

Alberta Plantwatch: Join us in Tracking Nature's Calendar!

Laura Frost and Elisabeth Beaubien

Spring is an exciting time for many people, as life reappears in all its glory. Birds return, singing their joyous tunes, butterflies come out to fly through the warm air, and young animals explore the new and exciting world around them. And then there are the flowers. Oh, the glorious flowers! Many people await the blooming of the first prairie crocus and anticipate the beautiful scent of the lilac flowers. In gardens and in natural areas, plants bloom and nature's calendar unfolds in a predictable sequence. As one plant species comes to the end of its blooming period, we can enjoy the beginning of another flower, ready to open its petals. We all notice the vivid colors and fragrant scents of flowers, but how many of us have noticed a trend towards earlier flowering?

Springtime is coming sooner and flowers bloom earlier than in past decades. Did you know that in Edmonton, aspen poplar blooms almost a month earlier than it did a hundred years ago? Springtime is definitely coming sooner than it did sixty years ago and that trend has accelerated in the last twenty years.



spring moving north. Elisabeth Beaubien started the Alberta Wildflower Survey in 1987 as part of her Masters' thesis in Botany and asked observers to report, by mail,

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Who's tracking these changes?

Volunteer observers, both individuals and school classes, all across the globe are tracking the change. Thousands of people in Canada, the United States, Japan, Europe and elsewhere are recording the dates that certain flowers bloom, for many different surveys and agencies. Last season, for example, 378 people reported bloom and leaf-out dates to the Alberta Wildflower Survey and Plantwatch.

What is Plantwatch? Plantwatch is a phenology program. Phenology is the study of the seasonal timing of life cycle events, such as plant blooming and leafing-out in the spring. The observers reporting to Plantwatch act as the "eyes of science," tracking the green wave of

2002 ANPC Workshop April 27-28

You should have received a registration form for the ANPC Annual Workshop and AGM with this issue of the *Iris*. The theme will be Alberta's native plants, their value and conservation. Details and registration forms will also be available at the ANPC website www.anpc.ab.ca

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Call for resolutions

You are invited to submit resolutions for consideration at the Annual General Meeting. The intent of resolutions is to give the membership a way of helping to guide the direction of the ANPC and to provide support for special initiatives or other projects.

Resolutions can be submitted to any board member before the AGM. They will also be accepted from floor during the AGM.

Botany Alberta No. 5

Plans are in place for Botany Alberta no. 5, which will take place in Kananaskis Country, July 5-7, 2002. There will be more details at the Workshop and AGM in Red Deer, or contact Elisabeth Beaubien <elisabeth.beaubien@ualberta.ca>, tel. (780) 987-5455.

Come Join the ANPC Board!

Call for nominations

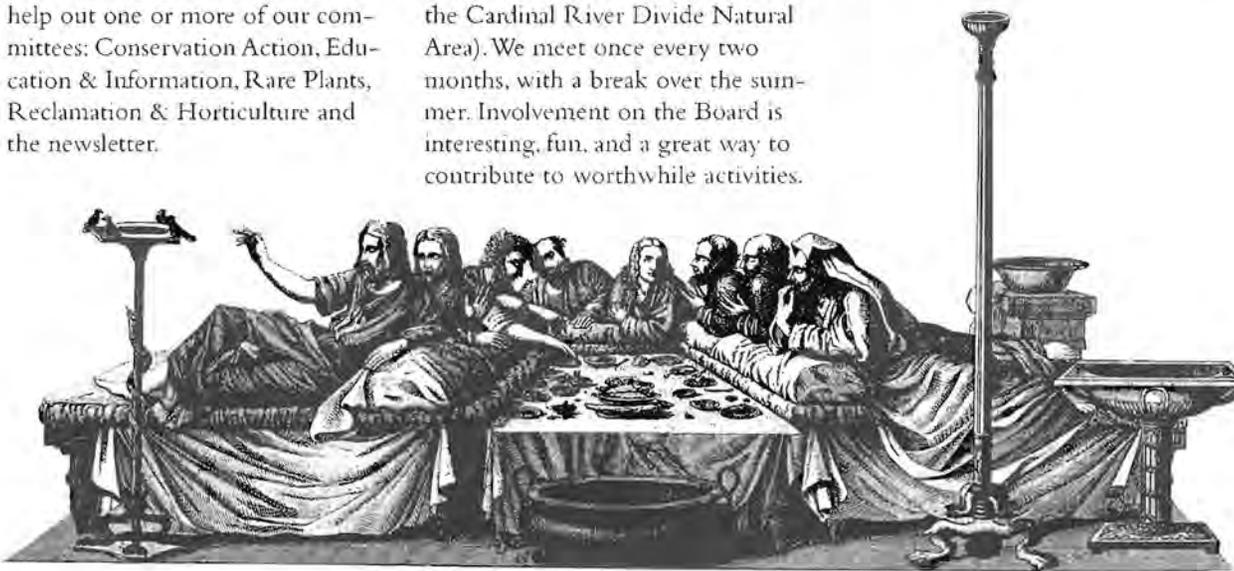
The following elected positions on the Board of the ANPC are open for a two-year term, starting in May 2002:

