of daylight hours.

## Garden work continues even while we sleep. Here's how to support nighttime pollinators

by **Karin Ursula Edmondson**

**W**hen we think about garden flowers, we typically picture diurnal, or day-blooming, plants. Unless we're designing a moonlight garden, we overlook night bloomers, which are generally undermarked. Of course, it's for good reason—after all, gardeners and plant professionals spend most of their time in gardens in daylight. But at night, when our weary heads rest on soft pillows, insect activity in the garden continues, courtesy of the night-shift pollinators, those crepuscular creatures like moths and nocturnal bees and bats.

### UNDER DARKNESS

Most nighttime pollinators are crepuscular, active at dawn and dusk rather than in the dead of night. (Most diurnal pollinators like honeybees and bumblebees have muscles that require certain critical temperatures to function, so they tend to sit still during chilly mornings just after dawn.) Since moths often pollinate the same plants as daytime bees, butterflies and hoverflies, growing a smorgasbord of perennials with varied flower shapes and sizes and with bloom times staggered from spring through fall is still the best bet to host pollinators both day and night.

Some night-blooming plants, such as moonflower, morning glory, evening primrose, four o'clocks, yucca, gardenia and nicotiana, will also attract bats, true nocturnal creatures that eat harmful beetles, other crop-decimating pests and upward of 600 mosquitos per hour. According to the US Forest Service Rangeland Management Program, bats are vital for pollinating approximately 300 food plants, including guava, banana, mango, peach, date, fig, cashew and pecan.

When purchasing plants for night visitors, make sure to ask nurseries and seed sources about their neonicotinoid policy. Neonics are the most common insecticides employed in the horticulture and agriculture industry to keep plants looking perfect (i.e., without insect damage). These chemicals do not discriminate between pest insect and beneficial insect, thus bees, moths and other essential pollinators are collateral damage. Honeybees are killed outright when in contact with any part of the plant, especially pollen and nectar. Sadly, even plants marketed as bee friendly may have been treated at some point with neonics, which can remain in plants for up to two years. Two reliable sources with strong neonicotinoid policies are Prairie Moon Nursery (<http://www.prairiemoon.com>) and High Country Gardens (<http://www.highcountrygardens.com>).



**1** Evening primrose (*Oenothera biennis*), native throughout much of North America, opens its flowers at dusk and closes them again at sunrise.



**2** The highly fragrant tuberose (*Polianthes tuberosa*) blooms in late summer, with flowers that remain open night and day.



**3** True to their name, four o'clocks (*Mirabilis japonica*) begin their bloom cycle in late afternoon.

**4** Like tuberose, Casa Blanca lilies offer a strong scent from white flowers that shine in dim light.

1. Katerynan/Stock/Getty Images 2. Veena Nair/Moment/Getty Images 3. Horne/Eu/Getty Images

## NIGHTTIME STARS

To guarantee that crepuscular and nocturnal pollinators visit your garden, include plants that start their bloom cycle in the late afternoon or early evening. The best choices are large white or pale flowers that produce ample nectar and a sweet scent (which typically increases as the night wears on). The flowers of both garden phlox (*Phlox paniculata*) and honeysuckle vine (*Lonicera sempervirens*) not only remain open at night but their fragrance intensifies then, too. Several annuals, perennials, bulbs and even a few shrubs work really well.

Old-fashioned four o'clocks (*Mirabilis jalapa*) opens in late afternoon in response to subtle temperature drops. Their lemon-scented flowers remain open all night, dying

and dropping off come morning as temperatures rise again. Available in reds, pinks and white, four o'clocks deserves a spot in the contemporary pollinator garden, especially in patio containers and decorative pots. [Editor's note: *Mirabilis jalapa* is reported as invasive in parts of the United States; see <http://www.invasiveplantsatlas.org>.]

Reminiscent of sweet country gates and arbors, morning glory vines (*Ipomoea indica*) feed nighttime pollinators from moths to bees and bats. Colors range from traditional pale 'Heavenly Blue' to the dark purple of 'Grandpa Ott'. 'Candy Pink' and blue-and-white 'Flying Saucer' are also widely available. The related moonflower (*Ipomoea alba*) is perfect for a white or moon garden. [Editor's note: *Ipomoea in-*

*dica* is reported as invasive in parts of Southern California and Texas; *I. alba* is reported as invasive in parts of the Southeast and Hawaii.]

Flowering tobacco (*Nicotiana*) imbues summer nights with heady sweet scents that beguile humans and night pollinators. Plant size ranges from 18 inches to 5 feet high. *Nicotiana* stalks tend to be sticky. The five-petaled, trumpet-shape flowers most often show shades of red, pink and white. For the best scent, look for species *N. alata* or *N. sylvestris*, as modern cultivars have diminished fragrance.

