



Wagner Natural Area Newsletter

Rare form of the common Round-leaved Orchid found in Wagner *by David Fielder*

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Wagner Natural Area consists of 629 acres (251 ha) of protected Crown Lands. It was set aside in 1971 to preserve its springs and open and forested fens. WNAS is its official steward under the provincial stewards program.

Everyone who visits the Wagner Natural Area in June must have seen the very common and beautiful orchid with its spotted lip - the Round-leaved orchid (*Amerorchis rotundifolia*). This orchid grows widely across Canada and the northern USA in mainly moist woodlands and bogs, but is also known to grow in tundra and limestone barrens (Leur 1975).

This year, David Fielder came across an unusual purple-lined form that is new to Wagner (*Amerorchis rotundifolia* (Banks) Hulten forma *lineata* (Mousley) Hulten). In fact, this beautiful orchid has only been seen in a handful of locations across North America and is one of six known forms of this species.

The first reported finding of forma *lineata* was from Elkwater Lake, Alberta in Cypress Lakes Provincial Park about 80 years ago (Mousley 1941).

While this orchid has been seen in a couple of locations in Ontario, it has only recently that these orchids have been seen in Saskatchewan and Manitoba.

The flowers are a bit bigger than its more prolific cousin but it does stand out amongst them! David found two plants growing on a small hummock on June 27, they were just coming off their peak bloom. Wagner's resident orchid expert, Ben Rostrom, confirmed the orchid's identification. The location was marked by GPS for future reference. In 2011, another orchid was first seen at Wagner (*Listera borealis*) bringing the total to 17, the number of orchids seen in this protected natural area. (There are 27 native orchid species in Alberta.) How many more are yet to be discovered in Wagner?



Above, usual form of Round-leaved Orchid; below, the *lineata* form.

Photos: David Fielder



Open House postponed: Wagner Society board in need of "new blood"

Wagner Society has decided to postpone our annual Open House, normally held in late November, until the spring, owing to a shortage of manpower on the executive. Ageing, family illness and resignations for various reasons have all made it difficult to arrange and coordinate the Open House and have created other priorities for the board to attend to.

Efforts to rectify this situation will be made over the winter. Several key executive positions on the Wagner board are now vacant. Some of us have been on the board for over 30 years and, although we have had infusions of "new blood" from time to time, we have not been completely successful in providing for stable and orderly replacement and succession.

As usual, **we are in need of volunteers**, both short term and long term, as well as new members. If you feel you could contribute to the upkeep of Wagner Natural Area in any way, and/or would like to know more about what's involved, please contact us at:

info@wagnerfen.ca



The Wagner Grapevine



Delayed release of new trail guide

Unfortunately, although we published our new trail guide as advertised in the spring, we were not able to install the permanent new posts along the trail that would accompany it. Accordingly, we have withheld distribution of the new guide. We hope that the new posts will be in place promptly for the start of the season next year.

Tree research in Wagner

Joan Laur, a PhD candidate at the University of Alberta, with the help of summer students **Melissa Wheatley**, **Emy Choi** and **Sabrina Chamberland**, investigated the wood anatomy and water relations of dwarf birch (*Betula pumila*) and Alaska birch (*B. neoalaskana*) from samples taken in Wagner this summer. She has presented preliminary findings and we look forward to sharing some of her results.

Bouquets and thanks...

To **Dave Ealey** for bravely undertaking the annual Breeding Bird Survey in Loney Dickson's place.

To **Derek Johnson** and **David Fielder** for their hard work on various permanent sample plots this season. Derek will be presenting his report in the next newsletter. Also to David, Derek and **Ben Rostron** for productive flora forays this season.

To **Derek Johnson** for masterminding The Carbon Farmer tree planting and taking part in the Alberta Primetime TV publicity.

To **Dick Clayton** for re-painting the picnic shelter. While some of us quite enjoyed the graffiti, it did tend to encourage copy-cat efforts. Graffiti on an environmental theme might have been more appropriate!

To **Pat Clayton** for extensive summer monitoring duties.

To **all the volunteers** who worked on the eco-islands this year. (See the article on pages 4 & 5 for more information on who was involved.)

