



menziesia

Summer 2010 NPSBC Native Plant Society of British Columbia www.npsbc.org Volume 15, Issue 3

Grassland workshop reveals subtleties of Lillooet landscape

A sold-out 2010 NPSBC/Forrex Grassland Ecology and Grass Identification workshop held in Lillooet provided new insights for participants interested in learning more about one of BC's most interesting habitats.

The workshop, led by grassland ecologist Don Gayton, was held in two parts -- a hands-on evening session on identifying both native and introduced grasses, followed by an all-day field session.

In the field, participants were able to learn more about the individual species, the interactions between those species as well as such things as fire ecology and impacts from invasive plant species. A further treat was provided by a look at a local restoration effort on the site of a highly disturbed grassland, riparian and gravel bar site. (Look for more on this project in the fall issue of *Menziesia*.)

Workshop participants travelled north to Hat Creek for a look at higher elevation grassland, replete with an amazing variety of spring wildflowers.

Many thanks to workshop leader Don Gayton and to Forrex. Big thanks also to the Lillooet Naturalist Society for their invaluable efforts in organizing the workshop and to the Sékw'elw'as (Cayoose Creek) Band for hosting the evening session and for arranging an amazing wild foods dinner that included steamed stinging nettle (*Urtica dioica*), a hooshum drink (*Shepherdia canadensis*) and tea made from Labrador tea (*Rhododendron groenlandicum*). *



Photo : Daron Hanna

Grassland guru: Workshop leader Don Gayton talks about the role of Ponderosa pine in the grasslands of BC

Whistler BioBlitz 2010

Join us for something a little different! NPSBC members have been invited to be part of BC's most successful BioBlitz -- at Whistler.

You'll be part of a team that will try to count as many plant species as possible in 24 hours within the alpine and valley ecosystems of Whistler.

The results will become part of the Whistler Biodiversity Project, a multi-year effort to catalogue and protect native biodiversity (and bolster the need for protected areas).

A BioBlitz introduces people to real (and fun) science and the amazing diversity surrounding us. The concept of BioBlitz was created by Harvard biodiversity icon E.O. Wilson to raise awareness of the huge diversity of animals and plants, even in developed areas.

Interested? Contact Dawn at dawnhanna@telus.net or at (604) 831-5069.



Viola adunca

Welcome to our new members!

David Abbott, Vancouver
 Jessica Allen, Merritt
 K. Eleanor Anderson, Burnaby
 Martin Anderson, Victoria
 Janice and Bill Balakshin, Chilliwack
 Irv Banman, Duncan
 Rita Barten, Lillooet
 Judy Bodaly, Lillooet
 Adrienne Brown, North Vancouver
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 Terry Hurst, Lillooet
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 Chris Junck, Victoria

Sarah Kantner, Victoria
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 Victoria
 Maria Mascher, Lillooet
 Jane McAllister, Duncan
 Kathryn McCourt, Summerland
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 Linda & Gerd Mueller, Vancouver
 Carol Nygren, Seattle
 Jim & Kathryn O'Donnell, Duncan
 Kathleen Perkin, Victoria
 Genesis Point, Lillooet
 Travis Rankin, Lillooet
 Jacqie Rasmussen, Lillooet
 Valerie Robinson and Kerry Davis,
 Mill Bay
 Gillian Smith, Lillooet
 Peggy Smith, Duncan
 Wylie Thomas, Victoria
 Beverly Vreeswijk, Saturna Island
 Eleanor Wright, Lillooet

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Feature articles are the sole responsibility of their authors. Opinions expressed therein are not necessarily those of the Native Plant Society of BC.

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 TO SEND MAIL to the list, address your message to NPSBC-L@victoria.tc.ca
 Send enquiries to the administrator at NPSBC-L-owner@victoria.tc.ca

NPSBC

Native Plant Society of British Columbia

Our Mission

The purpose of the Native Plant Society of British Columbia is to encourage knowledge, appreciation, responsible use and conservation of BC's native plants and habitats.

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NPSBC spring wildflower fling in Duncan draws members from around the province

By Dawn Hanna

In early May, more than 50 native plant enthusiasts from around the province came together to explore the spectacular flora of the Duncan area.

Day one started with an outing to the Somenos Garry Oak Protected Area, one of the few remaining deep soil Garry oak meadows and home to several endangered plant species.

The tour, led by plant ecologist Dave Polster touched on both the species and the challenges at the site, as well as efforts to conduct research, remove invasive species and replant with native species to restore an ecosystem that approximates the pre-contact ecosystem. Dave also led a quick tour of the nearby Somenos Marsh.

Then it was time for lunch at the Maple Bay Rowing Club, a chance to socialize and to catch up on what the Native Plant Society of BC has been doing for the past few months.

The afternoon was spent getting to know the Cowichan Garry Oak Preserve, owned by the Nature Conservancy of Canada.

The tour was led by site manager Irv Banman, who has been doing restoration work at the site since 2001. Participants were able to check out the native plant nursery on site and take a wander (single file, on designated trails) through stunning Garry oak meadows. Irv also spoke of the numerous research projects going on at the site to provide more information on such things as best management practices for removing invasive species, managing encroaching woody native species and native plant propagation.

On the second day, participants took part in one of two field trips: one to Mount Tzouhalem and another to Eagle Heights, south of Duncan.

Big thanks to Lynn Woodgate for helping to organize all of the outings and lunch spot. And big thanks as well to Dave Polster and Irv Banman for sharing their time, expertise and passion. *



Floral exploring: Some of the participants in the NPSBC Spring Wildflower Fling gather at the Cowichan Garry Oak Preserve for the obligatory group shot (above). The endangered *Balsamorhiza deltoidea* (deltoid-leaved balsamroot) grows on the slopes of Mount Tzouhalem (right). Irv Banman, site manager of the Cowichan Garry Oak Preserve talks about one of the biggest, oldest Garry oaks (more than five metres in circumference) known on the planet (below).

Photos: Dawn Hanna



Field trip snapshots

April flowers (right): On a cool day in April, Virginia Skilton led a field trip to Campbell Valley Regional Park and Hi-Knoll Park in Langley in search of spring wildflowers. The highlights were Hi-Knoll's fawn lilies (*Erythronium oregonum* and *E. revolutum*), which had intrepid photographers down on their knees (and other positions).



Photo: Dawn Hanna



Photo: Bob Holden

May blooms: (no picture) Hugh Daubeny and Nadine Robinson led a tour of native species at the UBC Botanical Garden, including the spectacular double-flowered *Rubus spectabilis* (salmon-berry) and ongoing Garry oak habitat project.

