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Cover photo: Marsha Hayward;
Looking through green alder (*Alnus crispa*) encased in
ice crystals along the Cold River.

Two New Species for Alberta

Varina Crisfield

Alberta has been thoroughly combed over by botanists, and for the most part, we have a good understanding of what plant species are found in the province. Once in a while, though, new things pop up that had previously been under our radar.

The summer of 2014 was an exciting season for us at the Alberta Biodiversity Monitoring Institute, as we collected not only one, but two new vascular plant species for Alberta. ABMI technicians collected specimens of the charismatic dragon's mouth orchid (*Arethusa bulbosa* Linnaeus) at a site northeast of Fort McMurray, and large-leaved pondweed (*Potamogeton amplifolius* Tuckerman) from two wetland sites in the northeast.

I thought I would give a little introduction to these new arrivals so that botanists and plant enthusiasts can keep an eye out for them, especially when botanizing in the northeastern portion of the province.

Dragon's mouth orchid (*Arethusa bulbosa*)

Dragon's mouth is the sole member of the genus *Arethusa*. It has a broad range in North America, extending from Alberta in the west to Newfoundland in the east, and as far south as South

Carolina; however, it is imperilled (ranked S1 or S2) throughout much of its range and has been extirpated from some jurisdictions.

The species is usually associated with fens, but occasionally occurs in bogs as well. It is thought to be an early successional species that does not tolerate heavy shading. In Alberta, it was found in a very wet rich fen in Marguerite River Wildland Park.



Gordon Robertson

Dragon's mouth orchid (*Arethusa bulbosa*)

Two New Species, from page 1

Dragon's mouth is a strikingly beautiful orchid that produces a single, large, bright pink flower. It has a single leaf that typically remains a bladeless sheath until the flower matures, at which point the leaf elongates to form a linear or lanceolate blade.

The flowers are relatively large (up to 5 cm), with petals and sepals that are both pink to magenta. The lip is pink with yellow and white crests. As implied by the Latin name, the plant possesses a bulbous underground corm.

Dragon's mouth superficially resembles the more common calypso orchid (*Calypso bulbosa*), but the two can easily be distinguished by a number of characters, summarized in the table below.

<i>Arethusa bulbosa</i>	<i>Calypso bulbosa</i>
Inflorescence erect	Inflorescence nodding
Floral bracts 2, tiny	Floral bract 1, conspicuous
Flower up to ~50 mm long	Flower 15–20 mm long
Sepals not twisted	Sepals twisted
Leaf linear, developing after anthesis	Leaves ovate to orbicular, developing in the fall

Chris Meloche



The beauty of this species has made it irresistible to orchid collectors, who have contributed to population decline and loss in some areas. Other anthropogenic factors—mainly fire suppression and peatland drainage—have resulted in the loss of appropriate habitat. In light of these pressures, it is perhaps unsurprising that, although widespread, dragon's mouth tends to be rare throughout most of its range.

This may not be entirely due to human influence, though: in addition to anthropogenic pressures, the species possesses a number of life history attributes that also likely contribute to its rarity.

Dragon's mouth requires relatively high light levels and tends to inhabit early successional environments after fire, declining as trees and shrubs reduce light levels in the understorey. To persist on the landscape, therefore, the species must continually colonize new sites where appropriate conditions are available; however, like many orchids, reproduction by seed in dragon's mouth is slow and unreliable. Seed set also tends to be poor—possibly because the plant does not produce nectar, and insect pollinators may avoid visiting it once they learn that it offers no sweet reward.

With its short lifespan, poor seed set, slow and unreliable establishment, and relatively specific habitat requirements, dragon's mouth certainly seems to make things hard for itself!

Large-leaved pondweed (*Potamogeton amplifolius*)

Large-leaved pondweed is an appropriate moniker for a species whose leaves can reach up to 20 cm long and 7.5 cm wide. Large-leaved pondweed is a distinctive and relatively easily identified pondweed, particularly in comparison to similar species (*P. alpinus*, *P. gramineus*, *P. nodosus*) found in Alberta.

The submerged leaves of this species are particularly helpful in identification, as they are not only unusually large, they are also arching (arcuate), petioled, and have a large number of veins (19+). The only other pondweed in Alberta with petioled submerged leaves is *P. nodosus*, which can be distinguished from large-leaved pondweed by its longer petioles and narrower, non-arching leaves; however, there is a fair bit of overlap in these characters between the two species, so identifications must be done with care.

For anyone interested in keys for distinguishing this species from others in the province, Christopher Brayshaw's book *Pondweeds, Bur-reeds and their Relatives of British Columbia* offers a good one that seems to work well with Albertan material. The *Flora of North America* (available online) can also be used, but I find their key to be less reliable than Brayshaw's.

After finding the initial two records for this species in 2014, the ABMI collected a third specimen of large-leaved pondweed in the summer of 2015. The species is now known from three locations in the province: one near Conklin, one south of Lake Athabasca, and one near Fort Mackay.

