



In this issue...

Coordinator Comments.....	1
Program Director's "Directions".....	1
Giant Hogweed – Big Scary Alien on the Move	3
New Weed Control Act & Regulations.....	4
Some plants aren't pretty – they just look that way.....	5
WAB Conference feedback	6
Around the Province:	
• Capital Region Invasive Plants Working Group.....	6
• Partnering for weed control benefits Crowsnest Pass	7
• Mustard invades St. Albert... ..	8
• Weed Warriors on the Watch... ..	9
• NW Regional AAAF 2010 Weed Inspector School	9
• YIPI Summer Programs.....	10
• Priority Area Weed Committee.....	11
Beyond our Backyard:	
• Farmers cope with Roundup-resistant weeds ..	12
• Plants invade Yukon-Kuskokwin Region	14
• Travels inspire – Kew Gardens, U.K.	15
Spotlight on Garlic Mustard	16
Upcoming Events	17
Codes of Conduct & Invasive Alien Plants	18
AIPC Board changes	18

Coordinator comments



By VIRGINIA BATTISTE

LAST YEAR, in the first issue of *The Invader* (Summer, 2009) that I edited, the lead article featured coverage of a speech by Preston Manning urging the stewardship sector to develop an issue campaign that would raise the profile of stewardship in the media, increase public awareness as the means to impact political

will. I am reminded of the comments as I look at where AIPC goes from here, after a year as staff with AIPC.

I have also just listened to a political commentary program covering the recent Premiers' Meetings in Winnipeg and it struck me again that, to really move the issue of Invasive Plants forward, we need to get on the agenda of the Premiers' meetings and even the First Ministers Meetings, the ones when the provincial and territorial heads meet with the Prime Minister. It is an action I advocated in the round table discussion I was part of at the National Invasive Species Forum Don and I attended last March in Ottawa.

AIPC as part of the National Invasive Species Working Group (NIASWG), a partnership of In-

vasive Species/Plants Councils and Aboriginal Groups across Canada working on invasive plants issues, participated in the issuing of a national Media Release on Giant Hogweed. It caught the attention of national, provincial and local media and raised awareness, and the profiles, of organizations like AIPC. NIASWG has since issued a National Fact Sheet on Giant Hogweed as a follow up.

Both activities are evidence of partnering and working together across Canada to bring the issue of invasives to the fore. It serves to raise awareness and the profile of the work being done by local provincial Councils, and is part of a strategy to obtain funding to continue the work being done by, for the most part, non-profit Councils.

continued on page 2

Program Director's "directions"

By DON BATTISTE

TRAVELLING TO meetings around the province, it is exciting to hear citizens, industry people in the landscape and nursery trades, agricultural fieldmen, bylaw personnel, and media quoting or referring to the AIPC and the various initiatives and resources it has participated in developing or has produced. Whether it is a native plant producer waiving a stack of AIPC Fact Sheets in front of participants in the 1st Waterton Wildflower Festival Garden Fair, meetings in Edmonton with Master Naturalists, or on the websites



of towns and cities throughout the province, the Alberta Invasive Plants Council is proving to be a recognized player, and trusted resource, for information on invasive plants in Alberta.

The past three months have been eventful in the invasive plant world across Alberta.

With the first discovery in Alberta of one of the most important forest weeds in North America, Garlic Mustard, to the proclaiming of the new Alberta Weed Control Act on June 16, and the national and

continued on page 2



Coordinator comments

continued from page 1

Provincially, AIPC has been involved in several activities to raise awareness of its work and role in dealing with invasive plants, both politically and in the media, not the least of which was the invitation to seven Provincial Cabinet Ministers to attend the AIPC AGM/Conference in April. While we weren't successful in having any of them attend, we did have six of the seven departments send representatives to participate in the Forum -- and contact with the Ministers did bring AIPC to their attention. The next time around, they will have a "point of reference" for AIPC as we are in contact with them further down the line.

AIPC developed a higher profile with media through the issuing of a Media Release which drew attention to the Weed Wise Gardening Brochure which led to a radio interview and newspaper article. Later, AIPC issued information on the "find" of Garlic Mustard in the Capital Region, providing names of resource people to be interviewed, and we fielded calls and provided resource information on Giant Hogweed for AccessTV local press, and Call of the Land.

One interviewer indicated they would put AIPC into their media database as a resource for information on invasive plants and weeds.

So, one step at a time, both media and political awareness of AIPC and its work is building. Our goal would be to build on that awareness in the upcoming year to move AIPC further to the forefront of public awareness as the resource for invasive plants information and education.

AIPC made contacts in the horticultural industry which have been valuable. We booked a booth at the Calgary Garden Show distributing 1500 Weed Wise Gardening brochures. AIPC, supported by volunteers from the Friends of Fish Creek, manned the booth and fielded many questions about garden invasives. Articles from AIPC have appeared in the Edmonton Horticultural Society Newsletter, and Jim Hole has made mention of AIPC in his regular blog.

AIPC partnered with City of St. Albert and Sturgeon County, who together hosted a Capital Region Invasive Plants initiative meeting

that brought together two dozen people. It was an excellent exercise in discussing common concerns, sharing strategies and finding common direction.

As the facilitator of the meeting, one of the most interesting observations was the comment that inviting people to a meeting on weeds was ineffective. Instead, the information had to be taken to where the people are, e.g. local fairs, field days, etc.

Promoting the issue of invasive plants moves to a whole new level with the proclamation of the new Alberta Weed Control Act, given the increase of the number of weeds listed in the accompanying Regulation. It is going to require even more effort to educate, raise awareness and come up with strategies to address the new issues that are raised with the new Act. AIPC continues to have a role to play and will need to pursue funding and deployment of resources to keep up with it all.

Watch for more in upcoming months as AIPC moves forward....

Program Director's directions

continued from page 1

local media furor, created by a media release from the National Invasive Species Working Group, over Giant Hogweed, which has not yet been discovered in Alberta, invasive plants have captured the spotlight.

The City of St. Albert Parks Department was the first to discover and identify Garlic Mustard in Alberta. (See related story pg. 8) This newly discovered forest weed is perhaps the most significant herbaceous invasive in the temperate forests of North America. It was thought by some experts that it couldn't survive in Alberta. But, many plants have proven to be hardy here, given a chance, and Garlic Mustard might well be part of that group.

In the company of a member of the City of Edmonton IPM who was inspecting the property for the first time, I had the opportunity to visit the private land along Mill Creek Ravine that is part of the area of Garlic Mustard infestation in Edmonton. The large, steep, wooded back yard was covered with Garlic Mustard. The City of Edmonton IPM and the Edmonton Naturaliza-

tion Group joined forces to use hand pulling and ongoing monitoring of the infestation.

Since the Garlic Mustard infestations were well established at both these sites, it might possibly be found at other locations, as well. It is important to encourage citizens and groups to be on the lookout for this invasive, especially in the Capital Region.

Another development I find exciting is the involvement of the horticultural industry, especially the retail garden centres around the province, in responding to the challenge of becoming educated regarding the new Alberta Weed Control Act. Many are beginning to make the necessary changes in their inventory and ordering for the future. As such, they are becoming an important 'public face' to gardeners on the issue of invasive plants and are making a responsible approach to invasive plants part of their own corporate image.

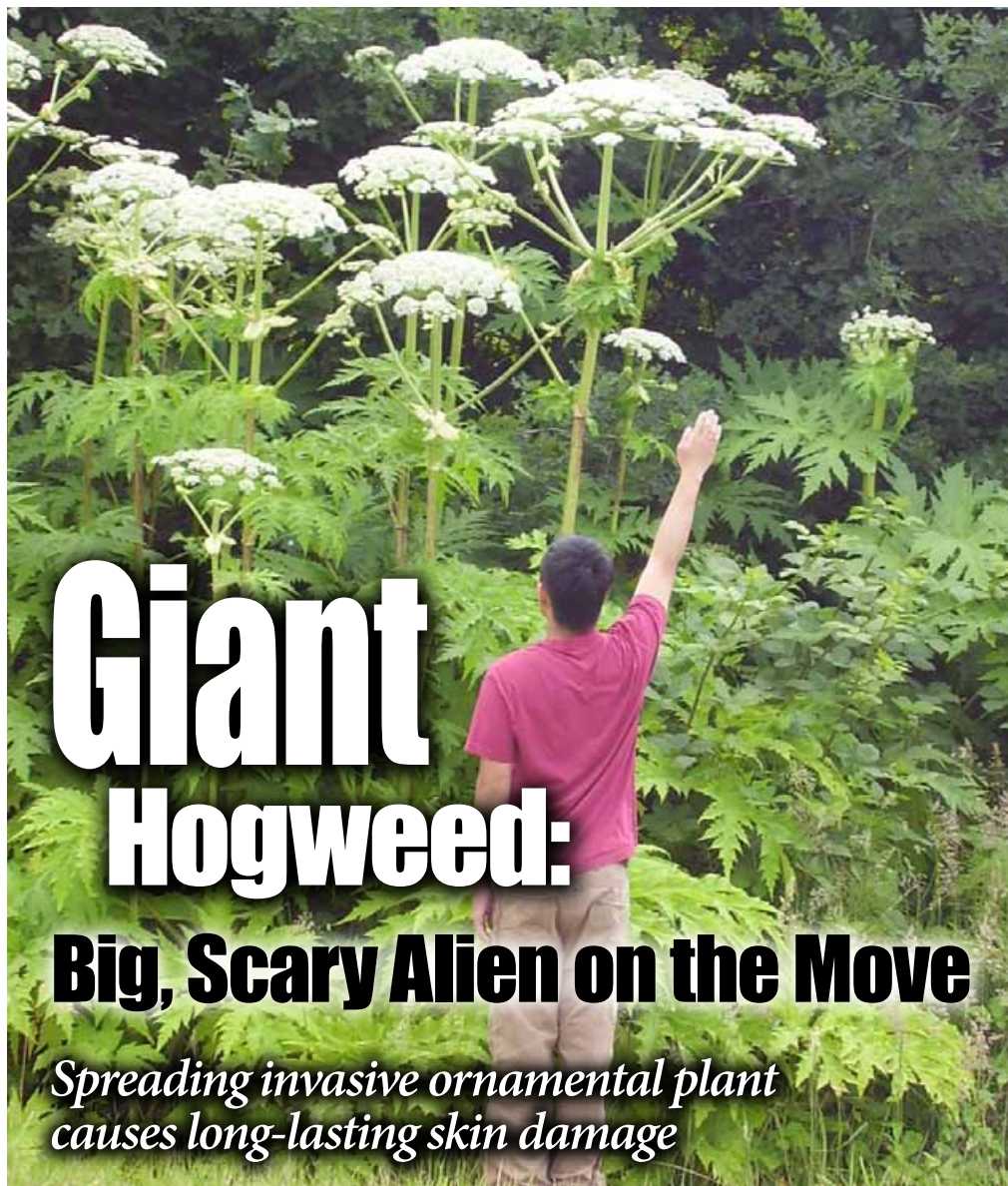
Finally, I want to mention that six representatives from Alberta Invasive Plants Council attended the 2010 Weeds Across Borders Conference held

