



NATIVE PLANT STUDY GROUP

COASTAL SAND DUNES OF BRITISH COLUMBIA

British Columbia is a province with an extensive marine coastline that is predominately composed of rocky, steep cliffs and only a relatively few areas of flat, sandy beaches.

Within these rare ecosystems, only the highly adapted can withstand the dynamic forces that shape sand dune ecosystems. From the perils of crashing waves, sifting sands, high levels of salinity, poor nutrient availability, extremely fast draining soils and harsh summer temperatures emerge a group of plants that use specialised survival strategies.

These beaches generally have several physical characteristics in common. First, just past the transition zone from land to water, is the strand line, where flotsam and jetsam become "stranded". This is the habitat of the extremely rare pink sand verbena (*Abronia umbellata*). Matt Fairbarns, with his usual entertaining and informative style, told the story of the gentleman from Klouuse who spotted the pink sand verbena in 1941 and did not see it again until 2000, growing in the exact same location. Two of the last remaining plants in BC are being grown at the

Pacific Forestry Centre, in the hopes they can be reintroduced into their former locations.

Next is the upper beach, an area with enough stability to allow annuals and other plants such as coastal strawberry (*Potentilla chiloensis*) and beach pea (*Lathyrus japonicus*), that tolerate high salinity and sand movement, to establish. This plant growth allows the beach to stabilize further, creating the fore-dune ridge, where dune wildrye (*Leymus mollis*) thrives. Behind this, scoured by winds to a heavy wet sand base, is a somewhat stationary area called the dune slack, often an area with some seasonal standing fresh water, where many beach plants germinate and establish. Here you might find the endangered yellow sand verbena (*Abronia latifolia*), the provincially imperiled grey beach peavine (*Lathyrus littoralis*) and the rare contorted-pod evening-primrose (*Camissonia contorta*). Other plants of concern in sand dune ecosystems are: beach carrot (*Glehnia littoralis* ssp *leiocarpa*), beach groundsel (*Senecio pseudoarnica*), dune bentgrass (*Agrostis pallens*), seashore lupine (*Lupinus littoralis*), black knotweed (*Polygonum paronychia*) and sand-dune sedge (*Carex pansa*). Further

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back in the loose blowing sand you can find the common large-headed sedge (*Carex macrocephala*) and dune bluegrass (*Poa macrantha*). The furthest reaches of these dune ecosystems is the ridge, a stabilized section where somewhat wind and salt tolerant inland species can establish. On the wet, west coast, these would be Sitka spruce (*Picea sitchensis*) forests, with an understory of salal (*Gaultheria shallon*), kinnikinnick (*Arctostaphylos uva-ursi*), mosses and lichens.

Yellow sand verbena is a rare plant in a rare ecosystem, supplying the exclusive diet for both the adult and juvenile rare sand verbena moth (*Copablepharon*

fuscum). During the day the moth caterpillar buries itself in the sand, to avoid the harsh summer conditions, emerging at night to feed on the verbena plant. Eventually it will construct its cocoon of sand particles and hibernate until it surfaces as an adult in early summer. Survival mechanisms for dune plants run the gamut from deep and/or laterally and vertically aggressive root

systems, summer dormancy, hairy or waxy leaves to symbiotic relationships with bacteria and mycorrhizal fungi.

Threats to sand dune beaches are many and the culprits are not a surprise: developments which impact the dunes, addition and/or removal of materials, road building and shoreline "hardening" which prevent the movement of new sand sources, invasive species such as European beachgrass (*Ammophila arenaria*) and destabilization from ATV's and the soles of countless feet. If you would like to visit some of these little known ecosystems, some examples of coastal sand dune beaches of south-eastern Vancouver Island are to be found at Island View beach, Sidney Spit, Witty's Lagoon and most of the Savary Island coastline. The

west coast of Vancouver Island has marvelous sections of sand beaches, especially Long Beach from Tofino to Ucluelet and the Sand Neck near Cape Scott. Graham Island in Haida Gwaii apparently has the most spectacular collection of sand dune beaches.