According to the *Flora of North America*, large-leaved pondweed has a wide, but discontinuous, distribution across the continent: it is mostly concentrated in the Great Lakes region, the Maritimes and New England, but occurrences

See **Two New Species**, page 3

Two New Species, from page 2

have been reported throughout the continent.

Other pondweed species have similarly patchy distributions across North America – pondweed seeds can be dispersed by waterbirds, which might add an element of stochasticity to the distributions of these plants.

Given that large-leaved pondweed has been recorded in all Canadian jurisdictions with the exception of the three northern territories and Alberta, it may have been just a matter of time before it would turn up here.

Large-leaved pondweed
(*Potamogeton amplifolius*)

Jean Pawek



Acknowledgements

Thank you to Jamie Godfrey, Liam Harapp and Lauren Law for collecting good specimens, and additional thanks to Lauren Law for providing habitat descriptions for the ACIMS report. Thanks also to Joyce Gould and Curtis Bjork for providing verifications of my initial identifications.

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Cheryl Hendrickson



In 2010, the ANPC received an Emerald Award in the Not-for-Profit Association category, in recognition of promoting knowledge of Alberta's native plants; conserving Alberta's native plant species and their habitats; and preserving plant species and habitat for the enjoyment of present and future generations.

ANPC continues to honour volunteers who have made outstanding contributions to ANPC by presenting this award to a selected volunteer annually at ANPC's workshop/AGM. Since the Emerald Award was received in 2010, Lorna Allen, Mryka Hall-Beyer, Linda Kershaw, Elisabeth Beaubien, and most recently Jane Lancaster have been recognized in this fashion as outstanding ANPC volunteers.

Jane Lancaster (left) receives the Emerald Award to hold for the next year. Elisabeth Beaubien (right) presents Jane with this ANPC honour.

Jane has helped ANPC in so many ways—editor for the rare plant survey guidelines, coauthor for the *Rare Vascular Plants of Alberta* book where she organized all the illustrations and maps, and now she continues to help with updates of both documents.

Many thanks to Jane!

Clyde Fen Natural Area Stewardship Report

J. Derek Johnson

Clyde Fen Candidate Natural Area is located approximately 8 km NE of Clyde, or 7.5 km E of Highway 2 along the Bouchard Lake Road. The natural area encompasses parts of three quarter-sections of land (SW 15, NE 16 and SW 27 of Twp. 60 Rge. 24 W4M).

Clyde Fen is important for a number of reasons. It supports the most southerly population of pitcher plants (*Sarracenia purpurea*) in Alberta. Other insectivorous plants found in the area include three species of sundew (*Drosera*) and three species of bladderwort (*Utricularia*). Bog adder's mouth (*Malaxis paludosa*) and Loesel's twayblade (*Liparis loeselii*) also occur in the area. These orchids are two of Alberta's rarest native plants.

Haul Road

Serious concerns about the future health of this natural area were raised following the construction in 2010 of a haul road to a sand and gravel pit that basically bisected the fen. The fear was that the road would disrupt the drainage pattern, to the detriment of the fen.

Over the past five years (except for 2011) at least one visit has been made to the area yearly to check on the condition of the fen. Most of the visits coincided with Nature Alberta's May Species Count. It turns out that the "doom and gloom" predictions for the area have not materialized to any serious extent. A single culvert was placed under the road at the south end of the fen in 2010. At the suggestion of several concerned citizens, a second culvert was placed across the road at the north end of the fen the following year. The water level appears to have stabilized on both sides of the road. The pessimists think that's only because the culverts have become plugged. I doubt this is the case because, if it were true, the road would be acting as a dam, and the water level on one side would be higher than on the other.

The operators also said they would spray the road to control the dust kicked up by the regular procession of heavy trucks on workdays. Whether they continue to do this on a regular basis, I don't know, but I have not seen an obvious dust layer on the vegetation except immediately adjacent to the road.



Derek Johnson

Photos 1 and 2. Comparison photographs between 2010 and 2013 showing how the roadside ditch has gone from water and annual weeds (above) to a well-developed cover of horsetails and cattails (below).



Derek Johnson

The litter along the side of the road is a bit disconcerting, but considering the road has been there for five years, it's really not that bad. It also gets nicely covered up in the summer by the horsetails (*Equisetum* species) and cattails (*Typha latifolia*) growing in the ditch along the side of the road. Both have proliferated extensively along the ditch since 2010 (photos 1 and 2).

ATV Tracks

There was at least one serious ATV incursion into the fen in 2010 (photo 3) when the road was being built, but the operators of the sand and gravel pit said they would prohibit access to the fen via their haul road. So far this seems to be true. The tracks from 2010 are still visible if you know where to look, but they are fading and there is no evidence of any ATV activity in the fen since 2010.



Derek Johnson

Photo 3. One of several ATV tracks in the fen in 2010. The tracks have become much less visible over the past five years.

