

WAGNER NATURAL AREA NEWSLETTER

Volume 21 Number 2 October 2007

Newsletter of the Wagner Natural Area Society, Management Committee
and Volunteer Stewards of Wagner Natural Area, Parkland County, Alberta



**Wagner Natural Area Society
Invites You to Their Annual**

**OPEN HOUSE
Monday, November 19, 2007**

St George's Anglican Church Auditorium
11733 – 87 Avenue, Edmonton

Doors open: 7:00 p.m. Presentations: 7:30 p.m.

Guest Speaker: Robin Leech, PhD, P. Biol.
Research Associate at the Royal Alberta Museum

“The Spiders of Wagner Natural Area”



Boreal Cobweb Spider
(*Steatoda borealis*)
Photo: Royal Alberta Museum

Robin Leech and his colleague Don Buckle from Saskatoon, Saskatchewan have now identified about two-thirds of the estimated 300 species of spider that were collected as part of a general invertebrate survey undertaken by the Provincial Museum in 1985. Robin is now ready to share the fruits of his labours and to discuss the significance of this study.

Wagner Society President Dr. Ben Rostron will provide a summary of the Society's year. Refreshments will follow. There will be an opportunity to obtain/renew Society subscriptions and memberships.

Thank You!

Wagner Natural Area Society would like to thank everyone who contacted Parkland County administration to oppose the proposal in Parkland County's draft Municipal Development Plan to rezone an area south of Wagner Natural Area from Agricultural to Industrial/Commercial. This re-zoning would have allowed for the future development of the Acheson Industrial Area but could have posed a threat to Wagner's groundwater recharge area and thus the sustainability of the fens. Parkland County has since withdrawn this proposal. We believe that the outpouring of public support for the integrity of the Natural Area played a key role in their change of mind. Again, thank you!

Wagner Natural Area Needs You! *A Message from the Board of Directors*

Recruitment and succession. These words are on the lips of many organizations today, the same words that foresters use when they want to repopulate a forest with healthy young seedlings to ensure its sustainability. At our last few meetings of the Wagner Society board, we have discussed an environmental crisis of another kind: the need to replace ourselves!

Some of us have been on the board for more than 20 years, a few even since the Society's inception in 1982. Although we are not likely to lose interest in the welfare of Wagner anytime soon, and even if we are in denial of our own mortality, some of us would welcome the opportunity to take a break, explore new roles, or simply phase out gradually, knowing that the stewardship of Wagner was in good hands.

We have been lucky: although we lost two board members to untimely deaths, we have been joined by newcomers who have proved invaluable to the board. Our current president, a hydrogeology professor at the University of Alberta and a family man, with a logical, legal mind and a passion for orchids, has steered us through some difficult patches and opened us up to new knowledge. Our current treasurer has taken on the huge task of getting and keeping our society organized and above board, as it were. Treasurers and others may manage some form of tenure, yet few people can keep up the pace of a presidency for more than two or three years, and our solution so far has been to "recycle" our presidents.

The Society is responsible for overseeing the care and protection of Wagner Natural Area under the Alberta Government's Tourism, Recreation, Parks and Culture Department's Volunteer Steward Program. The Society holds a recreational lease and is guided by a formal management plan. It is a registered non-profit society with a constitution and a board composed of nine people who are the executive and directors. We meet in each other's homes about ten times a year, organize a fall open house, hold spring and fall clean-up and repair work sessions, organize and guide field trips, and do weed culls and sundry other activities such as surveys and tree planting. We liaise with our government land manager, with other government departments, with Parkland County and our neighbours. Hence being on the Board is a mind-broadening experience as we are exposed to issues of natural history and land management, scientific research, public relations, law, water, and municipal and provincial politics!

Wondering whether you might fit in as a Wagner volunteer and a future board member? Socially speaking, we're a cohesive group of friends who work by

consensus, talking out our sometimes differing opinions in order to find a solution and get the job done. And we respect each other, recognizing each member's various contributions and strengths. We blend our various skills and interests towards the common goal of ensuring the well-being of the Natural Area. For younger people serving on our board, such experience can be a great asset to their careers.

It's true that our board meetings can often be lengthy, although over the years we've disciplined ourselves to get through a long agenda. But we make up for this by socializing, by bringing good food and even on special occasions wine to our indoor meetings. (On our clean-up days we always bring a nice lunch to enjoy in the picnic shelter.)

