



Merlin Trust Report

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Gardening Placement at the Tokachi Millennium Forest, Japan - April to November 2019

Report completed March 2020

Introduction

We have greatly enjoyed writing this report for the Merlin Trust on our seven and a half month placement at the Tokachi Millennium Forest. The forest is located on the North island of Japan and we were invited to work there for the season by Head Gardener Midori Shintani. The garden is a public space, however due to the long winter of Hokkaido, it is only open from April to November. It is privately owned by a Japanese entrepreneur, established to last for a thousand years, hence the name. It's goal is to reconnect visitors to nature and is divided into four key areas. The Forest Garden, where only Japanese flora is allowed to grow. The Meadow Garden, an intense space of heightened aestheticism. The Kitchen Garden, where visitors are introduced to edible and decorative plants. The Farm Garden, consisting mainly of roses and edible shrubs. And the Earth Garden, man-made waves of rolling earth. The spaces were designed in collaboration with Dan Pearson and Japanese landscape practice, Takano Landscapes. Under the sophisticated and thoughtful eye of Midori, we could not have found a more interesting and educational place to work, and deepen our understanding of both plants and landscape. We were incredibly grateful for the generous donation made by The Merlin Trust, and we hope you find our report on our time both interesting and valuable. The report is divided into the different areas of the Tokachi Millennium Forest, and describes our experiences and key learnings.

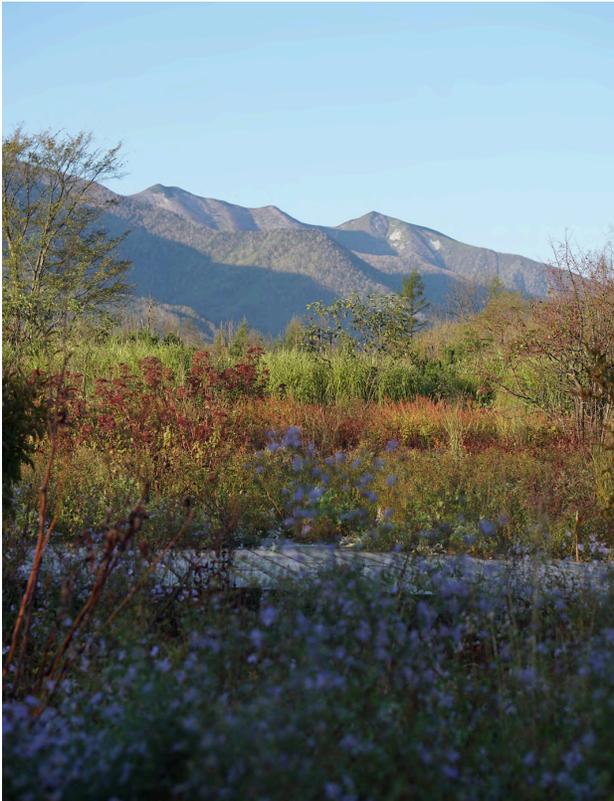
Our objectives

1. Increase our knowledge of plants throughout the season
2. Understand better the methods and philosophy of a 'naturalistic' garden, and what this takes to maintain over a full growing season
3. Deepen our knowledge of native Japanese hardy plants by working within a Japanese forest
4. Explore what it means to garden with an objective of lasting for a thousand years, across a variety of gardening forms: naturalistic Meadow Garden, native Japanese Forest Garden, Earth Garden, Farm and Kitchen Gardens.

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The Meadow Garden



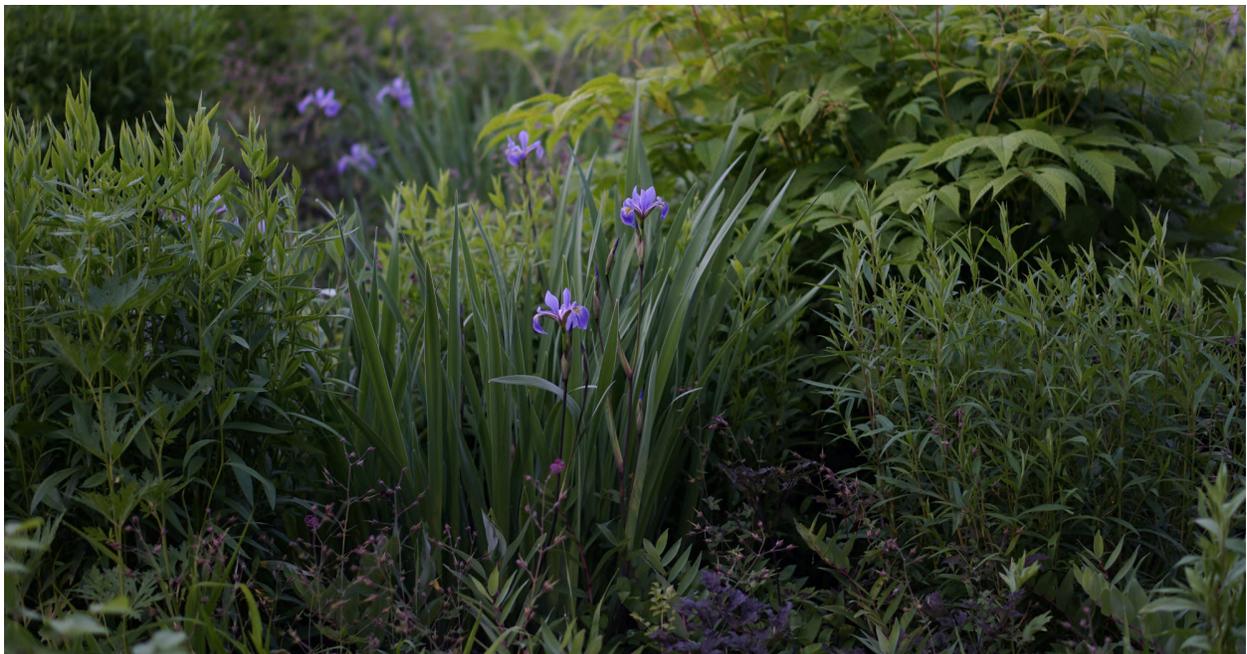
The Meadow Garden, designed by Dan Pearson, covers an area of 1.5 acres and uses a naturalistic planting style. A wooden river like path meanders through bold colourful perennials and swathes of *Calamagrostis* 'Karl Forster'. It is an intense space of heightened aestheticism. At first it seems a dramatic change from the calming green of the surrounding forest. On closer inspection, however, you understand that there is a deep connection between the Meadow Garden and the surrounding forest. *Astilbe odontophylla*, *Trillium camtschaticense*, *Veratrum maackii*, *Veronicastrum sibiricum* var. *Sachalinense* and *Aruncus dioicus*, all of which are native and can be found in the surrounding forest, have been incorporated into the Meadow Garden planting scheme. These native species are contrasted boldly against non-native perennials to intrigue and delight the visitor, as much does in this small space.





