

# ECOLOGICAL PEACE GARDEN MAINTENANCE GUIDE

Dawson College Montreal, QC Canada



Dawson College Peace Garden

*'We, at Dawson College, believe that all students have the right to learn in a safe environment where peace is nurtured within each individual and reaches beyond the boundaries of race, language and species.'*

# TABLE OF CONTENTS

<b>Peace Garden: General Information, Plans &amp; Maintenance Tasks</b>	<b>3</b>
<b>Introduction /Useful Links</b>	<b>3</b>
<b>Peace garden Location</b>	<b>4</b>
<b>Anastasia's Garden</b>	<b>5</b>
<b>Chief's Garden</b>	<b>6</b>
<b>Eco-Garden</b>	<b>7</b>
<b>Legend</b>	<b>8</b>
<b>Yearly Maintenance</b>	<b>9</b>
<b>Plan / Spring March - June</b>	<b>9</b>
<b>Summer: July - August</b>	<b>10</b>
<b>Fall: September - October / Winter: November - February</b>	<b>11</b>
<b>Gardening</b>	<b>12</b>
<b>Transplanting</b>	<b>13</b>
<b>How to Transplant</b>	<b>14</b>
<b>Mulching</b>	<b>15</b>
<b>Deadheading Flowers and Plants</b>	<b>16</b>
<b>Weeding</b>	<b>17</b>
<b>Goutweed</b>	<b>18</b>
<b>Biological Garden Pest &amp; Disease Control</b>	<b>19</b>
<b>Garden Tool Checklist</b>	<b>20</b>
<b>Garden Tool Details</b>	<b>21</b>