- Northern director
- Central director
- Treasurer

Fresh blood and new ideas are always welcome on the Executive. Volunteering can be a big commitment, but working with the ANPC is guaranteed to be a lot of fun. You don't have to commit to regular meetings—we're always looking for people who want to help out one or more of our committees: Conservation Action, Education & Information, Rare Plants, Reclamation & Horticulture and the newsletter.

Volunteering for the ANPC is an excellent way to share and improve your botanical skills. Board members are exposed to a wide range of activities, although they usually become involved in specific projects of interest to them such as stewardship of natural areas (for example, the Cardinal River Divide Natural Area). We meet once every two months, with a break over the summer. Involvement on the Board is interesting, fun, and a great way to contribute to worthwhile activities.

Elections for these positions will be held at our AGM in Red Deer. If you would like to nominate someone, or yourself, please contact any member of the board. Nominations can also be made at the AGM.



Letters to the editors

Wetlands Redux: Still a Few Mysteries...



I'm way behind in my reading; I'm just catching up with the summer issue of *Iris*. You're doing a good job as Editors; I hope you continue to stay involved. I just like to keep you on your toes. I have a few, perhaps nitpicky, comments on Markus

Thormann's wetland article in Volume 40 [Thormann, M. & David Locky, 2001. *Wetlands: Taking the mystery out of these mysterious ecosystems*. *Iris* 40].

Page 5—in Alberta you will frequently find scraggly paper birch (*Betula papyrifera*) in association with willow and alder in mineral swamps.

Page 6—canary grass is the usual common name for *Phalaris* species; *Phragmites* is usually referred to as giant reed grass. Despite the traditional reference to the area as a "bog", one would be hard pressed to find good boggy areas in the Wagner Natural Area. About the best you can find is a bog veneer of black spruce, Labrador tea and *Sphagnum* over highly minerotrophic waters.

Page 7—Some of the "typical" bryophyte indicator species listed for western continental wetlands in Alberta definitely are not. There is only one record of *Sphagnum cuspidatum* from Alberta that I am aware of. This is from a poor string fen (definitely not a bog) near the Goose Mountain Fire Tower in the Swan Hills. It was collected by Dale Vitt in 1971. I think this specimen may need to be re-examined as *S. cuspidatum* is primarily an eastern species (and BC) in Canada. There is no such species as *Sphagnum*

examulatus. I think there is a misprint here. What is probably meant is *Drepanolaelaps examulatus* (which should now be called *Warinstoffia examulata*). This is indeed a poor fen species.

Sphagnum papillosum does not occur in Alberta, so it can't be a "typical indicator species." You have to go to western BC or extreme SE Manitoba to find the nearest locations where this species occurs.

Keep up the good work.

—Derek Johnson

Thormann and Locky respond...

In the summer 2001 issue (No. 40) of *Iris*, we published an article titled *Wetlands - Taking the mystery out of these mysterious ecosystems*. Shortly after the publication date, Derek Johnson contacted us and the editors to inform us that he thought we had made some errors in our article. We would like to thank Derek for his keen eye and wish to address his comments here.

Derek mentioned that "you will find frequently scraggly paper birch, *Betula papyrifera*, in association with willow (*Salix* spp.) and alder (*Alnus* spp.) in mineral swamps". While *B. papyrifera* may indeed turn up in odd places, including wetlands, we do not consider this a typical wetland species. This *Betula* tree species is often found at lake and stream edges (Farrar 1997, Packer 1994), and it hybridizes with *B. occidentalis*, a variable species that is often found with willows and alders on wet sites (Farrar 1997). In mineral-rich wetlands, one would also find *B. neoalaskana*, which some authorities consider a variety of *B. papyrifera*.