June blossoms (left): On a warm day in June, Dawn Hanna led a field trip to Iona Beach Regional Park in Richmond to talk about some of the unusual plants and red-listed plant communities found in rare sand dune habitat at this little known regional gem.

NPSBC volunteers promote natives at VanDusen Plant Sale

Despite a day that began with pouring rain, gardeners from across the Lower Mainland turned out in droves to the annual VanDusen Plant Sale on Apr. 25. More than 40,000 plants are offered for sale that day and, happily, the sale featured a Native Plant Section.

Volunteers from the Native Plant Society of BC provided advice on native plants to a wide variety of gardeners, from those looking to expand an existing native garden to those looking at natives for the first time.

Many thanks to Luc Turcotte for organizing the native plant section and helping recruit volunteers. Thanks as well to the volunteers (listed below) who helped get everything organized on the day before the sale and who braved the changeable weather and helped make the native plant section one of the most successful of the day (almost \$10,000 of native plants were sold).

Thanks also to Lee Larkin of BC Wild Heritage Plants, Paulus and Annemieke Vrijmoed of Linnaea Nurseries and Anne and Roy Vidler of Wildside Native Plant Nursery for providing such healthy, beautiful examples of native plants available for the home gardener. ✱



Photos: Paulus Vrijmoed

Volunteer Erin Skelton (with hat) provides some friendly advice to an inquiring gardener.

Volunteers:
 Anna Bentley
 Irmgard Carter
 Irene Dungate
 Tanis Gieselman
 Jackie Gill
 Dawn Hanna
 Val Karlsson
 Alis Kilian
 Leslie Ingram

Wayne Ingram
 Doug MacDonald
 Marilyn Mount
 Deb Rudo
 Erin Skelton

Frank Skelton
 Michelle Stuart
 Amelia Sullivan
 Raakel Toppila
 Ross Waddell

Harewood Plains showcases a wide array of native wildflowers

By Charles Thirkill

Robert Louis Stevenson once said: "It is better to travel hopefully than to arrive.". That may be true, but the journey of life is a train of unforeseen events, and arrival has its rewards. The Friends of Harewood Plains is celebrating their arrival at a goal set five years ago at a community meeting in Nanaimo: the declaration of a floral emblem that is one of the constellation of flowers found on Harewood Plains in Nanaimo.

This bright star, called *Lotus pinnatus* (bog bird's-foot trefoil) is considered endangered by the Committee on the Status of Wildlife in Canada (COSEWIC) and is globally rare but locally abundant. The yellow-and-white flower is a member of the *Fabaceae* family that places stringent requirements on its habitat. It must have thin soils and running water on friendly bedrock. On Vancouver Island, the bedrock is Nanaimo conglomerate; on Harewood Plains, it is an unbroken slab of rock that slopes gently from west to east for two kilometres, sustaining a Garry oak meadow with a myriad of native flowers and shrubs. A recent inventory by Dr. Adolf Ceska showed the presence of at least 15 rare plants on the plains.

The dominant species on the open meadows are *Camassia quamash* (common camas), *Camassia leichtlinii* (great camas) and *Plectritis congesta* (sea blush), which compete to turn the landscape blue and pink respectively. It is a happy contest with many spectators but no clear winner. *Mimulus guttatus* (yellow monkey-flower) and *Saxifraga ferruginea* (Alaska saxifrage) are everywhere, with a liberal spicing of wild onions. *Allium cernuum* (nodding onion), *A. acuminatum* (Hooker's onion) and *A. amplexans* (slimleaf onion) are clustered in selected patches and *Delphinium menziesii* (Menzies' larkspur) adds its pensive, deep blue



Photo: Dawn Hanna

Lotus pinnatus

pigment to the palette. It all adds to a riot of colour that stimulates the retina and touches the hearts of all who see it.

Looking at the *Lotus pinnatus* on Harewood Plains, one is hard-pressed to call it endangered. There were 1,550 plants there in 2003 when the first inventory was done for the COSEWIC status report. There are more plants this year, possibly as many as 2,000 because conditions are so favourable. Patches can be seen where there were none before, and the known colonies seem to be more abundant than ever. The biggest threat to the flowers are the tires of the off-road vehicles that churn the shallow mud in which they grow.

The vernal pools around which the flowers flourish are home to native frogs and dragonfly larvae. Garter snakes have been seen hunting the tadpoles, making quite a spectacle as they writhe around in hungry pursuit. Where there are no tire tracks, the aquatic life abounds, but where the regular imprints of vulcanised rubber are found, there is no life.

Fortunately, things are looking up. Six years of broom clearing have

liberated the meadows for the native plants and large rock placements are selectively deterring off-road vehicles from the key meadows. Nanaimo City Council just declared the flower as the city's floral emblem and the nearby communities have banded together to form The Friends of Harewood Plains. We are celebrating our rarest wildflower resources with regular weekend walks and may conduct an arts contest to select paintings and photographs of the flowers.

All this is possible because the project has funding. The Habitat Stewardship Program, the Garry Oak Ecosystems Recovery Team, BC Hydro and Island Timberlands have made significant and long-term commitments to protecting and restoring the site. Without funding, broom-clearing would not be possible. With funding, we have cleared broom from two kilometres of hydro right-of-way, an area of 20 hectares. Even then it took six years of summer work for high school and university student crews, and the work will never be completely done. Funding has been generous, but seldom timely. The

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Harewood Plains, cont. from page 5

work needs to be done in May, when the broom is in bloom, but funding usually arrives in August, when the shrubs have long since gone to seed. Students cannot work today and be paid two months later, so someone has to take a risk and dip into their own accounts if the work is to be done, creating a tension that one could live without.

The future is full of opportunities and part of Harewood Plains could possibly become a park if everything falls into place at the right time. Parts of it could also be developed, since it is already zoned. The only barriers to construction are the meadows themselves, which are designated as environmentally sensitive areas. The remaining land is forest, with thin topsoil and hard bedrock that would require blasting. Given the terrain, it is difficult to see anyone profiting from the effort; we hope that wisdom prevails.

So what is the next step? We will celebrate our modest success, and will continue to keep the invasive plants at bay. We will enjoy the wildflowers, as they propagate (free of inhibiting allelopathic chemicals called sparteines produced by broom) for the first time in many years. *Fritillaria affinis* (chocolate lily) appears to have increased by as much as tenfold in the last three years. In 2004, a comparative phenology study showed that Harewood Plains sustained similar species to Nanoose Hill (another Garry oak habitat about 20 kilometres northwest), but with fewer specimens. This year, the balance has shifted and the open meadows are producing flowers at full potential.

