



Fig. 1 One of six reclaimed piers at Brooklyn Bridge Park

In June 2019, with funding from the Hardy Plant Society and Royal Horticultural Society, I spent two weeks in New York City visiting some of its public parks and botanic gardens. My trip was inspired by a desire to study the High Line, a 2.3km-long greenway established on a stretch of elevated former freight track

in west Manhattan, with the planting designed by Piet Oudolf. I volunteered to work on the High Line for the majority of my trip, and spent the remaining time visiting some other modern public parks that have transformed neglected space and infrastructure into innovative urban landscapes, in the boroughs of Brooklyn and Manhattan. These sites included Domino Park, Brooklyn Bridge Park (fig. 1), The Battery, and a collection of parks and monuments in lower Manhattan collectively known as Battery Park City Parks. By visiting these parks, along with the Brooklyn and New York Botanical Gardens (NYBG), I hoped that I would be able to fulfil another key aim of my trip: to familiarise myself with as many North American plants as possible (fig. 2).

At first it seemed that realising this aim wouldn't be difficult, for the word 'native' was on everybody's

Native plants in New York City parks and botanic gardens

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lips. All of the parks I visited expressed a commitment to using native plants. Battery Park City Parks has specified that natives should account for 85 percent of their new plantings, and within existing ones, horticultural staff are in the process of replacing non-US species with appropriate native alternatives, for example taking out Asian grasses and planting species or cultivars of North American switchgrass (*Panicum virgatum*).

The Battery has committed to planting only native trees, following the damage caused there by a 4.3m tidal surge during Hurricane Sandy in 2012. This park also contains an urban farm, with an emphasis on native plants. Nearly half of the 500 species used on the High Line are said to be native to the USA, and both the New York and Brooklyn botanic gardens contain gardens within them, explicitly devoted to native planting.



Fig. 2 *Heliopsis helianthoides* var. *scabra* in the Pier 6 Flower Field at Brooklyn Bridge Park

Yet, for all this talk of natives, two things were a little unclear to me. Precisely what was meant here by the words 'native plant'? And how could I and other park visitors identify them?

Applied to plants, the word 'native' eludes a completely satisfactory definition. It was first defined in a botanical context by HC Watson in the mid-19th century, to denote a species that was indigenous to a country, without having been introduced by human agency. Here, a native was viewed in opposition to an alien species, which though it may have become established in a place, was reputed or known to have been first introduced from other countries. Despite repeated use since then, little significant progress has been made in refining this definition.

There was a surge in the popularity of native planting in the USA during the 1990s, loosely described as a 'native plant movement'. Here, advocates called for the use of native species in gardens and habitat restoration projects, in response to the threats posed to ecosystems by humans, climate change and invasive alien species. Yet, in spite of how widespread the word has become, few enthusiasts can offer a precise definition of the term in this American context, and it remains ambiguous (fig. 3).

Some would claim that only plants growing in the USA prior to the time of the European colonisation of North America should

qualify as indigenous. But the geographical area that a plant is native to is a subjective parameter: a plant might be native to a state, a particular ecological region, or the USA as a whole. It seemed that in most of the parks I visited, this very broad, country-wide definition of the word was being applied.

Identifying these USA natives within park environments presented a further challenge. In an interview with the website Mother Nature Network, Andi Pettis, former Director of Horticulture at Friends of the High Line, made the point that Piet Oudolf's mingling of USA natives with Asian and European garden varieties, though it may evoke midwestern American landscapes, may mislead visitors to assume the park's plantings are more native than they actually are (fig. 4).

Plant labels were not generally used; except in some parks, for specimen trees. Plant provenance wasn't noted, and herbaceous material was rarely identified. In the case of public parks, widespread labelling is probably more trouble than it's worth; the High Line experimented with labels in the past, but discovered that this encouraged visitors to ramble through beds more than they were already wont to do. It would appear then that it is not feasible for parks to explain clearly to visitors what portion of their planting consists of natives.

But it was encouraging to find that for those wishing to learn more about the plants used in park designs, information was often readily available, either in the form of talks and tours, or online.



Fig. 3 Urban vegetation at Brooklyn Army Terminal - natives or weeds?



Fig. 4 *Knautia macedonica* 'Mars Midget' is not a north American native



Fig. 5 *Echinacea purpurea* 'Vintage Wine' in the High Line's Washington Grasslands



Fig. 6 *Amsonia hubrichtii* at Hudson River Park

Nearly all of the parks I visited published a full plant list – or even more useful – seasonal bloom lists. In the cases of Brooklyn Bridge Park and The Battery, these also noted whether a plant was native or not.

It is perhaps not surprising that public parks do not aim to educate visitors about natives to quite the same degree as

botanic gardens, for which education is counted as one their central roles. During my visit to the NYBG, Michael Hagen, curator of the Native Plant Garden (a separate garden within the NYBG), explained that it had been designed to help change people's perception of native plants (in this case, native to north-eastern North America) as weeds. To this effect, an English-style mixed border has been created at the entrance of the garden, to demonstrate to visitors that you can achieve a highly-cultivated finish with readily available, north-eastern native species and garden cultivars of plants such as penstemon and echinacea (fig. 5).

Within the Native Plant Garden itself, visitors move through a series of naturalistic environments, from dry woodland to wetlands and open meadow, and encounter a range of native plant communities. But providing effective

interpretation for visitors is no easy task for botanic gardens either: Hagen explained that working out how best to educate visitors about the plants in the meadow, which can either be viewed as a whole from the boardwalk, or in detail via the path meandering through, is something of a work in progress, potentially involving the use of explanatory plaques, or a smart phone app.