A few more Japanese native plants in the Meadow Garden, clockwise from left: Anemone hupehensis, Angelica gigas, Vernonia arkansana 'Mammuth'

The planting of the Meadow Garden is divided into three main themes, moving from Japanese ‘woodland’ to a ‘woodland glade’ and then a ‘meadow’. The colour and atmosphere increases with warmth as the themes progress. In one small space you feel as if you have walked from a Japanese woodland to an American prairie. Each theme is made up of different mixes with their own unique combination of plants. During our placement we were lucky enough to hear a talk Dan Pearson gave at the forest. He explained that his inspiration for the mixes came from the forest floor, where groups of plants find their own balance and natural succession creates interest throughout the season. It was the aim of each mix to recreate this experience of balance, whereby a large number of plants coexist together.





Midori and Dan host a talk for visitors standing in the Meadow Garden.

By gardening across the whole season we were able to learn first hand how plants worked in different communities, and how balance could be achieved by adding new plants. It seemed that the mixes fell into two types of communities; high and low competition. A high competition mix would be one where all the plants were naturally strong competitors but were able to balance each other out. Mix F, for example, comprised of the native *Angelica gigas*, *Astrantia major subsp involuataria*, *Filipendula kamtschatica*, *Thalictrum*, *Persicaria amplexicaulis 'Alba'*, *Phlox David*, *Aster Turbinellus* and *Lilium auratum*. Individually these plants are highly competitive, but together they work to keep each other in balance.



Clockwise from top left: *Persicaria amplexicaulis* 'Alba', *Lilium auratum*, and a close up of Mix F combination: *Angelica gigas*, *Phlox paniculata* 'David', *Persicaria amplexicaulis* 'Alba' and *Aster umbellatus*

Conversely, Mix K was made up of low competition plants that worked equally together. It was a beautiful mix comprising of *Eryngium agavifolium*, *Eupatorium purpureum* subsp. *maculatum* 'Atropurpureum', *Geranium* 'Patricia', *Persicaria amplexicaulis* 'Atrosanguinea', *Polemonium yezoense* var. *hidakanum* 'Purple Rain', *Thalictrum delavayi* 'Splendide' and *Liatris pycnostachya*. Whilst usually the *Eryngium agavifolium* might be too competitive for the mix, the cold winter of Hokkaido reduced the growth of the plant every year. Whilst this led to gaps at the beginning of the growing season, it also allowed for other less competitive plants like *Polemonium yezoense* var. *hidakanum* 'Purple Rain' and *Liatris pycnostachya* to enter and fill out the space in the summer. Thus creating a stable low competition mix. By working in a mix based garden we were able to value plants for their role across the season, but also see plants for what they bring to a community, not just as individuals.



Clockwise from left: *Eupatorium purpureum* subsp. *maculatum* 'Atropurpureum', *Thalictrum delavayi* 'Splendide', *Eryngium agavifolium* with *Persicaria amplexicaulis* 'Atrosanguinea'

It was not always easy however to control the balance of a mix. *Alchemilla mollis* in mix B was an avid self seeder dominating its mix. Whilst some of the plants could handle the competition, *Ligularia* 'The Rocket' and *Asclepias incarnata* *Soulmate* were struggling. Not only did we take out the self-seeding *Alchemilla mollis* but in late August we spent two days cutting back the seed heads. Such techniques helped keep the balance, but also gave a freshness and airiness to the space. We learnt that working in a naturalistic garden was a constant process of taking stock of balance, and working with nature rather than against it.



Rudbeckia 'Goldsturm', *Alchemilla mollis* and *Miscanthus zebrinus*

Indeed, often we had to react to sometimes intense changes of weather across the seasons. A great sense of drama and excitement is created within the garden through tall perennials; *Cephalaria gigantea*, *Baptisia australis* and *Knautia macedonica* to name but a few. During July however the garden experienced heavier rainfall than usual. Some of the taller plants flopped over, particularly the *Sanguisorba officinalis* 'Cangshan Cranberry' and *Baptisia australis*. As this was a naturalistic garden, staking was not a viable option. We were therefore taught the art of 'sukashi pruning'. A technique to cut back and reduce the volume of the plants whilst leaving the drama. We also practiced this style on areas where plants had overgrown the path. Ensuring the space looked natural, whilst also keeping a sense of enclosure which Midori felt was important for people to feel connected to the garden.



Baptisia australis and *Knautia macedonica*

To keep balance we employed a mixture of weeding, cutting back and planting. Midori followed a policy of adding plants to mixes rather subtracting, unless absolutely necessary. Each mix required a different level of attention depending on its balance. A particularly challenging mix was mix C. During the typhoon a huge amount of earth had been brought into the top of the meadow garden, with this came horsetail, *Equisetum arvense*. Unfortunately, the *Coreopsis verticillata* 'Zagreb' looked very similar and we could spend days here keeping the balance. Weeding, whatever mix, was always a great lesson in understanding the different root systems of the plants.

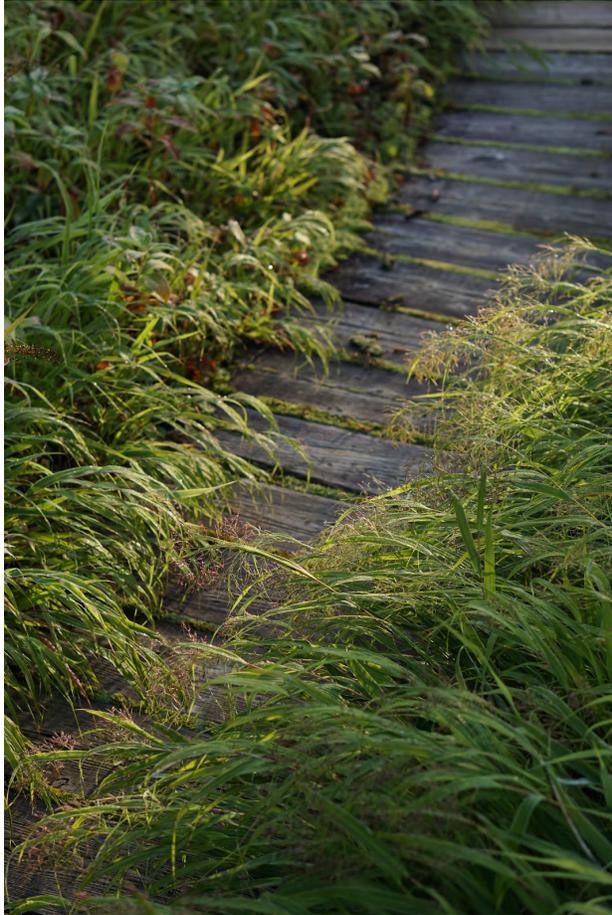


The garden's atmosphere changed dramatically over the season. When we first arrived it was practically bare, only *Galanthus elwesii* was visible on the ground and a few early shoots of other plants to come. By mid spring the silver *Stachys byzantina* and white plumes of the *Panicum polyanthum* gave the garden a welcoming freshness. By summer the evocative golden sweeps of *Calamagrostis x acutiflora* 'Karl Foerster' and the bright yellow of the *Cephalaria gigantea* created warmth and energy. Towards the autumn the bright pinks of the *Panicum polyanthum* 'Atrosanguinea' and deep red of the *Gillenia trifoliata* felt like a glowing ember. It was an incredible experience to see the garden change over such a short space of time, where plants were changing by the day and employing a wide range of techniques to keep balance¹.