It is indeed a special place, one well worth visiting and easily accessible to all. Access is from Extension Road, in the southern part of Nanaimo, up McKeown Way to the very end, then on foot up the hydro right-of-way. A two-kilometre walk up the gravel right-of-way and into the adjacent open meadows is a well-spent two or three hours in the springtime. For more information, please contact the author at thirkill@telus.net *

Charles Thirkill trained as a research chemist, then as a fisheries biologist. He is a self-trained botanist with an interest in local wildflowers. He is the author of two books: Nanaimo - City of Living Streams and The Nature of Nanaimo.



Photo: Dawn Hanna

The thin soil and sensitive biological crust that characterizes the Harewood Plains are easily damaged by off-road vehicle use and take years to recover.

A note on floral emblems

Many jurisdictions have official “flowers”, although the designation usually confers no special protection or legal status. Many official flowers are generic, such as Vancouver’s official flower “the rose” and Burnaby’s “the rhododendron”, or are non-native species such as the cultivated “Pride of PoCo azalea” for Port Coquitlam and the marigold for Kamloops.

However, there are some indigenous exceptions and one hopes that it is a growing trend that will help promote the visibility of native plant species in the province. Below, a few examples:

- The official floral emblem of BC (adopted in 1956) is the flower of *Cornus nuttallii* (Pacific dogwood) but it is not the official tree emblem of the province; that little known distinction rests with *Thuja plicata* (western red cedar), adopted in 1988.
- In 2001, Kelowna adopted *Balsamorhiza sagittata* (arrowleaf balsamroot) as its official flower, although they refer to it as Okanagan sunflower.
- In 2007, Lake Cowichan council recommended that *Erythronium revolutum* (pink fawn lily) represent the flora emblem for the town of Lake Cowichan.
- In 2008, Dawson Creek named *Solidago canadensis* (Canada goldenrod) as its official flower.

If you know of other native species that have been adopted as floral emblems in BC, please let us know (email dawnhanna@telus.net).

For the latest news and updates on activities, be sure to check the Native Plant Society of BC website at www.npsbc.org

Native plant species suffer under “management” at Swan Lake in Vernon

By Malcolm Martin

Native plants are one thing; weedy aliens are another. Seldom is much attention given to reviewing the history of badly altered property despite the effect that introduced plants can have on the native flora. With knowledge comes understanding, leading – it must be hoped – to sounder management.

The shores surrounding the shallow waters of Swan Lake are close enough to Vernon always to have been an attraction and therefore vulnerable to human activity. As settlement proceeded in the Okanagan late in the 1800s and through the twentieth century, it was cattle raising in particular, boosted by needs from the mining camps of the Cariboo, that came to the fore, leading to several large ranching operations north of Vernon. Livestock at that time would have ranged freely over hillside grasslands and surrounding dry forest during summer and been brought down into the valley for wintering where, for much of the early period, they would have had free access around Swan Lake. Disturbance of some sort has therefore been going on there for well over 100 years.

Physical damage from cattle trampling of lakesides and creekbanks was likely more important in those early years than were introduced weed seeds piggy-backing on imported agricultural products; the first herbarium specimen of *Centaurea diffusa* (diffuse knapweed) collected in the Okanagan, for example, is dated 1936 although it had been known in the United States for far longer.

Early in the 1920s, the first written description of Swan Lake appeared, based on visits by J.A. Munro beginning in the years following WWI. At the time Munro held a government position with responsibility for migratory birds in BC and was attempting to raise interest for a reserve of some type over the lake. Descriptions colouring his impassioned article titled *A Proposed Bird Sanctuary in British Columbia* published in the February 1922 issue of *The Canadian Field-Naturalist* are guaranteed to arouse the avid birdwatcher, giving the lake the aura of an avian Garden of Eden. Unfortunately his conservation spirit extended less to attention on vegetation. He notes that "between the edge of cultivation and the lake shore is a fringe of brush, chiefly alder, willow, mountain birch and black haw, and in several places on the east shore there are poplar and alder stands several acres in extent ... The fringe of brush along the shore is also alive with birds."

Munro shows us that agriculture had already encroached by the First World War, progressing subsequently to the clearance of trees and bushes along most of the lake to provide additional pasturage. *Report #3 of the Soil Survey of the Okanagan and Similkameen Valleys, British Columbia* gives a general description in 1949 not substantially different



Stachys palustris

from that of the present day. The cottonwood stands are now long gone, the brush fragmentary and only echoes of the thronging birds haunt the shoreline. It is fortunate that these shallow lake waters are still well used by migrant waterfowl in spring and fall. Tree and shrub planting on shore and along the outlet creek in the new reserve is in hand to restore some of the lost vegetation and help enhance habitat.

In the 1980s several attempts to purchase acreage around the south end of Swan Lake seemed to be progressing favourably enough to prompt a more detailed study of the vegetation. As it happened, negotiations fell through; however, a plant inventory covering all but late summer and fall period gives a useful insight into the situation at that time.

The area now comprising Swan Lake Nature Reserve, held jointly by the North Okanagan Regional District, Ducks Unlimited and North Okanagan Naturalists' Club differs in several ways from the area sought 25 years

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Swan Lake, continued from page 7 earlier. It also differs from the rest of the littoral zone around the lake primarily by including the wooded delta of the main inflow creek to the lake and associated "muck soil" (as the 1949 Soil Survey terms it).

Strike 1: Cattle trampling

In 2006, a detailed survey of the protected area was made (available from martinmac@telus.net) and may usefully be compared with the earlier study. One point that stands out is the complete loss of a narrow ecological zone straddling the high water level, a zone insufficiently wet to support cattails but too damp for upland grasses. It is here in the 1980s that *Stachys palustris* (swamp hedge-nettle), *Lysimachia thyrsiflora* (tufted loosestrife), *Verbena hastata* (blue vervain), *Geranium bicknellii* (Bicknell's crane's-bill), *Ranunculus cymbalaria* (shore buttercup) and several common sedges (*Carex deweyana* [Dewey's sedge], *Carex stipata* [awl-fruited sedge]) had been recorded but were missing from the latest review. Two factors suggest themselves as culprit – physical disturbance from the insensitive feet of cattle crowding the lake edge when brought in by the previous land owner each year in late summer, and vigorous spread by *Phalaris arundinacea* (reed canarygrass).