To **Allan Phillips** and the **Knights of Columbus** who did their usual excellent job of organizing and participating in the fall clean-up and barbecue on September 21. Some of those involved were: **Leonard Mineault**, **Warren Hamblin**, **Brad Medernach**, **Dave Nickurak**, **Gord Lesanko**, **Zach Fergin**, **Richard Fergin** and **Sheldon Fergin**. From Osborne Acres the **Lieffers family** of **Doug**, **Jaren**, **Emerson** and **Warren** contributed their time. **Arnold Fern** covered the trail. However, many more people who remain anonymous pitched in to pick up litter and help with cleaning of infrastructure. Wagner Society is grateful to them all!

To **Ben Rostron's two hydrogeology students** who rebuilt the bridge across Morgan Creek along the East-West Road allowance.

To **Derek Johnson**, **Kim McKinnon**, **David Fielder**, **Dave Ealey** and **Patsy Cotterill** for weed control work.

To **Irl Miller** and **Jasper Keizer** for management of trails.

Wagner Society Board of Directors, 2013-2014

President: Irl Miller **Vice-President:** Vacant **Past President:** Pat Clayton

Treasurer: Vacant **Secretary:** Vacant

Directors: Patsy Cotterill Dave Ealey David Fielder Alice Hendry Beth Jenkins
 Derek Johnson Jasper Keizer Ben Rostron

Other duties: Pat Clayton (Archives) Patsy Cotterill (Newsletter Editor)



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www.wagnerfen.ca

or contact us at:
info@wagnerfen.ca





Breeding Bird Survey in Wagner, 2013

by Dave Ealey



Cedar Waxwings nesting

Photo: E.T. Jones

Despite a late start and a wet June, this year's survey continued adding to the comprehensive database for breeding birds and their habitat use in Wagner Natural Area (Wagner). I will complete the data analysis over the fall/winter and submit a report for the research files; this article is a preliminary account of this most recent research into Wagner's breeding birds.

Although I had no plan to dive in and commit so much of my first post-retirement summer to undertaking a citizen-science research project, I am indebted to the Wagner board for this opportunity. It has been invigorating to head back into the field and burn off two decades of government-office rust...to feel like a biologist again! I had completed occasional breeding bird surveys and May species' counts at Wagner over the years, and provided some guidance to summer students who maintained regular counts at a few select locations along a trail. However, it has been a challenge for me to take the survey to this next level, featuring detailed point counts at 88 separate locations throughout the natural area, and all located via GPS coordinates. My thanks to Loney Dickson who designed and completed the original bird count research in 2009 and 2010, and for all of his advice and background information; Duke Hunter, Alberta Tourism, Parks and Recreation, who assisted me in interpreting the quagmire of the virtual compass, a.k.a. the Garmin GPS unit; and David Fielder, who magically appeared at precisely the right moment when my aforementioned GPS unit was crapping out due to operator error and unfamiliarity with the Global-positioning dance called the Hokey Pokey. And finally, I am thankful for the tolerance of my wife, Joan, who endured several weeks of early morning alarms while I embarked on my birdly endeavours.

The forest bird count method that I followed included recording and plotting, during a three-minute count period, all the birds heard or seen within 100-metres of the observation point. The data maps drawn are being used to help populate tables for further analysis. In addition, birds detected while travelling from point to point as well as during my general birding walks throughout Wagner were recorded for the summer's overall species list. Behaviour of the birds was recorded to assess breeding status.

A total of 49 species were detected within or flying over the 88 count circles completed. A few additional species were found during

the general travel on Wagner, but certainly my overall count when finally reported will be quite a bit lower than the 74 species documented in 2009 or the 87 species in 2010 (Dickson 2011). With my first survey period being in mid-June and my second survey in early July, it's likely that I missed some of the early active breeders and spring migrants. I hope to be able to cover that period next year. Of the 49 species documented in 2013, two were gull species that would not have bred on the Wagner property (Ring-billed Gull and Franklin's Gull), whereas all of the remaining birds could well have bred. Further analysis will establish the level of likely breeding status for comparison with previous years.