Matt Fairbarns is a plant ecologist, owner of Aruncus Consulting-a private firm which does botanical ecological assessments and a member of the Oak Bay Parks and Recreation Commission. *Verbena photos by Matt Fairbarns*

For further information:

env.gov.bc.ca/wld/documents/sand_dunes_brchr06.pdf



The Native Plant Study Group meets on the third Thursday of the month from Sept through May except Dec at 7 at the MacLaurin Building, UVic. Please join us. Membership fees are \$15.00 annually or a \$2.00 charge for drop-in. Check Room Schedule for new meeting locations.

NPSG Room Schedule for Spring 2008

17 Jan	MacLaurin D116
21 Feb	MacLaurin D288
20 Mar	MacLaurin D110
17 Apr	MacLaurin D116
15 May	TBA

The Moss and Mushroom Weekend with Dr. Terry McIntosh was a huge success, lots of great moss identification skills were imparted and we all appreciated the generosity of Dr. Dave Blundon of Camosun College for donating his time and expertise so that we could use the biology lab. The mushroom hike led by Dr Richard Winder and the moss hike with Terry were two highlights of the weekend. I think we all wished that we could have the time and energy to attend both.

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ROOTING CUTTINGS

By Heather Koni Pass

These methods will usually work for many kinds of cuttings taken in Fall. There are three ways to root cuttings, from lazier to more energetic.

..... **SUPPLIES:** Bucket of water; fresh cuttings with at least 4 leaf nodes, preferably from firm new wood; rooting hormone; one gallon flower pot(s) or germination tray(s); clean sand; perlite-NOT vermiculite- (moisten while in bag so no dust is inhaled); plastic tray cover or non-solid tray to cover germination tray. Landscape cloth or suitable substitute to lay in bottom of pots to prevent sand from washing out; string for bundling, dibble stick.

..... **CUTTINGS:** Choose branches of firm new growth and immerse cut end in water immediately. It is important to keep material hydrated through preparation. After gathering, cut into lengths of no fewer than 4 leaf nodes (2 for roots, 2 for future leaves). Remove any old leaves and flower buds. Immerse in water as prepared.

..... **QUICK POTTING:** Fill bottom half of pot with sand, then moisten to settle it. Gather a small bunch of cuttings and tie together loosely so bottom two nodes will be below "soil level", checking to ensure that all cuttings are top-end-up. Hold bundle in pot and add sand to well cover the bottom leaf nodes. Moisten and add more sand if necessary to correct the level of sand. Place in sheltered area of garden, avoiding north side of house and overhangs. In Spring, when new growth appears, tip cuttings out of pot and re-pot separately in appropriate soil.

..... **ALMOST QUICK POTTING:** Fill pot with sand. Moisten to settle. Put a little rooting hormone in a separate container. Take each cutting separately from water. Tap off excess water. Dip in hormone. Tap off excess. Make hole of appropriate depth with dibble stick. Insert cutting, ensuring that bottom two nodes are below "soil" level. Continue this process until pot is full of cuttings approximately one inch apart. Moisten to settle sand. Place in sheltered area of garden...as above.

..... **GERMINATION TRAY METHOD:** Fill germination tray with a mixture of half sand and half perlite.

Moisten to settle. You will fill tray from right to left. Treat with hormone as above. With dibble stick make a hole on a 30 degree angle into "soil" and insert cutting, ensuring the leaf node end doesn't extend past the end of the tray. You can get six cuttings planted across the tray in each row. Plant up each row 5 cm/2 in. apart. The leaf node ends will overlap, but is no problem. Ensure the cuttings in the last row don't butt into the end of the tray. When the tray is full, moisten again. Cover tray. Set on a deck, or in a greenhouse where you can monitor moisture. If cuttings dry out they will die! In the greenhouse bottom heat may aid rooting, but will need extra attention. To check on root development, tug VERY GENTLY on cuttings. If some resistance is felt, roots are growing. When enough roots have developed, remove from tray by GENTLY sliding the dibble stick down the plant and lifting out of the tray. Plant separately in appropriate soil.

..... One more thing...label pots and trays. Have fun!



