

Welcome to our little suburban garden in cool, coastal boreal climate of St. John's, Newfoundland. This basically a photo record over the first few days of June, 2010 at the time of the year we consider to be early spring when it is cool, wet, windy and quite often foggy, and, during in clear nights, it prone to frosts at least until mid-June. All the trees & shrubs belong the garden — the oldest being 35 years old.





A GARDEN FOR A SNOWY AND WINDY CLIMATE



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INTRODUCTION

Gardens are designed mostly for appearances. For example, in some gardens the focus is on flower beds; others on neat lawns often with a few deciduous trees; others with a mixture of flower beds, shrubbery & trees.

But rarely are gardens designed specifically for year round weather conditions. St. John's, Newfoundland, has a very pleasant summer and fall. But, with the exception of Victoria, British Columbia, St. John's has the mildest, windiest and snowiest capitol city in Canada.

What is surprising is that few gardens and parks are purpose designed specifically to take winter weather into consideration. For example, while snow creates many problems for the city, few gardeners realize that, with foresight, there are benefits to manipulating snow within and around the garden. Obviously, trapping snow not only protective blanket, but also lessens snow drifting within and beyond the garden. And if enough gardens planned for shelter & snow drifting winter living as a whole would be much more comfortable - as would summer for that matter. In fact, effective snow traps eliminate the tedious task of wrapping the plants in canvas which often does more harm than good during the freeze-thaw period.

This short presentation illustrates how two gardens (one 35 years old, the other barely two years old) where the author makes use of snow as a shelter and protective cover.

The beginnings of a new garden with three levels chiseled out of shale bedrock .





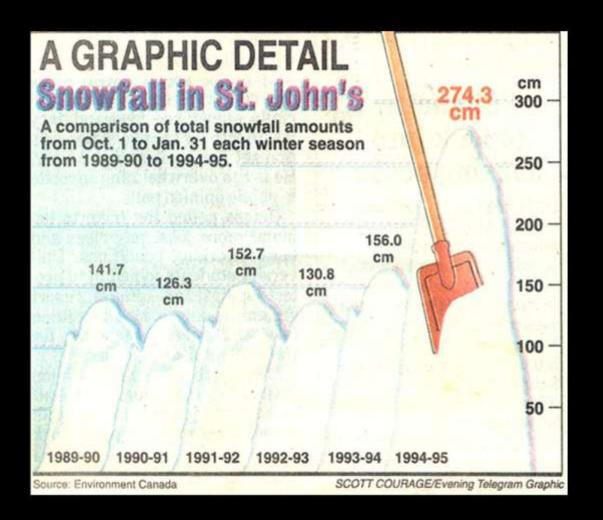


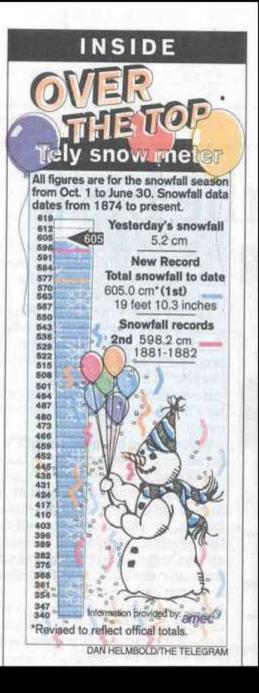


St. John's in Newfoundland is the snowiest and windiest city in Canada. Also spring comes rather late so that planting annuals before 15th June is not recommended. But it is the windiness in winter that causes severe snow-drifting that is the most troublesome for the garden because it exposes soils to deep soil frost. Of course, In summer the wind and causing severe drought in summer. The graph below sums up the nature of winds at the Robertson residence in St. John's.



Snowfall for the City of St. John's





A brand new housing development in St. John's the garden was like a gravel pit with rock out crops. Which meant that, when we finished building our house in 1971, we had chiseled out of bedrock to create flat sections and used shale for a crude garden wall. Considering it was so windy in summer we had deck chairs in a hollow which, in winter filled with snow and made the garden completely inaccessible for 6 months and more. But with the addition of a patio, and temporary fence and judicious planting of trees and shrubs we created livable space through out the garden. But the control of snow was not so much for personal comfort but, first and foremost, to protect the more sensitive species of trees & shrubs from the ravages of winter winds to ensure they thrived and grew quickly. For example, compare the photos below taken in 1975 and 1995, respectively.