Strike 2: Introduction of invasive alien species

Reed canarygrass is perhaps one of the most devastating influences loosed by agriculture on wet meadows and shoreline habitats, and one whose destructive character has not yet outrun its abilities. As a circumboreal species, reed canarygrass undoubtedly has numerous regional strains, so populations in any particular area may be native or, more likely, have been introduced from elsewhere by agriculture with baleful results. To provide a hay crop with the characteristics demanded by farmers – aggressiveness, vigour, competitiveness, resilience – reed canarygrass has long been recommended for use on damp land.

Breeding programs and importation of Eurasian cultivars have done much to "improve" seed available for sale. It is interesting to note in A.S. Hitchcock's *Manual of the Grasses of the United States*, first published in 1935, his description that this species grows to as much as 1.5 m tall. At Swan Lake, two metres is a normal height and it is not difficult to find references on



Native vegetation at Swan Lake has suffered from introduced species such as *Salix alba* (white willow) and invasive species such as *Phalaris arundinacea* (reed canarygrass), seen here growing well in the shade. *Photo: Malcolm Martin*

the internet from other parts of North America to its reaching 2.5 m, a strong suggestion of hybrid vigour.

Forming an underground warp and weft of thick rhizomes, reed canarygrass also seeds prolifically. In addition to this, its tall growth often lodges in late summer covering and effectively stifling any small neighbouring plants thereby strengthening its arsenal for dominating a habitat. About the only species at Swan Lake able to mount any sort of resistance is *Carex atherodes* (tufted sedge), almost as tall and forming a few competitive patches

near high water level. In discussing techniques for control of reed canarygrass, several sources quote its tendency to be weakened by shading, so it is discouraging to note that in the subject area it grows almost as well beneath the shade of willows of the creek delta as it does in open country.

Strike 3: Deep plowing

One striking point arising from recent property surveys is that of the roughly 200 different species recorded, about 53 percent can be classed as non-native – weeds if you prefer, a legacy of the heavy hand of humankind over more than a century. Even that may not be the final total as several alien grasses have since arrived in gravels added to an access road, and not all the current tree and shrub plantings for habitat improvement have been of native species. It might be argued that creation of hay fields on much of the upland area has largely been at fault but seeded species for hay production are quite limited (*Alopecurus pratensis* [meadow foxtail] and *Phleum pratense* [timothy] in the damper fields; *Medicago sativa* [alfalfa], *Trifolium pratense* [red clover], *Bromus inermis* [smooth brome] and *Dactylis glomerata* [orchard grass]) on drier slopes. Rather, it was the deep plowing that caused losses, a conclusion amply justified by examination of one bank too steep for plowing that received only disc harrowing. There, among the *Elymus repens* (quackgrass) and *Sisymbrium altissimum* (tall tumble-mustard) a remnant of colourful herbs hangs on to existence showing how attractive these drier slopes running down to Swan Lake must have been before being afflicted by progress.

One zone that has suffered pitifully from the unforgiving feet of cattle holds the beds of cattails fringing the lake, damp and cool in late summer and offering tall shade from the sun to cow backs. It is difficult to find such natives as *Galium trifidum* (small bedstraw) and *Comarum palustre* (marsh cinquefoil) where *Urtica dioica* (stinging nettle), *Cirsium arvense* (Canada thistle) and *Solanum*

Samples of invasive *Alliaria* wanted

Dr. Rob Colautti is looking for British Columbians to get involved in a large international collaborative project on *Alliaria petiolata* called the Global Garlic Mustard Field Survey. The project is very interested in receiving samples from Canada. (So far the only samples they have are from the Toronto area (where Dr. Colautti did his PhD.) Details are below.

The Global Garlic Mustard Field Survey is an international collaboration aimed at obtaining much-needed data on the abundance and distribution of Garlic Mustard (*Alliaria petiolata*) across its native and introduced ranges. In our first field season last year, we received measurements and seed samples from 65 populations, with a majority from Europe – already one of the largest systematic field surveys of an invasive

species. Our goal for this summer is 150 or more.

This year we are hoping to increase participation among educators, as well as land managers and citizen-scientists who may not have much formal science training. The survey involves a simple protocol that can be followed directly or incorporated into field courses and nature surveys. A population takes two people about 2 to 4 hours to measure. We are also planning to develop internet-based teaching modules and tools to aid with monitoring and managing this invasive plant. The sampling protocol, along with contact information is available at the Global



Alliaria petiolata (garlic mustard)

Garlic Mustard Field Survey website: www.GarlicMustard.org. Ideal sampling time is 2 to 4 weeks after flowering finishes.

Please contact me at rob.colautti@duke.edu if you would like to participate. ✱

Swan Lake, continued from page 8

dulcamara (European bitter-sweet) now hold prime place. Not surprisingly, it is a perimeter gravel track around half the property that boasts the highest and most varied weed list – a place for botanical punishment.

Not all the introductions are without interest, though. Use of tree willows for ornament or possibly to provide material for basketry appears to have a long history in the Vernon area. Fallen branches that are swept downstream root easily so the hybrid (*Salix x rubens*) is not uncommon and lines much of BX Creek running into the lake. Far less frequent, and possibly unique in this region, is a small grove of what the writer takes to be white willow (*Salix alba*), virtually identical in foliage but with a distinct gracefully upright growth pattern compared with the ungainly hybrid.

So what of the red/blue provincially rare species that have managed to survive the agricultural onslaught; how have they managed?

Salix amygdaloides (peach-leaf willow) is strange in being relatively frequent across Canada except for BC where it is restricted to a few stations in the Okanagan and Thompson valleys. There, as a shoreline inhabitant well away from both cattle and farmers at Swan Lake, it retains a viable population; in fact it shows up with *Salix prolixa* (Mackenzie willow) and *S. lucida* (Pacific willow) where willows are colonizing silt banks at the mouth of BX Creek. Similarly *Carex amplifolia* (big-leaf sedge) shuns the haunts of both cattle and farmer by restricting itself to a dense thicket of seral willows interlaced with hawthorn and *Cornus stolonifera* (red-osier dogwood) and seems quite content in this deep shade.

The third BC-listed plant, *Chenopodium atrovirens* (dark lamb's-quarters) is more of a paradox. Just a handful

of plants grow at the side of a track across an open dry field among a mass of *Atriplex patula* (common orache) to which it is related and quite closely resembles. Usually it stands slightly higher and needs an inspection of the flower/fruit orientation for identification. Survival has to be thought fortuitous.