in Shepherdstown, West Virginia June 1-4. Abstracts, full presentations and powerpoints can be found at: <http://www.weedcenter.org/wab/2010/presentations.html>

The Applied Research Projects section included two presentations on Weed Risk Assessment Models, one by Dr. Alec McClay, of McClay Eco-science, Sherwood Park, who is also an AIPC Board Member. This is a timely topic since the provincial government has been working on a risk assessment tool for Alberta.

The section on Education and Awareness was the most widely noted one by the Alberta participants. The emphasis was on community involvement in early detection. I encourage all The Invader readers to check out the Vital Signs web site from Maine <http://vitalsignsme.org/>. The presenter indicated that the Maine organization would be willing to share this site with other jurisdictions. It is an excellent resource for inspiration in the work to develop early detection and involvement of the general public.

Enjoy reading this issue of *The Invader*.



Giant Hogweed: Big, Scary Alien on the Move

Spreading invasive ornamental plant causes long-lasting skin damage

MAY 14, 2010

WITH THE APPROACH of International Day for Biological Diversity on May 22nd, the time is right to start focusing on the early detection of invasive alien species—the second biggest threat to biodiversity worldwide. The National Invasive Species Working Group is aiming to increase the number of trained volunteer “spotters” across Canada to help detect new invaders.

The initial focus for this nation-wide initiative is giant hogweed (*Heracleum mantegazzianum*), a very aggressive invasive plant with concern to human health and safety. Due to its intentional introduction in the horticulture industry, limited current distribution, potential for spread, and toxicity, members of the working group have agreed that this plant is a key national concern.

“Because of giant hogweed’s ability to grow in moist areas such as British Columbia’s many

lakes, rivers, wetlands, valley bottoms, and coastal regions, and its toxicity to humans, domestics and wildlife, its spread is a major concern for the Invasive Plant Council of BC” said IPCBC chair, Kristy Palmantier.

Native to Europe and Asia, giant hogweed was introduced to North America as an ornamental plant in the early 1900s. It is now present in BC, Ontario, Quebec, Nova Scotia, and Newfoundland, as well as a number of US States.

Its larger-than-life size is not the only reason to fear this plant. A single giant hogweed plant can produce 100,000 winged seeds, crowding out native plants and dominating moist areas. A rare type of invasive plant that threatens human health, giant hogweed produces a toxic sap that causes sensitivity to UV radiation, leading to skin blistering and severe burns. As a result, legal workplace regulations in BC and Ontario have unique implications for working in infested areas, and there are numerous cases of people being hospitalized due to injuries



PHOTOS: FRASER VALLEY REGIONAL DISTRICT

Growing up to five metres in height, giant hogweed stem hairs and leaves contain a clear, toxic sap that can cause burns, blisters, and scarring of the skin. Worksafe BC has issued safety guidelines on giant hogweed removal.

LEFT: A person illustrates the height of giant hogweed. ABOVE: Workers in protective gear.

caused by this ‘exotic’ looking plant.

Borrowing a page from the Australian “Weed Spotters” Program, the National Invasive Species Working Group believes “the more eyes we’ve got, the more invasive species we can spot, and potentially stop!” BC has a growing Spotters Network, coordinated by the Invasive Plant Council of BC and supported by regional invasive plant councils and committees across the province.

“We ask that gardeners take the time to learn what garden and horticulture plants are introduced and invasive to BC and become our ‘spotters’ on the ground. Work with your neighbours to keep invasive plants out of your neighbourhoods and communities,” suggests Palmantier.

Individuals can report an invasive species in BC by calling toll free 1-888-WEEDSBC. Visit www.invasiveplantcouncilbc.ca to learn how to identify giant hogweed and to get involved with an invasive plant committee near you.

OTHER RESOURCES:

- Cow Parsnip Misidentified as Giant Hogweed (Agri-News):

[http://www1.agric.gov.ab.ca/\\$department/newslett.nsf/all/agnw16873](http://www1.agric.gov.ab.ca/$department/newslett.nsf/all/agnw16873)

- ANPC Rogue’s Gallery:

http://www.anpc.ab.ca/wiki/index.php/Heracleum_mantegazzianum

- ID Comparison – Giant Hogweed vs. Cow Parsnip and Poison Hemlock (Oregon Dept. of Agriculture):

http://www.oregon.gov/ODA/PLANT/WEEDS/weed_gianthogweed_id.shtml

New Weed Control Act and Regulation

100-year-old Weed Control legislation brought into the 21st Century

From the July 5, 2010 issue of Agri-News

ALBERTA'S AGRICULTURAL LAND and natural spaces will benefit from enhanced protection with the new *Weed Control Act* and regulation, which came into effect on June 16, 2010. The new legislation replaces the old Act and consolidates regulations for a more streamlined and comprehensive approach to protecting the production and quality of Alberta land from invasive plants.

One of the most significant changes in the legislation is an expanded list of invasive plants – now organized into two designations: **Prohibited Noxious** and **Noxious**. It lists 46 Prohibited Noxious weeds and 29 Noxious weeds.

Prohibited Noxious weeds are species that are not established in Alberta, but have demonstrated detrimental effects in other provinces or states. The objective of identifying them is to prevent them from becoming established in the province.

Noxious weeds are species that are widely spread in various areas of the province, but can still pose a significant economic hardship once established. Controlling the spread of Noxious weeds is critical to protecting areas that are not infested.

The expanded list of invasive plants strengthens the legislation and the ability of the province and municipalities to work with the agriculture industry and other Albertans to

increase vigilance in keeping weeds out of Alberta. Many of the plants added to the list are the result of an extensive study of invasive plant species in bordering provinces and states which may pose a threat to Alberta's eco-system and agriculture industry. A more extensive list also will expand Albertans awareness of these invasive weeds, resulting in earlier detection and greater probability of eradication.

In addition to providing greater clarity of legislation, other changes include improvements to enforcement and appeal processes, and updates to better reflect current activity in the seed-cleaning sector and other industry developments.

The Alberta government developed the new Act and regulation in consultation with a broad range of stakeholders to ensure the legislation reflects Alberta's current realities and needs in the shared effort to protect the province's natural resources and agriculture industry. The stakeholder consultation process included agriculture fieldmen from municipalities, the Federation of Alberta Naturalists, Native Plant Councils, the Invasive Plant Council, urban centres, Alberta academic institutions and research organizations.

Information on the new list of designated plants is being shared with municipalities, and training for agriculture fieldmen and bylaw officers is underway.

In addition to effective legislation, Alberta's early detection and rapid response to weeds is

supported by programs such as the Crop Pest Surveillance System and the Alberta Weed Survey.

These efforts protect the competitiveness of Alberta's agriculture industry and support the Government of Alberta's plan for a strong economic recovery. Ensuring that the province's industries are competitive and continue to attract investment to provide jobs and prosperity is part of The Way Forward.

For more information on the *Weed Control Act* and associated regulation, call 780-422-1881 or visit the Alberta Agriculture and Rural Development website at www.agriculture.alberta.ca. Descriptions and photos of the new list of designated weeds will soon be posted.

OTHER RESOURCES:

- **New Alberta Weed Act:**

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6156](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6156)

- **Expanded List of Invasive Plants included in New Weed Act:**

[http://www1.agric.gov.ab.ca/\\$Department/newslett.nsf/all/agnw16805](http://www1.agric.gov.ab.ca/$Department/newslett.nsf/all/agnw16805)

- **Alberta Invasive Plant ID Guide – Online Resource:**

<http://www.wheatlandcounty.ca/files/ID%20Book%202010%20-%20Final%20-%20Copy.pdf>



LEFT & MIDDLE: Purple Loosestrife and Saltcedar are two invasives that have now been designated as *Prohibited Noxious* in Alberta.