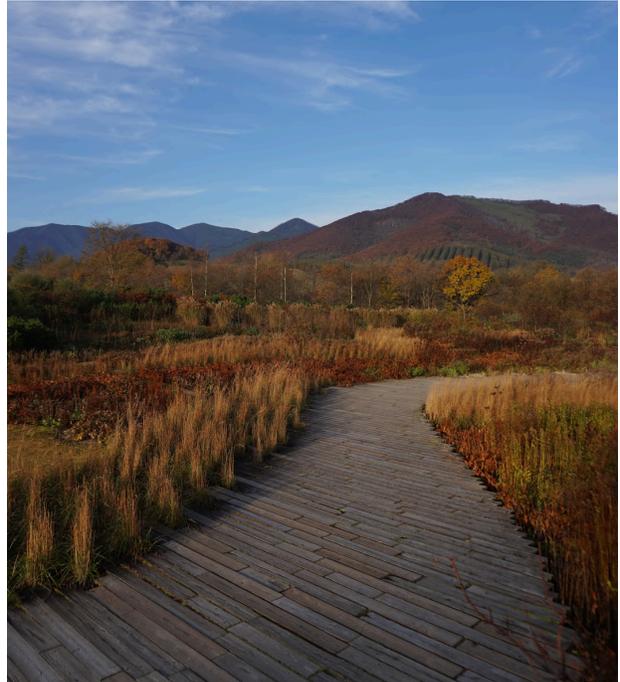
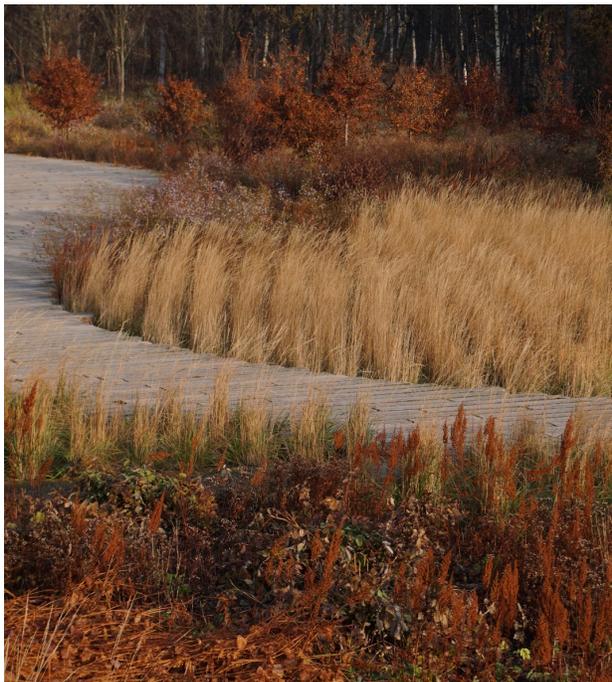


Bottom photo credit: Kichi Noro

¹ Please refer to the appendix where a series of images from a fixed point show the Meadow Garden's progression.



Hakonechloa macra - 6th to 22nd October



Meadow Garden on the 22nd October

The Forest Garden and Entrance Forest

The Tokachi Millennium forest is home to two forest gardens. Both contain only native plants, and with respect to management they are primarily self regulating. During our placement the majority of our time spent in them was not for intervention purposes but for observation. The plants provided a continuous lesson in how together they form a seasonal collective of complex iterations. Midori was kind enough to let us witness this, in particular by assigning us to the morning job of sweeping the forest's paths.

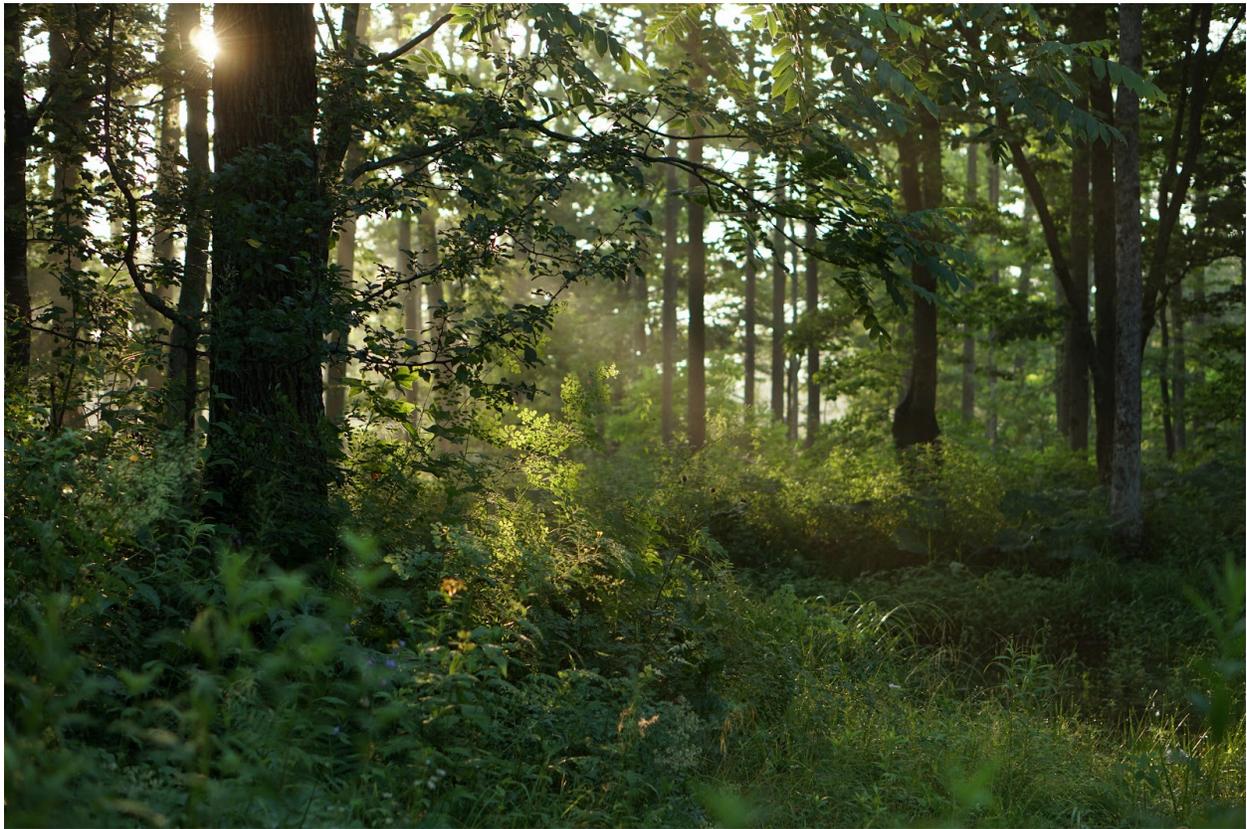


May 15th in the Entrance Forest - The wooden walkway is part of the forest path network we swept clean every morning.

