

White-top Aster



NATIVE PLANT STUDY GROUP

FOR BETTER OR WORSE

Adaptive Management Techniques for Rare Species Management

Andrea Schiller is a federal lands natural resources specialist involved in adaptive management techniques for rare species management. There are two options being used to handle threats to Species at Risk on federal lands in this area. One option is protection and at Rocky Point and Albert Head, seibert stakes are used for this method. The other option is adaptive management, which is used at Macaulay Point for the Purple Sanicle and Dense-flowered Lupine; at Bentinck Island for Seaside Birds-foot Lotus; at Rocky Point East, again for Seaside Birds-foot Lotus and at Observatory Hill, for White-top Aster.

Approximately 100 Garry oak and associated ecosystem species are at risk of extinction. 60 of them are plants and mosses. These species occur on private, municipal, provincial and federal lands (some of the species include: Erect Pygmyweed (*Crassula connata* spp *connata*) red list, Dense-flowered lupine (*Lupinus densiflorus*), Rigid Apple Moss (*Bartramia stricta*) Endangered, Purple Sanicle (*Sanicula bipinnatifida*) Threatened, Coast Microseris (*Microseris bigelovii*) Endangered. Red list, Poverty Clover (*Trifolium*

depauperatum spp *depauperatum*), Seaside Bird's foot Lotus (*Lotus formosissimus*) Endangered, White-top Aster (*Sericocarpus rigidus*) Threatened.

Regardless of the property owner, the threats to these species remain the same. They are threatened by habitat loss and fragmentation, human disturbances, encroachment woody species, and invasions of exotic species. But, this info isn't new. We have heard about these numbers, these species and these threats for years. But what do we do about it? This is the question that has been facing land managers for years. The Department of National Defense – CFB Esquimalt is taking action to protect the number of plant species at risk on their properties. To mitigate these threats and to provide good stewardship of these SAR, DND has initiated a number of projects to protect the species. Adaptive management is learning while doing. Adaptive management does not postpone action until "enough" is known but acknowledges that time and resources are too short to defer some action, particularly actions to address urgent problems such as declines in the abundance of valued biota.

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The essence of managing adaptively is having an explicit vision of the ecosystem one is trying to guide. That vision provides a baseline for defining surprise. Regular observations of management areas allow us to detect and react to 'surprises'. Without surprise, learning does not expand the boundaries of understanding.

To minimize the impacts of negative surprises, management is limited to relatively stable populations, and only conduct the activities on a fraction of the populations that are on federal lands. The hope is to use the information collected from this project, and apply the knowledge and management to other sites. Before any management of threats for rare plants, consultation with botanists IS REQUIRED, so that timing of management techniques minimise negative impacts on rare species.

To protect sensitive habitat for SAR in training areas, Seibert Stakes have been installed at Rocky Point and Albert Head to identify sensitive areas and to establish a perimeter of No-Go Zones. Macaulay Point, DND land leased to the Township of Esquimalt, is home to 2 COSEWIC listed species – Dense-flowered Lupine (Endangered) and Purple Sanicle (threatened). It is also one of the few DND properties that allows public access and is an off-leash dog park.

These species occur in several sub-populations on the property, however, Stewardship actions have cautiously been started on just two subpopulations. The SAR are either threatened by direct human or canine activity, or through invasion of exotic species. The first population is impacted by people.

The ultimate goal of this initiative was to redirect foot-traffic from these two pathways, onto the more formal pathway curving to the left. Initially a living fence of Nootka rose, currant, and mock orange was planted. Unfortunately, the fence did not establish

and thrive so plan B was activated. The result was a spilt rail fence which protects the entire slope effectively cutting off access to the SAR from the crest of the slope.

Invasive species were also threatening these plants so a large scale removal was conducted in Fall 2004. This really opened up the area. Unfortunately, this also opened up the area for activity for people and their pets. With the major exception of paths, Purple Sanicle leaves were very rarely damaged.

To complete the stewardship efforts for Macaulay Point, educational signage will be installed in the near future to provide information on Garry Oak Ecosystem restoration and the SAR on the property. It is anticipated that this signage will raise awareness for the site and its unique characteristics, encourage the sense of community ownership for the property and foster respect and perhaps involvement for restoration efforts.

The other SAR at Macaulay Point is Dense flowered Lupine (DFL), *Lupinus densiflorus* (Endangered). Dense-flowered lupine is an annual. It experiences some browsing pressure. Not sure who is eating the Lupine but it seems like

human disturbance is more important than grazing for DFL, some of which occur right along heavily used trails, there are problems with trampling and heavy use by dogs.