Definitions and interpretation aside, it was the aesthetic value of North American plants that I was most keen to explore, and after visiting New York City's public parks and botanic gardens it was easy to see why designers were so willing to embrace the native palette. The bluestars *Amsonia hubrichtii* and *A. tabernaemontana* var. *salicifolia* were called upon again and again to furnish beds with great hummocks (to 90cm in height and spread) of alluring texture, in a way that clipped mounds of evergreen box or yew might be used in the UK (fig. 6). Oak-leaved Hydrangea (*H. quercifolia*) was similarly employed near the backs of borders, to deliver height and drama in the form of its large leaves and conical panicles of cream flowers (fig. 7).

At the High Line, herbaceous material is not cut back until March. Oudolf's designs rely on tall deciduous grasses and perennials for

structure during the winter months. A case in point is the Northern Spur Preserve, a section of the High Line which is dominated by sturdy clumps of northern sea oats (*Chasmanthium latifolium*) and two species of gillenia (*G. stipulata* & *G. trifoliata*) that are covered in white star-like flowers in May. All sport stunning autumn foliage in hues of copper and gold. After they are cut back, the relative emptiness of the beds opens a view to emerging bulbs, new spring growth, and of course the (re-laid) railway tracks the park is named after.

Whether in flower or not, grasses were certainly making their presence felt during my visit. Airy and delicate, the bead-like flowers of crinkled hair grass (*Deschampsia flexuosa*) tickled the chins of taller perennial neighbours on the High Line. Of the many sedges I encountered, brome sedge *Carex bromoides* stood out as a favourite when planted as a carpet in the Chelsea Thicket zone, alongside *C. laxiculmis* BUNNY BLUE and bristleleaf sedge (*C. eburnea*). The colour and form of low-growing perennials such as *Heuchera* 'Amethyst Myst' and fringe cups (*Tellima grandiflora*) were picked out wonderfully as they nestled within the limey tresses of *C. bromoides* (fig. 8). Yet I also enjoyed the very subtle contrast in texture that came with planting fine-leaved perennials next to grasses. The feathery foliage of dense blazing star (*Liatri*

spicata) covertly mingled with that of grasses and *Amsonia hubrichtii* for example, before throwing up a throng of pink-purple terminal spikes that contrasted so well against any adjacent soft lines.

My favourite personal discovery came in the form of lead plant (*Amorpha canescens*), a legume naturally found in open woodlands, glades and prairies of the Great Plains and central North America. On the High Line it graced a number of grassland zones with a scraggy, tousled charm. Before flowering, the spike-like inflorescences had the appearance of curiously unassuming grey caterpillars. By the end of my stay however, these had begun to transform, the flowers opening up a vivid purple-blue to reveal bright orange anthers (fig. 9).

For public parks and botanic gardens alike, above and beyond their aesthetic



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Fig. 7 *Gillenia trifoliata* in bud, backed by *Hydrangea quercifolia* at The Battery

presence, the use of native plants contributes to a shared ethos: that of sustainability. Whether it is by helping mitigate storm-water runoff, or making the challenge of organic garden management more straightforward, native plants are cited as playing a significant role in park and garden sustainability.



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Fig. 8 *Tellima grandiflora* growing among *C. bromoides* in the Chelsea Thicket



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Fig. 9 Inflorescence of *Amorpha canescens*



Fig. 10 *Asclepias purpurascens* on the High Line



Fig. 11 *Dalea purpurea* just coming into flower on the High Line



Fig. 12 Similarity between red columbine and Indian pink flowers

Using natives that are adapted to local conditions not only reduces the chances of plant failure, but means they are more readily available. Planting drought-tolerant species typically found in prairie environments also reduces the need for supplementary watering.

Growing natives helps support biodiversity within parks and gardens, by providing forage and shelter for a wide range of birds, insects and animal life.

Asclepias such as butterfly weed (*A. tuberosa*), purple milkweed (*A. purpurascens*) and swamp milkweed (*A. incarnata*) were present in many of the parks I visited, as they are the exclusive hosts of the monarch caterpillar (fig. 10). Adult butterflies foraging on nectar-rich plants from late summer to autumn are also catered for, via native species and garden cultivars of Joe Pye weed (*Eupatorium maculatum*), aster, American wild bergamot (*Monarda fistulosa*) and button bush (*Cephalanthus occidentalis*), the latter grown as an aquatic in the Lily Pool of Rockefeller Park, in Battery Park City Parks.

Over 30 bee species have been recorded on the High Line, including masked bees

in the genus *Hylaeus*, which lay eggs into plant stems such as those of purple prairie clover (*Dalea purpurea* – fig. 11). As a result, the old stems of this potential host are left uncut during the High Line's herbaceous cutback. Ruby-throated hummingbirds are attracted to nectar contained in the tubular flower structures of Canadian columbine (*Aquilegia canadensis*), grown at Battery Park City Parks and Brooklyn Bridge Park, as well as in the Native Plant Garden at NYBG. As this columbine starts to go over in the Native Plant Garden, Indian pink (*Spigelia marilandica*), with its strikingly similar flower structure and colouring, is next to step up as hummingbird forage (fig. 12).

Only on one occasion did I see gardeners not want to make it too easy for local wildlife to eat their fill, in the form of a little healthy competition which took place between the resident birds and staff on the High Line. And I couldn't help being pleased, sitting down to servings of home-made juneberry pie on two occasions during my time there, that occasionally it was people who were able to make it to the *Amelanchier laevis* berries first. 🍷

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