Derek continued that canary grass is "the usual common name for *Phalaris* species". *Phragmites* is usually referred to as "giant reed grass". This was an editorial error

attributable to *Iris* [guilty as charged—the editors].

Derek wrote that "Despite the traditional reference to the area as a 'bog', one would be hard-pressed to find good boggy areas in the Wagner Natural Area. About the best you can find is a bog veneer of black spruce, Labrador tea, and *Sphagnum* over highly minerotrophic waters". He is correct in that there is only "bog-like" habitat at Wagner Natural Area, as the mineral waters are too close to the surface and potentially would affect the vegetation during high-water episodes. Similar "bog-like" habitat or elements can often be found in the midst of mineral-rich conditions in other wetlands, including fens. Some of these "bog-like" habitats can be quite small in area, e.g., less than 3 m in diameter and 0.5–1.0 m in height, and are sometimes called "fen hummocks", or, according to the Canadian Wetland Classification (National Wetlands Working Group 1997), "mound bogs", that often coalesce into larger bogs. To see true contiguous bog habitat, the closest examples are near Perryville (turn east off Highway 2 north, and con-

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Correction

In the article *Fire in Clyde Fens: Natural Area* by Derek Johnson (summer 2001 issue of *IRIS*), small bog cranberry was called *Vaccinium vitis-idaea* when it should be properly named *Oxycoccus microcarpus* (or *Vaccinium oxycoccus*). Only common name was provided by the author and the wrong scientific name was an editorial mistake. Thank you Derek for pointing out to this error.

tinue east past the 4-way intersection 5–10 km to see the peatlands north and south of the road—do not turn right and go to Perryvale).

Derek indicated that “some of the ‘typical’ bryophyte indicator species we listed for western continental wetlands in Alberta in fact are not”. He mentioned that there is only one record of *Sphagnum cuspidatum* from Alberta that he is aware of “(from a poor string fen—definitely not a bog, near the Goose Mountain Fire Tower in the Swan Hills). The specimen was collected by



Dale Vitt in 1971. Derek thinks that this specimen may need to be re-examined, because *S. cuspidatum* is primarily an eastern species (and B.C.) in Canada. Furthermore, Derek noted that *S. papillosum* does not occur in Alberta, so it can not be a “typical indicator species”. Western B.C. or extreme southeastern MB are the nearest locations where this species occurs.

Vitt’s (2000) list of bryophyte indicator species specified both these species as common indicators found in central and western Canada (species found in oceanic peatlands of the east and west coasts were excluded). However, in reviewing the literature and specimens in the University of Alberta

Cryptogam Herbarium, we found few sound examples of these species from Alberta (e.g., one occurrence each in western continental peatlands). Thus, we concur with Derek that *S. cuspidatum* and *S. papillosum* are not good indicators of bogs and poor fens, respectively, in Alberta. As one moves along the gradient of rich fens to poor fens to bogs, the number of indicator species decreases, hence the qualifiers “rich” and “poor”. It is therefore difficult to assign true indicator species to bogs in particular, as dry, ombrotrophic habitats can be found in all peatland classes (Vitt and Belland 1995). The full suite of species at the site in question must be taken into account and biogeochemical measurements should be utilized when in doubt.

Derek wrote that there is no such species as *Sphagnum exannulatus*, thinking there was a misprint (page 7). What we probably meant was *Drepanocladus exannulatus* (which should now be called *Warrustorfia exannulata*), which is indeed a poor fen species. This is indeed a typographic error that we did not catch. However, regarding the name change, nomenclatural changes to species names often take a long time to enter into the common vernacular, even for ecologists! One would have to be quite familiar with the contemporary literature to catch all of the name changes, as identification keys usually are specialized and reprints with nomenclatural changes are not often published. There are many examples of formerly accepted nomenclatural changes that have not made it into the literature for various reasons. We opted to use the more well-known names (e.g., *Drepanocladus*) for our species list because of their familiarity and in order to reduce confusion.

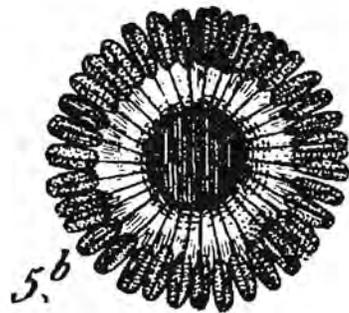
We have amended our indicator species list and will make available copies to anyone who requests one.

Once again, we want to thank Derek for his keen eyes and keeping us all on our toes.