Bentinck Island, an island off Rocky Point, has a number of SAR, one of which is *Lotus formosissimus* (Endangered). This species is threatened by invasive species and by grazing. To mitigate the threats of invasive species primary removal of Scotch broom was conducted in 2004 (debris burned in a burning barrel above the tide-line, and secondary removals of



Calypso orchid

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thistles and tansy ragwort. Grazing was mitigated by using cages.

Invasive removals were timed to occur when SAR were dormant and had dispersed seed. In 2006 broom seedlings and resprouts are coming up again....stewardship is a long-term undertaking!

Five crab traps were installed over LF to protect them from grazing. Five additional areas were marked as controls. The impact of these efforts are being monitored. There is evidence of rabbits at the site and damage to the unprotected LF is being attributed to these invasive species. Cages were disturbed (used for crabbing!). So for 2006 signs were attached to the cages.

The information that has been collected to date verifies that grazing is indeed impacting the seed production of this endangered species suggesting that further protection measures be implemented at this site (more cages?).

Bear's-foot Sanicle (BFS) is known from 5 sites in Canada, 2 of which are on Bentinck Island. It is threatened by habitat loss and encroachment by woody species. BFS occurs in coastal meadows which are usually heavily invaded by broom.

Another patch of *Lotus formosissimus*, on the mainland section of Rocky Point is threatened by habitat loss and degradation as a result of conifer encroachment. Scotch broom (*Cytisus scoparius*) has invaded White-top Aster patches. Less light may mean decreased flowering. Our initial reaction is to remove the broom. However, Hans Roemer had observed that white-top aster (*Aster curtus*) was heavily grazed on Mill Hill, and that least grazed plants were nestled between shoots of Scotch broom. CRD Parks and Canadian Forest Service have undertaken major broom removal projects around the largest white-top aster populations.

As federal land managers, faced with the task of providing stewardship to rare plants that exist on federal properties we want to know, for sure, that our actions do not further jeopardize the SAR. As a result when faced with daunting sites such as these, we feel compelled to take action but are unsure of the impacts of these activities, so the uncertainty may make us sit on our hands, and wait.

Questions we ask ourselves: what is the impact of broom removal on grazing pressure of White-top Aster? Who is the main grazer of White-top Aster? What is the Black-tailed Deer and Eastern Cottontail populations?



Menzies' Larkspur

With broom removed there were more flowering plants. White-top Aster seems to benefit from broom removal (increased flowering). Need more years of monitoring to determine for certain. Could be weather related or another unknown factor. Rabbits appear to be main grazer of White-top Aster.

Summary and Conclusion:

Adaptive management will work. Management plans need to be thought through, expert advice should be sought and all of the tools that have been developed should be used. It is most important with adaptive management that there is continuous observation of the management area and a willingness to react to the surprises that come along the way. With a cautious approach, these SAR can be saved.

Future plans include monitoring and adapting these projects and managing more species at risk.

SPEAKER SCHEDULE

May 17 Dave Blundon *Grasses Are Too Hard!*

Ever felt like a subject is just too hard to attempt? But wouldn't it be wonderful to impress your friends and family with your astonishing grasp of grass identification?

Grasses and grass-like plants could be considered the foundation of our woodland, grassland and terrestrial herbaceous communities. Which are native and which are usurpers? David Blundon, Biology Chair at Camosun College, will take us on a virtual identification tour of our local graminoids.

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BIGLEAF MAPLE (ACER MACROPHYLLUM)

Wandering through the parks and along the roads of the Victoria area in early April, you will find our native bigleaf maples in full but subtle bloom. While still bare of leaves, their profuse, pendant clusters of yellow-green flowers whisper that it is spring. Later, their paired, winged seeds float from the branches like legions of miniature helicopters.

The bigleaf maple is a long lived (200 years), fast growing, often multi-stemmed, hardwood tree of the west coast that can reach 35 metres in height and an equal distance in spread. It thrives on the rich, moist soils found along streambanks or in seepage areas. The lightly furrowed trunk on an ancient tree can reach 3 metres in diameter and it has the largest leaves of any maple in the world, often the size of a dinner plate.

Scientists and environmentalists often speak of ecosystems, defined not so simply, as a "localized group of interdependent organisms together with the environment that they inhabit and depend on". Many of us in Metchosin live within the unique and endangered Garry oak ecosystem. But did you know that a single bigleaf maple can be an ecosystem unto itself?