The diversity of native plants in the forest is not created by planting, but by an annual cutback and a rich native seed bank. In a similar principle to UK meadow management, the cut back prevents more dominant species taking over. Thus holding the ground layer in a state of herbaceous plants. If it was left, shrubs and evergreen flora would establish, leaving little room for the woodland perennials. In Japan, the most common plant to dominate forest floors of unmanaged woodland is Sasa bamboo (*Sasa kurilensis*). At the Millennium Forest the boundary between area cut back, and areas not, is made clear by the almost total dominance of Sasa.



Golden leaves of Sasa bamboo - The clear distinction between areas of the forest annually cut back and those not.



The beginning of the forest was a three minute walk from our accommodation, allowing for continuous observation.

Our principal insight from observations in the forest was that the plants were growing together in a series of interactions that formed a vegetation, and that this vegetation existed in dynamic equilibrium. This was opposed to most of our previous experiences, of highly managed horticultural spaces that required a level of focus for each plant. In the forest, the word vegetation infers a sense of 'whole'. Proportions of each plant are not set. A plant will only be found in the forest if two things are true. Firstly, it can grow in the available set of conditions without competition. Secondly, it can sustainably exist when faced with the inevitable competition. This endeavour for resources between plants creates an underlying tension that underpins the dynamic nature of the equilibrium. Applying this over the diverse range of Japanese native forest plants, and the outcome is unique. And due to Hokkaido's 5 month winter, the growing season was compressed and intense. Resulting in a scene that was in a constant motion. It was highly visible from one week to the next as plants moved to grow and set seed in time. This motion between seasonal layers is what made the vegetation dynamic within the year.



High competition within the vegetation. By mid May, 20 days on from only 5% vegetation coverage of the forest floor, there was very little space between the plants.

The first layer of ephemeral spring flowers was perhaps the most exciting. We were expecting the native flora to be interesting, but when we arrived in early April the forest floor, or Rinsho in Japanese, was strictly brown leaf litter. Not a plant in sight. So there was a suspense to what followed. In May the temperatures increased and suddenly, the rinsho rapidly built up momentum. *Primula jesoana* var. *Jesoana*, *Disporum smilacinum* var. *smilacinum*, *Erythronium japonicum* and *Glaucidium palmatum* being some of the most dramatic early contributors. All making the most of an open canopy and lack of competition for light. In June, the spring flush was followed by more substantial plants in *Hemerocallis dumortieri* var. *Esculenta* and *Aruncus dioicus*. July then offered a particularly good array in *Hosta sieboldii* var. *rectifolia*, *Filipendula glaberrima*, *Veronicastrum sibiricum* var. *yezoense*, *Cardiocrinum cordatum* var. *glehnii* and *Astilbe odontophylla*.



15th May - Primula jesoana var. jesoana in the Forest Garden



25th May - Primula jesoana var. jesoana flowering with Caulophyllum robustum



24th May - *Actaea asiatica*



18th May - *Lysichiton camtschatcensis* in the Forest Garden



5th May - Glaucidium palmatum



25th May - Glaucidium palmatum flowers going over, and the next layer of Hemerocallis emerging.



6th June - *Hemerocallis dumortieri* var. *esculenta*



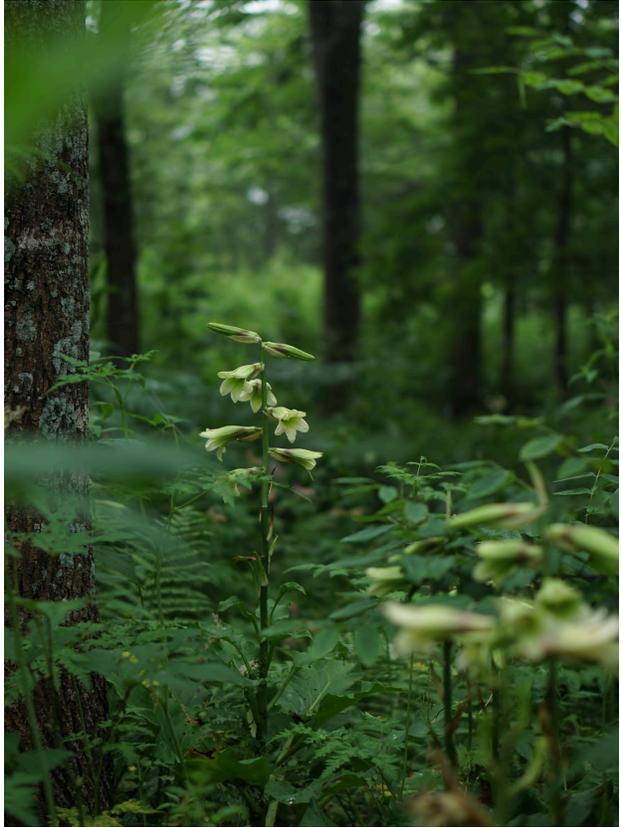
18th June - *Aruncus dioicus*



7th July - *Hosta sieboldii* var. *rectifolia*



7th July - *Veronicastrum sibiricum* subsp. *yezoense*



15th July - *Cardiocrinum cordatum* var. *Glehnii* and *Angelica ursina*



26th July - *Hosta sieboldii* var. *rectifolia* and *Astilbe odontophylla*

Table 1 shows that although only a few plants have been picked out, there are many contributing to the whole. For this to be possible through only a cutback, it is clear that the plants are self regulating into a coexistence founded upon balance. Each plant finds its niche within the seasons and the available conditions. As they are all unique species, each one's niche is slightly different. Together they overlap, and this sequence from one into the next is the essence of succession. It is happening naturally. In gardening terms, if this balance can be achieved far less maintenance is required. This is what we are now inspired to. The creation of sustainable plant vegetations that exists in a manner similar to the native flora of the Millennium Forest's woodland gardens.