Out of a total of 705 detections of individual birds, nine forest species and one gull provided the bulk of the detections. From most abundant to least, here are the top 10 for 2013: House Wren, American Robin, Yellow Warbler, Red-eyed Vireo, White-throated Sparrow, Least Flycatcher, Black-capped Chickadee, Solitary (Blue-headed) Vireo, Cedar Waxwing, and Ring-billed Gull.

Aside from the top 10, the following species (in taxonomic order) were recorded on the forest point count circles: Red-tailed Hawk, Solitary Sandpiper, Common Snipe, Great Horned Owl, Hairy Woodpecker, Eastern Phoebe, Alder Flycatcher, Yellow-bellied Flycatcher, Tree Swallow, Blue Jay, Black-billed Magpie, American Crow, Common Raven, Boreal Chickadee, Red-breasted Nuthatch, White-breasted Nuthatch, Swainson's Thrush, Ruby-crowned Kinglet, Warbling Vireo, Tennessee Warbler, Yellow-rumped Warbler, Northern Waterthrush, American Redstart, Western Tanager, Chipping Sparrow, Clay-colored Sparrow, LeConte's Sparrow, Savannah Sparrow, Lincoln's Sparrow, Song Sparrow, Dark-eyed Junco, Rose-breasted Grosbeak, Red-winged Blackbird, Brown-headed Cowbird, Northern Oriole, Purple Finch, Pine Siskin, and American Goldfinch.

My most interesting bird encounter was with a species not found on the point counts—a female Ruffed Grouse defending her young brood. With a hiss like a snake and an attitude like a David battling Goliath, this grouse reminded me that I was invading her space...I quickly backed off because, frankly, I wouldn't have it any other way!



Male Ruffed Grouse displaying. Photo: Gerald Romanchuk



Getting nature back to Wagner: Eco-islands established in the south-east this year, trees planted in Succession Field

From 1971 when Wagner Natural Area was first set aside as a parcel of 320 acres until about 2000 little consideration was given to actively restoring to natural vegetation the four old fields that were included in the Crown property. Natural succession to forest was advancing well in one of them, and in another marginal succession by suckering aspen poplar was allowed to take place. The remainder of the old-field area was hayed, initially to provide revenue to cover insurance costs. However, in 2001 a further 160 acres was added to the south of the site, and much of this area had been recently cultivated. Cultivation is not permitted in natural areas, yet with the abandonment of such a large tract of bare ground weed growth, particularly of Canada thistle, perennial sow-thistle and common dandelion quickly became problematic. The Wagner Society hesitantly began to explore its options with regard to restoration. The assumption was that the natural climax community on these disturbed upland sites (as opposed to the fen drainages and coniferous forest) would be a poplar forest, with white spruce gradually coming in to create a climax mixedwood forest.

In 2009 the thistle problem was so bad in and around the southeastern most field, Osborne Field, and a field farther to the west, Willow Field, that the Society enlisted the help of Parkland County technical personnel, who sprayed effectively with Milestone. After this, Osborne Field was sown with a commercial native seed mix, but germination was negligible, no doubt because there was almost no precipitation during that growing season. The following year a healthy crop of timothy grass appeared, presumably from a seed bank in the soil, and thereafter, dandelions and thistles gradually resumed their stronghold.

During 2011 and 2012, **Dr. Anne Naeth's** fourth-year class of reclamation students at the University of Alberta's Faculty of Agriculture, Life and Environmental Sciences undertook to provide Wagner Society with a plan of how to proceed with restoration at Wagner. The plan basically involved two approaches: full-field restoration and the creation of eco-islands. The Society's reclamation committee decided in favour of the latter as being more manageable with limited resources and manpower. It would also allow us to experiment and gain experience without committing scarce resources. The idea of eco-islands is that, if weeds are kept under control, they will expand and eventually coalesce to create continuous natural vegetation cover.

The Eco-islands

In the spring of 2013 two eco-islands, each 50 sq. m in area, were established in Osborne Field.

Eco-island # 1

Project Coordinator: **Cathy Mowat**

Purpose: Reduce presence of invasive (weedy) species and re-establish a more natural native vegetation

Funding: Grant from TD Canada Trust Friends of the Environment (April 2013)

Other donations included the native shrubs used in transplanting courtesy of Bedrock Environmental Services Ltd (Sangudo, AB) and Ceapro Inc., which donated eight water tanks.