..... Rising through the earth,
..... Sentries in a moss forest
..... They surface with rain

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NATIVE PLANT STUDY GROUP
(Sub-group of the Victoria Horticultural Society)

NOTES

The NATIVE PLANT STUDY GROUP is a non-political group dedicated to learning about B.C. native plants, as wild populations and in garden settings, and to supporting conservation of native plants and their habitats. The group is guided by a volunteer steering committee. Members are encouraged to volunteer for this committee. Participation in outside events, by the group, or by individual members using the NPSG name, is dependent on approval of the steering committee or, where indicated, by the at-large membership. Activities requiring funding must receive approval by the general membership.

Chair: Angela Deering
Co-chair: Valerie Elliott
Speakers:.. Moralea Milne
Treasurer: Catherine Fryer
Newsletter: . Moralea Milne
Plant Rescue: Todd Doherty
Field Trips: Jean Forrest
Pat Johnston
Membership: Agnes Lynn
Publicity: Valerie Elliott
Room Set-up: Pat & Wayne Robertson
Plant Raffle: . Heather Pass
List-serve: Linda Beare & John Olafson
Refreshments: Pat McMahon
VHS Liaison: Heather Pass

Native Plant Study Group members are required to become members of the Victoria Horticultural Society. Fees are \$25.00/yr and help pay for insurance to cover field trips. Send \$ to Box 5081 Stn. B, Victoria, V8R 6N3

The NPSG Newsletter is written and produced by Moralea Milne

Victoria Natural History Society
www.vicnhs.bc.ca
Native Plant Society of BC
www.npsbc.org
South Vancouver Island Mycological Society
svims.ca

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VOLUNTEER OPPORTUNITIES

- The Anti-ivy League of Cadboro Bay is fighting an ongoing battle. Is your warrior spirit ready to tackle the soul-sucking expanse of this pernicious weed? Contact Agnes at 721-0634 or thelynns at shaw.ca for more info.
- Hospital Rock: Contact Agnes as above
- Volunteer at Swan Lake Christmas Hill Nature Sanctuary For further details contact Joan at 479-0211 or email volunteer@swanlake.bc.ca.
- Beacon Hill Park Ivy Pull, Saturdays (except long weekends), 9 am-Noon southeast woods near Cook and Dallas. Bring gardening gloves. No dogs. Volunteers welcomed. Call Cornelia, 920-3556 or kacy at islandnet.com .
- Oak Bay Native Plant Garden meet every Fri. morning from 9-11, weather permitting. Corner of Beach Drive and Margate Avenue. New members welcome. Guided walks in March and April.
- Brighton Avenue Walkway Restoration. Removal of invasives and re-planting of native species in a Garry Oak rocky outcrop situation. Work each Sun. 9:30 - 11:30. Meet at Hampshire and Brighton, 2 blocks south of Oak Bay Ave.
- GORP Schedule..... 9:30-11:30
Sat Nov 17 Mahon Brook. Sheet mulching
Sun Nov 18 Playfair Park. Remove invasives
Sat Nov 24 Chatterton Hill Park. Remove invasives
Sat Dec 1 Camas Park. Remove blackberry & cyclamen
Sat Jan 12 Feltham Park. Remove ivy & blackberries
Sat Jan 19 Chatterton Hill Park. Remove invasives
Sat Jan 26 Camas Park. Remove invasives
Contact Jennifer Eastman at: 744-1710

EVENTS AND OUTINGS

Every Saturday at 1:30 pm: Tour of Merve Wilkinson's Wildwood Forest, Ladysmith. Jay, 250-245-5540
www.ecoforestry.ca/WildwoodMap.htm

For information on many environmental activities in our area check the Green Diary from the EcoNews website at earthfuture.com/greendiary/

Consult the CRD parks website for detailed information on their programs; wear appropriate clothing for the weather and sturdy footwear for all outings:
www.crd.bc.ca/parks

For all VNHS activities, please contact Agnes at 721-0634 or email her (thelynnns at shaw.ca) if you need more information. No pets please. Bring a lunch and plenty to drink for the all day outings. Check the Victoria Natural History Society at vicnhs.bc.ca