The demand for labour, both paid and volunteer, is a common, and increasingly loud, cry right now, as Alberta goes through a spurt of phenomenal development and population growth. Volunteer scarcity is of course nothing new, the result of our changing societal lifestyles. It's a double bind: not only do fewer people have the time to volunteer, but also more structured recreational activities demand more volunteer time to run them.

I believe this shortage of volunteers is particularly bad news for the environment. We need more parks and protected areas in the province, and indeed more are coming on stream. Yet like all lands they need looking after, and stewards and partners and "friends" are a recognized way of doing this. This is especially true of urban or peri-urban natural areas, where intensive management is often necessary because of the greater pressures from human activity: development, invasion by weeds, conflicting recreational issues.

Now, I admit that attending a Wagner board meeting may not seem the easiest way to relax after a hard day's work (though I can guarantee that pulling weeds is wonderfully therapeutic and mind-clearing!). But consider this.

Would you not enjoy the satisfaction of knowing that you have contributed towards alleviating the greatest crisis of our day, the degradation of the environment? When you've experienced a particularly pleasant walk in Wagner, think about becoming more involved, either as a casual volunteer or as someone who might like to be on our board for a while. We welcome everyone who has the same visions and goals as ourselves, namely, the preservation of the environment in general, and of Wagner Natural Area in particular. See page 3 for our contact numbers and give us a call!



The Wagner Grapevine



Spruce seedlings report

Derek Johnson provided the following summary after he had measured this September the 100 tagged white spruce seedlings that were planted by the Junior Forest wardens in May 2005 and measured for the first time soon afterwards.

May 2005

100 seedlings tagged
surviving
Total height = 27.09 m
m

September 2007

88 tagged seedlings
Total height = 26.58
m

Total loss in height 51 cm or about 5 mm per seedling. Considering where the seedlings were planted (the perimeter of the Villeneuve field and in the smaller of the two centre fields), a two-year survival rate of 88% is exceptional. Aside from outright death and dead tops, it seems much of the reason for overall loss of height was due to snowshoe hares' biting off the terminal leaders. Some of the seedlings had ant columns running up the stem, but most of these seedlings seem none the worse for wear and tear. After being transplanted, the seedlings spend 2–3 years developing roots before they put on any amount of shoot growth, so the overall lack of any height increment is not surprising. Derek thinks that, if most of the seedlings survive this next winter, we'll see more positive

growth recorded. More metal "pigtails" have been donated by the Canadian Forestry Service so Derek can now tag 50 of the seedlings planted in May, 2007 and replace some of the short pins from the 2005 planting with longer ones. Excluding the dead ones, that will give 182 seedlings to measure. Derek says that doing more than 200 is just too much work. He plans to measure the seedlings every other year until they reach breast height, and then probably every five years after that.

Tree swallow box banding report, 2007

Edgar Jones reports that he and **Dick Clayton** were once again able to report on tree swallow breeding success as determined from the bird boxes along Wagner fences, following a survey carried out on June 25, 2007. "The weather and timing for this year relative to the size of the young for banding was excellent, thanks to preliminary checking done by Dick Clayton" writes Eddie. They banded 154 fledglings and returned them to the boxes; many fledglings were almost ready to leave naturally. One box had seven dead young. Some mishap must have taken place but there was no evidence that it was caused by humans, so it must have been a natural predation.

Wagner management board has become concerned about the number of people who are walking their dogs off-leash in the Natural Area. The following notice now appears on the entrance gate:

"Attention all Dog-Walkers: The Wagner Natural Area is an On-Leash Only Area

"The hand-held, hard leash must not exceed 3 meters in length and dogs must be under the owners' visible and physical control at all times.

"This requirement is not only to protect our wildlife and sensitive habitats but also to ensure the safety and comfort of other visitors. " The Board has also noticed some soiling of the trail and asks that dog-walkers pick up after their dogs just as they would do in an urban street or park.

Please note that this management request is in accordance with Parkland County's off-leash by-law, which restricts off-leash to certain areas and forbids dogs to run at large in County-owned natural areas.