35 years later, the lawn is still only 3 cm thick literally on top of bedrock but, because of shelter & partial shade, never needs watering. This section of the garden is an effective snow trap which, come snowmelt, the lawn gets off to an early and vigorous start. The deciduous needles from the larch trees is a good source of humus and nutrients for the grass.





The secret to a beautiful and confortable garden in a very windy and snowy climate is to plant a shelter with a complex mixture of trees & shrubs and trap as much snow to prevent deep soil frost





Sow was late coming during the winter of 2010-2011. Most of it fell within a two-week period in mid February. Most of the snow beside the drive was piled up by the snow blower and a minimal amount of shoveling which protects the plants from hard frosts. Most of the snow beyond the driveway was piled there by the City Council's snowplough.



When it comes to a choice of spreading shrubs they must be chosen for their ability to take heavy snow loads, such as this 'nest' cultivar of Norway spruce .



The plants have to survive heavy loads of snow and/or ice for several months during the winter. In this example, the shrubs are never wrapped although a few with brittle branches are tied with string. The positive aspect of a thick blanket of snow from a plant's point of view is that there is very little soil frost throughout the winter that would otherwise damage fine roots. There is virtually no snow drifting within the garden



Bird life in the garden is plentiful. The Blue jay tends to frequent the garden mostly in early spring, while American Robins nest in the tree with the ivy and raise at least two broods of chicks. But mostly it the finches that forage in the garden year round.







BIODIVERSITY FROM A BIRD'S POINT OF VIEW

Birds feed on the larvae of moths, butterflies and other leaf eaters that inhabit the crown of red oak and other trees in the garden.

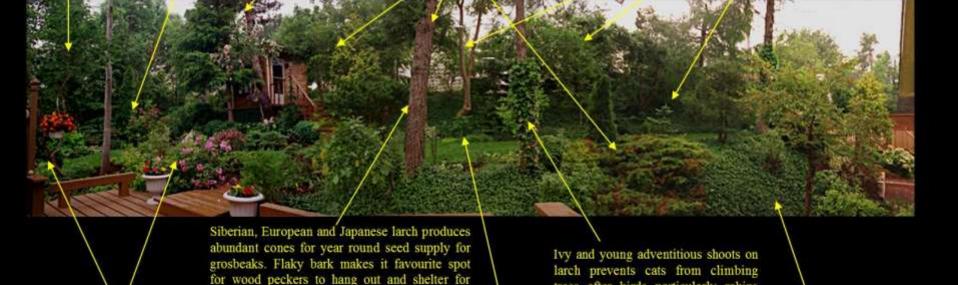
Other than its thorny branches, the usefulness of Bartlett pears is in attracting insects for birds to feed on.

hours on particularly cold, sunny and windy

Understory of dense shrubs (waxberry, spirea, mountain holly, low willow, rhododendrons, daphne, provide protection from cats particularly the ground feeders.

days.

Cedars, Vetchie's fir, white and Norway spruce and hemlock, juniper and hedge maple provide a safe roosting and place. The Rowan (S. aucaparia), dogberry, squashberry, amelanchier, V. cassinoides, and vicary (golden privet) provide berries for winter forage.



The majority of small birds spend most of their time foraging under the Rhodendrons, spreading juniper, heather, and perennials. When the garden was younger, a humming bird occasionally foraged for nectar. The chemical free lawn (hand-weeded), periwinkle ground cover and cultivated perennial/dwarf shrub beds are a major source of beetles & worms particularly for robins with chicks.

Dense periwinkle on the steep embankments provide and ideal habitat for small ground-nesting birds especially safe forage & concealment from predators. It is frequently used as a secure resting place by young robins learning to fly.

trees after birds particularly robins

sparrows that nest in the trees.

Ever year Robins raise two-three broods of chicks in the ivy on a small red pine (left). The hybrid larch (right) has been topped to allow more light into the garden and side pruned to keep branches clear of the electricity wires.