Clyde Fen Stewardship, from page 4

Effects of the 2001 Fire

In 2015, the fen was the driest I've seen it since 2001, which was the driest I have ever seen. 2001 was the year half of central Alberta burned to the ground, including much of Clyde Fen. 2001 was also the only year I was unable to find a single flower on the bog rosemary (*Andromeda polifolia*), the only time that's happened in 20 visits to the area for the May Count. No wonder the area was ripe for a fire.

The fire guard that was cut across the south end of the natural area in 2001 to stop the fire has grown in heavily with aspen (*Populus tremuloides*) and balsam poplar (*Populus balsamifera*), now at least 3 m tall and quite difficult to walk through. No more weeds. The brush pile at the edge of the fire guard has rotted sufficiently that I fell through it and lost the lens cap to my camera in 2013.

The pitcher plants (*Sarracenia purpurea*) in the natural area have recovered well following the fire in 2001. However, no pitcher plants can be found in the part of the fen on private property west of the haul road, where they once occurred. Cattle were run in this area for only one month in 2004, but that appears to have been enough to alter the area sufficiently to preclude recovery of the pitcher plants.



Janine Lemire

Pitcher plant (*Sarracenia purpurea*)

The swamp birch (*Betula pumila*) in the wetter parts of the fen recovered quickly following the fire in 2001, but the tamarack (*Larix laricina*) in the same area are not regenerating very well

(generally too wet?). Hardly a seedling can be found where once there were trees. Generally, the regeneration of the black spruce (*Picea mariana*) is much better.

Loesel's Twayblade

The patch of Loesel's twayblade (*Liparis loeselii*) discovered in the fen in 2005 appears to be surviving well. Two of the orchid fanatics from the Wagner Natural Area Society visited the area in late June 2013 and quit counting flowering stems at 70! They estimated there were at least 100 plants in the area. Exceptional, but I can't really compare this to other years since I've generally not been there at the right time to catch it flowering.

Weeds

The bad news is that the scourge of moist ditches in north-central Alberta, creeping meadow foxtail (*Alopecurus arundinaceus*) has established in two areas beside the road. In 2015, the edges of the road were sprayed with herbicide to control the shrub growth. It appears that only the west side of the road abutting private property was sprayed and not the side that forms the boundary of the natural area. Interesting, if indeed the gravel pit operators refrained from spraying on the natural area side, either voluntarily or because they were told to do so.

Highlights of Visits by Year

May 27, 2012

Six people, including four from Athabasca, visited the area to conduct the annual plant count (46 species were observed in flower). Making the trip an Adopt-A-Plant outing improved the participation and made it a much more interesting day. One of the participants came on the trip specifically to see the pitcher plants. The recently constructed road through the fen really upped the weed count. However, the effects of the road only seem to extend out a couple of metres from it.

On the positive side, stemless raspberry (*Rubus arcticus*) put up one of the best displays of flowers that I can remember in all the May Counts I've participated

in in the area. One lady, who said she'd spent most of her life in Athabasca, said she'd never seen the plant before. (That shows you that most people don't like getting their feet wet!) She picked the right year to come; the last three years there have been relatively few flowers on the stemless raspberry.

The only other record of interest was alpine cotton grass (*Trichophorum alpinum*), a species rarely seen in flower in the area on the count.

We took the opportunity to better mark the location of the Loesel's twayblade orchid in the fen. (Not too closely though, just in case somebody gets too curious.) This orchid is an S1 tracked species in Alberta (ACIMS) with four known locations in the province.

We were unable to get to Bouchard Lake (in the NW corner of the natural area) from the east because of the doghair jack pine regeneration along the cutline following the fire in 2001. Deadfall from the fire in 2001 also makes it difficult to get to the lake from the south. The fire in 2001 did absolutely nothing to get rid of the Siberian pea shrub (*Caragana arborescens*) surrounding the old farmstead in the NE corner of the natural area. It's back bigger and better than before the fire. Two black bears were spotted, but no indication of the colour of the spots or the flowering stage of the bears was given.

June 4, 2013

Two lonely souls visited the area for a belated May Count, and 70 species were seen in flower. That shows what a difference an extra week can make to the number of species seen in flower.

The sheer number of flower spikes on the cotton grasses (mostly russet cotton grass, *Eriophorum chamissonis*) in the area was striking (photo 4). I can't remember another year when there was so much white blowing in the wind. The amount of annual weeds growing along the road decreased from the previous year, being replaced by at least three species of horsetail.

See Clyde Fen Stewardship, page 7

Clyde Fen Natural Area Blog – Summer 2015

Joelyn Kozar & Kristen Andersen

Kristen Andersen and a group of seven enthusiastic botanists from the Alberta Native Plant Council took a field trip to Clyde Fen on July 18, 2015.

