

BUTTERFLY AND HERB GARDENS at CBU – Integrative Science project
Institute for Integrative Science & Health: www.integrativescience.ca

- **2003-2011**
 - **summer research assistants, students, and friends:** Stephenie and Dina Bernard (and their little sister Melinda), Joyce Ene, Shaylene Johnson, Shylo Marshall, Basma and Sana Kavanagh, Nadine LeFort, Elizabeth Donovan
 - Canada Research Chair in Integrative Science Dr. Cheryl Bartlett
 - Butterfly Garden Installation Artist Mike MacDonald
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Mi'kmaw Elders working in conjunction with the Integrative Science research team at Cape Breton University (CBU) have long encouraged activities and projects that can help serve their belief that people of all ages benefit when provided with opportunities to be out-of-doors.



Thus, a project was undertaken to create a Butterfly Garden and an Herb Garden at Cape Breton University (then known as the University College of Cape Breton, i.e. UCCB) in a location that could be easily accessed and appreciated by the university community – students, staff, faculty, and administration – as well as by visitors and guests on campus.



The project was started and completed during Spring / Summer 2003. Permission was granted to locate the gardens in the sunny courtyard between Campus Centre and Campus Expansion and workers with the university's Maintenance and Grounds Department plus Integrative Science personnel cleared the area of shrubs and trees in preparation for conversion to garden beds.



The bulk of the manual work in creating the actual gardens was done by the small team of Integrative Science summer research assistants, students, and friends named above.

Assistance in the selection, acquisition, and positioning of the plants for the Butterfly Garden was provided by the late Mike MacDonald, an artist who had designed several butterfly gardens across Canada (http://www.snacc.mb.ca/projects/butterfly_garden) and who traced his Mi'kmaw ancestry to Membertou First Nation.



Many of the plant species Mr. MacDonald selected for the Butterfly Garden are native to Nova Scotia. He felt that native plants would be vigorous and thus require minimal human care; in addition, they would be rich in nectar and pollen and thus highly attractive to butterflies.

Selection, acquisition, and positioning of the plants for the Herb Garden were done by Integrative Science Artist (and avid gardener!) Basma Kavanagh.

Financial resources to create the gardens were provided (in entirety) by the research program of Cape Breton University's Canada Research Chair in Integrative Science Dr. Cheryl Bartlett.



After the project was completed, Integrative Science Artist Basma Kavanagh created a colourful, explanatory brochure featuring maps to locate the positions of the 70 plant species or varieties in the Butterfly Garden and the 30 in the Herb Garden. The brochure was distributed freely within the university, at the coffee nook in the cafeteria, over the ensuing years. **The brochure can be found at the end of this document.** The names of the plants are also provided in an appended list, based on information as provided by Mr. Mike MacDonald or based on tags on plants when purchased at nurseries or garden centres (these same names were provided in the brochure).

In addition, in the autumns of 2004-2006, students in the Integrative Science academic program added numerous tulip bulbs to the Butterfly Garden, as part of laboratory exercises supervised by Integrative Science Lab Instructor Chantelle Cormier. It was felt that tulip blossoms in the spring would help provide cheerful colour for the garden long before the native plants began to flower.



Another addition was made to the Butterfly Garden in Fall 2005, namely a rock cairn in the shape of a turtle. This was laid out in the centre of the garden on the morning of 22 September 2005 as part of the activities within the Youth Day that preceded the national conference of the Canadian Aboriginal Science and Technology Society (CASTS) that took place in Membertou First Nation. The conference was co-hosted by Cape Breton University and the Unama'ki



Institute of Natural Resources. The Youth Day was organized, sponsored, and facilitated by the research program of the university's Canada Research Chair in Integrative Science Dr. Cheryl Bartlett with assistance from Integrative Science Youth Outreach Worker Andrew Sark and CASTS conference worker Jaime Battiste. Rocks to create the cairn were brought by youth from all five Mi'kmaq communities in Unama'ki – Cape Breton and also by conference participants from across North America. The cairn was officially named "Klikn", a Mi'kmaq word conveying the concept of "giving strength" [to something in relationship ... e.g. stones propped against the poles of the wigwam] and thus as a "strength giver for the future scientist(s)" ... envisioned as Aboriginal youth hoping to pursue their future science education at Cape Breton University. The word was suggested by Mrs. Murdena Marshall, Elder, Eskasoni First Nation (and retired Associate Professor of Mi'kmaq Studies, Cape Breton University).