Wagner Natural Area Society Board 2007-2008

26519 Highway 16, Spruce Grove, AB T7X 3L4

Visit our website at <http://www.wagner.fanweb.ca>

Executive:

President Ben Rostron (434-3839)
Past President Alice Hendry (962-4836)
Vice-President Derek Johnson (436-8231)
Treasurer Pat Webb (458-3477)
Secretary/Editor/Membership Patsy Cotterill (481-1525)

Directors:

Pat Clayton (456-9046)
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Beth Jenkins (458-1794)
Irl Miller (455-3866)
Edgar Jones (436-5327)
Mike Jenkins (Webmaster) (481-8695)
Jasper Keizer (Fire Warden) (962-2745)

A Place for Nature in the New Parks Plan?

On August 23, 2007, 25 representatives of stakeholder groups including environmental and recreational organizations attended a meeting called by provincial Parks policy planner Scott Jones. The aim was to provide input into the provincial government's new plan for Parks and Protected Areas (P/PA). Specifically, stakeholders were asked to answer the question: How can Parks accommodate population growth and improve quality of life opportunities for Albertans? About 11 written submissions were also made to this meeting. **Derek Johnson** attended the all-day event on behalf of Wagner Natural Area Society. The Stewards of Alberta's Protected Areas Association (SAPAA) was not able to attend the meeting but SAPAA board director **Alison Dinwoodie** later provided a written submission to Parks, which she had kindly allowed me to adapt for this newsletter, since it pertains to natural areas (more germane to Wagner) as well as parks and other categories of protected/recreational areas. It should be noted that Alison responded directly to the seven key components of the government's plan (which was not made available to the stakeholders on August 23).

Alison (AD) addresses these seven key areas as follows:

1. *Getting Albertans more involved, including "providing opportunities for Albertans to participate in a meaningful way in specific parks"*

AD – It is not possible to accommodate all needs expressed by the different stakeholders without destroying our P/PA, so expectations should be realistic. **Make sure there is fair opportunity for those who may not be well organised but frequently use parks on a low-impact basis.** For example, there is no representation of hikers (e.g., Grant MacEwan Hiking Club, Hostelling Association, etc.)

– So-called 'environmental groups' should be equally considered and not marginalized, as many of them are hikers who visit the parks, see the damage being done and are advocates for P/PA. FAN represents more than 30 naturalists groups, who are very significant users of parks and who play an important part in monitoring and taking inventories of our natural resources. P/PA belong to all Albertans, not just a local community.

2. *Stewarding park resources. This will involve "using science and research to ensure wise and sustainable management..."*

AD – **Effective management and monitoring of P/PA is absolutely essential.** While volunteer organizations can provide considerable help with this, they cannot do it in a vacuum (without government leadership and help).

– **Define, by legislation if possible, the purposes and activities of the different types of P/PA to provide more consistent directions.**

– More funding is required to help staff produce urgently-required management plans; only 58 plans, many now outdated, have been done for some 504 sites.

– More funding for on-the-ground staff is required to help educate the public. They can also provide enforcement, but this becomes less necessary if definitions, legislation, and management plans for different P/PA, as above, are in place.

– On-going research and monitoring programs are required to assess the continued health of our P/PA.

– Local knowledge from diverse users should be respected, particularly those of the Stewards. (E.g. I, (AD) had to correct many errors of fact and map mistakes in the Whitehorse Wildland Provincial Park plan.) However, outside perspectives must also be taken into account.

3. *Maintaining appropriate infrastructure*

AD – **Facilities for sustainable and appropriate use of P/PA are essential for optimal visitor experiences.** It is good to see more funding has been made available for the more popular parks as this is the only way to deal with increased population pressure, but different types of P/PA need different degrees of development. (See management plans above.)

– **Given that "preserving Alberta's natural heritage" is the vision and mission of the Parks department, the ecological integrity and sustainability of a P/PA is key.** If too many park facilities are provided without recognizing ecological integrity, a park becomes little more than a playground.

– Limiting ease of access (e.g., from peripheral forestry or county roads) helps to prevent overloading of the carrying capacity.

– More of the small campsite Provincial Recreation Areas could be upgraded to provide better accommodation for the increasing number of large recreational vehicles. Having separate small sites with only essential services in the major parks (e.g., washrooms and showers) would encourage more low-impact users.

– Booking procedures for campsites need to be revised; a number could be booked ahead of time, for a one-week maximum stay; if not occupied by the day after expected arrival, the booking would lapse. Too many choice sites are booked for too long and then not used, thus denying other users. More patrolling of certain campsites may be required to control late-night partying, which discourages other visitors. (More staff!)