# PEACE GARDEN

## General Information, Plans & Tasks

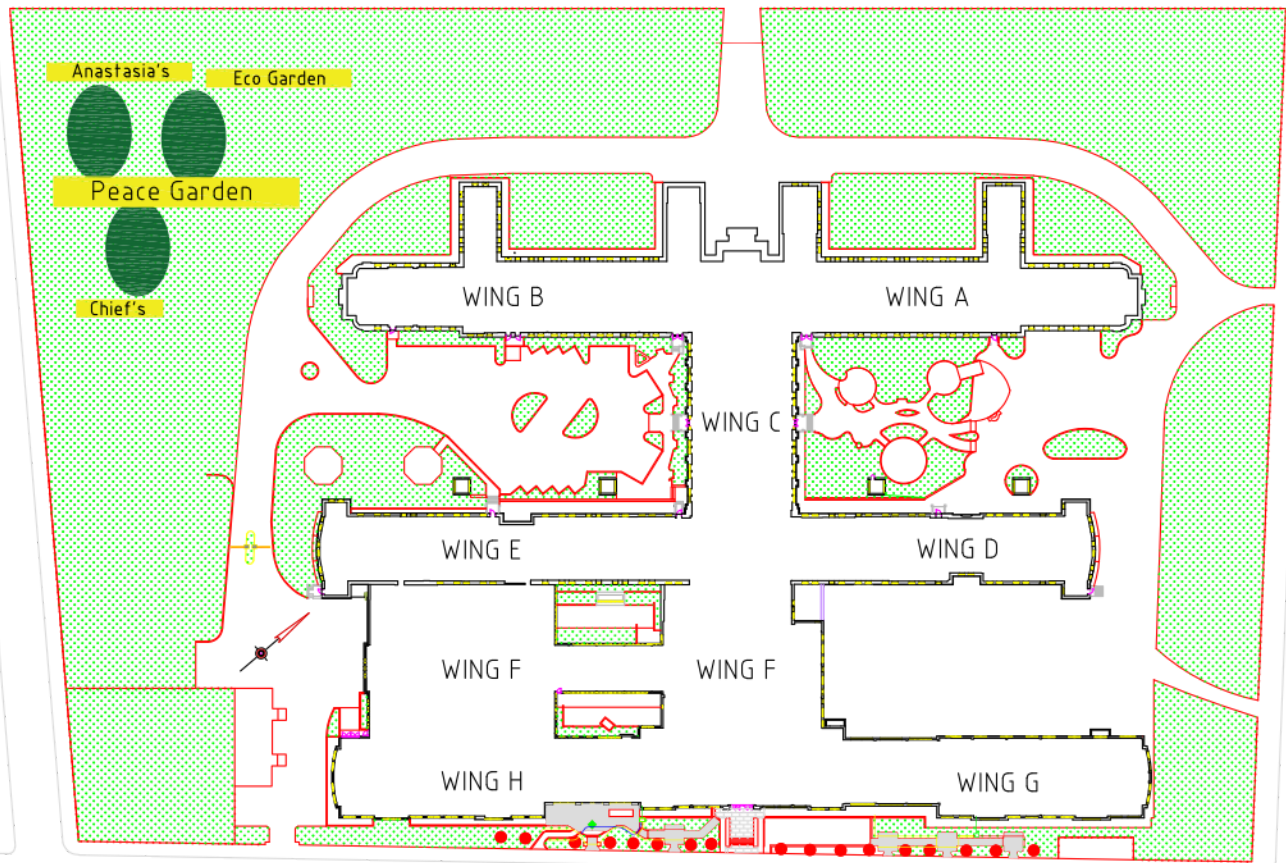
### INTRODUCTION

Apart from the obvious memorial significance after the tragic 2006 shootings at Dawson, the Ecological Peace Garden showcases community involvement, helps create a cultural shift at Dawson towards the greening of its ethos, creates a powerful sense of community and belonging to the college, and gives a section of our urban landscape back to native wildlife, thereby increasing biodiversity.

### USEFUL LINKS

- [Pruning Secrets for Exquisite Rosses](#)
- [Pruners](#)
- [Goutweed](#)
- [Plant Node](#)
- [Deadheading Shrubs](#)
- [Thinning](#)
- [Ergonomic tools](#)
- [Pitchfork](#)
- [Ho-mi Digger](#)
- [Spades and Shovels](#)
- [Heavy Duty Transplant](#)
- [Hand Trowel](#)
- [Loopers](#)
- [Garden gloves](#)
- [Sickle Knives](#)
- [Hose Accessories](#)
- [Extra information on gardening tools](#)