We started the morning by walking through an area on the east side of the road (constructed in 2010) that bisects the fen (SW 15-24-60-W4M). We were hopeful to find Loesel's twayblade (*Liparis loeselii*), a tracked S2 orchid, in this area since it has been observed in large numbers in past years. As it turned out, this was not the year for that species. Other orchids were in bloom including tall white bog orchid (*Platanthera dilatata*) and hooded ladies'-tresses (*Spiranthes romanoffiana*). We also found some of the resident carnivores including pitcher plant (*Sarracenia purpurea*) and oblong-leaved sundew (*Drosera anglica*). The fen was certainly drier than most years due to low rain fall. Although the ground was still saturated and not crunchy, some plants seemed quite stunted such as *S. purpurea*.



Taking a break at the old shooting range in a dry pine stand, just before walking south along a cutline back to the road.

Next we crossed the road to the west side in NE 16-24-60-W4M, as Derek Johnson knew of an area being invaded by cicer milk vetch (*Astragalus cicer*). We set out to hand pull these weeds as a group. The weeds were just on the north side of a small hill at the south edge of the natural area. Some common



Bog adder's-mouth (*Malaxis paludosa*), a tracked S2S3 orchid found in Clyde Fen.

tansy (*Tanacetum vulgare*) was also found there. Many hands make light work, and after a few garbage bags were stuffed, we set off to have lunch in the dry pine stand just northwest of where the gravel pit gate is located.

After lunch we started our way down the cutline in the direction of the lake then turned left into an area used in years past as a shooting range where there was no evidence of recent use. Common caragana (*Caragana arborescens*) was growing thick within the cutline, but walking was not very difficult. We eventually came back along the cutline, but turned south into the fen just before reaching the road where we started off (NE 16-24-60-W4M).

Here the fen is quite hummocky and thick with black spruce (*Picea mariana*). This area is not easy walking, given the extent of downed trees from the wildfire that passed through here in 2001. But some of the group had recalled bog adder's-mouth (*Malaxis*

paludosa), a tracked S2S3 orchid, in this area, and we were curious to see if we could find some this year. Before long, someone spotted it! Given the small size of this orchid (see photo above), it is somewhat similar to finding a needle in a haystack. So this was indeed a victory for the group. There were a total of six plants found.

That concluded the trip, and with a feeling of accomplishment, we wrapped up and headed off towards home (or the ice cream store).



View of shoreline on Bouchard Lake.

See *Clyde Fen Blog*, page 7

Clyde Fen Blog, from page 6

Joelyn Kozar and Allison Scovil took a field trip to Clyde Fen on August 22, 2015.

Our focus was to observe sedge species (*Carex* spp.) within Clyde Fen. We walked along the cutline bordering the east side of NE 16-60-24-W4M, but soon walked diagonally northwest towards Bouchard Lake. Walking was slow and difficult through the hummocky and burnt tree terrain. We frequently had to over and under fallen black spruce (*Picea mariana*) from the 2001 fire. Not to mention our frequent stops to identify *Carex* spp. such as bog sedge (*Carex magellanica*) and bristle-stalked sedge (*Carex leptalea*)!

We reached Bouchard Lake at the southernmost point of the lake where the treed fen portion of the wetland complex extends right up to the lake edge. As you get closer to the lake, there is a gradual increase of beaked sedge (*Carex utriculata*) and then a thin strip of common cattail (*Typha latifolia*). Standing on a fallen black spruce, I could see clear of the bushes and across the lake where there was a large group of waterfowl. Miraculously the stick held me, and it wasn't until I was making my way back to the treed fen that I fell through.

From here Allison and I walked east to a pine (*Pinus* sp.) stand with sandy substrate. There were signs of a shooting range, but fortunately nothing recent looking. We walked back along the cutline, and just before getting back to the road, we took a break in some shade. Here we noticed cyperus-like sedge (*Carex pseudocyperus*) and slender-beaked sedge (*Carex brevior*) growing in a low area.

All in all we noted ten *Carex* spp., including many species new to us. We packed up our stuff to travel back to our campground for supper and banana dream boats on the fire. ♦

Clyde Fen Stewardship, from page 5

White-tailed deer seem to be regular visitors when it comes time for lunch. Two does came within about 15 m of us before they figured out they really didn't want any tuna fish sandwiches.



Derek Johnson

Photo 4. Extremely prolific flowering of cotton grass (primarily russet cotton grass, *Eriophorum chamissonis*) at Clyde Fen in 2013.

June 1, 2014

Another belated May Count, this time with three participants. Only 40 species were in flower, in part due to a late spring, one participant had a bum ankle, and the compiler (me) suffered from cataracts and couldn't see anything. Nothing really special to note regarding the condition of the natural area.

May 31, 2015

A solo visit to the area revealed 57 species in flower, definitely an earlier spring. I was later arriving in the area than usual, so the two white-tailed deer does were waiting for me as I parked.