The calcium rich bark of an old maple or one growing in shady conditions, can be adorned in mosses, lichens, liverworts, ferns, bacteria and fungi, virtually obscuring the trunk and branches. The three most common mosses found on a bigleaf maple are yellow moss (*Homalothecium fulgescens*), rough moss (*Claopodium crispifolium*) and Lyell's bristle moss (*Orthotrichum lyellii*). It has been reported that the weight of all these accessory plants can equal four times the weight of the leaves. Living within these well

clothed areas can be countless insects and spiders, even earthworms inhabit the soil that builds up in the crotch of branches and under the mosses. The thick accumulation of maple leaves under the trees seems to provide ideal, cool, moist habitat for frogs and salamanders and the calcium in the leaves makes

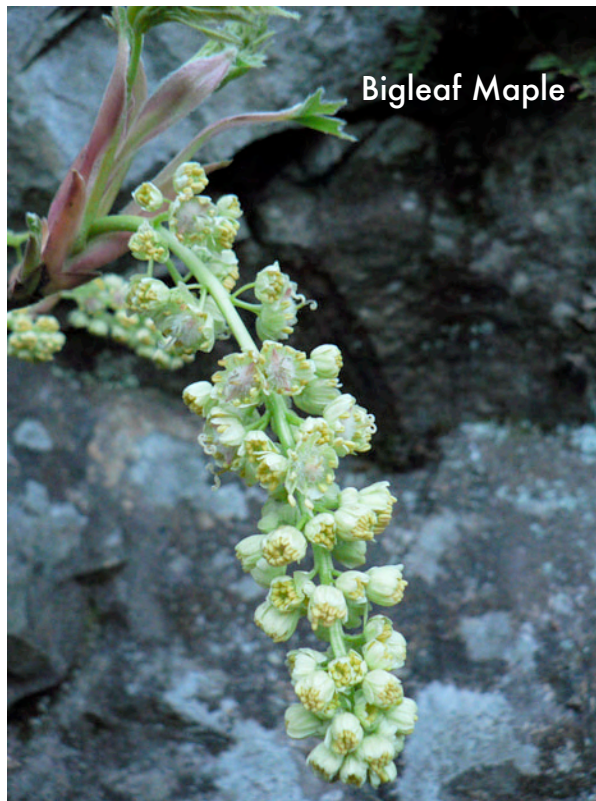
available good quality food for snails such as the Pacific Sideband, our largest land snail and for the endangered Oregon Forestsnail.

The weight of waterlogged mosses can cause huge old branches to break off and the resulting damaged areas are attacked by bacteria and fungi. These produce soft rots which allow woodpeckers, nuthatches and chickadees to create cavities for other creatures to use and inhabit. The seeds, buds and flowers are consumed by small mammals and birds; bees and butterflies flock to the nectar laden flowers; while deer find the twigs an acceptable browse. One of our largest and most beautiful butterflies, the western tiger swallowtail, uses bigleaf maples as a host plant for its caterpillars.

Ecologically, bigleaf maples are able to withstand floods and they are adapted to survive fires by resprouting, enabling the landscape to recover more swiftly from these disturbances.

First Nations peoples named the bigleaf maple the paddle tree, as its wood was used to fashion canoe paddles and other implements. The fiber from the inner bark was made into rope and baskets or dried and pounded into a powder for use as a thickener in cooking. The close grain and moderate hardness of bigleaf maple wood make it ideal for furniture, veneer, interior finishing, and musical instruments.

Our maples have a lower sugar content than their eastern counterparts but apparently the taste of the (Continued on page 4)



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EVENTS AND OUTINGS

- **For all VNHS trips:** call Agnes Lynn at 721-0634 or email her (thelynns@shaw.ca) or vicnhs.bc.ca "No pets please.
- For information on many environmental activities in our area check the Green Diary www.earthfuture.com/greendiary/
- CRD parks website: www.crdparks.bc.ca
- Every Sat at 1:30 pm: Tour of Merve Wilkinson's Wildwood Forest, Ladysmith. Jay, 250-245-5540

Fri, April 20 VNHS Visit to Lake Cowichan Wildflower Reserve. Meet at Helmcken Park and Ride at 9:00 a.m. to car-pool. Day-long outing.

Sat, April 21 - Sunday, April 22 VNHS Butterfly Count. If you would like to participate, please contact James Miskelly at jmiskelly@telus.net.