ABOVE: Yellow Clematis is now provincially designated as *Noxious*.

Some plants aren't pretty – they just look that way

By JIM HOLE
The StarPhoenix – July 10, 2010

TOUGHNESS and reliability are attributes we all want in our ornamental plants. The problem is these bulletproof qualities can also relegate plants – even the most beautiful ones – into the noxious weed category.

That's what's happened to some stalwart ornamentals last month when they were recently reclassified under Alberta's new weed control act. And Alberta isn't the only province updating rules; Saskatchewan will enact a new law this fall.

So what does this all mean for you? Well for gardeners it means knowing what plants you may need to remove from your property – and more importantly – why you should care about removing them.

The 46 prohibited noxious weed species on Alberta's list have adapted so well to our prairie environment that they've managed to edge out many native species. When these weeds out-perform native species, the food and habitat available for wildlife is reduced. In addition, when noxious weeds invade agricultural lands, they reduce crop yields and quality. That's why prohibited weeds that have taken up residence here – either inadvertently or intentionally – must be destroyed.

In addition to the 46 weeds in the prohibited class, another 29 offenders have the lesser designation of noxious. Even though noxious weeds don't have to be destroyed, it's advisable to eliminate them because you are required to control these plants. As an example, creeping bellflower (*Campanula rapunculoides*) isn't banned but shouldn't be allowed to spread beyond your property line – a near impossibility – so really shouldn't be planted.

As for the prohibited species, most (such as mouse-ear hawkweed or spotted knapweed)



ABOVE: Creeping bellflower is a designated in Alberta as a noxious weed and shouldn't be allowed to spread beyond your property line.

BELOW: Himalayan balsam is classified as prohibited noxious in Alberta.



have little ornamental value and aren't usually grown on purpose. But there are a handful of prohibited noxious weeds that are still being actively chosen for their beauty.

One new example on the prohibited list is Himalayan balsam (*Impatiens grandiflora*), which is a fierce self-seeder. It's a tall (90-120 cm) annual with purplish lance-shaped leaves and small pink flowers.

Also banned is the tamarisk (*Tamarix chinensis*), a shrub with fine foliage and pretty strings of pink flowers. It has a nasty habit of invading riparian zones and choking out native species.

“ In Alberta, it's mandatory to remove prohibited noxious weeds, meaning the onus is on us to know what's on the list. ”

The common name, salt cedar, alludes to the fact it draws salts out of the soil and into its leaves. Unfortunately, when the leaves drop in the fall, the salt leaches into the soil and, over several years, contaminates the soil making it impossible for other species to grow in the highly saline environment.

In Alberta, it's mandatory to remove prohibited noxious weeds, meaning the onus is on us to know what's on the list. (It's probably not a bad idea for Saskatchewan residents to be proactive and avoid planting the blacklisted plants.) So, to reduce the odds of officials showing up on your doorstep with shovels and garbage bags, you need to become familiar with the plants.

The best way to start is to download the complete list from Alberta Agriculture ([http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6156](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6156)). If you don't recognize the plants by name, take suspect samples to local garden centres for identification. The Invasive Plants Council is also an excellent resource to help identify problem weeds and the council's website suggests alternative species for your garden. Purple gas plants (*Dictamnus albus* v. *purpurea*), for example, can sub for Himalayan balsams, and dwarf Korean lilacs (*Syringa meyeri* 'Palibin') are wonderful alternatives to tamarisks.

If you still find yourself wondering if you're growing a noxious weed or a beautiful ornamental, just remember this simple test: reach over and pull on the plant. If it is impossible to uproot, it's a weed. If it comes out of the ground really easily ... well, it's probably a rare and expensive ornamental.

To keep abreast of what's new in the gardening world, follow www.facebook.com/HolesGreenhouses.

WAB 2010: AIPC members give their two cents

“ Highlights of WAB 2010 were:

- Learning how active Mexico is getting with their invasive species problems, e.g. they have a code of conduct for nurseries, they have put a lot of their IS inventory on line, and are active in risk assessment.
- Citizen scientists initiatives, e.g. schoolchildren in Maine and hikers in Wyoming.
- Learning about Alaska's programs - a good contact for Alberta as we have many of the same problems.
- Learning about invasive plant mapping initiatives in the US - EDDMAPS. ”

— DR. ALEC McCLAY, McClay Ecoscience

“ One of the presentations that really impressed me was Sarah Kirn's presentation on “Vital Signs: New Model for Engaging and Supporting Citizen Scientists of All Ages.” (<http://vitalsignsme.org/>) This interactive website allows citizens to track locations of invasive species in Maine. Species, as well as habitat observations, can also be searched, mapped, and observed. This website is also a great source to exchange and discuss ideas, ask questions, offer encouragement, and share best practises to invasive species management with students, educators, professional scientists, and citizen scientists from across Maine. Blogs can also be posted, and anyone can participate by collecting, reviewing, and analyzing data.

I was also impressed with the information that was provided on the all day field tour to Flowing Springs Park and Harper's Ferry National Historic Park. Most of the discussion involved talking about how vectors, such as railroads and rivers, are major pathways for the introduction and spread of many invasive plants. While in Harper's Ferry National Historic Park area, we walked along two major rivers (Potomac and Shenandoah) within three states (West Virginia, Virginia, and Maryland). ”

— ANDREA SHARPE, Forest Health Officer, SRD

Around the Province

Capital Region Invasive Plants Working Group

Representatives from Stakeholder groups gather to pool ideas on Invasive Plant issues in the Capital Region

By VIRGINIA BATTISTE

EARLY THIS SPRING, Kevin Veenstra, Tree/Pest Foreman, City of St. Albert and Quentin Bochar, Ag. Fieldman, Sturgeon County partnered with AIPC staff to facilitate the first meeting of the Capital Region Invasive Plants Working Group. Meeting in St. Albert, Thursday, April 22, two dozen participants from CFIA, SRD, Agriculture and Rural Development, Tourism, Parks & Recreation, City of St. Albert, City of Edmonton, the Counties of Sturgeon, Strathcona, Parkland and Lamont, Bylaw enforcement, Vegetation Management, research and AIPC shared ideas, discussed concerns and made plans to work together to address invasive plant issues in the Capital Region.

AIPC Administrative Coordinator, Virginia Battiste, led the participants through an exercise that explored what was working, identified the challenges being faced, shared successful tactics and strategies for engaging citizens, and determined where to go from here.

Fourteen areas of concern were raised from the general discussions which included all aspects of invasive plant management issues being faced by participants. In setting priorities, the fourteen areas were narrowed down to three top priorities of concern which included:

- Engagement, Awareness and Education;
- Budget and staffing concerns; and,
- Training and networking.

A good deal of discussion centered on ways to engage the public and attract political attention. It was agreed that inviting citizens to attend meetings on weeds was neither useful nor effective. Instead, it was necessary to take the information to where the people would be, e.g. Farmer's Market, Trade Shows, and other natural gathering places. Effective use of local media was mentioned and a regional media campaign for species being targeted in the area was proposed as well as pooling resources for awareness and education materials.

It was agreed there was a real need to engage politicians, and influence political will, but what form that might take was not determined. It was recognized that increased awareness and education, which would raise the profile of the issue, carried with it a corollary benefit of making more money available.

Commenting on the issue of budget and staffing, it was pointed out that there were too few dollars available, and too few people, to deal with the magnitude of the problem. A situation that is further complicated by the “silo” mentality of working without reference to others involved in the same issues in the same area. Breaking down the “protecting turf” attitude was deemed essential to utilizing resources more efficiently and effectively which would require more cooperative effort and broader networking. Real questions emerged regarding how to deal with the multi-jurisdictional issues faced by the fact weeds do not recognize political boundaries. Corridors of invasion also need to be given a higher priority for cooperative effort.

Ongoing training of those charged with dealing with invasive plants, especially in light of the proclaiming of the new Alberta Weed Control Act, stood to become a major issue for municipal jurisdictions, Weed Inspectors, Bylaw Officers and anyone else involved in enforcement of the newly declared Regulation, especially given the additional plants designated as Prohibited Noxious and Noxious Weeds. While the priority might continue to be focused on agricultural concerns, engaging the horticultural industry was also going to become necessary with the inclusion of many more invasive ornamentals in the new Act.

In conclusion, it was obvious that no monumental problems were resolved, but it was agreed that the meeting was an extremely useful exercise and an ongoing forum in which to meet would be valuable. A Steering Committee to maintain the momentum established from this initial meeting was formed which included Kevin Veenstra, Richard Law, Alec McClay, Quentin Bochar and Angela Veenstra. Their task would be to call another meeting in the fall.

Partnering for weed control benefits Crowsnest Pass

By **KIM LUTZ**
Weed Control Officer, CNP
with **VIRGINIA BATTISTE**

REGIONAL WEED MANAGEMENT AGREEMENTS

A partnership agreement for 2009 between the Municipality of Crowsnest Pass and the M.D. of Ranchland had positive effects on weed control for both municipalities. The agreement facilitated sharing of information and contributed to more effective weed management on a regional basis. Costs were shared by the two municipalities and benefits continue to be seen for 2010, even without a formal legal agreement in place.