Unlike 2013, when there was a super abundance of flowering in the sedge family, spikes were few and far between in the area this year, possibly due to the dryness, but in talking to other people about their May Counts, this wasn't a universal condition.

I couldn't find any sign of the leaves of Loesel's twayblade where I looked. No flower buds could be found on the pitcher plants, which was unusual, and the buck-bean (*Menyanthes trifoliata*) looked like it had just thawed out from a deep freeze. Many of the stems were brown and mushy.

The forested area that was cleared on the quarter-section west of the haul road in 2001 was planted with cicer milk vetch (*Astragalus cicer*) about five years ago, before it was converted to canola. Unfortunately, cicer milk vetch has escaped onto the cutline across the aspen mineral island on the west side of the road. Plants were pulled when seen. Fortunately, most of the fen is probably too wet for it to establish there. ♦

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Jimsonweed (*Datura stramonium*)

Elena Farries

“Red as a beet, dry as a bone, blind as a bat, mad as a hatter”—key symptoms of jimsonweed poisoning.

On September 10, 2015, a Weed Alert was issued for jimsonweed (*Datura stramonium*), a plant that is currently uncommon in Alberta (Government of Alberta, 2015). Jimsonweed (also known as locoweed, thornapple, or devil’s cucumber) can be deadly if ingested, and **ALL PARTS OF THE PLANT ARE POISONOUS**. Its habitat is disturbed areas including roadside ditches and agricultural lands. Recently, this plant was spotted in canola fields within Barrhead, Leduc and Westlock Counties.

This tall, foul smelling plant can reach heights of up to 2 m, making it hard to miss. It has thick, smooth, reddish-purple stems and white to purplish trumpet-shaped flowers that bloom between May and September. The seed pod is an interesting sight, with a bright green, spiny appearance containing anywhere from 100–700 tiny, black, kidney-shaped seeds. At maturity, the capsule splits open releasing the seeds in the surrounding area.

Now, here’s where it gets interesting. The name jimsonweed is a derivative of Jamestown weed, a name coined in the 17th century by British soldiers involved in the Rebellion of Bacon (Beverley, 1673–1722). The soldiers ate the boiled leaves in salad and acted as “a very pleasant comedy” for up to 11 days before returning to normal.

Jimsonweed is a member of the Solanaceae family and is one of several different species (including deadly nightshade) that contain the tropane alkaloids: atropine (leaves, roots, seeds), hyoscyamine (roots), and scopolamine (AACC, 2015). These alkaloids contain anticholinergic properties, which block the acetylcholine neurotransmitters in the brain resulting in delirium and hallucinations. Key physical symptoms can be summed up in a single phrase:



Leaves have irregular toothed margins 10–20 cm long. Bitter and nauseating to the taste.



Photos courtesy of Westlock County (Government of Alberta, 2015)



“Red as a beet, dry as a bone, blind as a bat, mad as a hatter.” Other symptoms include elevated heart rate, flushed skin, dry mouth, dilated pupils, blurred vision, combative behavior, and difficulty urinating. Symptoms show within 30 to 60 minutes, and can last anywhere from one to two days or even as long as two weeks due to delayed gastrointestinal motility. Severe toxicity has been associated with coma, seizures, and in serious cases, death.

Because of its hallucinogenic properties, a major issue with jimsonweed is its potential for misuse. Although exposure is sometimes unintentional, its toxic effects are often abused by teens, who attempt to achieve its “euphoric” effects (Spina and Taddei, 2007). This is a dangerous game, as the amount of toxins are highly variable from plant to plant and even leaf to leaf.

We don’t know how the seeds were brought into Alberta—perhaps in bird droppings or transported in crop seed? If you spot the weed, it should be carefully removed to prevent its spread. Wear gloves and long sleeves and **double-bag** the clippings in plastic, to be buried at the landfill. Do not compost or burn the clippings, as the smoke from the plant can also have toxic effects.

You can report any sightings to Nicole Kimmel, Weed Specialist, Alberta Agriculture & Forestry at 780-422-0885 or nicole.kimmel@gov.ab.ca.

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Tongue-tied in Latin: P to Q

C. Dana Bush

I was relieved to find several words in this list that I pronounce correctly (Pinguicula = ping-*gwi*-kew-la and Polemonium = po-lee-*mō*-nee-um), but most of them I struggle with the accents. Here again is a breakdown of the rules for accents.

Words of two syllables are stressed on the first syllable (Prunus = *proo*-nus). Words of more than two syllables are stressed on the next to last syllable if the vowel is followed by two or more consonants (Potentilla = po-ten-*til*-la), or if the vowel is long (Petasites = pe-ta-*see*-teez). Otherwise, they are stressed on the third to last syllable (Phacelia = fa-*kel*-ee-a).

I am so glad we are not obligated to pronounce these words in the accepted way, for I cannot convince myself to call pines pee-nus.