Looking to the future of this property projects a different picture to that of the past with stresses of other kinds coming into play. To Ducks Unlimited, waterfowl increase is paramount, already resulting in construction of a new artificial pool; to the regional district, success of public property management is measured by how much use is made of the area by local populations and visitors; to the naturalists' club, improved access and ease of wildlife viewing rate highly. For wildlife seeking undisturbed shelter, foraging and territorial space, these kinds of measures seem to mean an uncertain future of more, not less, disturbance. In all events, vegetation will remain of secondary importance on all agendas, as it always has, adjusting as best it can to changing times and new pressures. For the botanist, opportunities will exist for documenting changes following the removal of cattle and replacement by recreationalists, thus continuing the history of this property through time.

Although now free of cattle, the reserve (or park as the municipality prefers) has inherited from them a considerable legacy of non-native plants most of which have the capacity to continue as permanent residents, so a gradual return to some imagined pristine state will never happen; neither is there any reason to expect property managers to undertake vegetation "improvement" at so degraded a site, costly at best and of dubious success. Instead the area will continue to offer to botanists opportunities to follow the dynamics of species interaction over time. ✱

New directors join NPSBC board

In addition to continuing directors (see page 2 for details), two new directors recently joined the board of the Native Plant Society of BC.

Randal Mindell

My name is Randal Mindell and I am a late bloomer. After a youth wasted on baseball cards and seven-inch records, I pursued my first career as a writer and/or journalist. A year spent living in a cement-laden city made me think about the natural world for the first time in my life. I returned to university to pursue an undergraduate science degree with the intention of becoming a science journalist. Along the way, however, I got distracted by rocks and plants, specifically those in the Pacific Northwest. One morning, a chance encounter with an *Equisetum strobilus* atop the red and fossiliferous Chuckanut sandstones south of Bellingham served as an epiphany that led me into the exotic world(s) of paleobotany. After completing my Ph.D at the University of Alberta on the evolution of sycamores and chestnuts, I returned to Vancouver.

Currently, I work as an instructor in the Department of Earth and Ocean Sciences at the University of BC. My long term interests center around raising the profile of the natural world such that it again becomes a prominent hobby and passion of the public at large. I am fueled by visions of Wolf Blitzer discussing *Kalmia* as a startling revelation in *The Situation Room*. My favourite native plant is *Polytrichum juniperinum*, which demonstrates how a simple plan, executed to perfection, can go a long way. *



Nadine Robinson

My name is Nadine Robinson and I work at the UBC Botanical Gardens as a horticulturalist. I have been at UBC since 2008. I have recently completed my apprenticeship in horticulture from Kwantlen Polytechnic University; I also attended Capilano University where I took the landscape horticulture program.

My passion for plants coupled with my love for the outdoors is what brings me to the Native Plant Society. I am excited to be a part of the NPSBC and to do my small part in hopes of making a difference in the education and awareness of all our wonderful flora. I was first introduced to the society by attending the monthly meetings. I am always interested in education and the society has been an amazing source of knowledge from our amazing members and our wonderful speakers. *



NPSBC Victoria chapter wins award



The Native Plant Study Group, a chapter of the Native Plant Society of BC, was recently honoured with a Saanich Environmental Award. The group was chosen to receive the Biodiversity Conservation Award.

The Saanich Environmental Advisory Committee recognized the NPSG's work raising awareness about the beauty and value of native plants and bringing together gardeners, horticulturalists, botanists and others who share a passion and curiosity for native plants. They noted that the group's sessions are open to the public and that the NPSG schedules

garden tours, field trips and social events and coordinates a volunteer native plant salvage program in the Capital Regional District.

Also recognized was members' participation in restoration projects in the CRD and Saanich and the many educational and 'in the ground' activities that help to protect and restore regional biodiversity and ecosystems.

The NPSG award was accepted at a special awards ceremony by co-chair Nathalie Dechaine. *

Using light to illuminate your images

When is the best time of day to photograph flowers?

The short answer is – anytime! The great thing about flowers as photographic subjects is that they look good in any kind of light. You can make excellent pictures of flowers from early morning to late evening, in sunshine, under cloud and in rain or fog. Having said that, however, there is no doubt that different light will produce different effects in your photos.

We regularly hear about photographers who refuse to take pictures in the middle of the day because the light is too harsh and direct. For the flower photographer, adopting this attitude would be a mistake. The brilliant, direct light of midday can make a flower absolutely glow. One of the effects of direct light is to make sharp shadows and this is one of the reasons that some shooters dislike midday light. But shadows can have their uses. Shadows create texture and texture in a flower photograph can be a great enhancement. In a flower with layered petals, the shadow along each petal edge separates the petals so they are seen as individuals. Also, these shadows add texture and a great deal of interest to the picture. So look for and make use of shadows in your midday subjects.

Flowers, like almost any subject, can benefit from early morning and late afternoon light. The low angle of the sunlight creates a very different look that is interesting and attractive. Also, the colour of the light at these times of day

adds a warmth enhances their white balance camera is set you will find get the warm early and late bring to your because the auto is detecting the colour cast of is correcting white balance you are shooting so will make all



Long's Lens

to flowers that look. If the on your to automatic, that you don't colour that the light should photos. This is white balance overall (warm) the light and it. The auto assumes that at midday and your pictures

appear to have been shot at midday. For shooting early and late in the day, and this includes sunsets, you need to manually set your white balance to daylight.

A lighting effect that can be very dramatic at midday and early and late in the day is backlighting. To use backlighting, you choose a shooting position that places the sun behind the flower so the light shines through the petals. This causes the flower to glow and shows off the colour to maximum effect. Flowers with multiple layers of petals, such as many cultivated roses, are not good candidates for backlighting. The light simply cannot shine through all those layers. But wild roses with a single layer of petals and many similar flowers can look spectacular.



Photo: Ron Long

Pedicularis lanata (woolly lousewort)

On overcast days, flower colour is more saturated in photos and may appear even more intense than under bright sun. Blue flowers are sometimes difficult to record in direct sunlight, but blues in particular are enhanced under cloud. Once again, auto white balance will affect your result and may or may not improve the picture. For most flowers, auto white balance will produce a midday look that you may prefer. But for blue flowers, the midday look will likely not give you the intensity that you want so try manually setting daylight white balance. Perhaps at some point I need to devote an article to white balance but for now I hope that you are getting the idea that white balance is a feature of your camera that should be actively managed.