—David A. Locky and Markus N. Thormaann

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Green Street

The latest in urban development – volunteersto assist with nature programs in schools

Elaine Gordon, M.Sc.

Every day we hear that the environment is a mess; the number of species lost worldwide has now exceeded those lost during the great dinosaur extinction; the United States is covetously eyeing Canada's abundant water supply because their own is rapidly being depleted for "essential" swimming pools, visual effects in Las Vegas and to sustain golf courses in deserts. The daily doom smothering us is enough to make most people simply give up – we're unable to make any changes even if we wanted to.

Ah, but not so. Success stories are actually almost as common as failures. We just don't hear much about them. This is a story about one of the successes and it's aimed directly at schools, teachers and students.

Green Street is a project designed to bring high quality environmental education to schools. At present, it is offered only to schools in Atlantic Canada, Alberta and British Columbia. The programs cost upwards of \$500, but are provided to Grades 7 to 12 free of charge through generous funding organizations. Plans are underway to extend these services to elementary grades. The Green Street Website at <www.green-street.ca> describes the overall project, the objectives of each program, and details on how to register.

In the Green Street program, students take part in environmental stewardship activities that allow them to learn about the environment, and adopt a lifelong appreciation of and protective outlook for it.

A variety of projects, ranging from conservation to naturescaping school grounds, are available through the Green Street Program. These projects have been developed by a number of natural history clubs in accordance with a series of guiding principles to assure that they are of highest quality, in line with pro-

vincial curricula, and easy to use.

Until recently, teachers who registered with Green Street were simply provided with the materials to carry out these programs in their classrooms. Now, however, the Canadian Nature Federation has local volunteer naturalists on hand to assist teachers by bringing these programs into the classroom or out on field trips. The Canadian Parks and Wilderness Society has been offering volunteer docent services for the past two years. This past fall, the Canadian Nature Federation (CNF), Federation of Alberta Naturalists (FAN), and Canadian Parks and Wilderness Society (CPAWS) held a workshop to provide volunteers with the background necessary to assist schools in central and northern Alberta. The workshop led a group of naturalist volunteers through a series of exercises to familiarize them with a variety of effective teaching techniques. Workshop participants were provided with teaching guides for the Species

at Risk Kit, a program developed by CNF to allow students to take part in hands-on activities related to the protection of wildlife.

Using material from this Kit, Neala MacDonald, of CNF, demonstrated the effectiveness of active participation to guide students through exercises. Gareth Thomson, Education Director of CPAWS Calgary Chapter, provided the par-

ticipants with a teaching manual developed by CPAWS, *How to train volunteers to be teachers: a manual*.

Participants worked in small groups to develop basic skills in areas such as classroom management techniques, lesson preparation and taking advantage of the teachable moment, a topic particularly well suited to wildlife studies. Some participants are also experienced teachers who provided valuable insight into classroom protocol and handling a variety of real life situations that commonly arise in class.

Besides expanding the Green Street Project to include free programs for elementary schools, other programs are under consideration. PlantWatch involves participants in monitoring growth and seasonal development, such as flowering stages, of a number of selected

plants. The data collected over the years is significant in describing climatic changes.

FrogWatch, another project of CNF, is an ongoing scientific survey in which students and other volunteers and researchers across Canada monitor frog populations. The information gathered from field observa-

tions is used to assist scientists in assessing frog species abundance and identify changes to the ecology affecting frog populations. This project is presently undergoing some revisions and will be available again shortly. Several other potential projects are in the process of devel-



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Getting the word out—Alberta libraries receive copies of rare plant book

Lorna Allen

Lately, the Alberta Native Plant Council mailbox has been stuffed to overflowing—with thank you notes! Through the generosity of a grant from the Alberta Sports Recreation Parks and Wildlife (ASRPW) foundation, the ANPC was able to purchase and send copies of the *Rare Vascular Plants of Alberta* to all Alberta municipal, university, college and senior high school libraries. Generating mailing labels for all of the libraries was surprisingly time-consuming (we hope we didn't miss anyone). But thanks largely to Linda Kershaw, with help from Dave Downing, Ksenija Vujnovic and others plus speedy mailings by Angela Olthoff, we have pretty well completed the mail-out. And it was a big task! Over 700 books have been sent out to libraries throughout Alberta.

Many notes said simply "This is a

welcome addition to our library": quite a few went on to tell us how the book would be useful for their patrons. Here is a sample of the comments we've received so far:

"It will prove very useful in our Biology program as well as an excellent individual resource for students and staff. It is an excellent addition to our plant identification collection."