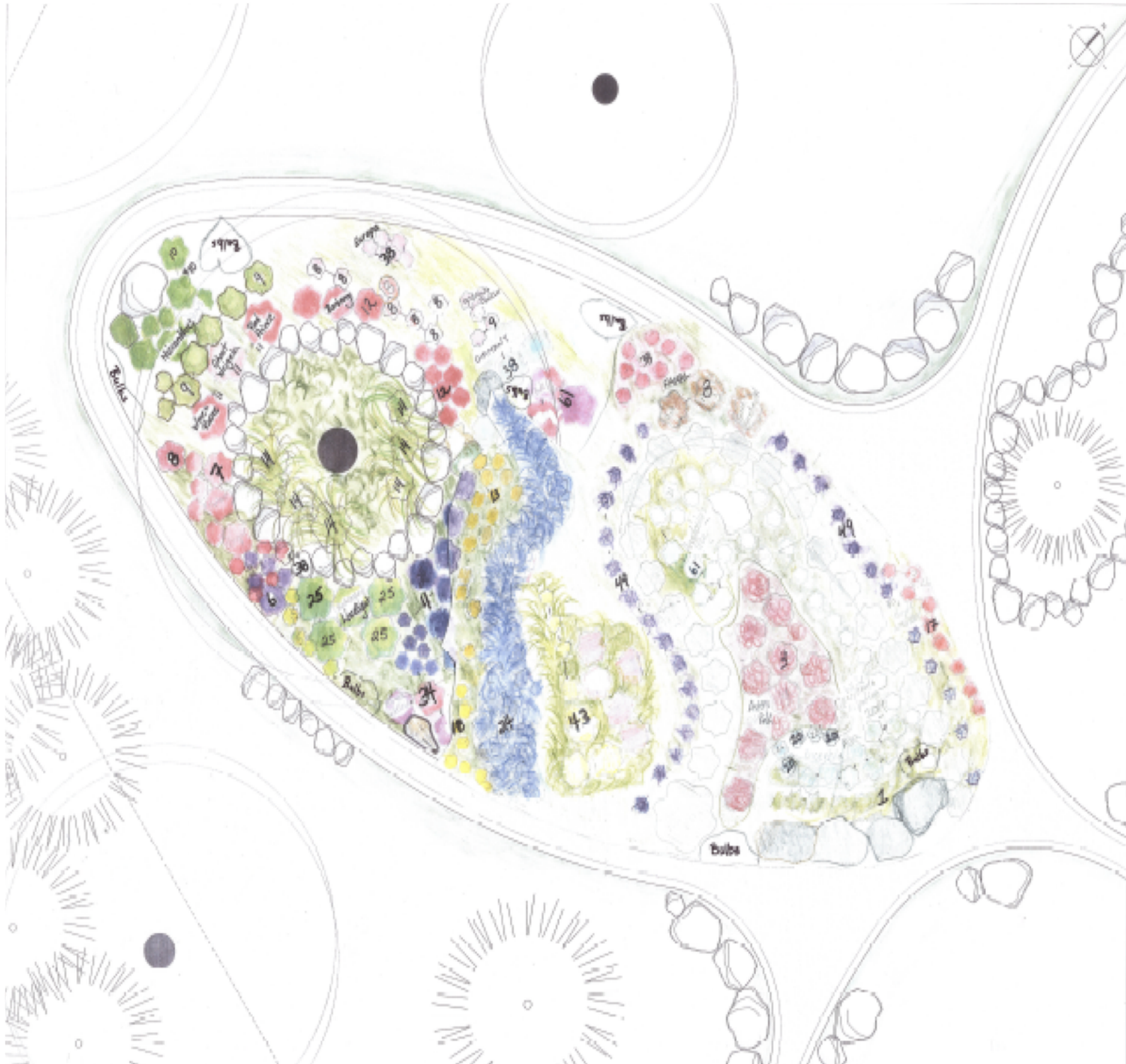
# PEACE GARDEN LOCATION



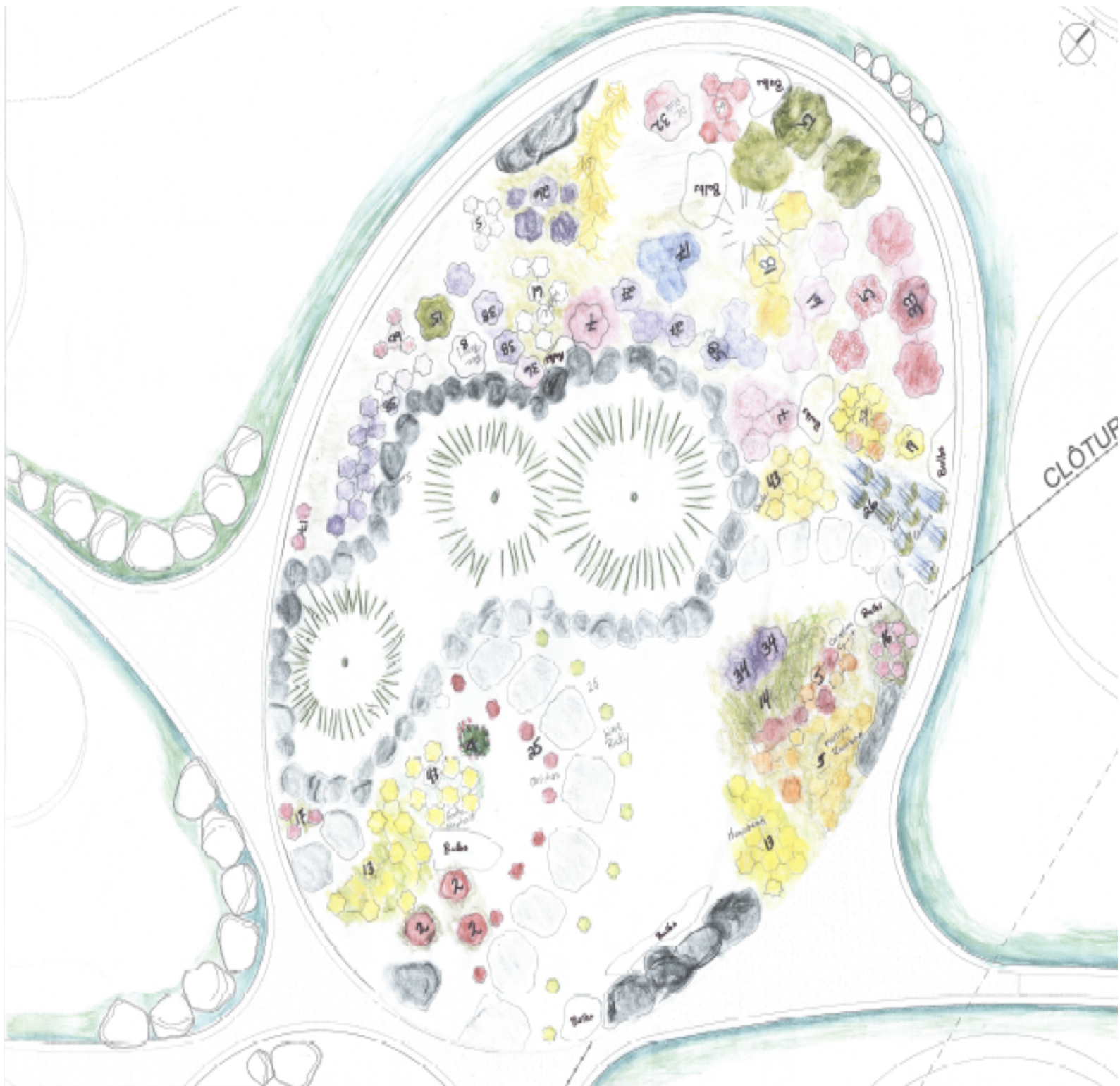


# ECOZONE

## ANASTASIA'S GARDEN



# CHIEF'S GARDEN





# ECO GARDEN



# LEGEND

## LÉGENDE:



ARBRE FEUILLU EXISTANT



CONIFÈRE EXISTANT



HAIE DE CONIFÈRES EXISTANTE



SENTIER EN PIERRES NATURELLES



SURFACE DE PLANTATION



ARBUSTE PROPOSÉ



SURFACE GAZONNÉ



SURFACE ASPHALTÉE



BANCS-ROCHE

## PEACE GARDEN PLANT AGENDA FOR BLUEPRINTS

32	Achillea (Yarrow)
17	Aconite (Monkshood)
26	Agastache (Anise Hyssop)
38	Alstilbe
47	Amelanchier
46	Anaphalis (Pearly Everlasting)
65	Antique roses - Hansa, R. Picard, David Austin varieties
3	Asters Hybrid
70	Baptisia Australis
12	Barberry bush
1	Boxwood
34	Buddelia
54	Campanula Carpatica
69	Campanula Latifolia
68	Canadian Bloodroot
59	Carex elatra aurea - golden sedge
7	Chelone
70	Chicory
19	Chrysanthemums
42	Cimifugia
13	Coreopsis
33	Cornus sericea (red dogwood)
39	Crocsmia - Yellow&orange
22	Daylilies - hemerocalles Hybrid
35	Delphinium

60	Dianthus
21	Dicentra Alba & Spectabilis
29	Digitalis Foxglove
5	Echinacea
51	Euronymous
50	Fireweed
52	Golden Rod - Solidago altissima
43	Hemerocalles
41	Hesperis matronalis (Dame's Heurchea)
25	Hibiscus (Rose of Sharon)
63	Holly bush
56	Hosta
15	Hydrangea - paniculata
64	Iris
6	Jack In The Pulpit
67	Japanese Iris
30	Joe Pye Weed
44	Juniper - Mophead
57	Lavender
49	
71	Lobelia Cardinalis
23	Mallow
70	Mayapple
27	Meadowrue Thalictrum
10	Miscanthus - Miscanthus 'sinensis
16	Monarda
4	New England Asters (native)
55	Oregano (Herrenhausen)
62	Imperata Cylindryca 'Red Baron',