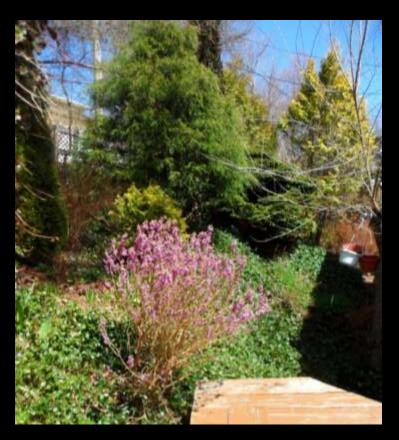




By early May most of the snow has melted, By mid-June there 's still a a risk of frost and and deciduous tree will still be leafless. So for shelter it is important to have a nice balance of deciduous and evergreen trees & shrub. Not merely for shelter but to advance the growing season within the garden by a month at the very least by increasing the 'heat sum'; i.e., number growing degree days.



The garden is very dynamic. For example, when snow starts melting the Daphne is the first to bloom and sometimes leafs before all the snow has melted. Within a couple of weeks or so the Azalea and wild annuals, such as Forget-me not (*Myositis*), and bedstraw (*Gallium*), are in full bloom. In a sense the structure of the garden also changes as emerging deciduous trees and shrubs blend in with cheerful colors and ia highly variable structure of trees and shrubs.

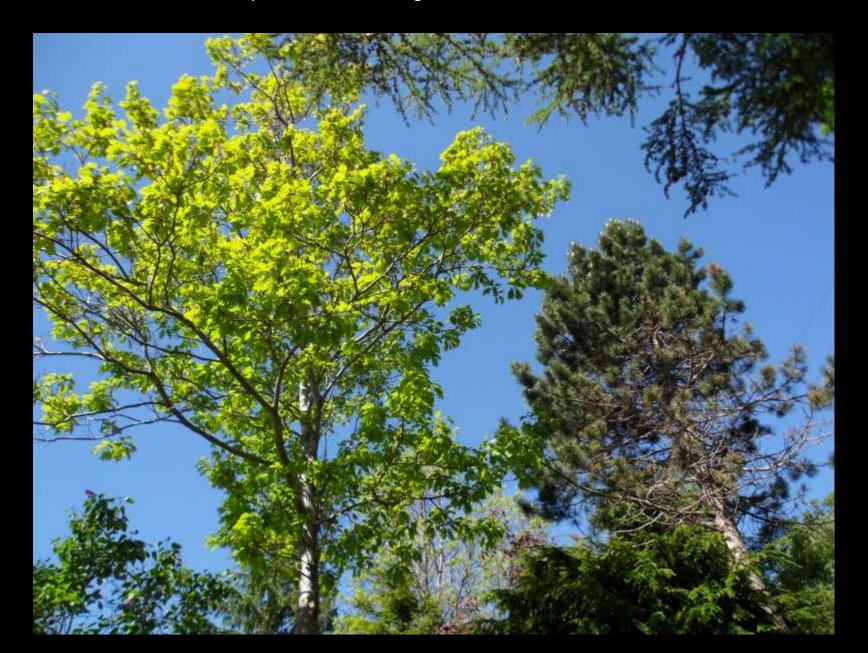




Almost July and the rhododendrons have not bloomed and the potted begonias are suffering from cool nights .



While Azaleas and company are blooming below, the red oak has leafed in yellow splendour, while new shoots of the Austrian pine buds have emerged.



Spring (1.e., the frost-free period, doesn't usually come till mid June when tulips and the young leaves of Mongolian Elm, and the flowers of periwinkle ground cover make an appearance. The main purpose of the Periwinkle (*Vinca minor*) and English ivy mixed ground cover is to stabilize the shallow soils on the bank. Periwinkle does not choke bulbous plants or shrubs, but ivy will if not controlled. Ivy and periwinkle can tolerate extreme sub-zero temperatures without snow cover, and will tend to grow under the snow cover.



Despite increasing perennials and flowering shrubs within the garden, benefit greatly it will be July before soils the pots have sustained warmth, particularly during the night, that allow for sensitive annuals like begonia. But the begonias will bloom from late July until October and sometimes well into November.



Sometimes the garden is well advance, only to be snowed under by a late blast of winter. Fortunately, late snow melts very quickly and is not cold enough to have caused any frost damage.