"We are fortunate to receive several book donations from time to time, but the one your organization has donated will see some enthusiastic use. It is an excellent user-friendly format, is attractive in presentation and the binding is superior. The content is on the curriculum too, so your timing is perfect."

"I find it exciting to have an Alberta resource"

"Generous contributions such as this make it possible for our library

to continue to make available to our students and staff attractive and current material."

"What a beautiful gift you have given us!" *Rare Vascular Plants of Alberta* is indeed a treasure. And to have it arrive in our library during the dark, gloomy days of January set us dreaming of summer. Thank you for your thoughtfulness."

"It is a beautiful book and will add much to our collection. It is always wonderful to receive books that relate to our province."

"I am sure that it will fill a longstanding gap in the botany sections of the library".

Placing a copy of the book in libraries will ensure that current information on Alberta's rare plants is widely available throughout the province, achieving part of our goal to help Albertans know more about their provinces' rich native plant heritage.

Book Review

The Prairie Gardener's Source Book

A Guide to Finding the Best Plants, Seeds, Products, and Information for Your Garden

June Flanagan and Donna Fremont
Heritage House Publishing, \$16.95

Reviewed by Elaine Gordon

So, all this time many of us have thought that because of our infamous winters and beautiful but short summers, we are limited in the variety of plants we can grow. Sure we have a decent range of species, but most of us stick to the old standbys: marigolds and geraniums (which are actually pelargoniums and not to be confused with real geraniums), the odd rose and, of course, those cheerful old daisies, which happen to be my own personal favourites. Well, do I have

news for you! Or more correctly, do June and Donna have news for you!!

When I first received a copy of this book, I was skeptical. As a botanist actively involved with conservation and restoration issues, I am well aware of the problems with "wild seed" mixes and other concerns relating to genetic contamination and introduction of exotic and invasive species. But I also love my old favourite cultivars. So I found myself in the position of wearing

two hats throughout this review – on one hand carefully scrutinizing each page for any endorsement of "no-nos" (the bad boys and girls of the seed world), and at the same time enthusiastically envisioning my own backyard alternately as an herb garden, a rock garden, or filled with thousands of lilies. The daydream changed with each page, to the point that I was marveling at the imaginary sight of several dozen

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varieties of sweet potatoes growing where my old barbecue pit now resides.

Quite simply, this book is a tool.

It is exactly what it says it is – a compilation of all things related to gardening in the Prairie Provinces – from seeds and horticultural assistance, to garden ornaments, to the average number of frost-free days in the major centres. This book offers whatever gardening ideas you can imagine. It tells you where

to get all the cool stuff you need, including items for specialty gardens such as Japanese gardens, water gardens and vegetable gardens. Are you interested in joining a group or specialty organization? What about books on gardening? If you are planning a vacation, check out the chapter on Public Gardens for fabulous botanical gardens and grounds to visit enroute: not only are the directions given, but the background and history of each one makes for an exceptionally interesting read. Many nurseries, garden centres and seed companies also maintain grounds and welcome visitors.

I also enjoyed the interesting facts buried in the descriptions for each source. For example, who knew that the most diverse herb, seed and plant company in Canada is found in Goodwood, Ontario? Or that for a nominal membership fee, you can join a network of gardeners across Canada to exchange seeds – members currently grow and exchange 675 tomato varieties and

275 bean varieties along with hundreds of other vegetables, fruits,

flowers, and herbs. Now, if you can't find a tomato that will totally knock the socks off Aunt Mildred's prize babies, it simply can't be done, and Aunt Mildred might even be coerced into offering some seeds herself for exchange.

Descriptions for each source include the address, plant specialty (e.g. roses), products for sale (bulbs, tools, accessories, books etc.), and summaries of

each operation including availability of proven medal winners and the aristocratic Blooms of Bressingham Perennials. They also include availability and description of catalogues (and cost where applicable), retail outlets, and e-mail address. Web sites are rated for excellence and availability of on-line products. In my opinion, growers and suppliers who provided details about their specialties definitely won out over those whose descriptions are short and general. I personally like to know whether a drive to Calgary warrants a detour to check out a retail site. If it sounds interesting, chances are I'll make the detour.