Location: In northeastern third of Osborne Field, close to peripheral fringe of aspen forest; the site is a somewhat more low lying area than eco-island # 2 and takes advantage of aspen suckers that are moving westwards from the forested field edge as well as one or two naturally adventive spruce seedlings.

A planting bee using Bedrock shrub stock took place on June 22, 2013, coordinated by Cathy. The following volunteers are thanked for their services on that day: **Helen Omelchuk, Kim McKinnon, Jean Fukushima, Doug Webster, David Fielder and Derek Johnson**. Cathy would also like to thank Namao Transport (1987) Limited for delivery of water. Fencing was later installed.



1 Planting crew: from left, Helen Omelchuk, David Fielder, Kim McKinnon, Derek Johnson, Jean Fukushima and Doug Webster Photo: Cathy Mowat

Eco-island # 2

Project Coordinator: **Patsy Cotterill**

Purpose: Establish a canopy cover of aspen poplar with appropriate understory of native shrubs and herbaceous material

Funding: By the coordinator

Location: Southeastern quadrant of Osborne field on a slight upland, separate from the forested fringe

May 23. Established the boundaries of the eco-island and sprayed with glyphosate to kill timothy and dandelions

June 4. Cultivation of the site using a rototiller. Concurrently volunteers removed timothy tussocks and other weeds. Thanks are due to volunteers **Gary Chan**, and to **Carolyn Vanderveen** and the **Lieffers** family from Osborne Acres for their work on this.

June 11. Planting of 50 aspen seedlings, approximately 30 cm tall, about one metre apart. The trees, of provenance Central Parkland # 2, were supplied by restoration specialist **Eckehart Marenholtz** of Chickadee Reclamation Services. A dozen shrubs, mostly saskatoon and red-osier dogwood, from the same source, were planted at the same time.

July 24. Mulch mats supplied by Eckehart were placed around the aspen seedlings for weed control. About a dozen trees were planted to replace those lost. These trees had either failed to leaf out or had died subsequent to leafing out. Eckehart and his wife **Elizabeth** provided excellent assistance on this occasion. Weeding (and transplanting of additional native stock) was carried out for short periods on the following dates: July 1, July 22, July 29, August 3, August 12 (including herbiciding using a mitt applicator), August 20, August 27, September 1, October 10 and October 12. Although the annual weeds, chiefly canola,

Getting nature back to Wagner: Eco-islands established in the south-east this year; trees planted in Succession Field (continued from page 4)



Preparation of Eco-island # 2; Gary Chan and the Liefers family.
Photo: P. Cotterill

were readily hoed out, dandelions and, later, thistles proved aggressive and persistent, which is why glyphosate was applied using a mitt on August 12. Weed control has certainly proved to be the most labour-intensive and time-consuming aspect of eco-island establishment. This could probably have been reduced with a somewhat different regimen; for example, by applying two herbicidings in the spring, separated by an interval of time that allowed re-growth of weeds, or by herbiciding the previous fall followed by a spring application, or by allowing a full growing season to elapse between herbiciding and planting. The following volunteers are thanked for assistance with weeding: **Carolyn VanderVeen, Trudy Harasci, Kim McKinnon, Colleen Raymond, Gail Fennell and Cherry Dodd.**

Transplanting of other native shrubs (e.g., snowberry, Canada buffalo-berry, willow) was done on the dates indicated, along with native herbaceous plants (e.g., late goldenrod, Canada anemone, wild strawberry, cream-coloured vetchling, star-flowered Solomon's-seal, sweet grass and purple oat grass) that are common understory plants. All these plants had original local wild sources.

In October, partial snow fencing was installed (the greater part kindly donated by **Trudy Harasci**) to collect snow and provide some protection to the transplants.

Next spring: survival will be assessed and growth measured. Weeding will no doubt continue to be a frequent chore. Given the expected prevalence of thistle and dandelion, glyphosate will be applied using a mitt and/or a hockey stick applicator, taking care to avoid the native plants.