Vowels

ă = cat	e = let
a = <i>a</i> part, <i>ca</i> nal	i = <i>i</i> n
o = hot	ie = kite
ō = note	u = <i>fu</i> ll
oi = usually as <i>oy</i>	ū = <i>tub</i>
in boy but classically as <i>o-i</i>	

Consonants

c = always hard as in cat
g = always hard as in gate
s = as in this, not as in those

P

Papaver	pa- <i>pah</i> -ver
Paxistima	
(Pachistima)	păks- <i>i</i> -sti-ma
Pellaea	pe- <i>lie</i> -a
Penstemon	pen- <i>stay</i> -mon
Petasites	pe-ta- <i>see</i> -teez
Phacelia	fa- <i>kel</i> -ee-a
Phalaris	fa- <i>lah</i> -ris
Philadelphus	fil-a- <i>del</i> -fus
Phlox	floks
Phyllodoce	fi- <i>lo</i> -do-kee
Physocarpus	fi- <i>sō</i> -kar-pus
Physostegia	fi- <i>sō</i> - <i>stee</i> -gee-a
Picea	pi- <i>kee</i> -a
Pinguicula	ping- <i>gwi</i> -kew-la
Pinus	pee-nus
Polemonium	po-lee- <i>mō</i> -nee-um
Polygala	po- <i>li</i> -gal-la
Polygonatum	po- <i>li</i> -go- <i>nah</i> -tum
Polygonum	po- <i>li</i> -go-num
Polystichum	po- <i>li</i> -sti-kum
Populus	pō- <i>pu</i> -lus

Potamogeton	po-ta-mo- <i>gay</i> -ton
Potentilla	po-ten- <i>til</i> -la
Primula	preem-ew-la
Prunus	proo-nus
Pseudotsuga	soo-dō- <i>tsoo</i> -ga
(menziesii = men- <i>zeez</i> -ee-ee)	
Pteris	te-ris
Pulsatilla	pul-sa- <i>til</i> -la
Pyrola	pi-ro-la

Q

Quercus	kwer-kus
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Janine Lemire

Populus tremuloides – aspen

Are you an enthusiastic gardener or horticulturalist in the Central Parkland or Boreal Ecoregion?

The Reclamation and Horticulture Committee chair is looking for people who would be willing to share what they know. Do you have current information on demonstration projects and installations, plant and seed sources, and other print and web resources that support native plant gardening and landscaping in your region?

If this might be you, please contact Cheryl at hendrickson@landsaga.com. More information is available on the Growing Native Plants webpage: http://anpc.ab.ca/?page_id=2559.



Janine Lemire

Phacelia sericea – silky scorpionweed

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News and Events

Save the date!

ANPC Workshop & AGM 2016

Date: April 30, 2016

Location: Stettler, AB

Topic: Rare Plant Conservation

Program specifics will be posted at www.anpc.ca, in the ANPC info-email, and in *Iris* as they evolve.

Please plan to join us.

Prairie Conservation Action Committee (PCAP) Conference

ANPC's affiliate, PCAP is hosting its annual Prairie Conservation and Endangered Species Conference on February 16, 17 & 18, 2016, in Saskatoon, SK.

Details at <http://www.pcasc.ca/>.

Alberta Wetland Rapid Evaluation Tool—Actual Guide (ABWRET-A)

Most of you who are interested will know that the long-awaited wetland evaluation guide has been published by Alberta Environment and Parks (June 2015) and is available at <http://www.waterforlife.alberta.ca/documents/RapidEvaluationTool-Jun01-2015.pdf>.

What you may not know is that Appendix 3 is titled Plant Species Considered Invasive by the Alberta Native Plant Council or Alberta Weed Act. Thanks to all the ANPC members whose fees and efforts supported this work, and especially to the volunteer efforts of the late Jim Posey.

Interactive Salix Key

An interactive key of new world *Salix* species developed by Dr. George W. Argus, Curator Emeritus, Canadian Museum of Nature, Ottawa, Canada is now available on the Alberta Conservation Management Information System (ACIMS) website: <http://www.albertaparks.ca/albertaparks/science-research/interactive-salix-key.aspx>.

Rare Plant Study Groups

There are four rare plant ecology study groups associated with ANPC. Three meet throughout the year, indoors through the fall and winter and outdoors through the spring and summer. From October or November until April, the following groups generally meet monthly. Group participants nurture their interest in and expand their knowledge of Alberta's native plants and communities and local ecology. **Please contact facilitators for details and to confirm attendance.**

Central Alberta Rare Plant Study Group (Edmonton)

Location: University of Alberta Herbarium, B-613 (botany wing), Biological Sciences Building (east end), Saskatchewan Drive, Edmonton. Date: Last Wednesday of the month; October to April inclusive. Time: 6:30 to 8:30 p.m. Facilitator: Varina Crisfield (vcrisfield@gmail.com).