Low light on overcast days has its own issues. The metering system in the camera may be forced to choose a shutter speed that is too low to allow sharp pictures when handholding the camera. Using a support for the camera is the best solution to this problem. Another approach is to raise the ISO (sensitivity) setting. A higher ISO number requires less light to make a photograph. For many

continued on page 12

New alpine flower guide for Vancouver Island

Alpine ecosystems are widely distributed on Vancouver Island and are highly diverse. Plant habitats range from the austere near the snow line to the luxuriant. They occur under a relatively dry climate on the east coast of the island and in extremely wet areas near the west coast where the snow often lingers into early September.

A rich diversity of plant life occurs on different rock types, in alpine wetlands and along water bodies or streams, on rocky cliffs, on dry screes or on moist, deep soils. This pamphlet aims to introduce the user to a representative selection of the most conspicuous and common alpine flowers on our island. Some rare species are included for two reasons, first and foremost as a challenge to those climbers and hikers who may develop a deeper interest, and second to learn more about the distribution of these species.

Users are encouraged to report rare occurrences to the BC Conservation Data Centre. Minimum information needed to verify a new occurrence is a digital photo and a GPS location. For the purpose of this pamphlet, alpine flowers are defined as those that are consistently found above the tree line. Occasionally, alpine species also occur below tree line on non-forested habitats such as avalanche tracks, rock outcrops or wetlands.

For sub-alpine and forest plants the reader is referred to handbooks such as *Plants of Coastal British Columbia* (Pojar & MacKinnon 1994). Nomenclature in this pamphlet follows *Illustrated Flora of British Columbia* (Douglas et al. 1998-2002).

Hans Roemer, PhD, has provided the botany and many of the photos. His familiarity with the mountains and his background as ecologist allowed the succinct descriptions of the habitats and, where necessary, the distinguishing features of the plants.

The associated website provides further details and enables present and future contributions beyond the scope of a pamphlet. For example, see "additional rare alpine flowers" (with photos and habitat descriptions).

Existing plant records for our island's alpine are quite sparse, especially for areas that are difficult to access. There is still much to be discovered about alpine plants and their distribution on Vancouver Island. The pamphlet is made of weatherproof paper and is available online for \$8.95 (plus shipping) or at a variety of bookstores and other retailers. Go to www.islandalpineflowers.ca for more information. *

Long's Lens, continued from page 11

cameras high ISO settings result in visible noise (grain) in the picture. Normally we prefer to avoid noise by using lower ISO settings, but in cloud or fog the grain can actually be used to add interest to the photo. So go for maximum grain by setting your highest ISO number and see what happens. The high ISO will allow the exposure system to choose a high enough shutter speed to give you a sharp picture without the need for a camera support.

As a photographer and flower lover, you are fortunate in your choice of passions. You are able to enjoy photographing flowers anytime and almost any place – even in the gloomy days of winter.

And remember: Shoot lots and lots of pictures. *



Field trip leaders wanted!



The Native Plant Society of BC is a completely volunteer endeavour, from the directors who sit on the board, to the speakers who share their knowledge, to the field trip leaders who get us out and about. If you're interested in leading or co-leading a field trip anywhere in the province, please let us know.

Send an email to dawnhanna@telus.net or call (604) 831-5069.

Coming events

NATIVE PLANT SOCIETY OF BC

SOUTH COAST NATIVE PLANT STUDY GROUP

(A subgroup of the Native Plant Society of BC)

Field trips

July 24/25

Whistler BioBlitz

Be part of a team that will try to count as many plant species as possible in 24 hours within the alpine and valley ecosystems of Whistler.

The results will become part of the Whistler Biodiversity Project, a multi-year effort to catalogue and protect native biodiversity (and bolster the need for protected areas).

A BioBlitz introduces people to real (and fun) science and the amazing diversity surrounding us. The concept of BioBlitz was created by Harvard biodiversity icon E.O. Wilson to raise awareness of the huge diversity of animals and plants, even in developed areas.

Contact Dawn at dawnhanna@telus.net or at (604) 831-5069.

August 14

Field trip to Mount Baker

Details to come. Check the website.

August 21

Digital Photography Workshop

10 a.m. to 4:30 p.m.

For anyone who still has questions about digital photography. In the morning we'll have a lecture and question session; at midday we pause for lunch and to shoot some photographs in the garden followed by a discussion of those projected pictures in the classroom.

What to bring :

- your digital camera
- your camera instruction book
- an empty memory card, if possible.
- notebook and pencil
- lunch – you will not have time to eat in the restaurant.

Cost to NPSBC members \$40. This includes entry to the garden.

Held at VanDusen Botanical Garden, Cedar Room

Limited to 15 participants – register early

Your instructor:

Ron Long was a professional photographer at Simon Fraser University for 36 years. During most of that time he maintained a parallel career as a photography instructor in the Continuing Education program at Kwantlen College. Ron is on the a director of the Native Plant Society, is active in the Vancouver Natural History Society and is on the Speakers Committee at VanDusen Botanical Garden.

For more info or to register, contact Ron Long at rphoto@shaw.ca or 604 469-1651

September 11

Field trip to Cypress Provincial Park

Join us on this foray to view king gentians, moonwort and other late summer bloomers. Details to come.

Evening presentations

All meetings are held at 7 p.m. in the Cedar Room at VanDusen Botanical Garden, 5251 Oak Street (37th & Oak St.), Vancouver. Admission is free.

October 7

A sense of place: The role of native plants at VanDusen Botanical Garden and UBC Botanical Garden

Harry Jongerden and Douglas Justice
Indigenous plants are often overlooked at botanical gardens, but what role(s) do they play at VanDusen Botanical Garden and UBC Botanical Garden? Come hear VanDusen director Harry Jongerden and UBC associate director Douglas Justice talk more about native plants in the garden and plans for the future.

November 4

Seeds of inspiration: The basics of native plant seeds

Patrick Wilson

What is a seed? How do they spread? What are the best ways to harvest them, prepare them and store them? Patrick Wilson provides a look at seed basics that's a great intro for beginners and a great refresher for us all. If you've got some seedy secrets, come and share!

December 2

Ranunculaceae: From the pretty to the poisonous

Daniel Mosquin

Deadly toxins. Garden ornamentals. Common weeds. Rare species. The *Ranunculaceae*. Join Daniel for a photographic and narrative account of this morphologically diverse family of mostly temperate species. The presentation will emphasize native plants of BC and elsewhere in western North America, with a few cultivated gems from around the world thrown in for good measure.