In Summer 2011, Cape Breton University deemed the Butterfly and Herb Gardens too overgrown with invasive weeds to warrant continued preservation and the area was re-landscaped to feature an Eight-Pointed Star, a shape often used as a symbol for the Mi'kmaq Nation. Rocks from the dismantled Klikn were placed within the wooden frame used to create the outline of the Star.



In October 2011, the area was designated "Kina'matneway Na Klikn" (meaning "education is our strength" ... as suggested by Elder Murdena Marshall) during a ceremony in which an ash tree was planted by Cape Breton University's President Dr. John Harker and Mi'kmaq Elder Dr. Albert Marshall along with his son Albert J, both of Eskasoni First Nation (see next page for more information, from <http://www.uinr.ca/2012/01/kina%e2%80%99matnewey-na-klikn/>).



UNAMA'KI INSTITUTE OF NATURAL RESOURCES

Mi'kmaq Sustainable Resources - Eskasoni, Membertou, Potlotek, Wagmatcook, Waycobah



NEWS / PARTNERSHIPS



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Kina'matnewey na klikn

Jan 11, 2012

In recognition of Mi'kmaq History Month, UINR joined Cape Breton University's Unama'ki College in its dedication of Kina'matnewey Na Klinkn (Strengthening Knowledge) in the University's courtyard. UINR's Executive Director Lisa Young, Elder Advisor Albert Marshall and his son Albert J, joined CBU President Dr. John Harker in a ceremonial planting of culturally significant Mi'kmaq plants.



Pakosi, Kjimskiku (Switey), and two Wisqoq trees were planted around a specially constructed eight-pointed star. CBU President Dr. John Harker explains, "Our reputation as Atlantic Canada's leader in Aboriginal post-secondary education is one that we are very proud of here at CBU. The green space that has been revitalized with the Mi'kmaq eight-pointed star and traditional Mi'kmaq plants is a wonderful reminder of the more than 35-year relationship that Cape Breton University holds with Aboriginal communities regionally and afar. This attractive space complements the ongoing transformation taking place at CBU and will be enjoyed by the University community and visitors to our campus for years to come."

Lisa Young, UINR's Executive Director talked about UINR's relationship with CBU. "UINR has a long history of association with CBU, and through our Memorandum of Understanding, we have embarked

on many projects together over the years. We are currently working with The Unama'ki College on a video with Unama'KIDS and are partnered with CBU on a research project on Kluskap's Cave. Our collaboration with CBU's Bras d'Or Institute recently had its students assisting us on our salmon smolt wheel project. This dedication and planting of these important Mi'kmaq plants symbolizes UINR's commitment to working with the University community to see our relationship grow and flourish."

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The statements below are from original promotion materials written in 2003 after the Gardens were completed:

BUTTERFLY GARDEN

Reasons for the Butterfly Garden at UCCB

- The Butterfly Garden is one way to increase our human awareness of the natural world and to emphasize the relationships and patterns that exist between humans and others throughout the whole of Nature — ideas central to UCCB's Integrative Science program.
- The Butterfly Garden acknowledges the vanishing habitats of butterflies (and other pollinators) in our towns and cities. With the Garden, we have created a safe place for adult butterflies to feed and have provided appropriate plants for their egg-laying needs. The Garden also provides places where the larvae of butterflies may feed and pupate.
- The Butterfly Garden will be a reminder of connectiveness and interdependence in our Universe. For example, we must constantly acknowledge that without pollinators like butterflies and bees, the food crops that we humans need to survive would not be able to grow.