48	Panicium Joanne Shenandoah
8	Pcony
45	Penstemon
24	Perovskia – Russian sage
61	Phlox
58	Phytosegia (Obedient plant)
53	Primula
36	Prunus Triloba (Flowering Almond)
31	Rose of Sharon Hibiscus
2	Roses (2A) Carpet Roses
18	Rudbekia
37	Salvia nemerosa
20	Shasta daisy
40	Tansy
28	Tree Peony
66	Trilliums
11	Wegiela bush
14	Wheat grass

# YEARLY MAINTENANCE PLAN

## SPRING: MARCH - JUNE

Spring: March – June		
Task	Responsible	Deadline
Plan supplies, tools, materials and plants needed for the year. Create purchase order requisitions for all supplies and pickup of plants from garden centres.		
Post-winter evaluation of Peace Garden. Evaluate the state of the garden: earth, mulch, perennial plants (did any not make it through the winter?), pruning or cutting of dead plant material, upcoming needs, plants, compost.		
Spring clean-up: pick up garbage, trim dead stalks of perennial plants , amend soil with compost (from Dawson compost ordered externally).		
Write letter to College Security listing students working during the summer		
Confirm garden tool inventory sheet		
Clean garden tools		
Mix leaf litter (leaves from the previous Fall season) & compost to spread evenly on Peace Garden		
Clean around perennial plants (8" circumference), transplant as needed, weed, prepare for planting		
Invitation to Dawson community to work in garden week days between 12pm - 2pm. Invitation on FB pages to volunteers		
Community Event: self-watering container workshop (s) for gardening students, then community.		
Safety session for Sustainability-Team		
Plant annuals, perennials and seeds		