A protective snow blanket (which virtually eliminates soil frost) and summer shelter trees the temperature (i.e., the heat sum) extends the growing within the garden by two months and allows for productive Bartlett Pears trees not normally cultivated unsheltered locations. In eastern Newfoundland.



A sample of spring flowers which spend up to up to 8 months under a heavy blanket of snow.



Apart from being tied up with string to prevent breakage of branches, this beautiful Azalea spends up to 8 months under 1-2 m of snow. The Alberta spruce is not tied up and obviously keeps its shape.



Moss tends to thrive especially in the cold damp and shady weather of early spring and fall. But it is easily removed with a rake and aerating with a stout garden fork and liming, as soon as the snow has melted. Otherwise, it is a bit a battle keeping the lawn free of moss without having to resort to chemical moss killers.



Throught the year some parts of the garden change more rapidly than others. This section has the most dramatic change every two weeks or so.



The main entrance to the back garden is on the west side, and it is notable for its relatively rapid and dynamic successional changes in the flora.





As we turn the corner the visitor is greeted and elegant curved lawn bordered by lots of colour ful herbs, shrubs and trees – many of them originating from more temperate climates



This is what is called a low-maintenance garden - has to be considering the owner's had many international travels. The trick is to create enough shelter that is attractive and biodiverse to protect the garden from drying westerly's whilst trapping extra snow. Also, limiting the hours of sunshine with trees cuts back on the need for lawn mowing & weeding. A few potted begonias adorn the patios



These sections in the snow trap part of the of the garden with a rich biodiversity is analogous to what ecologists call a snow-bed community because covered by a thick blanket of snow usually from late December to mid-March and sometimes from October to May.



This garden is notable for its dynamic roughly bi-weekly changes in colour and form in the lower strata from April to November.



This beautiful plant from the snowy mountains of Afghanistan is one of the early bloomers as soon as the snow blanket has melted away - even before the Newfoundland plants - bunchberry (*Cornus canadensis*) are barely out of dormancy



The native Cornus canadaensis (crackerberry in Newfoundland) grows best after a many months under a protective snow blanket.



The herbaceous parts of the garden are designed on the principle of natural succession whereby early spring plants are succeeded by several phases of later flowering herbs (i.e, bulbs of tulips, daffodils, etc., are not lifted as is usually the practice.



Throughout a sunny day, at least of the garden is shaded for a relatively short period of time while others are in bright sunshine. The advantages of managing periods of shade & sun reduces the need for watering.





The in the foreground is temperate species a golden Japanese cedar (Cryptomeria Japonica 'Spiralis') blends well with with the ferns, azalea and heather.

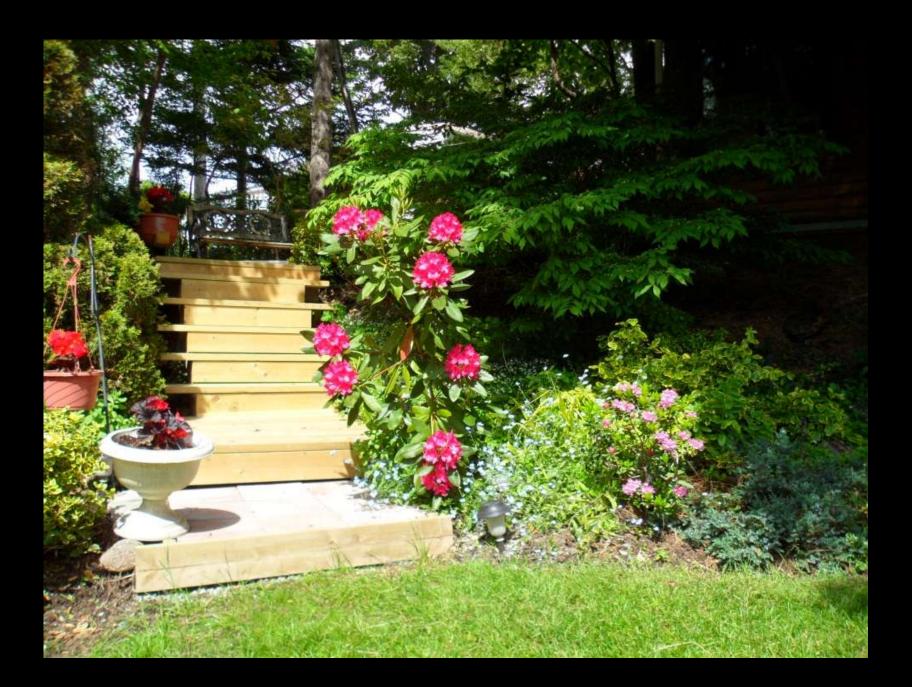


It is usually well into July before it warms enough for begonias to grow . But the can last well into October and hang on in a miserable state until mid-November