VICTORIA NATIVE PLANT STUDY GROUP

The speakers series is set to resume this fall, with sessions being held at 7 p.m. at the University of Victoria's MacLaurin Building, Room D-116. Non-member drop-in fee is \$3. Please check the NPSG website at www.npsg.ca for information as it becomes available.

NATURE VANCOUVER BOTANY SECTION

Please check the Nature Vancouver website at www.naturevancouver.ca for more information.

VAN DUSEN BOTANICAL GARDEN

The Cedar Series Lectures are held at 7:30 p.m. in the Floral Hall. Tickets are \$10 for members, \$15 for non-members and are available in advance from the administration office as well as the door.

September 9

GMO and Terminator Seeds, The Old and New with April Reeves

April Reeves will be discussing the history and technology of genetically modified organisms (GMOs) with a focus on terminator seeds. As we address the question, "Why should we be aware of terminator technology?" Ms. Reeves will also explore the long term vision and dangers of this technology and what you can do about GE Terminator crops and trees. Bring your questions for answers about all types of GM technology.

continued on page 14

Events, continued from page 13

Other events

September 19

Medicine Wheel Ceremony

Noon to 3 p.m. at the First Nations' Medicine Wheel in the Canadian Heritage Garden.

You are invited to join elders from the First Nations community in a spiritual ceremony to mark the changing of the season. Wear clothing appropriate for the weather, bring a small stone to bless and leave at the wheel as well as a food item to share at the pot luck meal at the conclusion of the ceremony.

Information: Contact Marina Princz at library@vandusen.org or 604-257-8668

UBC BOTANICAL GARDEN

All events take place at the UBC Botanical Garden, 6804 SW Marine Dr.

July and August

Young Explorers Summer Day Camp

A week long environmental and recreational adventure for children aged seven to 11. The camp will create life-long connections with nature, wildlife, plants, science, and the environment through games, crafts and exploration in our 44.5 hectare garden, the Greenheart Canopy Walkway and the UBC campus. For more information, go to www.ubcbotanicalgarden.org or call (604) 822-3928.

VOLUNTEER OPPORTUNITIES

Jericho Park, Vancouver

Second Sunday each month

(August 8, September 12)

9 a.m. to 1 p.m.

Help remove invasive plants and replant native plant species to restore and enhance habitat at Jericho Park in Vancouver. Tools and gloves provided. Meet at the wooden bridge over the pond. For more info, go to www.jerichostewardship.ca

Iona Beach Regional Park, Richmond

Third Sunday each month

(August 15, September 19)

10 a.m. to 1 p.m.

Help remove invasive plants and restore rare sand dune habitat at Iona Beach Regional Park in Richmond. Tools and gloves provided. Meet at the washroom building. For more info, go to www.parkpartners.ca/partners/IonaBeach/iona.htm *

Review

Northwest Mountain Wildflowers

Daniel Mathews

Application, \$9.95

Earthrover Software, 2010

Review by Dawn Hanna

My 11-year-old son may never forgive me for downloading the new Northwest Mountain Wildflowers to his iPod. Not that he has anything against the app itself, rather it's the amount of time I now spend on his 'pod and the frequency with which he must now recharge the battery.

Yes, the new app by Daniel Mathews, adapted from his books *Cascade-Olympic Natural History* and *Rocky Mountain Natural History*, can provide hours of entertainment even for armchair wildflower enthusiasts. Most people who purchase it though, will want to use it for more practical purposes – to identify those wildflowers found in the subalpine and alpine.

With a fair bit of snow still on our local mountains making a real-time test drive impractical, I decided to use the NMW app to identify a photo that I'd taken last summer at Cypress Provincial Park. You can search in a number of ways; I chose the simplest. Going to the search page, I selected BC as the location, alpine/subalpine as the habitat and composite head as the flower type, then selected the icon for pink/purple/blue flowers. That gave me 17 picture choices. Select one and you get a larger picture (and sometimes more than one picture). Select text in the upper right hand corner and you get a detailed description as well as similar species and info on how to tell them apart. Using this, the app led me to identify by species in question as *Symphotrichum foliaceum* (leafy aster), confirming my earlier i.d.

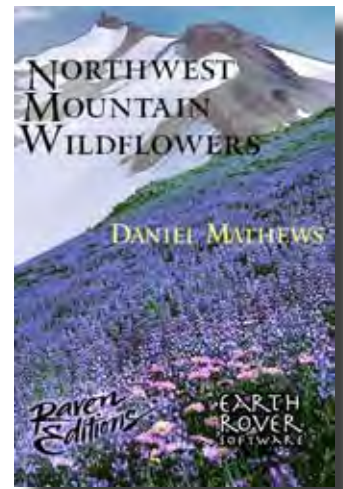
The text pages also contain interesting bits of information. Go to the page on *Pyrola picta* (white-leaved wintergreen), for example, and you can read discussion of the saprophytic versus the chlorophyllic forms (or species, if you're in that camp).

The app covers 500 wildflower species (718 photographs) and is a great lightweight addition to the backpack – especially if you don't want to carry a book-sized field guide with you. That said, it covers just herbaceous wildflower species – no ferns, mosses, grasses, sedges, rushes, shrubs or trees (although there is an upcoming app for mountain shrubs and trees).

The app is meant to cover a broad swathe of terrain across the northwest, including all of Washington, parts of Oregon, Idaho, Montana, BC and Alberta. Mathews notes that he draws a line for the northern limit of the guide as "running eastward from the tip of Vancouver Island then jogging north to include the Cariboo Mountains and Mt. Robson and Jasper parks in the Rockies".

There are also pages devoted to a glossary, regional maps and articles about mountain ranges as well as information about some of the natural history of the northwest mountains including such topics as timberlines, snow depth specialties, non-green plants, weeds and fungus/root symbiosis. And there is some great stuff about naturalists and plant explorers.

Northwest Mountain Wildflowers an application that is well worth the \$9.99. It may not ever be a replacement for Hitchcock and Cronquist's *Flora of the Pacific Northwest*, but then it doesn't weigh 1.5 kilograms either. One other note for BC native plant enthusiasts: Many of the photos are by NPSBC past president Virginia Skilton and her husband Doug. *



DNA barcoding exposes fake ferns

DNA testing of garden ferns sold at plant nurseries in North Carolina, Texas, and California has found that plants marketed as American natives may actually be exotic species from other parts of the globe.

The finding relied on a new technique called DNA barcoding that uses small snippets of DNA to distinguish between species, in much the same way that a supermarket scanner uses the black lines in a barcode to identify different grocery items.