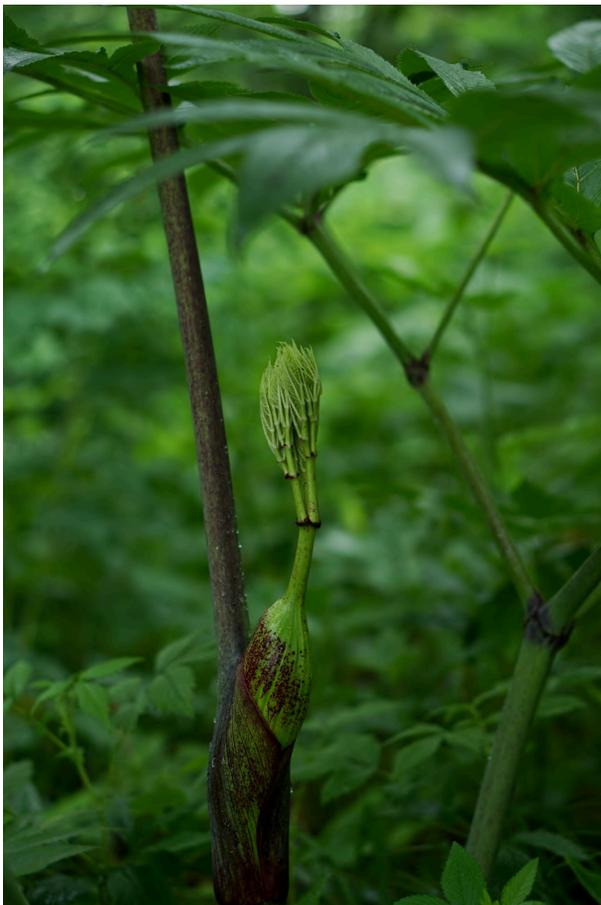
Table 1	April	May	June
Flowering	<i>Adonis ramosa</i> <i>Anemone debilis</i> <i>Corydalis ambigua</i> <i>Lysichiton camtschaticensis</i> <i>Petasites japonicus</i> <i>Symplocarpus renifolius</i>	<i>Actaea asiatica</i> <i>Anemone debilis</i> <i>Anemone flaccida</i> <i>Anemone raddeana</i> <i>Aquilegia buergeriana</i> var. <i>oxysepala</i> <i>Arisaema peninsulae</i> <i>Caltha palustris</i> <i>Caulophyllum robustum</i> <i>Chloranthus quadrifolius</i> <i>Chloranthus serratus</i> <i>Diphylleia grayi</i> <i>Disporum smilacinum</i> var. <i>smilacinum</i> <i>Erythronium japonicum</i> <i>Glaucidium palmatum</i> <i>Hemerocallis dumortieri</i> var. <i>esculenta</i> <i>Lysichiton camtschaticensis</i> <i>Lysimachia europaea</i> <i>Mianthemum dilatatum</i> <i>Mianthemum japonicum</i> <i>Paris verticillata</i> <i>Primula jesoana</i> var. <i>jesoana</i> <i>Thalictrum baicalense</i> <i>Trillium channellii</i> <i>Viola grypoceras</i>	<i>Aconitum gigas</i> <i>Aquilegia buergeriana</i> var. <i>oxysepala</i> <i>Astilbe odontophylla</i> <i>Aruncus dioicus</i> <i>Chloranthus serratus</i> <i>Cirsium kamschaticum</i> <i>Disporum smilacinum</i> var. <i>smilacinum</i> <i>Fillipendula glaberrima</i> <i>Hemerocallis dumortieri</i> var. <i>esculenta</i> <i>Hydrangea petiolaris</i> <i>Matteuccia struthiopteris</i> <i>Polygonatum odoratum</i> var. <i>maximowiczii</i> <i>Thalictrum baicalense</i> <i>Trautvetteria caroliniensis</i> var. <i>japonica</i> <i>Veratrum album</i> ssp. <i>oxysepalum</i>
Significant foliage interest	<i>Aconitum sachalinense</i> subsp. <i>yezoense</i> <i>Angelica ursina</i> <i>Cacalia hastata</i> <i>Cardiocrinum cordatum</i> var. <i>glehnii</i> <i>Hemerocallis dumortieri</i> var. <i>esculenta</i> <i>Primula jesoana</i> var. <i>Jesoana</i> <i>Veratrum album</i> ssp. <i>oxysepalum</i>	<i>Aconitum gigas</i> <i>Aconitum sachalinense</i> ssp. <i>yezoense</i> <i>Aesculus turbinata</i> <i>Allium victorialis</i> ssp. <i>platyphyllum</i> <i>Angelica ursina</i> <i>Anthriscus sylvestris</i> <i>Aruncus dioicus</i> <i>Astilbe odontophylla</i> <i>Cacalia hastata</i> <i>Cardiocrinum cordatum</i> var. <i>glehnii</i> <i>Cirsium kamschaticum</i> <i>Fallopia japonica</i> <i>Fillipendula glaberrima</i> <i>Fillipendula kamschatica</i> <i>Hydrangea petiolaris</i> <i>Lilium medeoloides</i> <i>Lysichiton camtschaticense</i> <i>Matteuccia struthiopteris</i> <i>Petasites japonicus</i> <i>Polygonatum odoratum</i> var. <i>maximowiczii</i> <i>Sasa kurilensis</i> <i>Thalictrum minus</i> var. <i>hypoleucum</i> <i>Veratrum album</i> ssp. <i>oxysepalum</i>	<i>Aconitum gigas</i> <i>Angelica ursina</i> <i>Anthriscus sylvestris</i> <i>Aralia elata</i> <i>Aruncus dioicus</i> <i>Astilbe odontophylla</i> <i>Cacalia hastata</i> <i>Cardiocrinum cordatum</i> var. <i>glehnii</i> <i>Cirsium kamschaticum</i> <i>Fallopia japonica</i> <i>Fillipendula kamschatica</i> <i>Gallium</i> sp. <i>Hydrangea petiolaris</i> <i>Lysichiton camtschaticense</i> <i>Makia amurensis</i> <i>Matteuccia struthiopteris</i> <i>Petasites japonicus</i> <i>Polygonatum odoratum</i> var. <i>maximowiczii</i> <i>Sasa</i> sp. <i>Thalictrum minus</i> var. <i>hypoleucum</i>

It is important to note that such a system is not only dynamic within the year. It is the changes in conditions from year to year that make that equilibrium most dynamic. A colder summer will affect seed production, which will have consequences for the development of the vegetation for years to come. A more pronounced rainy season will impact the growth of plants that are more adapted to those conditions. Their growth then increases relative to the plants that are not as well adapted. If this were to happen in concurrent years, the plant proportions in the vegetation will start to alter. An example of a major environmental shock was the typhoon in 2016. It swept away vast quantities of soil, moved boulders, and brought a lot of coarse sand down from the Hidaka mountains. One impact was the diversion of an existing stream. What we saw in 2019 was that the old stream was already beginning to be colonised by plants better suited to the drier condition. The shallow youthful stream now a new place for plants with wetter sensibilities.



A diverted stream created by the 2016 typhoon.

To give a sense of how a plant can develop over the year, *Angelica ursina* is a good case study. It is an East Asian native, and grew up to 3m plus in Hokkaido. The following are a series of images detailing its development amongst the forest vegetation. Starting off with a low rosette of leaves quite early on. It then was caught up by other plants in June to July and became a more equal contributor to the green setting of the forest. Following that, a flowering growth spurt in July shot it above the normal heights of other plants. The image on the following page showing its prominent character at this point. The lesson with this plant, as with many others, was not to think about succession in terms of flowering, but foliage too. The flowering moment was not the best bit, it was a part of the whole process. Within the forest, May, June and early July would not have felt the same without this umbellifers presence.





26th July - *Angelica ursina*

The overall 1000-year sustainability goal of the Millennium Forest always held in the mind of Midori and her team. Our work with *Veratrum maackii* is an example of this patient approach to gardening. Seed was collected of this plant from the Forest Garden in 2012. They were then propagated back in the greenhouse. It took seven years of attention for the resulting plants to be large enough for return to the forest. We were lucky enough to be a part of this and as we planted these small 9cm pots back into the Forest Garden, it provided us with a new and deeper connection to the place.