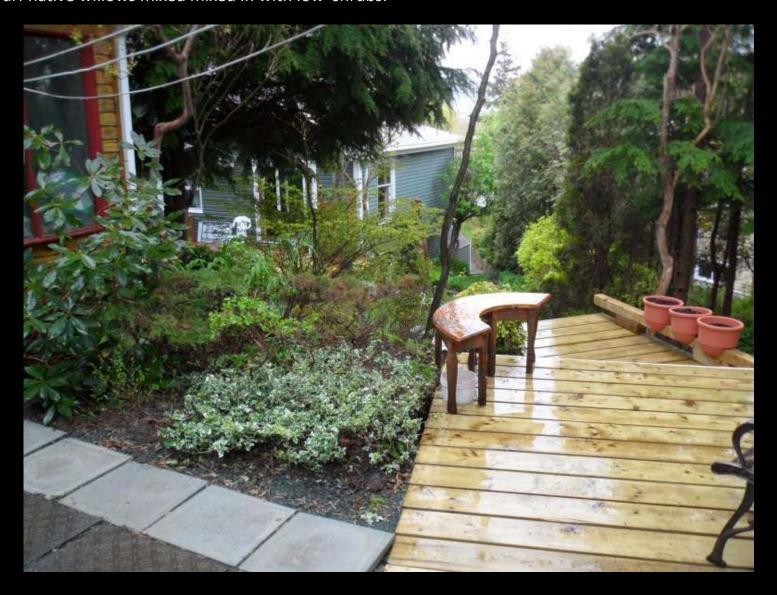
The steps of the new patio are an invitation to a secluded part of the garden and where the clothes drying on a line are hidden behind the hemlock and shrubbery.







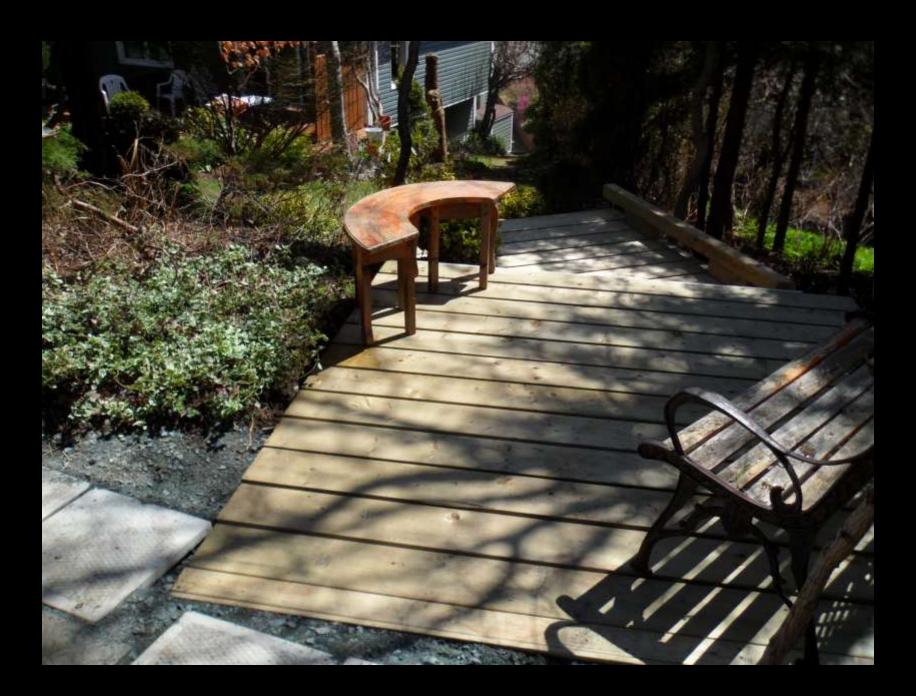
In the spring of 2010, a additional patio was built in the northwest corner of the garden which was left partly open to allow for drying of clothes. This gives a more ambient access to the clothes line and another great view of the garden where one can enjoy the cool breeses on a hot summer day. This section also has small collection of drwarf native willows mixed mixed in with low shrubs.