Nurseries, garden centres and seed companies are listed alphabetically within their respective city or town, which are in turn alphabetical within each province. Mail-order sources outside the Prairie Provinces are included in a separate chapter. This is easy reference when you want to check out what sources are available locally. My only suggestion would be perhaps to include

Many greenhouses now carry native seeds and bedding plants, and conscientious owners will ensure not only that the seeds are native to our area but also that they have not been collected from protected areas.

an area notation or highway number. For example, Suzie's South Country Greenhouse in Barons, Alberta, carries unique garden plants and unusual garden accessories including Amazon Iron plant supports. My curiosity immediately zips into high alert. What are Amazon Iron plant supports? I have no idea, but now I must have Amazon Iron plant supports; maybe include them on my Christmas list. But where *is* Barons? No e-mail address... I know I can go out to the garage, get my map from the car and eventually find it but it would be helpful if I knew where to start the search.

Switching hats from horticulture to botany: Thank you, thank you, all contributors who carry and support organic products. It is so heartening to see that the trend to stop the use of poisons is gaining in popularity. Which brings me to my pet peeve: wild seed mixes. I noted with great relief that the authors have pointed out that the sources of native plants included in this book do, in fact, grow and sell native plants of our region and not a mixture of seeds from Europe or Asia. A few years before I ever set foot in a botany lab, I sprinkled a can of supposed wildflower seeds over a

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portion of my front garden. I then spent several subsequent years pulling, stamping and digging out some rather voracious (but pretty) plants. Instead, I could have easily, innocently (but stupidly) introduced a noxious invasive plant. Some plants native to this region are indeed aggressive but play an important role in natural succession; fireweed comes to mind as an example. However, these plants have natural herbivores and competitors that will keep them from taking over and choking out natural areas such as wetlands. Many greenhouses now carry native seeds and bedding plants, and conscientious owners will ensure not only that the seeds are native to our area but also that they have not been collected from protected areas. Any greenhouse that cannot guarantee the source of its native or "wild" seeds should be immediately avoided at all cost—this is a serious problem; they may not be reliable in other areas as well.

This is clearly a book for plant lovers whether you live in one of the Prairie Provinces or elsewhere. Its biggest strength lies in the fact that it really brings home the point that the root of gardening (as it were) comes down to whatever your imagination can conjure. And whatever you can think up, there is not only a source, but there is also advice in the form of expertise, publications, magazines, videos, Web sites, and associations. That's a lot of information packed into 216 pages. The authors have produced a concise comprehensive book that is not only informative, it's also fun to read. Great job, June and Donna!

Elaine Gordon has a MSc. in Botany (plant systematics and ecology) from the University of Alberta. She currently serves on the Board of Directors of the Alberta Native Plant Council and the Federation of Alberta Naturalists.

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opment.

You can register with Green Street at their website. If a docent is required, this request will be relayed to the program co-ordinator, who will contact the teacher or school to assess the program, set an appropriate date, and assign a suitable docent to work with teachers to bring the program into the classroom, or arrange field trips as required.

By giving students the opportunity to become involved in a very important aspect of our natural world, we are providing them with lifelong skills and the satisfaction of contributing valuable information to ongoing scientific projects. This can only result in a healing process for our planet, perhaps leading to

reassessment of what is really important in our lives.



the flowering dates for up to 15 native Alberta plants. This survey averages about 200 observers annually. In 1995, realizing the great potential of a wider-reaching program, Beaubien led the effort to create a national program: Plantwatch. Plants were selected that are useful indicators across much of Canada.

Each province and territory now has a regional coordinator and reporting is done speedily in "real time" over the Internet. This spring, the Ecological Monitoring and Assessment Network Coordinating Office of Environment Canada will launch a new national Plantwatch web site. At this web site, a visitor will be able to click on a province or territory to connect to its survey and its list of plant species. There will be plant descriptions with full-colour photos, as well as a location finder from which observers can

determine their plants' exact latitude and longitude using a series of maps. Immediately after observers submit bloom dates to the site, the data will be incorporated into maps. To learn more, visit the current web page at <www.devonian.ualberta.ca/pwatch>. (When the new web site is up, you will automatically be redirected to it.)

In Alberta, the Alberta Wildflower Survey has been updated and renamed Alberta Plantwatch. Reporting can now be done over the Internet, by mail, fax or e-mail. Alberta Plantwatch now has a total of nineteen species for monitoring. These were chosen from the Canada Plantwatch list and the Alberta Wildflower Survey list. The plants useful for spring phenology studies are perennial, spring-flowering, easy to identify and broadly distributed. They have a short bloom period and do not have

and observe. The last two species listed, purple saxifrage and white dryad, occur in the mountains and their bloom times vary widely depending on elevation.