Things that adult butterflies like and how the UCCB Garden caters to them

- Butterflies require nectar-rich plants and are especially attracted to daisy-type plants whose centres consist of hundreds of tiny flowers densely packed together — a feature that allows one butterfly to feed many times in one stop. The UCCB Garden contains many such plants.
- Butterflies lay eggs on plants that their larvae can eat. In UCCB's Garden these plants include asters, lupines, milkweed, black-eyed susans, and sedums.
- Butterflies find white flowers particularly attractive, so white ('alba') varieties of many plants were included in the UCCB Garden.

HERB GARDEN

The UCCB Herb Garden is also located in the sunny courtyard, close to the Butterfly Garden and the Great Hall. It was similarly made possible through the resources of UCCB's Toqwa'tu'kl Kjjitaqnn / Integrative Science research program.

While many of the plants in the Herb Garden are attractive to butterflies and other pollinators, the Herb Garden was created mainly with humans in mind: our UCCB chefs and hospitality students, as well as anyone wishing some mint or lemon balm for their tea, or herbs for their lunch. So, please feel free to visit and harvest, but we ask that you be respectful of the plants and of the Garden.

Butterfly Garden: list of plants

1. Bachelor's Button (*Centaurea dealbata*)
2. Black-eyed Susan (*Rudbeckia hirta* var. "Irish Eyes")
3. Black-eyed Susan (*Rudbeckia fulgida* var. "Goldsturm")
4. Blanket Flower (*Gaillardia grandiflora* var. "Burgundy")
5. Bog Laurel (*Katmia polifolia*)
6. Butterfly Milkweed (*Asclepias tuberosa* var. "Milkmate" and "Soulmate")
7. Butterfly Weed (*Asclepias tuberosa*)
8. Canada Anemone (*Anemone canadensis*)
9. Canadian Columbine (*Aquilegia canadensis*)
10. Catnip (*Nepeta racemosa*)
11. Chamomile (*Anthemis nobilis*)
12. Cinquefoil (*Potentilla nepalensis* var. "Miss wilmott")
13. Columbine (*Aquilegia alpina*)
14. Columbine (*Aquilegia* hybrids var. "Mackana's Giant and "Crimson Star")
15. Coneflower (*Echinacea purpurea* var. "White Swan")
16. Coneflower (*Echinacea purpurea* var. "Lavender Queen")
17. Coral Bells (*Hechera sanguinea*)
18. Creeping Phlox (*Phlox subulata* var. "Candy Stripes")
19. East Indies Aster (*Aster tongolensis* var. "Wartburgstern")
20. Feverfew (*Tanacetum* sp.)
21. Fleabane (*Erigeron speciosus* (doubled))
22. Gloriosa Daisy (*Rudbeckia cordoba* and *Rudbeckia speciosa*)
23. Golden Margueritte (*Anthemis tinctoria* var. "Kelways")
24. Heritage Hollyhock (*Alcea rosea*)
25. Jacob's Ladder (*Polemonium caeruleum*)
26. Joe Pye Weed (*Eupatorium maculatum*)
27. Lavender (*Lavandula augustifolia* var. "Munstead")
28. Lupin (*Lupinus* hybrid var. "Gallery Blue")
29. Lupin (*Lupinus* hybrid var. "Gallery Pink")
30. Lupin (*Lupinus* hybrid var. "Gallery White")
31. Maiden Pink (*Dianthus deltoides* var. "Arctic Fire")
32. Mallow (*Malva sylvestris* var. "Mystic Merlin")
33. Maltese Cross (*Lychnis chalconica* var. "Alba")
34. Mountain Bluet (*Centaurea montana*)
35. Musk Mallow (*Malva moschata* var. "Alba")
36. Oregon Fleabane (*Erigeron speciosus*)
37. Peach Leafed Bellflower (*Campanula persicifolia* var. "Alba")
38. Peach Leafed Bellflower (*Campanula persicifolia* var. "Grandiflora Blue")
39. Pearly Everlasting (*Anaphalis margaritacea*)
40. Pot Marigold (*Calendula officinalis*)
41. Purple Blazing Star (*Liatris spicata*)
42. Red Valerian (*Centranthus ruber*)
43. Rock Garden Blend Sedum (*Sedum acre*, etc.)
44. Salvia (*Salvia nemorosa* var. "Blue Queen")