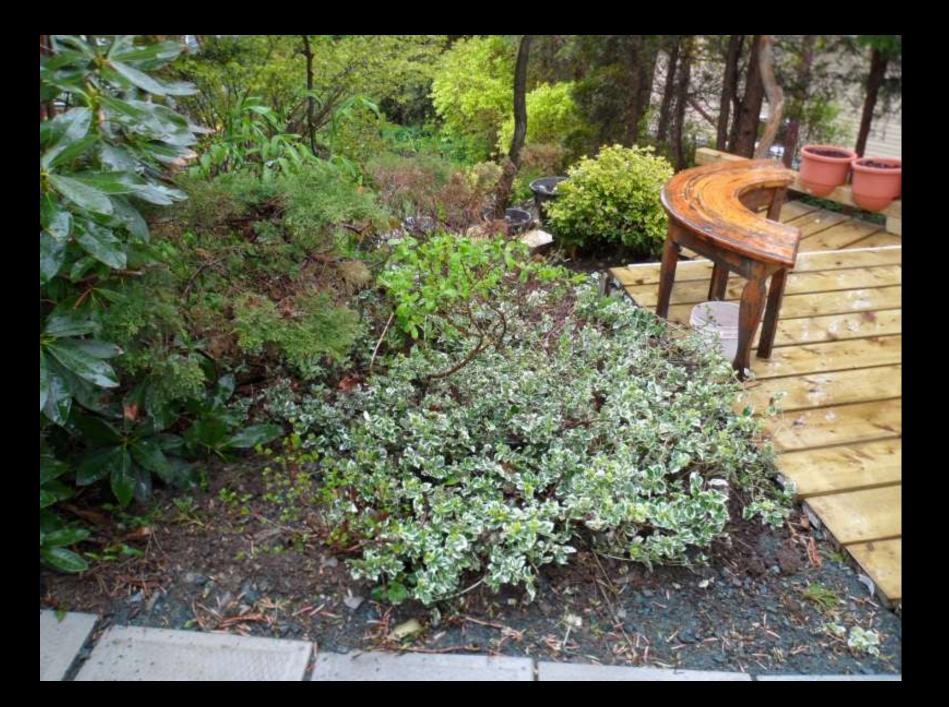


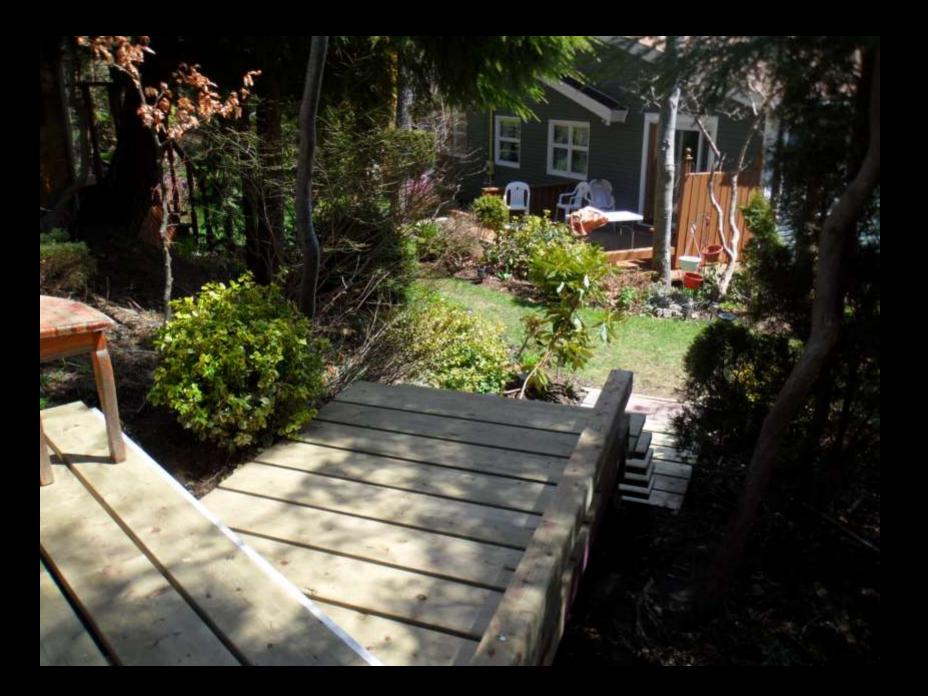
A corner of the garden is purposely exposed to dry westerly winds (for drying clothes). It is also has a patio with partial-shade tolerant shrubs, ferns and perennials.