July - Veratrum maackii in morning sun and fog.

When Dan Pearson came out to visit his project in July, he highlighted the ‘social and aesthetic cohesion’ of the forest vegetation. One way for a group of objects to be visually cohesive is to share colour. And in Hokkaido, green was a primary source of this simplicity. The Forest Garden having such a verdant array of plants, that even areas without a single flower could conjure up vast depths of wonder and uninhibited appreciation. Crucially, this experience is heightened by flashes of a different colour. This not only offers moments for fascination at a single point in time, but also highlights the garden’s movement through time. Different flashes emphasise a different phase within the year. Their proportion of the visual field is relatively tiny. However they modestly add accent to the composition, without disturbing the simple theme that is green. Yet their emotional impact far exceeds their volume. They take hold of our attention.

Attention is a key benefit of this green simplicity. If the framing of a single flower can catch a visitor’s eye, the impact could be as meaningful as seeing the swathes of *Dactylorhiza fuchsia* appearing on Great Dixter’s topiary lawn each June. Our brains make sense of things most easily when contrast is available. It assists the process of focus. It was in early July when *Lilium medeoloides* flowered in the Forest Garden. Around fifteen visible plants across 8.5 acres. These lanterns of electric orange hovered 45cm off the ground in a mist of *Thalictrum minus* var. *hypoleucum* verdure. The delicacy of the individual in this case can really draw one in. Their isolation highlights their poised nodding character. On a trip to Shiretoko, north Hokkaido, one single specimen of the same species was enough to make a whole tour group stop and look. Their captivation was a perfect example of singular effectiveness.



7th July - *Lilium medeoloides*

Our experience of green's impact on the mind was not exclusive to forest gardens. Japanese moss gardens clearly show that a unified surface of green tones can transfix audiences the world over. Gio-ji and Saiho-ji were particular favourites from our trip. The former having a full canopy of Acers that completed a full 360 degree encompassing of plants. These are a dialled up version of what green can do. Different shades coming from below, dappled variations flickering above. You don't need hundreds of flowers. When you have this base setting it engenders atmosphere. The notes of excitement, such as trickling stream through the moss, then punctuate and lift the experience to something with a touch more intrigue and diversity. Thus forcing you to look a bit closer with a portion of directed attention, without cracking the spell of overall fascination. And it is this balance of simplicity and plausibility one feels first hand at the Millennium Forest gardens, where visitors are offered a chance to engage with the value that lies beyond the forest's individual parts.



Gio-ji temple, Kyoto



Gio-ji temple - 5cm wide trickling stream in the moss.



Gio-ji temple - Acers above and the moss below created a 360 degree green visual field.

During our placement Midori always focused on connecting us to the landscape. This came in many forms, but two prime examples were harvesting mountain vegetables and Furin. In May, she took us deep into the forest to source food for a celebratory company BBQ. There we sourced *Aralia elata* shoots that were to be made into tempura. A very spiky tree, but delicious if the buds are cut before it is larger than a few inches. Other moments of harvesting from the forest included the bitter flavoured flowers of *Petasites japonicus* that we mixed into a miso paste. *Reynoutria japonica* (Japanese Knotweed) which had a satisfying crunch and citrus taste. It was tender enough at 45cm plant height or lower to use in soup or eat raw. And *Allium victorialis* ssp. *platyphyllum* (wild garlic) which we made into soup. Beyond harvesting, other forms of connection came through the exploration of Japanese culture. The Furin, shown in the photo, are Japanese wind chimes. Their aim is to catch the slightest of breezes and make it ‘feel’ more windy in order to bring a sense of cooling during Japan’s hot humid summer. Cleaning these hand blown glass balls, then hanging them in the trees of the forest, was a special coming together of gardening and culture.

In summary, the native forests were a crucial facet to our learning at the Millennium Forest. The opportunities for daily observation were vast and extensively complemented the rest of our experience. Understanding gained in the forest frequently linked back to our work in the Meadow Garden. Whether it was the way in which plants formed a collective balance, the succession the two places continually moved through, or the plants that cross over from forest to garden. The site as a whole provided far more than its parts in isolation. Combine that with Midori’s generosity as a teacher and depth of knowledge as a gardener, and the resulting forest experiences were something extraordinary. We will feel lucky to have trained in such surroundings for the rest of our time as gardeners.



Japanese wind chimes called Furin / 風鈴

Kitchen Garden

The Kitchen Garden at the Tokachi Millennium Forest was a magical place to learn. Deep in our work, it would always be invigorating to look up and see the bright colours and curving lines of the meadow garden, framed by the jagged lines of the Hidaka mountain range behind.



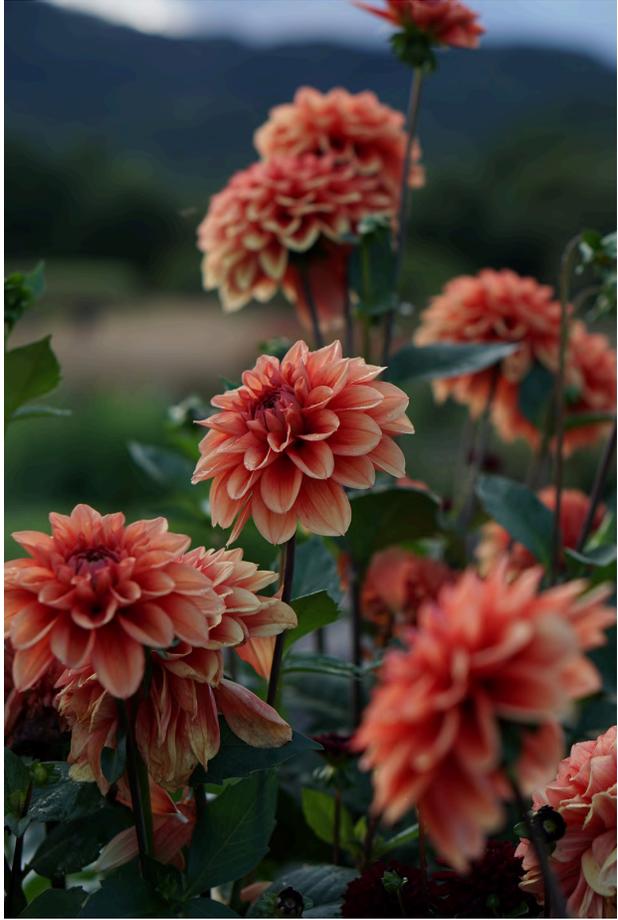
Top: Soybean bed (photo credit: Kichi Noro); View of bed in Kitchen Garden looking out towards the Meadow Garden



Cutting beds of the Kitchen Garden

Situated below the cafe, the Kitchen Garden is made up of nine raised beds which jut dramatically out from the land. Even in the early spring when empty they held an impressive aura; an exciting sense of something to come. We grew a variety of vegetable produce but also cut flowers in the beds. This included native vegetables like *Tora mame* (a type of soybean) and *Saya akane* (a type of Japanese sweet potato). But also non native vegetables like chard and beetroot. It was great to hear visitors exclaim in wonder, a firm favourite was always the courgette and sunflower raised bed! Produce grown here was used in meals in the cafe for visitors to eat. In doing so Midori hoped visitors would make the connection between ‘bed’ and plate and think more deeply about their relationship with nature. A fundamental goal of the kitchen garden was education; a laudable challenge considering 92% of the population live in cities².