45. Shasta Daisy (*Chrysanthemum maximum* var. "Alaska")
46. Shasta Daisy (*Leucanthemum superbum* var. "Alaska")
47. Shasta Daisy (*Leucanthemum superbum* var. "Silver Princess")
48. Shasta Daisy (*Leucanthemum superbum* var. "Snow Lady")
49. Sneezewort (*Achillea ptarmica*)
50. Speedwell (*Veronica spicata* var. "White Icicle")
51. Spider Flower (*Cleome spinosa*)
52. St. John's Wort (*Hypericum perforatum*)
53. Stiff Goldenrod (*Solidago rigida*)
54. Stonecrop (*Sedum spectabile* var. "Autumn Fire")
55. Sweet Rocket (*Hesperis matronalis*)
56. Sweet William (*Dianthus barbatus* (double dwarf mix))
57. Thrift (*Armeria maritima* var. "Splendens")
58. Tickseed (*Coreopsis verticillata* var. "Moonbeam")
59. Tickseed (*Coreopsis grandiflora* var. "Early Sunrise")
60. White Blazing Star (*Liatris spicata* var. "Alba")
61. Wild Strawberries (*Fragaria virginiana*)
62. White Turtlehead (*Chelone oblique* var. "Alba")
63. Woolly Yarrow
64. Yarrow (*Achillea millefolium* var. "Cerise Queen")
65. Yarrow (*Achillea millefolium* var. "Paprika")
66. Yellow Loosestrife (*Lysimachia punctata*)
67. Yellow Mexican Hat (*Ratbida columnifera*)



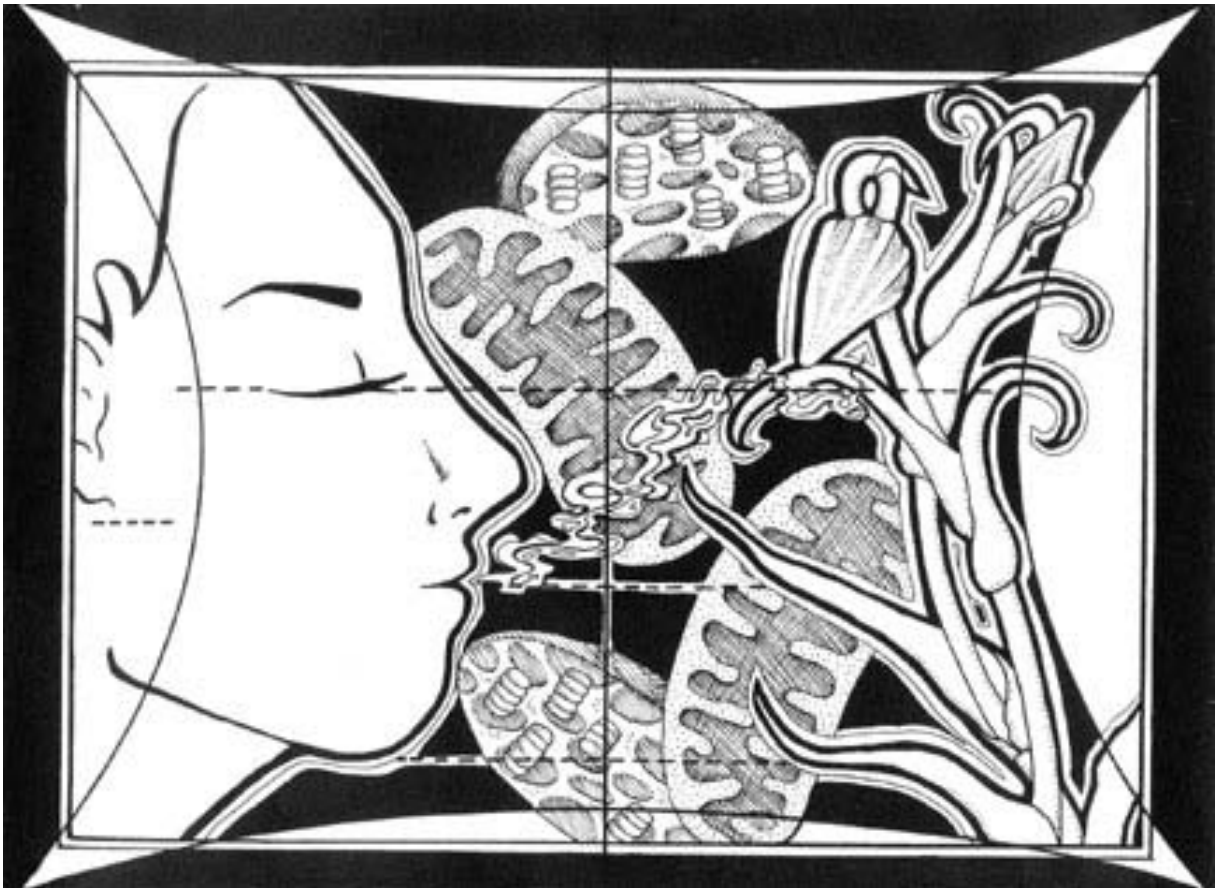
plus shrubs:

1. Red Osier Dogwood
2. Saskatoon Berry
3. Wild Rose (*Rosa virginiana*)

Herb Garden: list of plants

1. Apple Mint
2. Borage (*Borago officinalis*)
3. Bronze Fennel (*Foeniculum vulgare*)
4. Chives (*Allium schoenoprasum*)
5. Clary Sage (*Salvia sclarea*)
6. Coriander (*Coriandrum sativum*)
7. Dill (*Anethum graveoleus*)
8. English Thyme (*Thymus vulgaris*)
9. Fireweed (*Epilobium augustifolium*)
10. French Thyme (*Thymus vulgaris*)
11. Garlic (*Allium vulgare*)
12. Horseradish (*Amaracia rusticana*)
13. Lemon Balm (*Melissa officinalis*)
14. Lemon Thyme (*Thymus citriodocus*)

15. Lovage (*Levisticum officinalis*)
16. Mint (*Mentha* sp.)
17. Nasturium (*Tropaeolum majus*)
18. Oregano (*Origanum vulgare*)
19. Pennyroyal (*Mentha pulegium*)
20. Pot Marigold (*Calendula officinalis*)
21. Prairie Onion (*Allium stellatum*)
22. Red Valerian (*Centranthus ruber*)
23. Red Wild Thyme (*Thymus serpyllum*)
24. Rosemary (*Rosmarinus officinalis*)
25. Salad Burnet (*Sanguisorba minor*)
26. Spearmint (*Mentha spicata*)
27. Summer Savory (*Satureja hartenis*)
28. Sweet Mint (*Mentha rotundifolia*)
29. Valerian (*Valeriana officinalis*)
30. Wild Roses (*Rosa virginiana*)



artwork by Integrative Science Artist Basma Kavanagh

UCCB Butterfly and Herb Gardens



Butterfly Garden

The UCCB Butterfly Garden is located in the sunny courtyard beside Campus Centre . It was created in Spring/Summer 2003 by Mike MacDonald (a photographer and professional butterfly garden designer) and by UCCB employees, students and friends:

Stephenie, Dina and Melinda Bernard, Joyce Ene, Shaylene Johnson, Shylo Marshall, Basma and Sana Kavanagh, Nadine LeFort, Elizabeth Donovan, and Cheryl Bartlett.

The Garden was made possible through the resources of UCCB's Toqwa 'tu 'kl Kijjitaqnm/Integrative Science program. Many species of plants native to Nova Scotia were used as they are vigorous (thus requiring little human care) and rich in nectar and pollen (thus attractive to butterflies).