Data collected from Plantwatch can be used by many sectors of industry and society. This valuable "seasonality" information helps farmers and foresters to correctly time such operations as planting, fertilizing, crop protection and harvest. It is also useful in wildlife management (for example, in early springs more deer fawns survive), human health (pollen warnings for allergy sufferers) and tourism (best times to photograph flowers or animals, or to go fly-fishing). It is also useful in recording the trends in climate change, such as the shift to warmer winters and springs over the past century, that influence earlier plant flowering.

If you enjoy watching spring unfold, why not contribute to science by observing the bloom times of a local plant? It is easy to get involved in the Plantwatch program. A person of any age can observe bloom times and report them to the program. You do not have to know your plants to do this just learn to recognize the plant(s) you plan to observe. You can get ready for this year's reporting by finding a Plantwatch species in your area and tagging the tree, shrub, or patch of plants for observation this spring.

If you are a teacher interested in using Plantwatch in your classroom, check out the *Plantwatch Teacher's Guide* on the web site. The Guide has 104 pages of easy-to-use learning activities and curriculum connections. It is split into 11 Acrobat files for easy downloading and printing.

For more information on Plantwatch in Alberta, or to register yourself as an observer, please visit our web site or call us at (780) 987-3054. Please join us in the journey of tracking nature's calendar!

What species are used?

The key indicator plants for the new Alberta Plantwatch are (listed in approximate bloom order, with alpine species at the end):

- Aspen poplar (*Populus tremuloides*)
- Prairie crocus (*Anemone patens*)
- Larch (Tamarack) (*Larix laricina*)
- Bearberry (Kinnickinnik) (*Arctostaphylos uva-ursi*)
- Dandelion (*Taraxacum officinale*)
- Early blue violet (*Viola adunca*)
- Golden bean (*Thermopsis rhombifolia*)
- Wild strawberry (*Fragaria virginiana*/*F. vesca*)
- Saskatoon (*Amelanchier alnifolia*)
- Star-flowered Solomon's seal (*Smilacina stellata*)
- Choke cherry (*Prunus virginiana*)
- Wolf willow (*Elaeagnus commutata*)
- Common purple lilac (*Syringa vulgaris*)
- Bunchberry (*Cornus canadensis*)
- Northern bedstraw (*Galium boreale*)
- Labrador tea (*Rhododendron groenlandicum*)
- Common yarrow (*Achillea millefolium*)
- Purple saxifrage (*Saxifraga oppositifolia*)
- White dryad (*Dryas octopetala*/*D. integrifolia*)

confusing "look-alike" species or subspecies.

All but two plants are native, that is, they occurred here well before European settlement. The two non-native, or introduced, plants are lilac and dandelion. Lilac was selected because it is so widely distributed in urban and rural areas, and has a long history of use in phenology studies in North America and Europe. Dandelion was chosen because it is very common, and easy to recognize

News and notes

New Books

Rare vascular plants of Alberta

Linda Kershaw, Joyce Gould, Derek Johnson & Jane Lancaster.
University of Alberta Press and the Canadian Forest Service
ISBN: 0-88864-319-5 (softcover)
Price: \$34.95

Wild Plants of the Great Plains

Thomas Reaume
Hancock House Publishers
ISBN 0-88839-499-3 (softcover)
Price: \$75.00
For more information contact
Hancock House Publishers
<www.hancockhouse.com>

Fire, Native Peoples, and the Natural Landscape

Thomas Vale, editor
Island Press
ISBN 0-55963-888-5 (hardcover),
1-55963-888-5 (softcover)
Price: US\$50.00 (hardcover),
US\$25.00 (softcover)
For more information contact Is-
land Press <www.islandpress.com>

Making Parks Work

John Terborgh, Carel van Schaik
Island Press
ISBN 1-55963-904-0 (hardcover),
1-55963-905-9 (softcover)
Price: US\$65.00 (hardcover),
US\$32.50 (softcover)
For more information contact Is-
land Press <www.islandpress.com>

Farm as Natural Habitat: Reconnecting Food Systems with Ecosystems

Dana L. Jackson, Laura L. Jackson,
editors
Island Press
ISBN 0-55963-846-X (hardcover),
1-55963-847-8 (softcover)
Price: US\$50.00 (hardcover),
US\$25.00 (softcover)
For more information contact Is-
land Press <www.islandpress.com>