4. *Adding new parks and protected areas "to achieve ... representation of the natural diversity and special features in the province, and ...meet the recreational needs of a growing population"*

AD – **New parks are required to fill the gaps in the representation of our ecoregions, for protection of biodiversity, not just to fill the increasing demand for recreation facilities.**

– The cumulative effect of all the current industrial activity and loss of habitat must be borne in mind when the degree and type of activities are determined, keeping in mind the primary purpose of P/PA, which is to protect Alberta's biodiversity.

– Other solutions should be assessed for meeting some of the demand for more high impact and less sustainable activities, e.g., increased motorized recreation. Parks staff should be working closely with other government departments, such as Sustainable Resource Development (SRD), Energy, and Environment, who could make available

more Crown land for these activities, such as previously logged forests with their existing network of roads, or mines which would not have to be reclaimed to the same degree if designed for more intensive OHV use.

– A strong presence of Parks is required in the new **Land Use Framework** plan to ease some of the pressures on P/PA. Also it is important to ensure adequate buffers are kept to maintain the viability of P/PA.

5. Improving the “entire visitor experience”

AD – Albertans should all be able to find places to carry out their ‘nature-oriented’ recreation activities in P/PA, but that does not mean that all P/PA are open to all-comers. See above regarding Stewarding park resources, so that the public knows what to expect and how to behave appropriately.

– **Conflicts between motorized and non-motorized recreationists are a long-standing source of discontent and should be reduced by clarification of the legislation as soon as possible.** Many Provincial Recreation Areas are designated for high-impact activities such as OHV and snowmobile use and facilities can be provided there for them. In contrast, Provincial Wildland Parks are primarily for non-motorized recreation and allow visitors to “experience nature in a non-disturbed state”.

– Non-motorized recreationists have been increasingly alienated from many areas they traditionally frequented before OHV use increased exponentially. “Sharing the trail” with motorized users provides a very inferior recreation experience for those looking for peace and quiet; this does not improve ‘quality of life’ for them. Clearly defined separate areas provide the best way to de-fuse this situation. Hunters can still hunt in Wildland Parks in a ‘traditional manner’, by horse and foot. The government’s lack of direction makes it very difficult to provide for proper education of the public.

– Based on input from our members, SAPAA is very concerned about the degradation of P/PA through intrusive uses which compromise and impair the quality of the air, water and biological resources. In some cases degradation of a PA has left it permanently compromised. E.g., OHV use in some sandy areas and wetlands has caused irreparable harm. The Parks department needs to be just as concerned with ‘preserving Alberta’s natural heritage’ as it is with the need to build facilities in its P/PA.

6. Using partnerships with other levels of government and the private sector to provide parks, programs and protection

AD – Different types of partnerships are a very important part of supporting and extending our P/PA. The various organizations need to know each others’ objectives if they are to work together satisfactorily.

– There are several small local groups who could also be considered as partners, particularly Stewards and educators who may contribute significantly to the protection and ‘wise use’ of P/PA. Many are run by volunteers whose time is limited, however, and government should not download their responsibilities unnecessarily.

7. Maintaining continuous improvement

AD – Albertans are concerned that **P/PA and their biodiversity may be compromised by the cumulative effects of excessive use and inappropriate activities,**

including industry. If we want P/PA for the future we should take precautionary measures now to ensure they retain integrity as part of our legacy for future generations.

– On-going monitoring and regular reports to the public could track changes and prevent irreversible damage to our fragile ecosystems, which are also under threat from climate change. P/PA should be ensuring opportunities for future generations by managing use today to preserve natural heritage.

8. Other

AD – **When the Memorandum of Understanding with SRD is fully implemented, it will be very significant how P/PA staff manage Alberta’s P/PA. A considerable increase in staff will be required,** many of whom may initially lack the background and experience appropriate for their particular areas. Continuing cooperation with SRD and county officials and industry players will be required. Any delays or gaps in adequate management of P/PA will be extremely detrimental to maintaining the integrity of Alberta’s P/PA, given the rapid rise in population pressures.

The Canadian Parks and Wilderness Society (CPAWS) has provided a very good overview of Alberta’s P/PA and SAPAA fully endorses its report, ‘The State of Alberta’s Parks and Protected Areas (2007)’. See their website at www.cpaws-edmonton.org/factsheets/report_summary_for_online_distribution.pdf

Invasion of the Aliens, or ...Weeds in Wagner (Part One) By Patsy Cotterill

Don’t panic after reading this title! There’s nothing new about weeds in Wagner. This of course applies to the Province as a whole: indeed, some of our weeds have been around so long we don’t even recognize them as such. And we don’t even know the origin and background of some species. For example, we often cannot tell whether different populations of Kentucky bluegrass (*Poa pratensis*) or common yarrow (*Achillea millefolium*) are aliens or native sons!