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- Sat 17 9am-noon Royal Roads Course: Tree Identification in Autumn and Winter. \$40. 391-2600 x 4801 or royalroads.ca/continuing-studies/GLHO1293-Y07.htm
- Sun 18 10am The Wonderful Mushroom Hunt. Adolf and Oluna Ceska will introduce participants to our wildly varied fungi, some of which are delicious while others are lethal. Meet at the Clapham Dr. access to Metchosin Park. Jean, 383-3336
- Tue 20, 7:30pm VNHS presents "Three Years of Mushroom Survey on Observatory Hill", with Oluna and Adolf Ceska. Swan Lake Nature House.
- Sun 25 1pm CRD Parks Horth Hill Hike. Meet at info kiosk in parking lot off Tatlow Rd.
- Tues 27 7:30 VIRAGS High Altitude Mexican Plants Gordon Head United Church, 4201 Tyndall

DECEMBER

- Sun 2 CRD Parks 1-3:30pm The Other Side of Witty's, meet at Nature House off Metchosin Rd
- Sun 9 CRD Parks 10-noon Craigflower Cr Trail, meet at trailhead off Highland Rd off Watkiss Way
- Sat 15 CRD Parks 1 pm Ancient Trees of Francis King Park, meet at Nature Centre off Munn Rd
- Sun 30 CRD Parks 10-2pm Sooke Potholes Ramble, meet at info sign in parking lot 1
- Mon 31 CRD Parks 10-1 pm Turkey Trek at Elk/Beaver lakes, meet at main Beaver Lake parking lot

For UVic events:

New parking policy--pay parking is in effect 24 hours a day. You must purchase a \$2 parking permit for the evening.

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SPEAKER SCHEDULE

January 18, 2008

Invasive Plants of Southern Vancouver Island

Wendy Tyrell is a director with VNHS, a member of the Invasive Species Steering Committee of GOERT, Land Officer at HAT, and Coordinator for the Coastal Invasive Plant Committee, a group concerned about the increase of non-native plants in the coastal region of BC.

February 21 Dr Richard Hebda Topic TBA

An expert on native plants, Richard is Curator of Botany and Earth History at the Royal BC Museum, a beloved instructor in the Restoration of Natural Systems program at UVic, author of more than 90 scientific papers and many articles on native flora and ethnobotanical studies.

March 20 Lindsay Coulter TO THE RESCUE: protecting B C's rich biodiversity

B.C. is home to 76 per cent of our nation's bird species, 70 per cent of its freshwater fish species and 66 per cent of its butterflies. Unfortunately, the province's biological wealth is under threat – more than 1,300 species are at risk of disappearing. Find out which species are at risk of disappearing and how you can help.

Lindsay Coulter completed her BSc. in Zoology at the University of Alberta, currently she's the Conservation Policy Analyst with the David Suzuki Foundation.

April 17..... Topic TBA

Mystery presentation! Due to a forgotten previous commitment the topic and speaker for this evening is still a work in progress. Stay tuned

May 15

Fran Benton No Love for Langford

How living in Langford changed Lindsay from a mild mannered botanist into a Garry Oak Meadow activist. Fran Benton teaches at Malaspina University College in the visual arts, recently she has been working in film and digital media.



ECOLOGICAL TERMS

Below are some terms I have come across in various writings, they took a bit of searching to find the meanings:

Exogenous-disturbances originating outside a system of interest which cause allo-genic succession

Allogenic succession example-glacier retreat or flood

Endogenous-disturbances originating within a system of interest which cause autogenic succession

Autogenic succession example-gopher mound or species competition

"Any given disturbance is probably caused by a combination of both processes and

the relative importance of each will change with time"
"The intensity of a disturbance, the amount of damage and the frequency of disturbance is a disturbance regime. These factors may be synergistic and enhance the degree of impact of the above factors".

Nitrophytic-growing in a nitrogen rich environment, often used to describe species which require or tolerate high amounts of nutrients (skunk cabbage, trillium, cow parsnip)

Oxylophytic- species growing in humous rich, acidic, nutrient poor conditions (false azalea, many-flowered woodrush, rattlesnake plantain)