A special thanks to Eckehart Marenholtz for his advice and assistance given in person and by email throughout the season.

Tree Planting in Succession Field

This spring Wagner Natural Area Society was approached by The Carbon Farmer, Brad Rabeiey, with the offer of transplanting tree seedlings into sites of our choice within Wagner. We agreed that the Succession Field and the periphery of the Villeneuve field were appropriate sites, as long as the planting was done without benefit of machinery. This was without cost to the Society. The Carbon Farmer is paid to grow and plant trees by companies who thereby gain carbon offsets.

Derek Johnson agreed to be the Wagner coordinator for this project and took part during the planting days of June 22 and 23. Derek also participated in an Alberta Primetime TV program report on the project.

The transplanting involved some 2000 white spruce seedlings and balsam poplar seedlings of approximately 30 cm in height, planted by The Carbon Farmer and his crew. While white spruce seedling survival appeared satisfactory, within a short time it became evident that mortality of the balsam poplar seedlings was very high due to heavy browsing. A cow moose and calf seen several times in the Succession Field were thought to be the culprits, but deer were likely also implicated. Several replacement balsam poplar seedlings planted later in the same spots by Patsy Cotterill met the same fate, although some small willows planted at the same time survived. Derek, who has kept good records of survival of all white spruce so far planted in Wagner, will monitor flagged seedlings next season. Evidence so far suggests that planting of individual poplar saplings may not be the easiest or fastest way to re-forest a field!



Eco-island # 1 on October 12, 2013

Photo: P. Cotterill



Eco-island # 2 on July 29, 2013

Photo: P. Cotterill





Tragedy in Our National Parks? Tragedy of the Commons (Part 3) by W.A. (Bill) Fuller

This is a continuation of a reprint begun in the June 2012, Volume 26 (1) issue and continued (Part 2) in the May 2013, Volume 27 (1) issue of the Wagner Natural Area newsletter. Dr. Fuller made this presentation in 1977 to the National and Provincial Parks Association of Canada (now CPAWS). The late Bill Fuller was a well-known local biologist and long-time supporter of Wagner Natural Area.

“Let us now look at the results to be expected from stressing the system, that is, allowing the number of visitors to increase until some aspect of carrying capacity is exceeded. By definition the system deteriorates under this stress so we need consider only the gains and losses, and the nature of the responsibility involved, for each of the classes of people in our model (Figure 3).

Figure 3. Results of Stressing the National Parks

Who is affected?	How are they affected in terms of:		
	Enjoyment	Dollars	Visitors
Visitor	Gain	Loss	0
Caterer	0 or Loss	Gain	0
Administrator	0 or Loss	Gain (?)	Gain

The caterer stands to benefit economically from an increase in the size of the market in which he sells his services. He will therefore press for developments in “his” park in order not to lose customers to his counterpart in another kind of recreation area. Thus it is in his best interest to act irresponsibly, that is, to encourage more and more visitors. Admittedly, some caterers may derive enjoyment from their occupation and may be uneasy about diminution of that enjoyment, but their loss is relatively small, is shared by all, and is likely to be over-ridden by their monetary gains.

One further comment about the position of the caterer – if you ask the owner of a

hotel or store or bus line in a National Park whether he is a private entrepreneur he will probably answer “yes,” but the game he is really playing is not pure Private Enterprise but a hybrid of Private Enterprise and the System of the Commons. To the extent that he is exploiting, even indirectly, a commonly owned resource for personal gain, while enjoying negative responsibility, he is outside the rules of Private Enterprise.

The administrator is in something of the position of a hired manager in a socialist system. He does not benefit directly from exploitation of the environment, but he probably benefits in terms of promotion – and hence of status and income – from successfully catering for more visitors,

who, in turn, impinge on the environment. Thus, the administrator is playing a game that is a hybrid of Socialism and the System of the Commons.