Ted Smandych cutting Canada thistle along Atim ditch in July, 2007

Photo: P.J. Cotterill

Continued on page 6

Wagner Natural Area is protected because of its natural vegetation communities with their associated fauna, both above and below ground, consisting of predominantly native species. By *native*, we mean species that have colonized this part of Alberta by purely natural agencies, having arrived or returned since glaciation or, in a few instances, predating glaciation in refugia. By contrast, alien species (which are what the vast majority of our weeds are) are Johnny-come-latelies, imported through human aegis, hitchhiking or being brought deliberately along with the first visitors and settlers and their agriculture, transportation and pharmacopoeias. It follows then that weeds tend not to be denizens of natural communities, but are found in the disturbed habitats that Man creates for them with his activities. Since Wagner Natural Area also includes some disturbed habitats (once-cultivated fields, trails, cutlines and ditches) besides its natural fens and forests, it also has its complement of weed species.

A quick look at the vascular plant list for the Natural Area will reveal that of the approximately 320 species on the list (I am excluding mosses, although mosses also include “weedy” species), just less than 40 species are considered alien to this area, indeed to the Province as a whole, or approximately 12%. This may seem a relatively high proportion of weeds, but many of them exist in the Natural Area in very small numbers, or only sporadically, or even only historically (though a seed bank in the soil may persist). For example, after we cleared a patch of land where the picnic shelter now stands and imported gravel for its foundation and the access route, we had a sudden explosion of a showy weed that is very rare in Alberta, yellow hemp-nettle (*Galeopsis speciosa*). An annual, it had all disappeared by the following year, replaced by Canada goldenrod (*Solidago canadensis*), a perennial and an ubiquitous colonizer of old fields. This in turn is now being ousted by willow and poplar saplings in a classic case of vegetation succession. Around this same time the edges of the trail to the picnic shelter were festooned with the white daisy blooms of scentless chamomile (*Matricaria perforata*), a prolific weed of bare ground and cultivated fields. By dint of pulling and picking off its seed heads (as an annual or biennial it relies on seeds to reproduce itself), we had eliminated it in a couple of seasons. Stinkweed (*Thlaspi arvense*) and a few other annuals still occasionally spring up on pocket gopher mounds in the fields, but they have declined in number as the original seed source depletes. Annuals in fact are not a threat as long as the ground is not continuously disturbed, in which case the perennial plants quickly fill in, creating continuous vegetation cover in which seedlings cannot establish. One biennial, caraway (*Carum carvi*), occurring in patches in the Villeneuve and Atim fields, has required our attention over the last few years. A member of the carrot family that can become pervasive if left to itself, it has first-year rosettes that are difficult to remove. However, its tap-rooted flowering stems in the second year can easily be tugged out of moist ground.

Our biggest problems are thus the perennial weeds, especially those that are well-adapted to permanent pastures and relish a fair amount of moisture, such as field or Canada thistle (*Cirsium arvense*) and perennial sowthistle (*Sonchus*

arvensis) (*arvensis* means “of the field”). For the last few years we have mounted a not-particularly successful attack on these species, hand-pulling them because we wished to avoid the use of herbicides as a possible hazard to wildlife. Our fields also contain, in fact, are very largely made up of, species that are not recognized as weeds from an agricultural (or anthropocentric) point of view. These species take up space that native species could occupy and so we consider them ecological weeds. These are smooth or awnless brome (*Bromus inermis*) and alfalfa (*Medicago sativa*). Alfalfa appears to succumb naturally to grass after a while, but smooth brome is persistent in pastures, native prairies and open woods. It was widely introduced as a forage grass during agricultural settlement (and is still being planted) and, being well adapted to our continental climate, especially where moisture is adequate, is now well-nigh universal.