Southern Alberta Rare Plant Study Group (Calgary)

Location: University of Calgary Herbarium, Biological Sciences Basement. Date: First Saturday of the month (second Sat. in Jan. only); October to April inclusive. Time: noon to 4:00 p.m. Facilitator: Leslie Monteleone (lesliemonteleone@hotmail.com).

Medicine Hat Rare Plant Study Group

Location: Medicine Hat College Herbarium (L155). Date: Fourth Saturday of the month (except December & February) from noon to 3:00 p.m. Facilitator: Cathy Linowski (clinowski@memlane.com).

Northern Plant and Ecology Study Group (NPESG)

This is a field-based study group, active through the growing season and into early autumn. Contact Marsha Hayward for more information (wildloonart@telus.net).

Plant Happenings and ANPC Info-Email are merging

After decades of keeping us informed about all things botanical, Lorna Allen is retiring as the publisher of Plant Happenings.

Many of us have come to rely on the broad range of information that Plant Happenings has provided to us over the years. It's clearly too valuable to give up, so ANPC has agreed to carry on the effort.

Within the next two or three months, ANPC's monthly email and Plant Happenings will be merged into one (approximately) monthly document. Anyone who now receives the info-email will receive the combined document, unless you decide to unsubscribe—see below.

If you have submissions for Plant Happenings, please submit them to Anna Marie at amozolik@gmail.com.

You don't have to be an ANPC member to receive this combined publication—all you have to do is ask. But we hope you'll consider becoming an ANPC member.

Lorna, sincere thanks for your dedication to providing us with information about botanical issues and events.

Anna Marie, thank you for jumping in to take up the effort.

Want more News and Events?

Sign up for the ANPC Info-Email, by emailing Sandy McAndrews at s.mcandrews@shaw.ca.



ALBERTA
Native Plant
COUNCIL

Puzzling Pairs: *Potentilla finitima* and *Potentilla pensylvanica* with Updated Key from Flora of North America

Dana Bush & Patsy Cotterill

In *Iris* No. 76 (March 2015) I parsed out the names and identification of these two troublesome species, based on *Flora of Alberta* and *Flora of the Great Plains*. Patsy Cotterill wrote to tell me that Volume 9 of *Flora of North America* (Rosaceae) was out and contained a very different key, from which she isolated the Alberta species (see below). Nowhere in the key can I see a description of the reticulate venation in *P. lasiodonta* that I observed and which was described in *Flora of the Great Plains*. It appears that the current experts rely on the number and size of the teeth and the length of the bractlets. All you botanists out there—key them out and let me know what you think of the keys. We will publish the comments in *Iris*.

There are also a number of name changes and additions to note: *P. multifida* is a European species, so they have renamed ours as *P. bimundorum*. It is on ACIMS tracking list (S2), as are *P. lasiodonta* (S3) and the recently added *P. jepsonii* (S1), which is a mountain species.

Sect. *Pensylvanicae*

1. Styles papillate-swollen at very base, if at all, inflorescences ± congested to very open. $2n = 28$. Northern provinces and territories on gravelly ruderal sites, sandy lakeshores; 0–1000 m. S2 G5. Tracked by ACIMS.

P. bimundorum

(Syn. *P. multifida* Linnaeus. *P. multifida* is restricted to eastern Europe and western Siberia.)

1. Styles papillate-swollen in proximal 1/4–3/4+; inflorescences usually congested, sometimes elongating in fruit. 2
2. Basal leaves pinnate, short hairs usually abundant to dense, rarely absent, sometimes obscured (especially in Great Plains); leaflets (2 or) 3–6 (–9) per side, on distal (1/3) 1/2–3/5 of leaf axis; cottony and crisped hairs absent abaxially; epicalyx bractlets: lengths 1–2 times sepals, margins ± revolute. 3
3. Leaflets: teeth 4–8 (–10) per side, margins incised $\pm 3/4$ to midvein, leaving undivided medial blade 2–4 (–8) mm wide; epicalyx bractlets: equal to length of sepals. $2n = 28$. Widespread (but not in Pennsylvania). S5 G5.

P. pensylvanica Linnaeus

3. Leaflets: teeth 8–12 per side, margins incised $\pm 1/2$ to midvein, leaving undivided medial blade 5–9 mm wide; epicalyx bractlets: 1–2 × length of sepals. $2n = 14$. Restricted to sandy sites in n Great Plains; 300–1100 m. S3 G2G4Q. Tracked by ACIMS.

P. lasiodonta Rydberg

(Syn. *P. finitima* Kohli & Packer)

2. Basal leaves subpinnate to subpalmate, short hairs absent, sparse, or obscured; leaflets (1 or) 2 or 3 per side, on distal 1/6–1/3 (–1/2) of leaf axis; cottony and/or crisped hairs absent or sparse to dense abaxially; epicalyx bractlets: lengths 1/2–1 times sepals, margins revolute or not. Petals 2–5 × 2–4 mm, ± equal to sepals; styles 0.8–1.2 (–1.5) mm; leaflets incised 3/4+ to midvein; stems (0.2) 0.5–5 (–6) dm; widespread. 4

4. Sepals: glands absent, sparse or obscured; leaflets usually white abaxially, cottony (and sometimes crisped) hairs ± dense. $2n = 56$. Open prairie, alkaline bottoms, stream sides in sagebrush, disturbed sites; 10–3400 m. S4 G5?