Sun, April 22 VNHS Plants of Uplands Park & Cattle Point with Matt Fairbarns. Cattle Point/Uplands Park is on Beach Drive between Oak Bay & Cadboro Bay. Meet at the nature sign at the Cattle Point waterfront parking area at 9:00 am 3 hour outing.

Thurs, April 26 VNHS Meander Around UVic's Finnerty Gardens. Meet outside the UVic Chapel at 6:00 p.m. for an approximately 1 hour tour. To find the Chapel, go around the Ring Road and look for Parking Lot 6.

Fri, April 27 VNHS. Mount Tzouhalem Ecological Reserve. Meet at Helmcken Park and Ride at 9:00 a.m. to car-pool. Day-long outing.

Sun April 29 CRD Parks. Seaside Blooms with a View. Witty's Park. 1-3 pm. Meet at Tower Point parking lot off Olympic View Dr.

Mon April 30 CRD Parks. Sooke Potholes Ramble. 10-2 pm. Meet at info sign in parking lot 1.

Sat, May 5 VNHS 16th Annual Camas Day at Beacon Hill Park. There will be a Bird Walk at 7:30 led by Rick Schortinghuis of VNHS; Bird Walk at 9:00 led by Tom Gillespie of VNHS; Wildflower Walk at 11:00 led by Plant Ecologist Matt Fairbarns; Wildflower Walks at 11:00 am & 1:00 pm led by Dr

Brenda Beckwith; Archaeology Walks at 11:00 am & 1:00 pm led by Dr Grant Keddie; All About Bugs Walks at 11:00 am & 1:00 pm with Michelle Gorman and a Heritage Tree Walk at 1:00 pm with Agnes Lynn. Events start at the flagpole on top of Beacon Hill. Contact 592-6659 or www.friendsofbeaconhillpark.ca

Thurs, May 10-May 13

Botany BC 2007 in Osoyoos, B.C. BOTANY BC's annual meeting is open to anyone interested in plants. Contact: Elizabeth Easton (250) 953-3488 email: Elizabeth.Easton@gov.bc.ca For more details & the registration form see: <http://members.shaw.ca/dmeidinger/botanybc/>

Sun, May 13 CRD Parks. Marvelous Matheson. 11-2 pm Meet at parking lot off Matheson Lake Rd.

Tues, May 15 BOTANY NIGHT "Plants and Poetry" Andy MacKinnon will present a second installment of his Poetry Night. Contact Andy to include your own poetry or your own choice at metchosinmacs@yahoo.ca Swan Lake Nature House, 7:30 p.m. Everyone welcome, bring your friends.

Sat, May 26, CRD Parks. Hike from Francis King to Thetis Lake. 10-2 pm. Meet at Nature Centre off Munn Rd.

Bigleaf Maples Continued

syrup is at least as good, if not superior. There are often workshops held in January on the fine art of tapping maples, usually presented through Malaspina College or the Nature Conservancy at their Wildwood Forest site. The barely opened young flowers are edible and the taste is rather like raw broccol. Older flowers though become somewhat bitter. Their rapid growth and drought tolerance make our bigleaf maples good candidates for shade trees. With their gorgeous spring blooms, their fall colour that has been described as a "blaze of yellow glory" and their value to wildlife, they offer many reasons to plant them in your yard. Give them some room to grow and a modest amount of supplemental water and soon your home will enjoy the shade supplied by nature's air conditioner. However, exercise caution and plant them away from your septic system or the fast growing roots might block the field.

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Have you visited our beautiful website at www.npsg.ca? It has been built through the talented and generous efforts of Valerie Elliot and Stephan Jacob of ID2 Communications (www.id2.ca)

VOLUNTEER OPPORTUNITIES

Volunteer at Swan Lake Christmas Hill Nature Sanctuary For further details contact Joan at 479-0211 or email volunteer@swanlake.bc.ca.

Hospital Rock: Help restore a remnant Garry oak ecosystem, meets at 9 am Tues and Sunday mornings. Contact Agnes for more information at 721-0634 or thelynns@shaw.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@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. Work each Sun. 9:30 - 11:30. Meet at Hampshire and Brighton, 2 blocks south of Oak Bay.



The Native Plant Study Group meets on the third Thurs of the month from Sept-May except Dec at 7 pm in Rm D116, MacLaurin Building, UVic. Please join us. Membership fees are \$15.00 annually or \$2.00 for drop-in

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

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.

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