Under a 2009 Inter-Municipal Weed Management Agreement, a Weed Control Advisory Committee was established which included a council member from each municipality, Ranchland Agricultural Fieldman staff, the Municipality of Crowsnest Pass Director of Community Services and the Weed Control Officer, shared between the two districts. With cost sharing between the two municipalities and grant monies, Kim Lutz was hired as the Weed Control Officer which was instrumental in re-establishing an effective weed control program for CNP.

However, the agreement was set aside for 2010 in favor of a regional, less formal, cooperative management approach. Because of difficulties entailed in setting out formal legal agreements, and the challenges of sharing jurisdictional authority with neighboring communities, it was felt an informal arrangement had greater potential to become an effective approach for regional weed control management for the area.

CNP 2009 WEED CONTROL PROGRAM ENGAGES CITIZENS

According to Lutz, CNP residents responded to the 2009 weed control program in leaps and bounds! Her phone rang off the hook that summer with weed complaints or concerns. The public also responded by showing up at local weed pull events, asking questions about which weeds should be removed and their control methods, and making use of newspaper article

pictures and information to help identify problem weeds and take action.

The CNP weed control program was revitalized and refocused. The Weed Control Officer role had previously concentrated on herbicide application on municipal property, rather than public education or coordinating land owners to manage weed infestations.

Lutz kept a high profile in the community, was approachable by anyone with questions or concerns, and provided advice on how to manage neighboring land owners with weed infestations.

The 2009 budget for weed control allowed CNP to clear all weed infestations in highly visible locations, and some riparian areas, using a combination of mechanical and chemical means. The municipality contracted with a private contractor to apply herbicide on municipal land infested with regulated weeds.

Boulevards, town access roads, new acreage developments, and public weed complaint locations were treated. And, under a service contract with Alberta Department of Transportation, CNP had the private contractor spray weed infested highways and shoulders.

NATIVE SEED MIXTURES IN DEMAND

During the summer of 2009, Lutz became aware of a demand for native seed mixtures, designed specifically for the CNP climate and varied topographical landscape, that could be used on disturbed areas. With ongoing growth and development in CNP, more land is disturbed and weeds are establishing themselves on the gravelly, and shallow soil sites.

Several seed mixes were designed for the CNP with different goals in mind. Information on the seed mixes is available to land owners interested in the reclamation

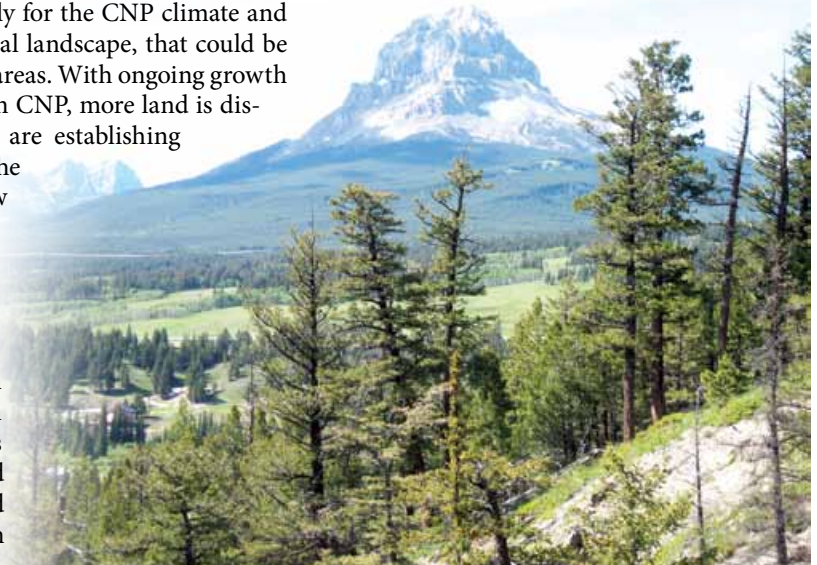
and revegetation of disturbed sites on their properties.

Development of the seed mixes was a collaborative project in the CNP between Marilyn Neville from the Foothills Restoration Forum, Carla Bick and Larry Kopas from the M.D. of Ranchland, George Bloom the local Sustainable Resource Development weed contact, and the Municipality of Crowsnest Pass Weed Control Officer, Kim Lutz.

MOVING FORWARD IN 2010

A collaborative weed pull between the Crowsnest Conservation Society, Trout Unlimited, and the Municipality of CNP took place on July 10th. It targeted some of the most prevalent weeds in the CNP, including blueweed, oxeye daisy, and dame's rocket which is found along riparian areas where herbicide application is restricted and weed seeds spread rapidly on the water's surface.

The Municipality of Crowsnest Pass is currently working on turning the Weed Control Officer position into an Agricultural Fieldman position. The Municipality would take on a special Municipal designation due to the lack of cropland in the CNP. The Ag. Fieldman would focus their efforts on weed control, as before, under the Weed Control Act, take on reclamation efforts within the Soil Conservation Act for disturbed areas, as well as pest management under the Agricultural Pests Act.



Mustard invades St. Albert

BY KEVIN MAH

St. Albert Gazette – April 24, 2010

CITY RESIDENTS should be on the lookout for a mustard menace this month as the province brings in major changes to its weed control act.

The new Weed Control Act is expected to become law May 1, says Jim Broatch, pest management specialist with Alberta Agriculture, and it will add a host of new plants to the province's destroy-on-sight list.

Among those invasive weeds is the garlic mustard — a spade-leafed green plant recently spotted in the Forest Lawn Ravine.

Kevin Veenstra, the city's tree and pest control foreman, says he stumbled across the weed last week while working in the area. It's currently the only green plant on the forest floor, he says, and it's already taken over half the ravine. "By the looks of the infestation, I'd say it's been here for a while."

Left unchecked, Veenstra says, this plant could easily displace all native species throughout this ravine and the Sturgeon River. "All the native forest will become dominated by garlic mustard." The infestation is already so big that he plans to skip hand-pulling and jump directly to pesticides — he'll spray the weeds with Roundup next week.

WEED SHAKEUP

Invasive plants are introduced species that displace native plants, says Virginia Battiste of the Alberta Invasive Plants Council. Such plants harm riparian zones, wildlife, and people. Many are garden plants that escape and run wild.

The old weed act had three categories of weed, Broatch says: nuisance ("control if you like"), noxious ("stop it from spreading"), and restricted ("destroy on sight").

The previous version focused on a small number of agricultural weeds, Broatch says. The

new one brings in parks and natural areas, and takes a more preventative approach. "The more weeds we can prevent getting established in Alberta, the better."

The act greatly expands the list of restricted weeds, which are now called "prohibited noxious" weeds. While the old list had seven plants, the new one has 46. City staff will be obliged to destroy these plants on sight.

These are plants that are in or poised to come into Alberta in the near future, Battiste says. "If we aren't careful and aren't diligent, they're going to become the same problems here as they are in other jurisdictions." Store owners and gardeners should avoid growing these plants. Her organization and the province have planned an education campaign to teach people how to spot these invaders.

The act also expands the list of noxious weeds, adding St. Albert pests such as burdock. It eliminates the nuisance category altogether since those weeds are too widespread to control, Broatch says.

ST. ALBERT'S NEW INVADERS

Veenstra knew of four weeds that the city would have to destroy under the new act: garlic mustard, purple loosestrife, flowering rush, and Himalayan balsam.

St. Albert has been pulling purple loosestrife from the Sturgeon for years, Veenstra says. He's not sure where the tall, magenta-flowered plant is coming from, but notes that it used to be popular in gardens.

The flowering rush is a grassy aquatic plant with an umbrella-like cluster of pink flower



PHOTO: BEN LEMPHERS/ST. ALBERT GAZETTE

Kevin Veenstra, St. Albert's tree and pest control foreman, investigates a patch of garlic mustard. The invasive weed is on the province's new search and destroy list.

heads on top, he says. These plants have been spotted near the bridge at St. Albert Trail.

Himalayan balsam is also known as policeman's helmet, according to the Alberta Invasive Plant Council, since it has pink flowers that are shaped like a British police helmet. It spreads quickly using explosive pods that can launch seeds up to six meters away. Veenstra says they've been spotted near outfalls in Riel and Braeside.

The new weeds will mean more work for Veenstra's crews, he says, but he was sure they could handle it. "We've always taken care of all those weeds anyhow." His department is planning an expanded weed awareness campaign this summer that will feature public weed pulls.

Anyone who spots an invasive weed is asked to call public works.

Weed warriors on the watch

New invasive spotted near St. Albert's grain elevators

By KEVIN MAH

St. Albert Gazette - July 17, 2010

ALBERTA'S WEED WITCH has spotted a new invasive plant near St. Albert's grain elevators.

It was pouring rain Friday morning when Maureen Vadnais rolled into town. Vadnais, known to many as the Weed Witch, was there with city arbourist Kevin Veenstra to confirm the presence of an invasive weed.

Vadnais trains weed inspectors for Alberta Agriculture, which is how she got her nickname. It didn't come with any mystic powers, she says, although she wishes it did. "I'd wave my magic wand and get rid of them all," she says of weeds.