A team of Duke University researchers suspected a fern sold in commercial nurseries might not be what the labels said it was, so they took a specimen



to the lab to analyze its DNA. When they pasted the DNA sequence of three of the plant's genes into an online database, they discovered that what had been labeled as Wright's lip fern (*Cheilanthes wrightii*), an American native popular in rock gardens and xeriscapes, was in fact a bristle cloak fern (*C. distans*) from Australia.

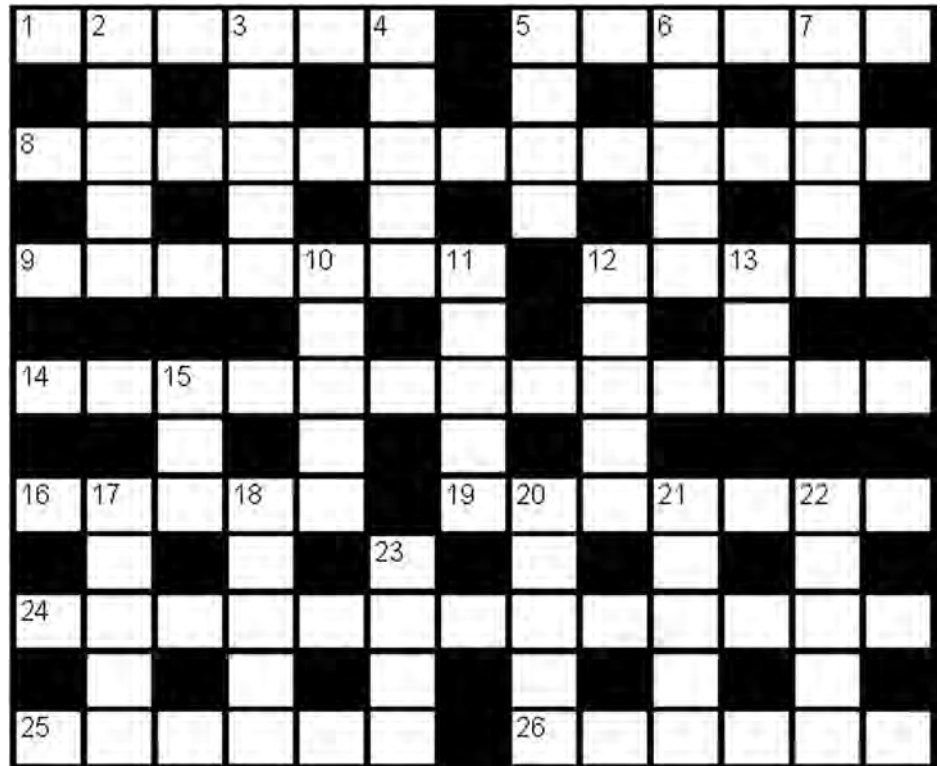
Since DNA barcoding was first proposed in 2003, the technique has caught on more quickly in animals than plants. A standardized botanical barcode remains elusive partly because of the greater complexity of plant genetics, but also due to ongoing debate over which combination of genes will work reliably for the more than 400,000 species of land plants.

But for those in the business of buying and selling exotic plants, DNA barcoding could help identify harmful or invasive species or prevent the sale of species that are rare or endangered.

One of the advantages of the technique is that it can identify species from small amounts of tissue or processed material -- a bit of leaf, a plank of wood, or an herbal mix -- that are otherwise impossible to match to the plants they came from.

~ Duke University News

Cannings' Cryptic Crossword



By Richard Cannings



ACROSS

1. Sis went after the university paper (6)
5. Pine tree meson circles New York (6)
8. The grape clove crushed in Vancouver Island village (9,4)
9. Calcium shift confused bottom feeder (7)
12. Small flycatcher sounds small (5)
14. Hopi manna zone produced common cyanobacterium (13)
16. Small plane carried tropical plant genus and musician (5)
19. Keen birder with a native orchid (7)
24. Small iris sadly looked at graminoid (4-4,5)
25. BC town a rare paintbrush colour (6)
26. Document fools south (6)

DOWN

2. Hey, an animal could be made with that! (5)
3. She and a loud bundle of grain (5)
4. Plays in the waves, fur chewed up in

ship (5)

5. Greek letter postscript forms the seeds of something (4)
6. Neither Spanish nor Cuban revolutionary creates ecological space (5)
7. French Open? (5)
10. In north, uh, inside part (5)
11. Shrub where he takes the first and last letters to left (5)
12. Mopes around fruit (5)
13. Odds on whinny produces victory (3)
15. Use rose fruit for joint (3)
17. Soldier turns to bathroom in ice house (5)
18. Edit—a digital fix? (5)
20. Asian country takes in return of aid (5)
21. Stern, confused seabirds (5)
22. Flowers fixed sores (5)
23. A hundred who you can wok with blue colour (4)

Answers on page 16

How it works

Every clue contains the definition of the answer plus a cryptic clue to the word or the letters that form it. Some examples:

1. Back an Oz IRA for snowbird destination? (7) Answer: ARIZONA (an Oz IRA backwards)
2. Echo loses hot, lethargic feeling for environmental study. (7) Answer: ECOLOGY (echo loses H (hot) + logy (lethargic feeling))
3. Mashed pea seed for fishing or diving (4,3) Answer: DEEP SEA (anagram of pea seed; watch for words like confused jumbled, crazy, mashed -- they often signal an anagram.)

Cryptic crossword answers explained

from puzzle on page 15



ACROSS

1. Thesis (SIS after THE); 5. Pinyon (pion around NY); 8. Telegraph Cove (the grape clove anagram); 9. Catfish (Ca+shift anagram); 12. Pewee (sounds like peewee); 14. Aphani-zomenon (hopi manna zone anagram); 16. Piper (triple meaning); 19. Listera (lister + a); 24. Blue-eyed Grass (blue + eyed + grass); 25. Golden (double meaning); 26. Assess (asses + S).

DOWN

2. Hyena (hey an anagram); 3. Sheaf (she + a + f); 4. Surfs (fur anagram inside SS); 5. Pips (pi + PS); 6. Niche (ni + Che); 7. Ouvre (French word for open); 10. Inner (in + N + er); 11. Hazel (A and Z inside HE + L); 12. Pomes (mopes anagram); 13. Win (odd letters of whinny); 15. Hip (double meaning); 17. Igloo (GI backwards + LOO); 18. Emend (E + mend); 20. India (in + aid backwards); 21. Terns (stern anagram); 22. Roses (sores anagram); 23. Cyan (C + Yan [as in "Wok with Yan"]).

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