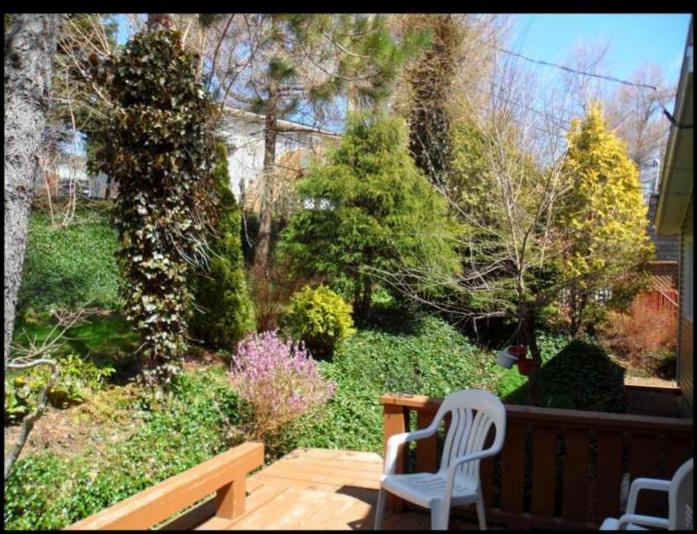




As soon as the snow has melted from this snow trap, there's a freshness and cheerfulness that banishes memories of a hard winter.



Steep banks, especially on shale bedrock tend to erode severely especially when there's runoff during snow melt. Even if erosion was not a problem, the steep bank is awkward to garden & maintain. Planting a ground cover of periwinkle (Vinca minor) solves the problem. It has an attractive, long-lasting blue flower and best of all it will keep growing throughout the winter under the snow and allows for interplanting of bulbs and shrubs. Best of all, unlike many ground covers, it is very easy control its borders simply by sherring of mowing the edge (if it borders a lawn).



Despite the enormous amount of snow and freezing rain, the evergreens keep their shape. Most of the deciduous trees and shrubs also withstand heavy snow and freezing rain – the exception being the Mongolian Elm in foreground, which has very delicate and brittle branches



An elegant Mongolian Elm once graced the back of the house. But, despite frequent trimming, it's branches were too brittle to withstand even light load od of ice which was a nuisance when it rubbed against the house. When it was finally removed it was no great loss in the view from the patio.





Evening shadows do not diminish the pleasure of a colorful spring garden



At a microscale, the garden is just as complex and colorful with this mixture of Coral, yelow Japanese dwarf holly, Saxifrage and wild Maianthemum and other plants set against a background of English holly.



Ajuga, saxifrage and the evergreen Yellow Japanese dwarf holly put on a long-lasting colourful show



Every winter seeds from the three larch trees fall onto the snow. The seed is apparently the spontaneous hybridization between the garden larch. The larch as well as birch seeds germinate on gravel path of the east of the garden and grow vigorously so that by the second year they are large enough to plant out in other gardens such as the vigorous 4 year old hybrid larches (right) planted in a new garden at Government House which the









Usually the first snow fall is late October-early November. First snow, as seen here, did not fall until mid-February 2011 and of course we wished this would be all we'd get over the rest of the winter. But no such luck!



The Front Garden

The front garden in particular gets enormous amounts of snow directly from the sky what is dumped on it when clearing the driveway plus what the city snowplows push up from the bottom of the cul-de-sac. One would think it impossible to have a garden under such circumstances. Not at all! As you will see in the following slides.