Vadnais has been busy training inspectors to spot the 46 weeds on the province's new prohibited noxious list. The list is part of the new Weed Control Act, which kicked in June 16.

She identified a long patch of yellow, daisy-like flowers by the railroad tracks near the grain elevators as one of those weeds: tansy ragwort. "We're looking at the leaves and they're very sharply defined," she says, with deep lobes and sharp, scalloped edges. The stems also had red stripes on them. Most telling of all were the flowers — unlike the common tansy, which has yellow, button-like blossoms, this one had small bulbs with ray-like petals on it.

Tansy ragwort produces thousands of fluffy



PHOTO: KEVIN MAH/ST. ALBERT GAZETTE

Maureen "The Weed Witch" Vadnais of Alberta Agriculture examines a suspected tansy ragwort plant near the grain elevators in St. Albert, which was part of a large patch. The plant, known for its yellow flowers and red-striped stem, is a prohibited noxious weed in Alberta and must legally be destroyed if found. The plant is notorious on farms as it can cause liver damage and death in animals.

seeds that spread and take over disturbed areas, Vadnais says. Alkaloids in the plant attack the livers of livestock when eaten, killing them over time. These plants have to be destroyed under provincial law. Common tansy, which is on the noxious list, merely has to be contained.

The fact that this weed was found by a railroad is worrisome, adds Veenstra. "It could be all up and down the province."

NO GIANT HOGS HERE

Veenstra says he's been getting many calls about giant hogweed, another plant on the prohibited list.

Giant hogweed hit the news this week after local papers and the CBC reported its presence in eastern Canada. There have been no confirmed sightings of it in the city or the province, say Vadnais and Veenstra.

It would be hard to miss the weed if it were in town — it's about five metres tall, has an inch-wide stalk and jagged leaves bigger than most people. It also has a large umbrella of white blossoms at its peak and big red blotches on its stalk. "Once you see it," Veenstra says, "it'll make your mouth drop."

The weed's sap can cause severe chemical burns and blindness in people on contact, Vadnais says, so it should not be touched without gloves. Anyone who suspects they've found one should contact public works or an agricultural fieldsman to remove it.

Giant hogweed is often confused with its native cousin, cow parsnip, Vadnais says, which has similar flowers but grows just three meters tall. Although edible, cow parsnip can cause skin irritation and should be handled with gloves.

NW Regional AAAF 2010 Weed Inspector School

By SARAH KEHLER

Agriculture Services Coordinator, Yellowhead County

EACH SPRING the AAAF Regions host Weed Schools in various locations throughout Alberta. This year the NW AAAF Region Weed Inspector School was hosted by Yellowhead County in Wildwood, Alberta.

Information was provided by specialists from Alberta Agriculture and the AIPC on the New Weed Control Act, Invasive Ornamentals, and Weed ID sessions which included hands on learning activities.

Nearly 100 of the regions AAAF members, Weed Inspectors, Sustainable Resource Development staff, Urban Bylaw and invasive plant managers from industry were in attendance.

These events are the best place to get up-to-date resources for managing invasive plants. Contact your local Agriculture Fieldman for information on who will be hosting the Spring, 2011 Weed Schools in your area!

Yellowhead Invasive Plant Initiative Summer Programs



PHOTOS: SUPPLIED

ABOVE: Volunteers picked 750 kg of invasive plants during "Pull a Weed Day" in July.

BELOW LEFT: The Yellowhead County Spray Team are spraying weeds throughout the summer.

By SARAH KEHLER

Agriculture Services Coordinator, Yellowhead County

YELLOWHEAD Invasive Plant Initiative 2010 programs kicked off this year with the first annual "Pull a Weed Day" held on July 9th in Brule, Alberta. Interested community members were invited to participate from 10:00am-3:00pm in weed pulling activities throughout Brule area. Workers were provided with safety vests, gloves, weed pulling bags, signage and plenty of cold water! A lunch of hotdogs and pop was served to all of the workers at the Brule Community Hall.

The volunteers' efforts were assisted by area Mountain Pine Beetle Crews, Junior Forest Rangers and ASB Summer staff. In total the team picked 750kg of invasive plants from

stream crossings, sensitive areas and from within the community of Brule.

Representatives from Yellowhead County Agriculture Services and Alberta Sustainable Resource Development were onsite for any questions that community members had about the Yellowhead Invasive Plant Initiative 2010 program, weed control options, ASB Rental Equipment and new invasive species to be on the watch for.

The event raised weed and invasive plant awareness in one of the most ecologically sensitive areas of Yellowhead County. The hope is that more community members will become involved in future events!

Along with the picking efforts the Yellowhead

County Spray Team worked spraying Prohibited Noxious and Noxious Weeds throughout the region in late July and August, completing 100km of roadways and subdivisions.

Yellowhead County ASB set up an herbicide demonstration plot at a grazing reserve just west of town to show area residents control options available for some of their worst weeds. Restore and Grazon were put to the test to control heavy infestations of Canada Thistle, Tall Buttercup, and, one of the areas worst new invaders, Wild Caraway. Garlon Ultra was also applied to control the encroaching brush.

In 2011, the goal is to start up similar events in other remote communities throughout the County by hosting Weed information Open Houses and volunteer-driven weed-picking events!

For further information about the Yellowhead Invasive Plant Initiatives contact Sarah Kehler at 1-800-814-3935 email: skehler@yellowhead-county.ab.ca or Caroline Charbonneau at 780-865-6968 email: Caroline.Charbonneau@gov.ab.ca.



Government
of Alberta

Priority Area Weed Compliance

By KIM NIELSEN

Manager of Agricultural Services, Clearwater County,
with VIRGINIA BATTISTE

ONE OF THE MANY intriguing concepts Kim Nielsen learned about working with the Department of Primary Industries, Victoria, Australia, in 2008-09, was a community driven process for weed control compliance.

“Getting the community involved is a great way of complementing what we do as the Weed Control Act authority. It allows us to better utilize staff and resources while catering more specifically to a particular community’s needs.”

Nielsen says the willingness to explore this concept is growing. He adds that Alberta Justice is currently reviewing how this approach might be incorporated into provincial legislation.

The Priority Area Weed Compliance, as the title implies, will have a set geographic area and will deal with widespread weed issues. For Clearwater County, that means tall buttercup and wild caraway will top the list.

According to Nielsen, dealing with such wide spread weed issues takes a lot of compliance resources and can be challenging, especially when it comes to setting out expectations that are fair to all landowners. He says the community approach establishes the level of fairness.

Clearwater County Agricultural Service Board has been very supportive in considering this new initiative and is currently field testing the concept. The Board selected an area of approximately 36 square miles with a mix of farms and rural residences (151 landowners) and began engaging the community by hosting a meeting describing the economic and environmental impact of tall buttercup. At the end of the meeting a vote was called for supporting what has been named Priority Area Weed Compliance or PAWC and almost unanimous consent gave the nod to proceed. A Steering Committee was formed whose purpose was to liaise with Clearwater County Agricultural Service Board and also provide guidance for the project.

All landowners were issued a Weed Notice with the simple expectation, and standard level

of compliance, based on the premise of, “do no harm to your neighbor”, i.e., no seeds leaving the farm. The goal for 2011 is to have significantly less tall buttercup or none at all. Recognizing there are varying levels of infestations, the standard set allows staff to approach each parcel of land or landowner on its own merit, from scattered plants to wide-spread infestations.

Nielsen says the Australian experience with this concept has shown a marked increase in voluntary compliance when the community gets behind the issue. He adds that Clearwater County is looking forward to gauging if this very successful Australian model will work in Alberta, too.

The current Project spurred an incredible awareness which resulted in all 151 Weed Notices being complied with. A community meeting will be held in September highlighting an evaluation of the Project and preparing for 2011. The Project will run for at least 3 years with the hopes that it will establish an on-going community value for all residents when it comes to dealing with Tall Buttercup management.

ERADICABLE WEEDS

While in Australia, Nielsen also worked on new and emerging weeds, the main priority for the Victoria Department of Primary Industries, Landscape Protection.

“Focusing on new and emerging invasives is very cost effective compared to being involved with containment or management of weeds on a larger scale. In fact, it is so cost effective that the state incurred all costs associated with eradication of new and emerging weeds.”

The list of weeds under the State Prohibited Weeds Category, in the State of Victoria, was extensive, according to Nielsen. Significant efforts were made by state staff to ensure the confirmed weed sites were checked and plants eradicated.

This concept was discussed in Clearwater County last year under the name Eradicable



PHOTO: KIM NIELSEN
The above picture was taken in Victoria and shows the community initiative surrounding Ragwort control.

Weeds Program and was subsequently adopted as policy for the County. Agricultural Services staff were extremely pleased with the public’s support. A case in point, vouching for the process, concerned the presence in the county a weed species that was cause for concern, orange hawkweed.

Prior to the announcement of the Eradicable Weeds Program in 2009, Nielsen says there were 3 sites of orange hawkweed on record within Clearwater County. Following the awareness campaign, another 7 sites were reported by the public. These were treated and expected to be eradicated. Similar responses have been seen in 2010 with another hawkweed, Meadow Hawkweed, which is also on the Eradicable Weeds list.

“Without the community’s willingness to participate it is fair to say that sites will go unreported and chances of spread beyond eradication much greater.”