We have very few alien tree and shrub species in Wagner to present ecological problems, possibly because our mature forests with their well-developed understories of native species resist penetration. We have recorded only a few plants of European mountain-ash (*Sorbus aucuparia*) and *Cotoneaster* species, which are extremely common in Edmonton’s river valley, for example. However, if urbanization continues around Wagner these could become more frequent in the future, as they are mainly escapes from residential gardens, spread by birds. Fortunately, there was no permanent habitation in Wagner and no-one ever tried to plant *Caragana* bushes in what is now the Natural Area, though possibly these natives of the Eurasian steppes would not have flourished in the wet soils anyway.

While we consider most alien species to be undesirable, we give some a higher priority for control than others, based on several criteria. Because weeds have economic significance, particularly in agriculture, reducing crop yields, and requiring expenditure to remove, laws exist to control them. Under legislation (federal, provincial, municipal) weeds are classified as restricted, noxious, or nuisance. Restricted weeds under the *Alberta Weed Control Act* include species that occur in relatively low amounts and/or infrequently, so that immediate control is likely to prevent their establishment. None of Wagner’s weeds fall into this category. However, the following noxious weeds according to the Act occur: perennial sow-thistle, Canada thistle, and common tansy (*Tanacetum vulgare*). We have recently stepped up our attempts to drastically reduce all populations of these species, with the hope of eventual eradication. This also accords with our ecological objectives, as these species have spread, or have the potential to spread, into native ecosystems, a situation devoutly to be avoided. Of the nuisance weeds listed in the Act, we have quack grass (*Agropyron* (now *Elymus*) *repens*), annual hawk’s-beard (*Crepis tectorum*), hemp-nettle (*Galeopsis tetrahit*), stinkweed and common dandelion (*Taraxacum officinale*). In a second article I will describe some of the biological properties of these noxious, nuisance and other weeds that make them so well adapted to the artificial habitats in which they grow, and how we plan to outwit them (!) with our strategies for control, where in fact such control is necessary and /or feasible.

The Insect Year in Wagner Natural Area

By *Mike Jenkins*

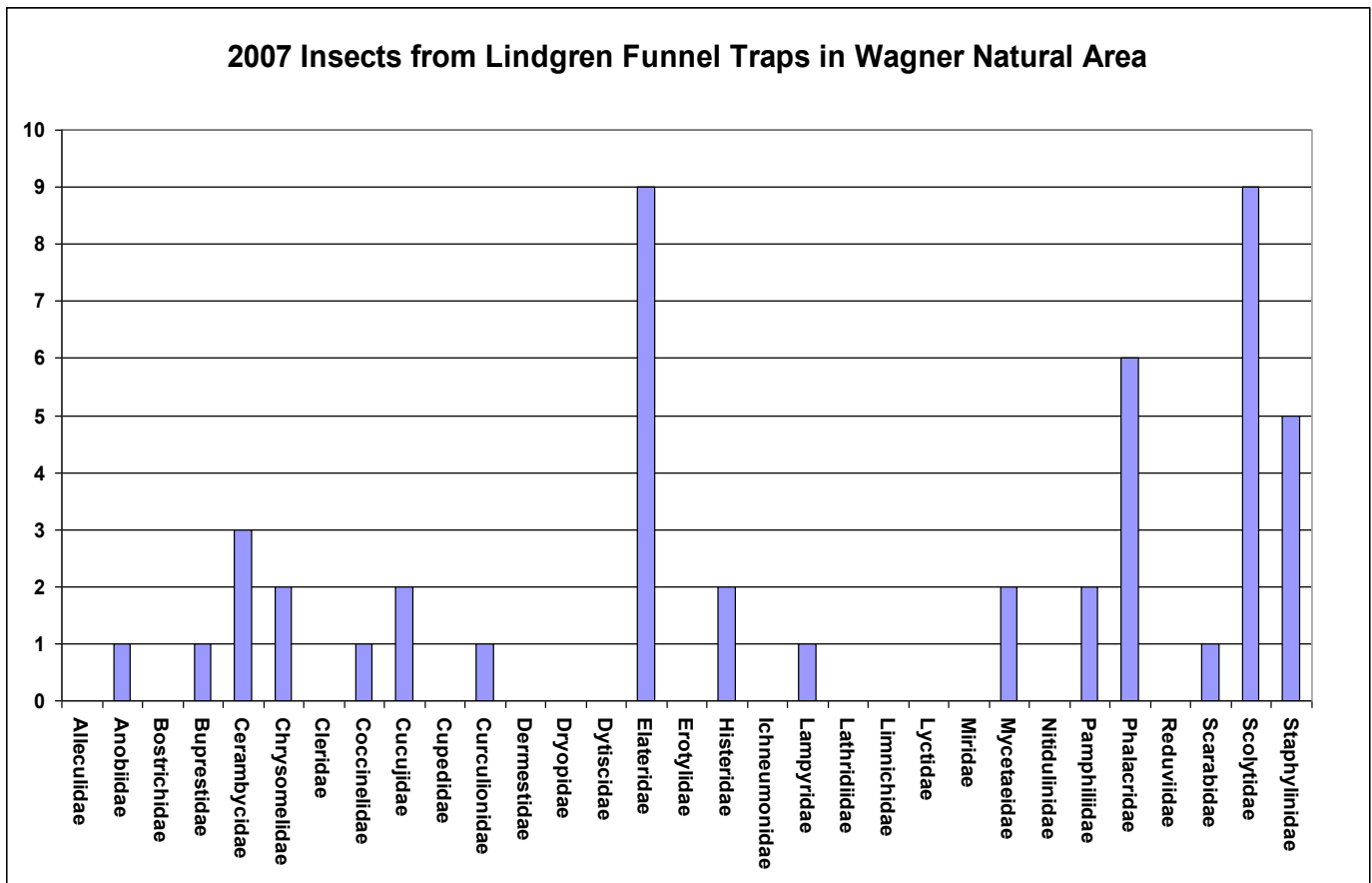
(Mike is an entomologist with the City of Edmonton's Pest Control Branch.)