So much snow from the cul-de-sac is piled in front of our house that our driveway becomes 3-4 times longer by the time the snow starts melting. Melting can be slow process insofar as these 'street glaciers' turn to is and usually disappear until May. Fortunately, although some of the shrubs, particularly rhododendron, the edge of garden are completely covered by the snow and ice but do not suffer any damage.



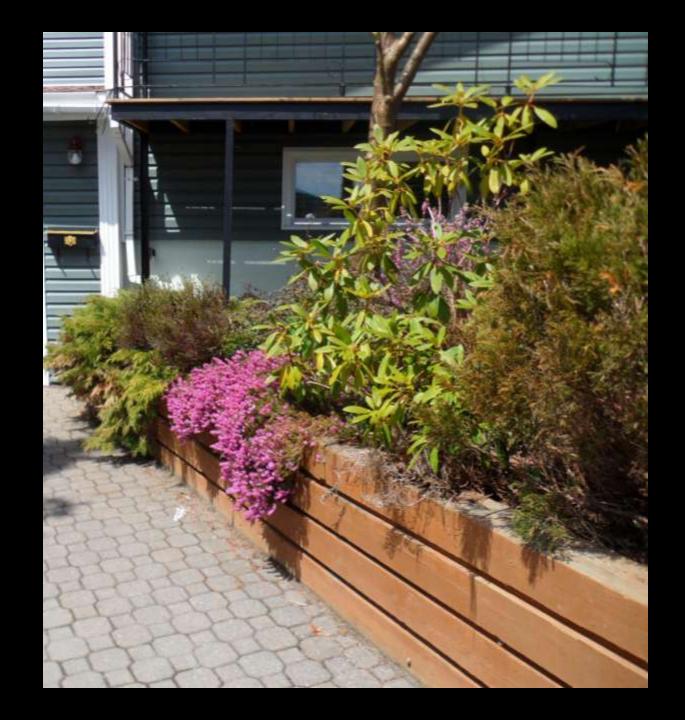
To compensated for a relatively late frost-free and/or cold and miserably wet period in June we have concentrated with plants that are 'early starters' and provide a rich tapestry of bright and cheerful colour, form and structure. Let's take a little tour by entering the garden via the driveway and exit on the right side.



Usually from November and quite often into late May this part of the garden is under a hard pack of snow and ice.

However, the winter of 2009-2010 has been a good year insofar the garden was snow bound only from late December to the middle of March.

Most gardeners wrap their shrubs for winter protecting. **WE DO NOT** and as you can see they are they survive very well under a blanket of more than a meter of heavy snow and ice for up to 6 months.





The front garden is basically a depository for snow clearing and so we have use species of plants that basically a snow-bed community; i.e, they don't mind being covered by 1-2 m of snow for as long as November to till April. Below is border of the driveway around July and on February 21st 2011 (with lots more snow to come).





Being on the edge the driveway top buds of this beautiful Rhododendron have not suffered any serious damage, but then this is shelter from the wind and care is taken when shovelling snow.





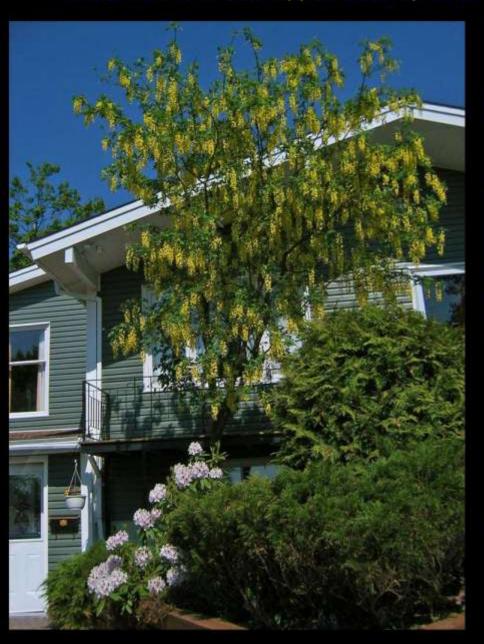
The beautiful Azalea gets no winter protection other than tying the stems with string



A sample of plants in the front garden that spend several months under snow and ice.



A laburnum tree and clipped cedars provide shelter and privacy in a pleasant way.





These plants grow well despite being under 1-2 m of snow & ice for almost 6 months.









Every window in the house provides such fine view of the garden that one almost feels like being in an atrium.