Include both tuberose (*Polianthes tuberosa*) and Casa Blanca lilies (*Lilium* 'Casa Blanca') in the garden. Both plants feature highly perfumed blooms that remain open at night to woo the winged nocturnal denizens. In a similar romantic theme, gardenia's gorgeous and fragrant flowers will charm insomniacs, be they insect or human. Grow them in the ground in USDA Zone 8 and warmer; keep them potted farther north, so they can be moved indoors for winter.

The tall, thick stalks and yellow flowers of evening primrose (*Oenothera biennis*) occur naturally in fields and along roadsides. The cultivar 'Lemon Sunset' stays shorter than its wild parent, and it's showier too. 'Siskiyou Pink' and 'Twilight' offer gardeners colors other than yellow. White *Oenothera caespitosa* is a mounded dwarf form that reaches eight to twelve inches in stature.

Starry campion (*Silene stellata*), the more decorous cousin to weedy bladder campion, is an herbaceous perennial often found in mesic prairies and primarily pollinated by nocturnal moths, specifically the rare campion coronet (*Hadena ectypa*). The caterpillars of the related capsule moth (*H. capsularis*) also feed on starry campion. Planted in groups of three or five, starry cam-



## GIVING MOTHS MEANING

While we tend to covet butterflies for our gardens, we sometimes view their relatively drab brethren, the moths, as nighttime nuisances that circle outdoor lights and flutter too close for comfort to our heads. Statistically, moths outnumber butterflies 10 to 1. In the United States alone there are more than 11,000 moth species.

Nocturnal moths are indicative of ecologic function and integrity of terrestrial land. Conservation biologists, landscape architects, wetland scientists, geotechnical and construction firms and other environmental professionals are using Terrestrial Rapid Bio-Assessment (TRBA) to establish qualitative and quantitative assessments of ecosystems through documentation of nocturnal moths. Established by scientists at GZA GeoEnvironmental, the TRBA methodology attracts moths to one or more survey sites within a land parcel. Low-tech tools like UV external light sources, 1000-watt metal halide lamps, synthetic pheromones or other moth-attracting bait bring in the moths, each of which "provides a piece of species-specific life-history information that contributes to the characterization of the local ecology," says Blaine Rothauser, a conservation biologist and GZA Senior Project Manager and Natural Resource Specialist. Habitat diversity is revealed via numerous and varied species of moths. So, the next time you see a halo of moths hovering around your outdoor lighting, smile, knowing that the ecology of your garden is probably quite robust.—KUE

pion's fringed, five-petaled flowers borne on long lateral stems add cheer to any garden bed.

Wild campion's cousins bladder campion (*Silene vulgaris*), evening campion (*S. pretense*) and white campion (*S. latifolia*) typically grow in fields and meadows, along roadsides and in ditches and attract hawkmoths. In the spirit of ecological gardening, leave them be. Start to change your perspective on plants labeled wild or weedy. It helps to consider your pocketbook—these wild plants pop up as free nocturnal-pollinator attractants.

Yuccas are entirely dependent on the yucca moth (*Tegeticula yuccasella*) for flower pollination. Conversely, yucca moth larvae rely on yucca seeds for nutrition. Yucca's impressive flowers—a single upright stalk sometimes reaching to eight feet tall and filamented with white flowers—also lure bats. Adam's needle (*Yucca filamentosa*) is hardy to Zone 5. It thrives on sandy, dry soils in full sun and adds contemporary flair to gardens.

Since shrubs often form the backbones of gardens, keep a spot for summersweet (*Clethra alnifolia*; Zones 3–9), New Jersey tea (*Ceanothus americanus*; Zones 4–8) or Carolina allspice (*Calycanthus floridus*; Zones 4–9) to sustain

the night-shift insects. All three shrubs feature scented blooms that remain open 24 hours to feed both day and night pollinators. Clethra—which can be found as the rounded four-foot 'Hummingbird' and 'Sixteen Candles' and the taller 'Ruby Spice'—enjoys uniformly moist soil and dappled sun. Three-foot-round New Jersey tea prefers soil on the drier side and full sun. Versatile allspice will enjoy part sun in average soil or a moist spot by a stream. 'Aphrodite', a cross between *Calycanthus floridus*, the western *C. occidentalis* and Chinese *C. chinensis*, bears intensely fragrant magnolia-like burgundy blooms and matures at about six feet tall and wide.

Even though moths, nocturnal bees and bats aren't usually featured in sunny, romantic garden images, they are natural and necessary inhabitants of gardens and landscapes. Keep these beneficial nighttime pollinators in mind when designing and planting your next garden, and then rest easy, knowing your garden is open for pollinators 24 hours a day. ☞

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