Finally, we must look at the position of our several categories of visitor. The wilderness lover, seeking an intensely personal experience in solitude, finds the parks increasingly crowded. For him, psychic carrying capacity has been exceeded, and he may decide that his gains in enjoyment no longer justify his dollar costs. Here is a negative feedback that, in principle at least, can regulate traffic in the back country. The danger I foresee, however, is that the sensitive visitor who can no longer satisfy his need for solitude in National Parks is likely to lose interest in their maintenance. Thus, paradoxically, the major consequence of this feedback loop may be to create apathy or loss of support for sound park management. At the other extreme, ecological illiterates will continue to patronize camping slums and bowling alleys, demanding ever more facilities with little,

if any, thought for the future. Thus, I am forced to conclude that there is nothing inherent in the system that will prevent the inexorable encroachment on remaining wilderness until some degree of ruin ensues.

Where then do solutions lie? Let me say at the outset that I have no detailed prescription, but if the foregoing analysis is basically true it points to a number of dangers and suggests some possible remedies.

An obvious recommendation, of course, is to create more parks and thus spread visitor use and relieve overcrowding. The operational difficulty with this “solution” is to find areas that meet National Park standards and that are, at the same time, free of competing claims for other uses. The philosophical difficulty is that it could lead to creation of new parks for the wrong reasons. In my view, National Parks should preserve outstanding examples of the diversity of landscapes and biomes that is Canada. Important biomes, such as grasslands, are still not represented. These gaps should be filled, even in areas of low visitor potential, before we respond to visitor pressure by providing additional parks in popular areas.

In any event, the land mass of Canada is finite and, therefore, so is the potential for establishing new parks. In the long run the solution does not lie in increasing the supply of park lands.

A partial solution may lie, however, in providing increased opportunities for facilities-oriented, mass recreation, outside the National Parks. These could be National Recreation Areas, as in the United States, or areas operated by provincial or local governments or private interests. *(continued on next page)*



Tragedy of the Commons (Part 3) (continued)

In all future planning for National Parks, I think, we must accept the existence of an economic system that is neither pure Private Enterprise nor pure Socialism, but which contains a large element of the System of the Commons. We must, therefore, be willing to set aside some of the dogmas of traditional economics and replace them with concepts based on the rules that operate in commons of all kinds.

Recalling that in a commons it pays to act irresponsibly, and that freedom brings ruin, it is obvious that we must contrive to put a penalty, rather than a premium, on irresponsibility, and we must accept restrictions on our personal freedom to do as we wish in National Parks. Neither of these objectives would be impossible to meet in a tribal community where restraints, such as social approbation or ostracism, provide a form of negative feedback governing irresponsible or rapacious behavior. But in a modern, impersonal, urban society both will be operationally very difficult.

Devices to penalize irresponsibility will likely be labeled socialistic attempts to impede Private Enterprise, and will be fought tooth and nail by all who fail to perceive the distinctions between Private Enterprise, Socialism, and the System of the Commons. Powerful opposition can also be confidently predicted to attempts to limit freedom of access to, or activity within, National Parks. Orators, whether of the right or of the left, will extol the virtues of freedom without recognizing that freedom to bring ruin is an empty freedom."

To be concluded in the Spring, 2014 newsletter.



Left, Round-leaved Bog Orchid, *Platanthera orbiculata*, photographed in Jasper in 2012; below, close-up of the flowers of plant found in Wagner, 1 July 2013.

Photos: David Fielder



Upon reflection about a plant identification controversy that boiled over this past August, which entailed the death of numerous electrons during a frenetic and lengthy email battle, here's an offering of how it might have been viewed by our resident species.

[See Page 8 for more on Jewelweeds.- Ed.]

The Jewelweed's Lament or Touch Me Not!

by Dave Ealey*

I may be just a touch-me-not, but will not be a hear-me-not,
From Wagner's keenest botanists, I feel a great affection,
Yet Patsy, Derek and Fielder, dwell mostly on detection,
What comes of being besotted, tag me dotted, notted, spotted.
I follow my *capensis* claim, from Africa's Good Hope Cape,
Through convergent evolution, to Wagnerian landscape,
My floral shape's a relaxed curve, I do it with quite a verve,
I've heard it's bumblebee-friendly...they've never buzzed that to me!

So what's in a name from Latin that demands a referee?
You might declare I'm *Impatiens*, but that style's not true for me,
Am I eastern? Am I western? Why not say Wagner bestern?
I am what I am, that's all that I am, I'm *noli-tan-ge-re!*

*Recently retired with clearly too much time on my hands.