Research by University of Davies, California shows that, once the size of a weed infestation increases, the success of eradication declines. In other words, an infestation of the average weed approaching 1,000 hectares is realistically next to impossible to eradicate.

Clearwater County Eradicable Weeds Program will be a concerted effort to prevent new weeds taking a foothold, following the Australian model of taking charge of eradicating new sites, incorporating an early detection rapid response concept.

Beyond our Backyard

Farmers cope with Roundup-resistant weeds

By WILLIAM NEUMAN and ANDREW POLLACK
New York Times - May 3, 2010

DYERSBURG, TENN. — For 15 years, Eddie Anderson, a farmer, has been a strict adherent of no-till agriculture, an environmentally friendly technique that all but eliminates plowing to curb erosion and the harmful runoff of fertilizers and pesticides.

But not this year.

On a recent afternoon here, Mr. Anderson watched as tractors crisscrossed a rolling field — plowing and mixing herbicides into the soil to kill weeds where soybeans will soon be planted.

Just as the heavy use of antibiotics contributed to the rise of drug-resistant supergerms, American farmers' near-ubiquitous use of the weed-killer Roundup has led to the rapid growth of tenacious new superweeds.

To fight them, Mr. Anderson and farmers throughout the East, Midwest and South are being forced to spray fields with more toxic herbicides, pull weeds by hand and return to more labor-intensive methods like regular plowing.

“We’re back to where we were 20 years ago,” said Mr. Anderson, who will plow about one-third of his 3,000 acres of soybean fields this spring, more than he has in years. “We’re trying to find out what works.”

Farm experts say that such efforts could lead to higher food prices, lower crop yields, rising farm costs and more pollution of land and water.



PHOTOS: CRISTOPHER BERKEY/NEW YORK TIMES
Jason Hamlin, a certified crop adviser and agronomist, looks for weeds resistant to glyphosate in Dyersburg, Tenn.

“It is the single largest threat to production agriculture that we have ever seen,” said Andrew Wargo III, the president of the Arkansas Association of Conservation Districts.

The first resistant species to pose a serious threat to agriculture was spotted in a Delaware soybean field in 2000. Since then, the problem has spread, with 10 resistant species in at least 22 states infesting millions of acres, predominantly soybeans, cotton and corn.

The superweeds could temper American agriculture’s enthusiasm for some genetically modified crops. Soybeans, corn and cotton that are engineered to survive spraying with Roundup have become standard in American fields. However, if Roundup doesn’t kill the weeds, farmers have little incentive to spend the extra money for the special seeds.

Roundup — originally made by Monsanto but now also sold by others under the generic name glyphosate — has been little short of a miracle chemical for farmers. It kills a broad spectrum of weeds, is easy and safe to work with, and breaks down quickly, reducing its environmental impact.

Sales took off in the late 1990s, after Monsanto created its brand of Roundup Ready crops that were genetically modified to tolerate the chemical, allowing farmers to spray their fields to kill the weeds while leaving the crop unharmed. Today, Roundup Ready crops account for about 90 percent of the soybeans and 70 percent of the corn and cotton grown in the United States.

But farmers sprayed so much Roundup that weeds quickly evolved to survive it. “What we’re talking about here is Darwinian evolution in fast-forward,” Mike Owen, a weed scientist at Iowa State University, said.

Now, Roundup-resistant weeds like horseweed and giant ragweed are forcing farmers to go back to more expensive techniques that they had long ago abandoned.

“We’re back to where we were 20 years ago. We’re trying to find out what works.”

EDDIE ANDERSON, farmer

Mr. Anderson, the farmer, is wrestling with a particularly tenacious species of glyphosate-resistant pest called Palmer amaranth, or pigweed, whose resistant form began seriously infesting farms in western Tennessee only last year.

Pigweed can grow three inches a day and reach seven feet or more, choking out crops; it is so sturdy that it can damage harvesting equipment. In an attempt to kill the pest before it becomes that big, Mr. Anderson and his neighbors are plowing their fields and mixing herbicides into the soil.

That threatens to reverse one of the agricultural advances bolstered by the Roundup revolution: minimum-till farming. By combining Roundup and Roundup Ready crops, farmers did not have to plow under the weeds to control

Beyond our Backyard



Supplemental herbicides were applied on Eddie Anderson's land to combat weeds that are resistant to glyphosate. Mr. Anderson, who has about 3,000 acres of soybean fields, is dealing with the pest pigweed.

Ten resistant species of weeds in at least 22 states are infesting millions of acres.



continued from page 12

them. That reduced erosion, the runoff of chemicals into waterways and the use of fuel for tractors.

If frequent plowing becomes necessary again, "that is certainly a major concern for our environment," Ken Smith, a weed scientist at the University of Arkansas, said. In addition, some critics of genetically engineered crops say that the use of extra herbicides, including some old ones that are less environmentally tolerable than Roundup, belies the claims made by the biotechnology industry that its crops would be better for the environment.

"The biotech industry is taking us into a more pesticide-dependent agriculture when they've always promised, and we need to be going in, the opposite direction," said Bill Freese, a science policy analyst for the Center for Food Safety in Washington.

So far, weed scientists estimate that the total amount of United States farmland afflicted by Roundup-resistant weeds is relatively small — seven million to 10 million acres, according to Ian Heap, director of the International Survey of Herbicide Resistant Weeds, which is financed by the agricultural chemical industry. There are roughly 170 million acres planted with corn, soybeans and cotton, the crops most affected.

Roundup-resistant weeds are also found in several other countries, including Australia, China and Brazil, according to the survey.

Monsanto, which once argued that resistance would not become a major problem, now cautions against exaggerating its impact. "It's a se-

rious issue, but it's manageable," said Rick Cole, who manages weed resistance issues in the United States for the company.

Of course, Monsanto stands to lose a lot of business if farmers use less Roundup and Roundup Ready seeds.

"You're having to add another product with the Roundup to kill your weeds," said Steve Doster, a corn and soybean farmer in Barnum, Iowa. "So then why are we buying the Roundup Ready product?"

Monsanto argues that Roundup still controls hundreds of weeds. But the company is concerned enough about the problem that it is taking the extraordinary step of subsidizing cotton farmers' purchases of competing herbicides to supplement Roundup.

Monsanto and other agricultural biotech companies are also developing genetically engineered crops resistant to other herbicides.

Bayer is already selling cotton and soybeans resistant to glufosinate, another weedkiller. Monsanto's newest corn is tolerant of both glyphosate and glufosinate, and the company is developing crops resistant to dicamba, an older pesticide. Syngenta is developing soybeans tolerant of its Callisto product. And Dow Chemical is developing corn and soybeans resistant to 2,4-D, a component of Agent Orange, the defoliant used in the Vietnam War.

Still, scientists and farmers say that glyphosate is a once-in-a-century discovery, and steps need to be taken to preserve its effectiveness.

Glyphosate "is as important for reliable global

food production as penicillin is for battling disease," Stephen B. Powles, an Australian weed expert, wrote in a commentary in January in *The Proceedings of the National Academy of Sciences*.

The National Research Council, which advises the federal government on scientific matters, sounded its own warning last month, saying that the emergence of resistant weeds jeopardized the substantial benefits that genetically engineered crops were providing to farmers and the environment.

Weed scientists are urging farmers to alternate glyphosate with other herbicides. But the price of glyphosate has been falling as competition increases from generic versions, encouraging farmers to keep relying on it.

Something needs to be done, said Louie Perry Jr., a cotton grower whose great-great-grandfather started his farm in Moultrie, Ga., in 1830.

Georgia has been one of the states hit hardest by Roundup-resistant pigweed, and Mr. Perry said the pest could pose as big a threat to cotton farming in the South as the beetle that devastated the industry in the early 20th century.

"If we don't whip this thing, it's going to be like the boll weevil did to cotton," said Mr. Perry, who is also chairman of the Georgia Cotton Commission. "It will take it away."

Beyond our Backyard

Plants invade Yukon-Kuskokwim region

By DAVE CANNON

Invasive Plant Coordinator, Yukon-Kuskokwim
The Tundra Drums

MAY 5, 2010

INTRODUCED OR NON-NATIVE plants are not a common sight on the Delta or middle Yukon and Kuskokwim Regions, but they are beginning to pop up in several locations.

Unfortunately, the more one looks the more likely they'll be found. However, just because a plant is not a native species doesn't mean that it poses a threat. Many introduced species provide all kinds of benefits. It would cost that much more money to live here if we couldn't grow our own potatoes, tomatoes, lettuce, etc. No one could argue that many ornamentals such as wave petunias, begonias and fuchsias are a pleasant addition to any household.

One of the joys of summer is to encounter the eye-catching beauty of a colorful garden when visiting a fish camp or wandering through a village on a gorgeous summer day. As a cheechako, one of my highlights was seeing my first humongous Alaskan head of lettuce in the village of Georgetown.

There are more than 300 introduced plants in Alaska, some of which have been here for over 100 years. Unfortunately, some of these non-natives pose serious risks, and those that do are called invasives. The worst of the invasive plants are considered noxious weeds, which are officially designated by the state as injurious to public health, agriculture, recreation, wildlife or property.