In 2007, the City of Edmonton set up a number of Lindgren funnel traps in the Edmonton region. These traps were baited with a combination of attractant pheromones and pine volatiles intended to draw the mountain pine beetle (*Dendroctonus ponderosae*).

A massive outbreak of mountain pine beetle has been causing major damage throughout British Columbia for the past several years, and in 2006 it spread to parts of north-western Alberta, including Grande Prairie. These traps were intended as a means of early detection and monitoring for

the presence of the beetles in this region. One of the sites selected for the traps was Wagner Natural Area, and the traps were placed amongst the spruce trees along the access road to the public parking site.

No mountain pine beetles were captured at this site, or any other in the Edmonton region, although plenty of other insects were. The beetles and wasps from the traps were identified at least to family, and are summarized in the following table.



The most common families are the click beetles (Elateridae), and the bark beetles (Scolytidae). Although the Scolytids include some major pests, such as mountain pine beetle, smaller European elm bark beetle and spruce beetle, there are also many harmless species in the family. None of the

specimens collected appears to be of any species of concern. The next most common are the Phalacridae, or shining flower beetles. These are common, harmless beetles that are often found in composite flowers.

Continued on next page

Insects in Wagner, continued from previous page



Lindgren funnel trap

The trap consists of a series of funnels. Together, they present a visual image similar to a tree trunk. Any insect attracted to the trap (with the aid of chemical lures) falls down through the funnels into a collecting jar at the bottom. The jar is filled with propylene glycol and a small amount of detergent as a killing agent and preservative.

Images of Things to Come



Treed fen with hoar frost on a winter's day. Spent bulrush stems, heavy and bent over with hoar frost, form the low vegetation in the picture, as they colonize a marl pond; the backdrop is of Black Spruce (evergreen) and feathery Tamarack, a conifer which nevertheless loses its leaves in the fall.



We can be too zealous about clearing fallen branches off trails. This broken willow branch along the Cabin Trail provides good food for Snowshoe Hares which chew off the bark and phloem.



The leaves of Labrador Tea droop and close together like a folded umbrella in winter. With the ground frozen, they must reduce water loss from their evergreen leaves.

Photos: Wagner Natural Area Society

From the Visitors' Book: Most of the comments visitors make are complimentary; a few are joking ("I saw a bigfoot!"); yet others refer to the peace and quiet of Wagner. Some people have commented on the Natural Area's calming and healing effect when their personal lives are in turmoil. Some wish the place were bigger. In August and September, people are often puzzled that the marl ponds are dry. It is normal and natural for them to be dry late in the year, even though they are fed by springs stemming from an underground aquifer. We become alarmed only if they dry up earlier in the year when the tadpoles of the Western Toads and the Wood Frogs are still in the process of transformation and their air-breathing lungs have not yet taken over from their gills. **Wayne Roberts**, zoologist and amphibian expert at the University of Alberta, monitors our amphibian populations every year and believes that they are healthy.