Derek Johnson checking a permanent sample plot in July.
Photo: David Fielder

Visitors:

To report medical or crime emergencies on site call 911.
To report damage to the Natural Area call Public Lands at 780-464-7955. To communicate ideas and suggestions please contact Wagner Society at info@wagnerfen.ca



Wildflowers of Wagner No. 39

Impatiens noli-tangere L. Family Balsaminaceae

In late July and August visitors to the Marl Pond Trail this year were being “wowed” by the bright yellow blooms of patches of Western Jewelweed or Western Touch-me-not, *Impatiens noli-tangere*. An annual of variable stature (50 to 150 cm) and moist, shaded soils, it can appear in large numbers and reach its greatest heights in years of ample precipitation.

As an annual with easy access to soil moisture in its habitat, such as muddy stream edges and depressions in wet woods, it invests little in the structural strength of its vascular system. Its green stems are brittle, translucent, succulent with watery juice, and eventually hollow. Its oval, toothed, alternately arranged and stalked leaves, ranging from 4-7.5 cm long, are thin and also somewhat translucent; they are a yellowish-green colour when young but become a darker, bluish-green in age.

The flowers are loosely clustered on stalks that arise in the angles of the upper leaves; they are basically yellow but are usually fairly heavily dotted with red spots, especially on the back of the spur. The large (3 cm-long) flowers dangle almost perpendicular to the flower stalk. They are slipper-like in overall shape, which reminds some people of yellow lady’s-slipper orchids. Although the flower consists of three sepals and three petals, the most conspicuous part is the large (2 cm) pouch-like sepal, which tapers gradually into a tubular spur, whose tip curves downwards and backwards. The pouch sepal is about a half as broad as long. Slender green pods or capsules, 1.5-3 cm long, split at maturity into five valves, flinging out the 1-9 seeds explosively. This characteristic, common to *Impatiens* species in general, is the source of the common name, touch-me-not (a direct equivalent of the Latin “be unwilling to touch”). However, often a small vibration is enough to cause the capsules to shatter. The other common name used for the genus, Jewelweed, derives from the small beads of rain or dew that gather on the leaf surfaces and glisten in the sun.

Bees and hummingbirds are the chief pollinators of the Western Jewelweed’s conspicuous flowers, the latter attracted by the nectar inside the spur tip. The plant also produces very small, whitish flowers that never open, cleistogamous flowers. These are self-pollinating and capable of producing seed capsules, thereby increasing the seed supply (always important for an annual). Seeds readily germinate in moist ground with the result that masses of seedlings, looking a bit like large patches of cress, can carpet the ground in spring.

Western Jewelweed, as its name implies, has a western distribution in North America, and also occurs in Eurasia. Another species, Spotted Touch-me-not, *Impatiens capensis*, occurs in Alberta, and has a much wider distribution in North America, where it is exclusively native. Its flowers are a deep orange colour, it is more spotted on the lower side, and its pouch appears chunkier, as it is about two-thirds as broad as long. The spur narrows abruptly and its tip recoils tightly, a bit like a pig’s tail. In the absence of flowers the two species are virtually impossible to tell apart.

I. noli-tangere appears to be by far the commoner species in the Edmonton area, though plants approaching *I. capensis* have been found near Big Lake. We can have fun looking for both species in Wagner and other local venues next year as well as for the forms without spots that also occur.

For more information on this fascinating species and its fellows in the genus *Impatiens*, check out Peter Zika’s article, *Jewelweeds and Touch-me-nots*, in *Botanical Electronic News*:

<http://www.ou.edu/cas/botany-micro/ben/ben408.html>

Western Jewelweed, Western Touch-me-not Balsam Family



Flower of Western Jewelweed, *Impatiens noli-tangere*.

Wagner, 1 September 2012.

Photo: David Fielder



Western Jewelweed. George Pegg Botanic Garden, 16 August 2009

Photo: P. Cotterill



Plant with flower shape (but not colour) of Spotted Jewelweed, *I. capensis*. Note chunky spur, tightly coiled tip, and lack of spots. Big Lake, 29 August 2013.

Photo: P. Cotterill