# SUMMER: JULY - AUGUST

Summer: July – August		
Task	Responsible	Deadline
Update blueprints: new plantings, remove perished plants and log transplants		
Planting or transplanting of annuals, perennials and biennials		
Weekly weeding		
Review & update future plans, maintenance plan, documents related to the Peace Garden and communication to Dawson Community		
Deadhead plants as needed		
Pest control – beetles, others...as per landscape guide Integrated Pest Management program (p. 8)		
Provide and train for garden tours		
Remove dead leaves, branches, etc.		
Goutweed control in entire garden, including ecozones		
Waste pick up		Daily

## FALL: SEPTEMBER- OCTOBER

Fall: September – October		
Task	Responsible	Deadline
Plan and implement approved community events		
Optional Community Event: 3 Day Bulb Sale & planting		Mid October – date TBA
Garden clean-up for winter (includes: pruning roses, cut back ALL perennials & shrubs)		
Winter preparation for tools and garden material (storage bins, gloves, small tools)		
Community Event: Plan release of monarch butterflies		Early to mid-September
Garden Winter preparation: deadheading, thinning, cut goutweed, pick-up waste, weeding, pests control if needed, ecozone...		

## WINTER - NOVEMBER TO FEBRUARY

Winter: November – February		
Task	Responsible	Deadline
Take inventory of needs - gardening tools: gloves, first aid kit, shovels, tool cart, hoses/storage		
Review programming for summer programs, daycare, visitors and tours		
Review upcoming garden work with Sustainable Dawson Executive		

# GARDENING

## HELPFUL INFORMATION & TIPS

### Type of plants

#### WHAT IS A PERENNIAL?

A perennial plant is a plant that comes back to life year after year. In its first year of growth, most perennials will produce leaves but not flowers. In the second year, and subsequent years, the plant will flower. Usually by the third year, perennial plants can produce seed as well, in that the perennial plant has gone from seed to seed. The mother plant does not die, but gathers energy in its root system to feed itself the next spring. It usually increases in size every year. A common example of a perennial plant in Canada is the peony, hemerocallis (common day lily), lavender, fireweed, mayapple or anaphalis.

#### WHAT IS AN ANNUAL?

The sole goal of an annual plant is to produce seed in one season. The plant grows, flowers and forms seeds. Once the seeds are mature (having been successfully pollinated), the mother plant dies, therefore it has a life cycle of one year. The mature seed can be planted to produce another plant. That is why gardeners that want continuously blooming annuals deadhead the plant, thereby “tricking” the plant into thinking it needs to produce more flowers in order to produce seed. Common examples of annuals in Canada would be a cosmos, geranium, basil or dill.

#### WHAT IS A BIENNIAL?

Biennial plants in the garden are flowering plants that have a lifespan of two years. They grow leaves and roots the first year, then enter into a dormant period during the winter. The second year the plant produces flowers and set seed. It is always preferable to plant the seeds of a biennial each year to ensure that you will have a continuous supply of flowers. Examples of biennials are hollyhock (Alcea), black-eyed susan (rudbeckia hirta) and foxglove (digitalis).

*Note: Many annual and biennial plants are self-seeders, growing new plants in the same area which leads some people to thinking they are a perennial.*

# TRANSPLANTING

## **WHAT IS TRANSPLANTING?**

Transplanting is a technique used in gardening to move plants from one area to another. This includes annuals, vegetables and perennials. Transplanting differs depending on the type of plant, whether it is potted or being moved from an existing garden to another garden.

## **HOW TO TRANSPLANT ANNUALS?**

Annuals are the easiest to transplant. They are usually bought at a local garden centre in packs or pots. Transplant the plant by digging a hole a bit larger than the root ball of the plant in the pot. If the roots of the plant are tightly packed, gently loosen them to spread out in the bottom of the dug hole. Place the plant just slightly below (½") it's existing earth ball and cover with loamy soil. Press down lightly to firm the root ball in place and water well.

## **HOW TO TRANSPLANT PERENNIALS?**

Transplanting perennial plants that have just been bought from a garden centre is the same technique as for an annual. Transplanting existing perennials that have lived in the garden for years is completely different. Existing perennials are usually transplanted because they have grown quite large, or the gardener would like to split the plant to make new plants. This technique involves the following:

To lift the existing plant from the earth, it is very important that the root system is not damaged. To achieve this, use a transplant shovel which is made longer to enable reaching the root system. Push the shovel in perpendicular to the earth, straight down, and pull the shovel gently towards you. Repeat this all the way around the plant. Once your shovel has sliced through the earth, gently use it to lift the plant out of the ground.