Anchorage, Juneau, Fairbanks, Homer and Kodiak have already experienced the negative impacts of numerous invasive species. Japanese knotweed, for example, has displaced salmon berry patches in the Juneau area. Orange hawkweed has infested remote sections of Kodiak Island and reduced the amount of native vegetation available to various wildlife.

Invasive plants are spread by vectors which transport the seeds or portions of plants that then take hold when given the opportunity. Wind and water (e.g., rivers) can be vectors, birds and animals can carry the seeds on their fur or feathers or in their scat. Humans, one of the most efficient vectors, transport invasives



PHOTO: canolacouncil.org

Hempnettle, a noxious weed in Canada and Alaska, is very difficult to control because its seeds can lay dormant for seven years. Aniak, Alaska saw a substantial infestation of hempnettle.

via vehicles on roadways, via boats, airplanes and by heavy machinery moved around the state. Hikers and hunters on trails traversing the woods scatter seeds as they walk. And float planes are the ideal means of transporting invasive aquatic plants.

To give you an idea of just how widespread and burdensome invasive plants can be, it's estimated that worldwide \$1.4 trillion is spent annually in attempts to control them; Idaho annually spends \$300 million while Montana spends \$14 million each year on spotted knapweed alone, which has been found at over 10 sites from Ketchikan to Anchorage.

Although it might be safe to say that Alaska will likely never see the widespread infestations that those other states have because of our extreme climatic conditions, we don't know that for sure ... especially with the current climate change trends. Therefore, we must be vigilant and address the situation now - an ounce of prevention is worth a pound of cure, so please use discretion when contemplating planting a non-native flower or plant, for it could turn out to be the worst thing you ever did. Several local residents wished they'd never planted flowering spirea and yellow toadflax (aka butter and eggs) years ago; now they can't get rid of them, at least not without using herbicides. Yellow toadflax, also known to occur in Napaimute and McGrath, is a persistent and aggressive invader that can form dense colonies and contains a

poisonous glucoside that is moderately poisonous to livestock.

Those two plants were planted intentionally, but others have arrived through different means. Here on the Delta and surrounding area, one of the main vectors of unwanted plant species is straw. A recent study conducted by the BLM along the Iditarod Trail found 18 non-native plants, mostly around the checkpoint areas. The Iditarod race committee does its best to use certified weed free straw, but that's a limited commodity in Alaska. A relatively small amount is produced within the state so it's often purchased from Washington or Oregon. Unfortunately, what may not be invasive in those states may be a species of concern in Alaska. Hence, there are no guarantees that additional invasives aren't being perpetuated.

We already know of a substantial hempnettle infestation in Aniak which may have come in via some agricultural activity years ago. Hempnettle creates a dense vegetative layer that reduces the cover of grasses and other plants and consumes soil moisture and limited nutrients; it is considered a noxious weed in Canada and Alaska. One of the reasons that hempnettle is so difficult to control is that their seeds can lay dormant for seven years before sprouting.

So the sad story is that total prevention and elimination of all invasive threats is impossible; we can only do the best we can individually. However, we must make an effort to minimize the potential. If you're in a known area with an infestation, brush your pant legs and shoes off before leaving. If you have a pet, brush them too. Check your boat and remove any seeds that may have fallen in or on it. The more people are aware of the problem, the less of a chance that we'll end up with something we don't want.

In plant lingo, it's best to nip this problem in the bud early. We are, however, fortunate here on the Delta in that we can minimize this serious threat if we make a concerted effort to identify invasives early and take action to prevent their spread. Prevention is the best tool and much cheaper than reacting once they establish themselves. But identifying outbreaks early and responding to them quickly is critical.

Dave Cannon lives in Aniak and serves as the invasive plant coordinator for the middle Yukon and Kuskokwim area. He can be reached at 907-675-4443.

Travels Inspire

– Kew Gardens, U.K.



PHOTOS: MARIAN JONES

LEFT: Kew Gardens, southwest of London.

BELOW: The Kew Gardens Gift Shop's seed packet display carries a warning to international buyers.



“Today, the mission statement of Kew Gardens reads, “To inspire and deliver science-based plant conservation worldwide, enhancing the quality of life.”¹ – but its beginning was as a repository for alien plants.”

By MARIAN JONES
Forest Health Assistant, SRD

THE LAST STOP on the ‘Tube,’ before reaching Heathrow Airport, brings you to Kew Gardens - known formally as “Royal Botanic Gardens, Kew.” It is 132 hectares of landscaped gardens and glasshouses on the south west fringe of London.

Kew Gardens history goes back to the early 1600’s with the construction of a four-storey brick house and gardens which were purchased by the Royal Family in the late 1700’s. In 1841 the government took control of the gardens and began constructing glasshouses, one of which is the world’s largest surviving Victorian glasshouse which covers 4880 square metres.

Today, the mission statement of Kew Gardens reads, “To inspire and deliver science-based plant conservation worldwide, enhancing the quality of life.”¹, but its beginning was as a repository for alien plants.

During the late 18th and early 19th centuries the introduction and cultivation of non-native plants was conducted by many organizations in Britain, especially Acclimatisation Societies.² A naturalist on Captain Cook’s Endeavour “...encouraged plant collectors abroad to bring back with them to Britain samples of their discoveries.”³ Kew Gardens was the recipient of

most of these plants, as well as exotics from private gardens, and became the primary centre of economic botany in the world.³

The Gardens still retains that role, to an extent, and its Millennium Seed Bank Partnership (MSBP) saves plants that might otherwise disappear for a variety of reasons including the impacts of invasive species, as well as climate change and human activities. Ten percent of the world’s wild plant species have been banked to date.

A sign hangs in their gift shop among the seed packets, reminding purchasers about seed import regulations and why they exist.

Kew’s International Garden Photographer of the Year contest for 2010 featured a National Winner photo of volunteers removing invasive rhododendrons with the accompanying text:

Rhododendron clearing on Lundy Island Ilene Sterne entered a photo of a group of Lundy Field Society volunteers ‘rhodi bashing’ on the east side of Lundy Island. Lundy Island is in the Bristol Channel, between England and Wales. Ilene Sterne is a regular visitor to the island and a contributor to other conservation projects including bird and seal recording.

‘Rhodi bashing’ involves cutting down the invasive rhododendron. It encourages re-growth of

the rare Lundy cabbage, a plant which grows only on the east side of Lundy Island. The Lundy cabbage supports two endemic species, the Lundy Cabbage Beetle and the Lundy Cabbage Weevil, which live only on this plant so cannot survive without it.

The ‘rhodi bashing’ project has been going on for several years; it depends largely on the volunteers and is a challenging task as it involves hard work on steep slopes, often in harsh weather. The project has already demonstrated real results, Lundy Cabbage is beginning to grow back in areas where it has not been seen in many years.

Invasives aside, Kew Gardens is a fabulous day spent for any plant lover, even those who don’t know the name of anything, but still like to look at gardens all the same. There are many educational exhibits for kids as well.

My own visit at the end of May was also an excellent time to see all of the ‘new residents’ swimming and waddling around the many beautiful ponds. And in the desert glass house an Agave abrupta (Century plant) was sending up a blooming stalk so tall that a piece of glass had to be removed from the ceiling. A visit to their website at www.kew.org can show you Kew at home and their many partnerships around the world.

1 <http://www.kew.org/>

2 *The Invader*, Spring 2009, Vol. 3 No. 1

3 Lever, Christopher. 1992. *They Dined on Eland*. Quiller Press, London.

Spotlight on...

Garlic Mustard

(*Alliaria petiolata*)

aka Garlic Root, Garlicwort, Hedge Garlic, Jack-by-the-Hedge, Poorman's Mustard

Overview:

Garlic mustard is a biennial native to Europe & Asia. It is believed it was introduced to North America as a medicinal & culinary herb – the young leaves have a garlicky smell when crushed. It forms a rosette the first year and then bolts early season of the second year and goes to seed by early summer. Garlic mustard reproduces by seed only, and being a member of the Mustard family is a prolific seed producer. It forms a long, thin, white taproot which has a crook just below ground level. Garlic mustard can self-fertilize or be fertilized by pollinators.

In the northeastern US it has become a dominant understory species in woodland/flood-plain habitats. It is unpalatable to herbivores and seeds are viable for an average of 5 years. It produces a toxin which inhibits mycorrhizal fungi which interferes with the growth of other plants and trees.³

Rosettes resemble some other plants but only garlic mustard leaves have garlic odour.

Habitat:

Garlic mustard is a shade tolerant plant, but is becoming more common in full sun.² It prefers the less acidic, rich, moist soils of riparian woodlands.



PHOTO: King County Department of Natural Resources and Parks (www.your.kingcounty.gov)



Rosette Leaves

PHOTO: Ohio State University (www.oardc.ohio-state.edu)



Flowering Stock

PHOTO: Ohio State University (www.oardc.ohio-state.edu)

Identification:

Stems: Usually 1-2 stems per plant growing 30 to 90 cm tall, with little or no branching in upper stems.¹ Stems are usually smooth but sometimes sparsely hairy.²

Leaves: Rosette leaves are dark green and round to heart-shaped with scalloped edges. Stem leaves are alternate, coarsely toothed, heart-shaped and 5-10 cm wide, becoming smaller upwards on the stem. Both stem and rosette leaves have long, hairy petioles.²

Flowers & Seeds: Flowers are borne in clusters at the tops of stems, and have 4 white petals approximately 0.5 cm long. Fruits are siliques (long pods) 2.5 to 5 cm long and contain an average of 16 seeds.² Seeds brown or black, oblong 2-4.5 mm X .7-2 mm.¹

Prevention:

Disturbed soil is most susceptible to rapid colonization of garlic mustard. Maintain healthy vegetative cover in habitats suitable to invasion by garlic mustard.