²World Bank Data, “Urban population (% of total population)”, 2018



Clockwise from top left: harvesting Norther ruby potato, Dahlia, harvesting potatoes, mixture of Dahlias tubers

One of our first jobs when we arrived at the forest was to sow seeds in the onshitsu (greenhouse), which would be later transplanted into beds. To educate visitors Midori wanted to show a wide range of cutting flowers and vegetables which could grow even in Hokkaido's tough climate. We learnt how to sow seeds using sharpened hashi (chopsticks). Holding a folded piece of paper in one hand we would tame the seeds with the hashi into the plug trays. Using this technique we grew everything from lettuce to antirrhinum. Some with more success than others! In June we transplanted what we had grown from seed into the beds. A month later we were lucky enough to show a group of Hawaii tourists around the garden. They were amazed at how fast everything had grown in such a short space of time, a mark of how short the growing season is in Hokkaido. It was incredibly rewarding to grow all the Kitchen Garden produce from scratch and see how much interest visitors showed it.



Top: Sewing seeds in the greenhouse using sharpened 'hashi' (chopsticks) in April; Bottom: transplanting in June into the Kitchen Garden (photo credit: Kichi Noro-san)



Harvesting and sorting soybean varieties at the end of the season.

Midori follows a strong philosophy of recycling in the forest which is carried out into the Kitchen Garden. For example, to create plant supports for the tomatoes we used material from a young forest planted by the pond. Every two years Midori chooses a different species to cut down for use in the kitchen garden, our year was salix. Choosing the right height and straight character, we cut down about 60 trees. Midori taught us how to assemble the supports and tie them using a Japanese gardening knot called 'otokomo-sube'. When it came to planting, because of the strong winds which could come down from the mountains, we laid the tomatoes horizontally and covered them with soil as if packing for bed, this hoped to give them even more support from strong winds.



The willow support structures we made for the raised beds with materials collected from the forest

Aside from vegetables, the Kitchen Garden was also used for cut flowers. Both Midori and Shintaro, who had previously worked as a florist in Tokyo, created incredibly beautiful flower arrangements from both the Meadow Garden and Kitchen Garden. The most effective bed was the combination of Dahlias and *Panicum elegans* 'Frosted Explosion'. We were taught how to stake the Dahlias, again using willow from the forest, and tying with an 'eight knot'. Midori showed us how to keep the Dahlias growing upwards, rather than outwards, by removing growing secondary shoots from all but the lower three nodes. We often had to weed out about a hand's width of *Panicum* 'Frosted Explosion' to keep the balance right and allow the Dahlias space to grow.



Top left clockwise: cutting Dahlias, arranging flowers, staking dahlias, combination of Dahlias with Panicum 'Frosted Explosion'

At the beginning of September Midori showed us how the forest makes compost for the garden. Midori's technique was a mixture of 'green and brown'. The green constituting from the fresh cuttings we had taken earlier when clearing the kitchen garden; old chard, side shoots from tomatoes we didn't need, deadheadings of cutting plants. The brown was made up of all the old leaves collected from the path during our morning sweep and from the forest. Along with this, we also added local Japanese rice bran (for its organic materials) and horse manure from the next door farmer. We created our 'mixture' in layers ensuring all areas were equally spread and mixed, before covering for a few days. When we left the temperature was 20°C and we were aiming for 40.



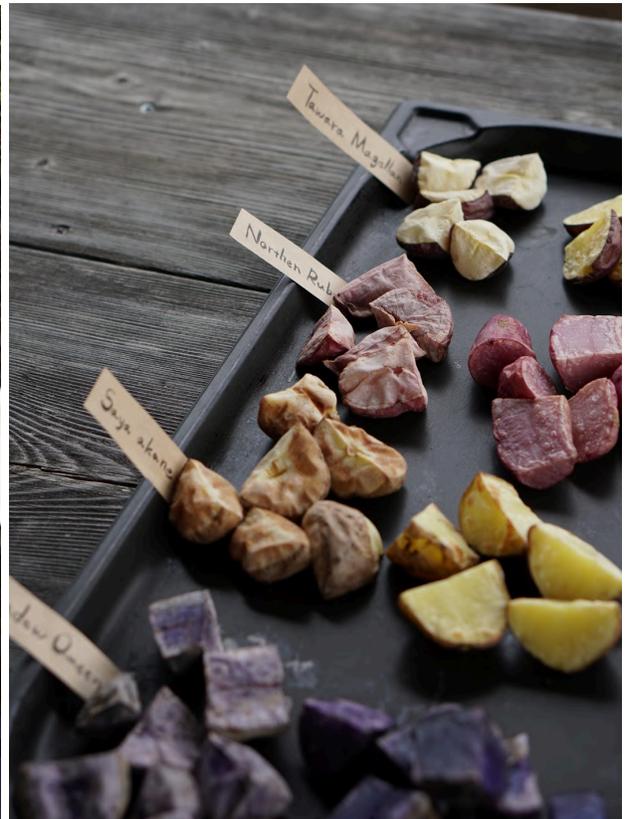
Seasonal flower arrangements made by Midori and Shintaro

All our work however was not solely for the Tokachi Millennium Forest, when we asked Midori where the best place to buy coriander, her answer was ‘you grow it’. By which Midori meant she would show us how to build a raised bed. We collected soil from under the Millennium Hill which Midori said was rich in fertility because the farmers who once owned the land would dump a combination of cleared tree and manure here. Using old wooden sleepers we had removed from the entrance to the Kisera in April, Midori showed us how to plot out our bed and make sure it was level using a theodolite. Once we drilled the sleepers together, we filled it with a mixture of mushroom compost and soil. Being our first bed, we took full creative licence and went for an abstract Pollock style mish mash of plants. We grew sage, cosmos, pumpkins, thyme, basil, carrots, and much more. The whole experience was a real testament to Midori’s willingness to go out of her way to teach others and connect them to the cycles of nature.



Our raised bed at planting on 4th June and on 27th July

One of the great things about working in the Kitchen Garden was the sense of community between the other public gardens in Hokkaido. Often we were treated to home grown ‘sagashi’ (small presents to encourage work). Our bounty included fresh peaches from Shintaro’s family, four types of the most amazing grapes from Midori’s friends, corn grown from colleague’s farms in Hokkaido and the most delicious haskap from Ueno Farm. One of the volunteers even smuggled Alice some lavender from the famous lavender fields of Furano. Through the kitchen garden we really felt a sense of community to the surrounding gardens and insight into Japanese culture and hospitality.