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The Butterfly Garden is a reminder of connectedness and interdependence in our Universe. For example, we must constantly acknowledge that without wild pollinators like butterflies and bees, many of the food crops we humans need to survive could not bear fruit - and without fruit, there is no food, and no seeds for future crops.

Things that adult butterflies like and how the UCCB Garden caters to them



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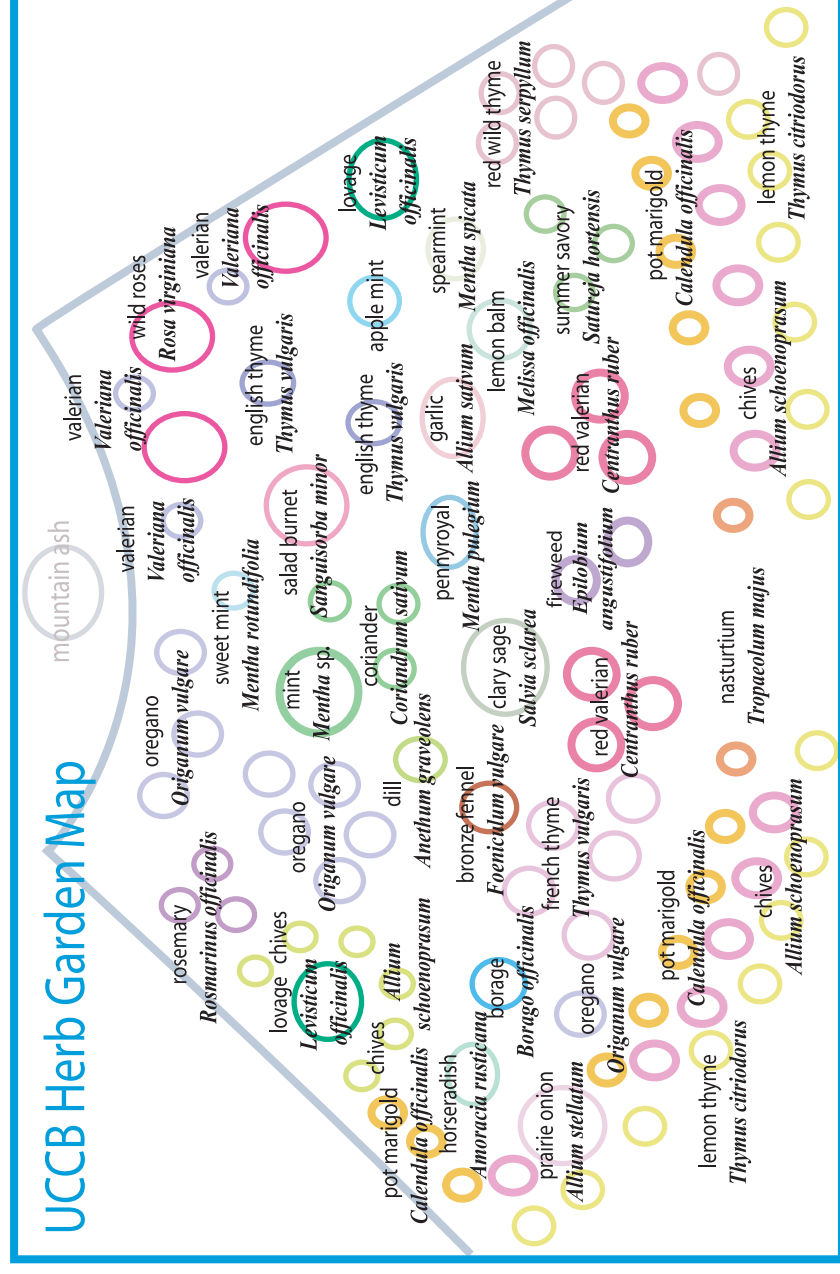
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We hope you enjoy the Gardens.



UCCB Butterfly and Herb Gardens



For a virtual visit to the UCCB Gardens, and for more information on UCCB's Toqwa 'tu 'kl Kijjitaqnm/Integrative Science program, please visit our web site: <http://faculty.uccb.ca/msit>



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