Wildlife Restoration: Techniques for Habitat Analysis and Animal Monitoring

Island Press
ISBN 0-55963-936-9 (hardcover),
1-55963-937-7 (softcover)
Price: US\$50.00 (hardcover),
US\$25.00 (softcover)
For more information contact Is-
land Press <www.islandpress.com>

Plague of Rats and Rubbervines: The Growing Threat of Species Invasions

Yvonne Baskin
Island Press
ISBN 0-55963-876-1 (softcover)
Price: US\$25.00 (softcover)
For more information contact Is-
land Press <www.islandpress.com>

Monitoring with Lichens— Monitoring Lichens

Pier Luigi Nimis, Christoph
Scheidegger, editors
Kluwer Academic Publishers
ISBN 1-4020-0429-X (hardcover),
1-4020-0430-3 (softcover)
Price: US\$ 138 (hardcover), US\$50
(softcover).
For more information contact the
Kluwer website <www.wkap.nl>

Donald Schnell
Timber Press
ISBN 0-88192-
540-3

To be published May 2002
For more information contact Tim-
ber Press <www.timberpress.com>

Carnivorous Plants of the United States and Canada, Second Edition

Donald Schnell
Timber Press
ISBN 0-88192-540-3
To be published May 2002
For more information contact Tim-
ber Press <www.timberpress.com>



Meetings

National CSEB Conference: Environmental Monitoring and Biological Systems.

May 2-4, 2002
University of King's College,
Halifax, NS
For more information, contact
Shawn Martin
<smartin@cefcconsultants.ns.ca>

Sedges 2002: International Conference on Uses, Diversity and Systematics of Cyperaceae.

June 6-8, 2002
Delaware State University,
for more information, contact
Robert Naczi <rnaczi@dsc.edu>

Botany BC/Botany Washington Joint Meeting

June 16-19, 2002
Selkirk College, Castlegar BC.

Montana Native Plant Society Annual Meeting

June 28-30, 2002
Theodore Roosevelt Memorial
Ranch

Science for Plant Conservation— An International Conference for

Botanic Gardens

July 8–10, 2002
Trinity College, Dublin
For more information, visit the
conference website <[www.rbg.ca/
cben/science](http://www.rbg.ca/cben/science)>

17th North American Forest Biology Workshop and Western Forest Genetics Association

July 15–19, 2002
Washington State University, Pull-
man WA USA.
For more information, visit the
conference website, <nafbw.wsu.edu/>

Botanical Society of America 2002

August 2–7, 2002
University of Wisconsin, Madison. -
WisconsinMeetings
For more information visit the
conference website,
<www.botany2002.org>

4th International Workshop on Disturbance Dynamics in Boreal Forests

August 9–14, 2002
Prince George, BC. For more infor-
mation visit the conference website,
<www.res.unbc.ca/borealdisturbance>

Mountain Forests: Conservation and Management

July 28–August 1, 2002
Silver Star Resort, Vernon BC.
For more information, visit the
conference website,
<www.mountainforests.net>

XXVI International Horticultural Congress

August 11–17, 2002
Toronto
for more information contact Norm
Looney at <looneyn@em.agr.ca>
or by telephone at (604) 494-6361.

The Power of Natural and the Empowerment of Natural Areas: 29th Annual Natural Areas Association Conference

October 2–5, 2002
Asheville, North Carolina, USA
for more information, visit the
NAA website at <www.natareas.org>

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Fall (no. 44)	Sept. 15	Nov. 1, 2002
Winter (no. 45)	Jan. 15	March 1, 2003

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The editors reserve the right to edit submissions, but will review changes with the authors whenever possible. Disputes will be resolved in favour of the audience.

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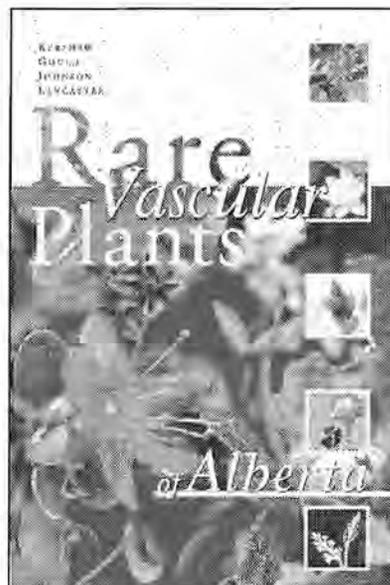
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