Top left clockwise: harvesting thyme, Potato testing, Haskap



Clockwise: Harvesting Thyme and Rosemary, Blueberry tasting trial

Farm Garden

Hokkaido has a strong connection and love for the traditional 'English garden', with many of the public gardens taking clear inspiration. The Farm Garden, half of which is dedicated to roses, is an important attraction for visitors. Indeed, it was here more than anywhere we were approached by visitors and asked questions. Often our Japanese vocabulary didn't extend to the correct answers, but we always tried our best! The raised beds were mainly given over to a mixture of David Austin Roses and occasionally perennials. As with the Kitchen garden, Midori wanted to show visitors which Roses were the best to grow in Hokkaido and inspire them to grow their own.

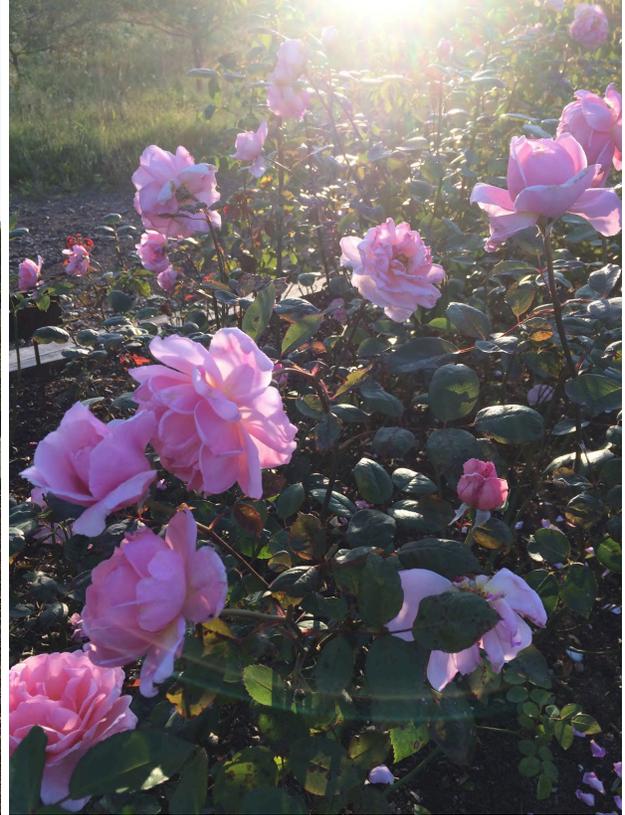


Entrance to the Farm Garden



Looking back to the entrance from the stock beds

When we first arrived we had to unpack the roses from their secure winter protection. Because there had been a decrease in the amount of snowfall, which provided an extra layer of protection against winter, they had suffered over winter. We cut back until the new buds, which often meant cutting the specimen in half, and sometimes to the base. By July however the roses were indeed blooming, and looking beautiful again. During the summer our main role was deadheading, a job which could take the whole day, about three times a month. Choosing when to deadhead was a careful balance between aesthetic choice and future growth for, by cutting back less, it was believed the plants would conserve more energy for winter. Midori said that often roses did well in Hokkaido for about three or four years before failing. Indeed the farm garden had only been planted three years ago due to the typhoon which flooded the area. An important part of Dan's trip was for them to discuss what would happen with the roses. As ever it was great to see such a continuous and balanced relationship between head gardener and designer, working together to keep pushing a space forward.



Rose beds early and late summer



Visitors in the roses

Indeed, we had to take out a climbing rose along the edge of the Farm Garden which had not survived the winter. We replaced it with *Persicaria amplexicaulis* 'Atrosanguinea' which was growing vigorously in the meadow garden. Another great example of Midori and her team recycling as much as they can within the garden. *Nepeta* 'Six Hills Giant' and *Perovskia* 'Blue Spire' were also two very successful plants taken from the Meadow Garden and placed into the kitchen garden. Creating a balance against the warm colours of the roses with their cold hues. Twice we collected cuttings from both to grow in the onshitsu for outside projects the garden team were doing. As always Midori was open for experimentation and we each took a different age of the *Perovskia*; old, middle, young. We cut the stems into two nodes, keeping them in water before potting up into trays, using rooting powder. The young and middle were fine and we were able to pot them on. However, the old shoots did not fare well and we had to take cuttings again. Interestingly, where we had left new shoots already growing they did ok. But we did not take this experiment any further to see full results.



Clockwise from left: Taking cuttings of *Nepeta* 'Six Hills Giant', growing in plug trays, results a few weeks later

In May we were lucky enough to have the chance to plant a layer of *Enkianthus campanulatus* in the shrub belt behind the Farm Garden. We spent a day clearing the area and raking mushroom compost over the soil. Midori then placed the shrubs and together we dug 'mitsu-bashi', or 'water holes'. The idea was that when it rained water collected around the base of the plant and fed them with sufficient water for the year. By the next season, the boundaries would have broken and the holes disappeared. A successful self watering mechanism, and by the end of summer the *Enkianthus* were looking very healthy.



Towards the end of the season Midori taught us how to tie up the trees for winter protection. This was extremely important to help ensure that the branches didn't break due to the weight of the snow. It was a challenging process whereby two people had to carefully work with the shape of the tree to tighten it into a cone-like shape that would help spread the weight of the snow, without being too tight. We also performed the same task on the roses; tying them in pairs or threes so they would withstand the wind. Being able to end packing up the roses, in a similar way to how we had started with untying them, gave an incredible circularity to our time.



Clockwise from left: Autumn colour in the Meadow Garde, bottom tow tying up fruit trees to protect from winter snow



Wrapping up the roses for winter soon before we left. The blizzards can reach -20 Celsius.

Conclusion

Working across the season at The Tokachi Millennium Forest was a once in a lifetime experience. We learnt an incredible amount in such a short space of time, particularly about what it means to create and maintain a naturalistic style garden. We both feel that what we've learnt will have had a tremendous impact on both of our horticulture careers. In particular, the Forest Garden and learning about Japanese native flora. Our time was made all the more rich and educational because of the patient and commitment Midori gave to us as Head Gardener, which we are incredibly grateful for. Midori and her team were incredibly generous to us with their time, knowledge and insights into Japanese culture and gardening. We feel extremely privileged and must thank again the Merlin Trust for their incredible contribution.

Budget

Travel	£
- Air fares	1,498.84
- Bus and train	760.00
- Car usage (fuel)	400.00
Food/stores	
- £17 per day for 224 days x 2 people	7,616.00
- (less TMF volunteer food contribution*)	(1,296.00)
*1000 yen per day for 90 days x 2 people	
Miscellaneous	
- Japan Visa	24.00
- Insurance	428.77
Total cost	8535.61
Bursary Funding	
- Merlin Trust	1,000.00
- RHS Osaka Bursary Fund	1,928.00
- HPS: Kenneth Black Bursary Scheme	880.00
- Downe House	1,250.00
Personal contribution	4,373.61

Appendix

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Meadow Garden fixed point seasonal change photographs

1st May



17th May



24th May



3rd June



19th June



5th July



24th July



13th August



3rd September



29th September



28th October



15th November



Thank You