P. bipinnatifida Douglas

(Syn. *P. pensylvanica* Linnaeus var. *bipinnatifida* (Douglas) Torrey & A. Gray)

4. Sepals: glands abundant, evident at least distally; leaflets usually green to greyish abaxially, cottony hairs absent, crisped hairs absent or sparse to abundant. 5

5. Epicalyx bractlets: lengths 2/3–1 times sepals, margins ± revolute (at least in fruit); stems (0.4) 1–4.5 (–6) dm; $2n = 28, 56$. N Atlantic Coast & Hudson Bay across n prairies to n Rocky Mountains; 0–2200 m; rocky and sandy shorelines, open prairie, disturbed sites, talus, rocky outcrops. S4 GNR.

P. litoralis

(Syn. *P. pensylvanica* var. *litoralis*; *P. pensylvanica* var. *pectinata*)

5. Epicalyx bractlets: lengths 1/2–3/4 times sepals, margins flat; stems (0.2) 0.5–2.6 dm. Great Basin and surrounding Mountains; 2500–3700 m; seasonally moist sites in alpine meadows, ridges, fellfields, rock ledges, talus slopes. S1 GNR (not ranked globally). Tracked by ACIMS.

P. jepsonii

(Syn. *P. pensylvanica* L. var. *ovium* Jepson. Has been recorded in Waterton.)

Ertter, Elven, Reveal, and Murray (FNA) say, “*P. lasiodonta* is a diploid relative of tetraploid *P. pensylvanica*, sharing similar velvety vestiture with revolute margins. The species differs in having larger epicalyx bractlets and less deeply incised leaflets. Plant height and leaf size are at the upper range of *P. pensylvanica*, and populations are evidently restricted to sandy substrates.”

See *Potentilla* Key, page 12

Native Plant Portrait: Beardtongue (*Penstemon* species)

Al Fedkenheuer

Beardtongue (*Penstemon* species)

There are more than 10 *Penstemon* species native to Alberta. They are a very hardy genus and grow from the alpine to the dry hillsides and prairie of eastern Alberta. Beardtongues bloom in a variety of colours, from a striking blue to white, yellow, lilac-blue and purple, flowering from early spring into August and exhibiting several growth forms. Three species, *Penstemon nitidus*, *P. confertus* and *P. fruticosus* are presented in the following paragraphs but don't confine your selections to just these three. All of the species are perennials, can be started from seed or purchased as started plants, and they do not spread via sprouts from the root system.

Smooth blue beardtongue, *Penstemon nitidus*, is one of our favourite wildflowers. It has very showy sky



Smooth blue beardtongue
(*Penstemon nitidus*)

blue flowers, 1.5–2 cm long, which appear in May-June. The flowers are complemented by bluish-grey leaves and stems. Plant height is in the 20–30 cm range. It does not spread via the root system so it stays “at home” in the place where you plant it. This species grows well on dry, sunny slopes and in areas with east, south and west exposures and other hot, dry areas such as close to buildings. No fertilization or watering is required; it is very drought tolerant and grows well on sites ranging up to moist. This plant will not grow in wet, shaded areas.

Yellow beardtongue, *Penstemon confertus*, is a slender stemmed plant with sulfur-yellow flowers about 1.5 cm long, and it blooms in June-July. The flowers are arranged in whorls along the stem which grows in height from 10 to 50 cm depending upon the soil and site conditions. Yellow beardtongue grows best on dry to moist sites and is well suited for full sun, exposed east, south and west facing garden sites where it often develops into a lovely small cluster of stems and flowers. It does not survive in wet, shady areas.

Large purple beardtongue [or shrubby beardtongue], *Penstemon fruticosus*, is a colourful plant normally found in the subalpine, but it grows well in Calgary area gardens. The flowers are large, typically 3–4 cm long, beautiful lilac-purple, and blooms appear in July-early August. The plant grows into a small to medium dense cluster of flowering stems but is not aggressive. Plants grow to be 10–40 cm tall on sites that are dry to moist and sunny. No fertilizing or watering is required.

Dr. Al and Pat are owners of ALCLA
Native Plant Restoration Inc. in Calgary
Email: fedkenhp@telus.net ♦

Jimsonweed, from page 8

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Potentilla Key, from page 11

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Iris is published three times a year by ANPC. The Council aims to increase knowledge of Alberta's wild flora and to preserve this diverse resource for the enjoyment of present and future generations.

If you have an announcement, article or other item, you are invited to submit it to the editor for publication. Items concerning native plants will be given highest priority.

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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