At this point, you need to dig a hole 2 – 3" larger than the existing plant in its new location. Gently place the plant in the hole, firming the earth around the root system and to the height of 1" of the stem. Make sure to water thoroughly and well to ensure that the root system does not go into shock. It usually takes a couple of days for the plant to return to its solid upright appearance as it has adjusted to the transplanting.

# TRANSPLANTING

## **HOW TO TRANSPLANT BUSHES?**

Transplanting existing bushes (roses, red dogwood) requires more work. It is necessary to dig a larger hole (twice the size of the bush). Fill the hole with water to the top and let it drain. Once the water has drained, place the bush into the hole, spreading the root system around to give it room to grow. Water the hole until it is half full. Once the water has drained again, you may start to replace the soil, filling it to the top of the earth level. Firm the earth gently (you do not want to pack the earth tight around the root system or the roots will be compacted and it will cut off air circulation). Water thoroughly once again and for the next several days to ensure that the transplant is successful.

## **HOW TO SPLIT PERENNIAL PLANTS?**

After many years in the garden, your perennial may have outgrown its spot. This is the time to make new plants by a technique called splitting or dividing. It is always best to divide plants on a cloudy day or towards the evening. After lifting the plant, shake the earth from the plant. Some plants (like day lilies) are quite easy to divide by hand.

They can be split into two or more plants and transplanted to another spot, using the perennial transplanting technique above. There are other perennials (like hostas, goldenrod and ornamental or native grasses) that have a very solid and thick root ball. To successfully split these types of plants, you would need a heavy duty transplant spade. To split, slice the spade through the plant into the required amount of plants that you want. Then transplant using the transplanting method mentioned above.



# MULCHING

## WHAT IS MULCH?

Mulching is the process of placing the mulch material on the earth and around plants in the garden. Mulch retains moisture for the plants and significantly suppresses the growth of weeds. Mulch is shredded or chipped wood pieces (usually cedar), tamarack, cocoa shells, cocoanut fiber, grass, straw, bark or the cuttings of dead flower stalks. It also breaks down over time, fertilizing the soil and amending it to a loamy consistency.

## HOW TO SPREAD MULCH?

layer 3-5 cm of mulch throughout the garden. Make sure to leave a 15 cm circumference bare of mulch around the roots of each plant. Mulch, when not used properly, can harm your plants. If mulch is placed too close to the stem, this can lead to death of the plant as air circulation has been cut off.

The application of mulch is best done during spring clean-up, after weeds have been removed and the previous year's flower stalks have been cut.



# DEADHEADING FLOWERS AND PLANTS

## **WHAT IS DEADHEADING?**

Deadheading is the removal of flowers that have finished blooming, but not set seed.

## **HOW TO DEADHEAD?**

### **Winter:**

Many perennials can be left over the winter without deadheading for a number of reasons, such as:

- ♦ Leaving the seed heads for birds to feed on during the winter months
- ♦ It is easier to remove dead growth in the early spring
- ♦ In bushes such as roses, lilacs & plants that put forth growth buds for the next year

Many perennials in the peace garden are not cut down as they provide food for wildlife in the winter. Examples include echinacea, rudbeckia, rose hips (fruit of the rose bush), sumac, and sunflowers.

### **Spring and Summer:**

With annual flowers, it is especially important to deadhead, as it encourages new growth & more flowers. This requires cutting the flower stalk down to the first node for regrowth of new flowers.

Perennial flowers are left on the stalk until ALL flowers have finished blooming. At the end of the blooming season, the flower stalks only can be cut down to the ground. This enables more energy to go into the leaf and root systems, creating a stronger, healthier plant.

### **Fall:**

It is optimal to deadhead flowers in the fall when you do not need a seed head for seed collection or feeding of the birds and other small mammals. Fall deadheading means to cut down the entire plant, mulch it with a shredder and spread the shredded material on the ground around the roots.

# WEEDING

## WHAT IS WEEDING?

Weeding is the process of removing unwanted plants & invasive species from the garden. The most important aspect of weeding is to ensure that the whole root of the unwanted plant is removed. If the roots are not removed, the weed can easily propagate again, and in many cases make a number of new weeds as well. Weeding can be a relaxing and restorative chore in the garden. It is repetitive and allows you to meditate or flow while accomplishing this garden chore.

## HOW TO WEED

Make a deep cut into the soil around the weed to ensure the root is removed. Once the soil is loosened around the root of the weed, use your tools to pull and lift the root from the soil. You can place weeds in the compost as long as they have not gone to seed. Otherwise, dispose of them by ensuring there are no seeds that can germinate.

## TOOLS TO USE?

- Ho-mi digger
- Dandelion remover tool
- ♦ Spade

# GOUTWEED

## WHAT IS GOUTWEED?

Goutweed, an introduced plant from Europe, is an invasive herbaceous (non-woody) plant species that grows in colonies of plants with underground roots (rhizomes). The roots look like spaghetti and spread rapidly and deeply, both sideways and downwards into the earth (see photos below).

Goutweed is damaging as any plant we have ever encountered in the Peace Garden. They produce large numbers of seeds. Goutweed grows in any kind of soil and is very drought tolerant. One tiny piece of root can become a whole new colony (e.g. a sudden growth of 200 plants at the same time). Elimination requires a diligent maintenance program.



With green top-growth removed, massive root system can be seen.



Extent of goutweed regrowth in Peace Garden (spring of 2018).

## HOW TO PREVENT GOUTWEED?

### Spring

Goutweed has an extensive regrowth in the spring. This is the time that we need to be “on top of it” the most. At the first presence of green leaves, cutting the plant to earth level immediately is needed to discourage colony growth. Without photosynthesis, goutweed will have difficulty cultivating new colonies. All cut goutweed is to be disposed of in a bag and thrown into a garbage. Do not leave it on the ground, or put in the compost.

This is to be followed by mulching with non-dyed tamarack mulch, if possible. This helps suffocate new growth as much as possible. The mulch must be layered to a minimum of 7-8 cms thick. When clipping goutweed plants from inside existing perennials mulch is not to be put on the area clipped as it will suffocate the perennial plant. If a plant is embedded with an excessive amount of goutweed, please notify the garden Team Leader. Removal or replanting will be considered.

# BIOLOGICAL GARDEN PEST & DISEASE CONTROL

What	Function(s)	How to use	How often	Notes/ Warnings
Diatomaceous earth	For little ground insects	Sprinkle on soil, between plants	<b>MONDAY</b> (1/week)	Keep away from face! Do not breathe in:)
Algae Spray	To fertilize	Dilute in water / do not put too much fertilizer in water or it will burn the plants.	<b>TUESDAY</b> (1/week)	Especially for tomatoes, need a lot of nutrients. If they have purple veins, they need it!
Mineral oil	Insecticide / envelops larvae and suffocates them	Dilute in water: 1 teaspoon/1 litre Spray on undersides of leaves	<b>WEDNESDAY</b> (1/week)	Especially for brassica family, i.e. kale, rapini <b>Do not use on same day as sulphur!</b>
Kelp Fertilizer	To fertilize	Dilute in water: 2 teaspoon / 1 litre Spray on underside of leaves	<b>THURSDAY</b> (1/week)	
Hydrogen peroxide	For wilting	Already diluted. Spray on leaves.	<b>THURSDAY</b> (1/week)	Especially for tomatoes, if they start having yellow leaves. Watch out for spread (fungi) + wash tools/hands in warm soapy water!
Sulphur	Fungicide for i.e. powdery mildew, downy mildew - keeps it from spreading	Dilute in water: 1 tablespoon / 1 litre Spray all over the plant	<b>FRIDAY</b> (1/week)	<b>Do not use on same day as mineral oil!</b> Watch out: both mildews are fungi so spread w/touch → when found, take off affected leaves, try not to touch unaffected ones and once all are removed go wash your hands + tools eventually used in warm soapy water!



# GARDEN TOOLS CHECK-LIST

Garden Supplies and Tool Inventory		
Tools	Quantity	Location
<u>Pitchforks</u>	3	
Short-toothed rake	2	
Ho-Mi Digger	2	
Long transplant spade - green handle	1	
Dandelion removal tool	3	
Wood-handled flat shovel	5	
Heavy-duty transplant shovel	2	
Classic broom	2	
Wheelbarrows	3	
Flat shovel with green handle	1	
Blue tarps	7	
Tomato basket supports	2	
Ergonomic shovels	2	
Lee Valley spades	6	
Canadian Tire spades	4	
Gardening cart	1	

# GARDEN TOOL DETAILS

## **WHAT ARE ERGONOMIC TOOLS?**

Ergonomic tools help make gardener and the tool work together more efficiently and prevent injuries, especially for wrists and back.

## **WHAT IS A PITCHFORK?**

A pitchfork is a gardening tool used to return and loosen the hard soil.

## **WHAT IS A HARD RAKE?**

The hard rake is used when we transplant flowers from one area to another. They are utilized for the following:

- ♦ Moving earth
- ♦ Leveling earth
- ♦ To neaten garden beds
- ♦ Lightly cultivate earth around perennials
- ♦ Spreading mulch and compost

## **WHAT IS A HO MI DIGGER?**

The ho-mi digger is a Japanese multi-use tool that is very popular in the gardens. It has a number of uses:

- ♦ For digging small holes
- ♦ Placing earth around a plant
- ♦ Pushing earth
- ♦ Weeding

## **WHAT ARE SPADES & SHOVELS?**

Today the words are used interchangeably except by specialists, but the spade is for digging, the shovel is for scooping. This difference is the angle in between the handle and the blade. A shovel is angled while the spade is more or less straight from handle to blade. There are different types of spades and shovels and each of them has a specific use.

# GARDEN TOOL DETAILS (Continued)

## **1. HEAVY DUTY TRANSPLANT SPADE**

The heavy duty transplant spade is used for:

- ♦ Transplanting or dividing plants in dense, root-filled soil. It is a 'heavy-duty' tool for bushes and large perennials.
- ♦ The ergonomic handle is efficient and protects against injuries of the back as well as wrist. The large footholds prevent accidents when stepping on the shovel to push it into the earth.

## **2. FLAT SPADE**

The flat spades are widely used in the Dawson gardens. They are light and easy to handle. This type of spade is best used for the following:

- ♦ Slicing through soil
- ♦ Lifting sod
- ♦ Edging lawns and beds
- ♦ Cutting weeds
- ♦ Opening straight-sided holes or trenches

## **3. SPADE FORK**

The spade forks are primary used as follows:

- ♦ Lifting Breaking up soil
- ♦ Aerating soil Loosening
- ♦ weeds Cultivating

## **4. DIGGING SHOVEL**

The garden digging shovel is perfect to accomplish the following:

- \* Moving Earth
- \* Digging

## **5. TRANSPLANT SHOVEL**

The transplant shovel is the perfect tool for digging out well established perennials. The longer length of the shaft ensures that a major portion of the roots are transplanted with the plant. The ergonomic style makes this tool efficient to use.

# GARDEN TOOL DETAILS (Continued)

## **WHAT IS A DANDELION REMOVAL TOOL?**

A dandelion removal tool is used to pull-out the whole roots of the plant to prevent its regrowth.

## **WHAT IS A WHEELBARROW?**

They hold anything from earth, flowers, branches, Logs, etc. Work is made more efficient and easier when using a wheelbarrow within the garden or on the grass. A must-have!

## **WHAT IS A WEEDER?**

A weeder is the perfect tool for removing weeds with long tap roots. The length of the shaft and the ability to push straight into the earth makes removing weeds easy.

## **WHAT IS A HAND TROWEL?**

The hand trowel is really useful for container gardening and raised beds. Many at Dawson have ergonomic handles, which put less strain on the wrist because of the flexible position of the handles.

## **WHAT IS A HAND PRUNER?**

Pruners of all types are handy in the garden. They are utilized in the following ways:

- ♦ Cutting small branches, on rose bushes
- ♦ Cutting wood stalks of perennial plants
- ♦ Deadheading (removal of dead flowers from plant)
- ♦ Cutting anything that has a woody stem

## **WHAT IS A LOPPER?**

Loppers are used to cut larger branches, 1" + from trees and bushes in the Peace Garden

- ♦ They can also be used to cut larger branches into smaller pieces
- ♦ They include handle extenders to make it easy to reach higher areas of a tree

## **WHAT ARE DIFFERENT TYPES OF GARDEN GLOVES**

There are many types of garden gloves that can be used while gardening.

1. Rubber material on the palm side that enables a firm grip on your tools as well as working where there is moisture.
2. Canvas gloves or leather gloves – used for heavier garden work, picking up branches, cutting garden material and lifting garden tools and debris.
3. Cloth gloves – for light gardening.

# GARDEN TOOL DETAILS (Continued)

## **WHAT ARE SICKLE KNIVES?**

Sickle knives are a must-have tool in the herb garden. They are utilized in the following ways:

- ♦ Cutting bunches of herbs
- ♦ Cutting down old stalks
- ♦ Separating plant material for cutting

## **WHAT ARE HOSES?**

Hoses are used throughout the Dawson gardens, especially in the urban agriculture areas to make sure the plant receives enough water. They are really important during dry season.



**For more information please visit our site:  
Sustainable Dawson**

**You may also contact us directly at:  
[sustainability@dawsoncollege.qc.ca](mailto:sustainability@dawsoncollege.qc.ca)**