Control:

Grazing: Unpalatable to grazers and disturbance from trampling would increase an infestation. *Invasive plants should never be considered as forage.*

Cultivation: Not likely to survive intense tillage, but has become a problem in reduced tillage situations.² A thick mulch of wood chips have proven effective.³

Mechanical: Hand pulling is very effective but most of root must be removed to prevent resprouting. Mowing can prevent seed production, but plants must be cut close to ground level to prevent the plant from re-flowering from leaf axils. Mowing must be repeated through the growing season to be an effective control method.³

Chemical:⁴ Spot applications of glyphosate and triclopyr have been effective on young plants. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: A search for potential agents is ongoing.

¹ Flora of China. *Alliaria petiolata*. www.eFloras.org

² Ohio Perennial & Biennial Weed Guide, Ohio State University. <http://www.oardc.ohio-state.edu/weedguide/singlerecord.asp?id=330>

³ King County Department of Natural Resources and Parks, Noxious Weed Control Program, Best Management Practices – Garlic Mustard. <http://www.your.kingcounty.gov/dnrp/library/water-and-land/weeds/BMPs/Garlic-Mustard-Control.pdf>

⁴ Always follow the product labels. The use of pesticides in any manner not published on the label or registered under the *Minor Use of Pesticides* regulation constitutes an offence under both the *Federal Pest Control Products Act* and *Alberta's Environmental Protection and Enhancement Act*.

Upcoming Events

SEPTEMBER 13-14, 2010

Columbia Mountains Institute of Applied Ecology ECOLOGICAL APPROACHES TO INVASIVE PLANT MANAGEMENT

SEPTEMBER 13-14, 2010

COAST HILLCREST HOTEL, REVELSTOKE BC

INSTRUCTOR: David Polster, Polster Environmental Services

COURSE DESCRIPTION:

This two day course will present an ecological approach to invasive plant management, where vegetation management systems are designed to work with natural successional processes. The first day is a classroom session, and the second is a field day with the participants evaluating sites. This is an intensive, content-heavy course. A course manual is supplied.

** In British Columbia, this course has been approved for 6 Continuing Education credits in pest management and 2 Continuing Education credits in application technology, for people holding Industrial Vegetation pesticide applicator certificates.*

*** In Alberta, this course has been approved for 6 credits in pest management and 2 credits in application technology, in the landscape applicator class of certificate.*

This course does not include instruction on the use of pesticides. The point of this course is to avoid the need to use pesticides.

TO REGISTER: <http://www.cmiae.org/Forms/course-invasives-sept-2010.php>

SEPTEMBER 27-30, 2010

North American Weed Management Association (NAWMA) PEAK TO VALLEY 2010 ANNUAL CONFERENCE & TRADE SHOW

SEPTEMBER 27 - 30, 2010

PUEBLO, COLORADO

WEBSITE: <http://www.nawma.org/>

REGISTRATION DEADLINE: August 15, 2010

OCTOBER 4-5, 2010

Columbia Mountains Institute of Applied Ecology PUBLIC PARTICIPATION SKILLS FOR NATURAL RESOURCE MANAGERS

OCTOBER 4-5, 2010

1.5 DAY COURSE beginning at 1:00 P.M. Pacific Time on OCT. 4
HILLCREST HOTEL, REVELSTOKE BC

INSTRUCTOR: Dr. Ajit Krishnaswamy, FORREX Forum for Research and Extension in Natural Resources

COURSE DESCRIPTION:

This course will introduce the basic concepts and skills for planning and implementing a public participation process. Although participation is widely recognized as a critical aspect of natural resource management, and is a regulatory requirement for a variety of environmental and natural resource management processes, few resource managers have had formal training or professional development opportunities in this field.

TO REGISTER: <http://www.cmiae.org/Forms/course-PublicPartic-Oct%202010.php>

OCTOBER 6-7, 2010

Columbia Mountains Institute of Applied Ecology HUMAN DIMENSIONS OF NATURAL RESOURCE MANAGEMENT

OCTOBER 6-7, 2010

REVELSTOKE BC

CONFERENCE DESCRIPTION:

Natural resource practitioners are accustomed to integrating biological and other natural science and technical factors into their decision-making. Integrating data from the natural sciences with information about social values and human behaviours increases the effectiveness of natural resource management. At this conference, we will present how addressing human dimensions can make your decisions more robust and your plans more likely to be implemented successfully.

DETAILS AND REGISTRATION: www.cmiae.org.

continued on page 18

An apt quotation, from 150 years ago

“... introduced plants ... have become common throughout whole islands in a period of less than ten years. Several of the plants now most numerous over the wide plains of La Plata, clothing square leagues of surface almost to the exclusion of all other plants, have been introduced from Europe; there are plants which now range in India ... from Cape Cormoris to the Himalaya, which have been imported from America since its discovery. In such cases ... no one supposes that the fertility of these ... plants has been suddenly and temporarily increased... The obvious explanation is that the conditions of life have been very favourable, and that there has consequently been less destruction of the old and young, and that nearly all the young have been enabled to breed.”

— Charles Darwin, "On the Origin of Species By Means of Natural Selection, or, the Preservation of Favoured Races in the Struggle for Life" London: John Murray, Albemarle Street, 1859.

Submitted By JIM POSEY

Codes of Conduct & Invasive Alien Plants

Submitted by **CORY LINDGREN**
Canadian Food Inspection Agency

THE CODE OF CONDUCT on horticulture and Invasive alien plants is a joint project of the Bern Convention (Council of Europe) and EPPO. The Code is addressed to Governments, the horticultural industry and trade (plant importers, commercial and municipal nurseries, garden centres, aquarists), and all those who play a role in deciding which species are grown in the landscape (e.g. landscape architects, municipal parks and gardens departments, recreation and leisure departments).

While the Bern Convention has published a comprehensive version of the Code of conduct (in English and French), EPPO has prepared a standardized version in the format of an EPPO Standard "Guidelines on the development of a Code of conduct on horticulture and invasive alien plants" in the series PM3 on Phytosanitary Procedures for National Plant Protection Organizations. These general guidelines are intended to be implemented at national level.

Finally, the Code of conduct has also been translated into Spanish and Polish. The Spanish version has been edited by the Ministerio

de Medio Ambiente y Medio Rural y Marino and illustrated with pictures of invasive alien plants. It has printed in 1000 copies that will be sent to Autonomous Communities, horticulturists associations and Forestry Associations for distribution.

The Polish version is available from the portal of the General Directorate for Environmental Protection. In Poland, further efforts are being attempted to reach a wider audience through the media such as TV programmes on gardening and popular magazines on horticulture. All these documents are freely available from the Internet.

CODE OF CONDUCT ON HORTICULTURE AND INVASIVE PLANTS

- **English version:**

<https://wcd.coe.int/ViewDoc.jsp?id=1473857&Site=DG4-Nature&BackColorInternet=DBDCF2&BackColorIntranet=FDC864&BackColorLogged=FDC864>

- **French version:**

[https://wcd.coe.int/ViewDoc.jsp?Ref=T-PVS/Inf\(2008\)2&Language=lanFrench&Ver=original&Site=DG4-Nature&BackColorInternet=DBDCF2&BackColorIntranet=FDC864&BackColorLogged=FDC864](https://wcd.coe.int/ViewDoc.jsp?Ref=T-PVS/Inf(2008)2&Language=lanFrench&Ver=original&Site=DG4-Nature&BackColorInternet=DBDCF2&BackColorIntranet=FDC864&BackColorLogged=FDC864)



Changes to the Board...

Thanks for their years of service, and "Farewell" to retiring Board Members: **Dr. Paul Watson**, Research Director, Alberta Rural Development Network, and **Katie Roxburgh**, Assistant Agricultural Services Manager, Red Deer County.

Welcome to newly elected Board Members: **Sarah Kehler**, Agriculture Services Coordinator, Yellowhead County and **Dr. Chris Willenborg**, Assistant Professor, Dept. Agricultural, Food & Nutritional Science, University of Alberta. **Dr. Willenborg** was also elected Board Vice-Chair. **Ian McDonald**, Ace Vegetation remains Chair, and **Maureen Vadnais**, AARD, remains as Treasurer.

Upcoming Events

continued from page 17

OCTOBER 25-29, 2010

2ND INVASIVE SPECIES IN NATURAL AREAS CONFERENCE

Sponsored by the Northern Rockies Invasive Plant Council in conjunction with Weed Biological Control Consortium Meetings, W2185 Biological Control in Pest Management Systems of Plants

OCTOBER 25-29, 2010
COEUR D'ALENE HOTEL, NORTHERN IDAHO

WEBSITE: <http://www.nripc.org/conferences.html>

ONLINE REGISTRATION: <http://www.kcs-convention.com/nripc/?cat=000>

NOVEMBER 16-18, 2010

Canadian Weed Science Society

2010 CWSS-SCM ANNUAL MEETING SCHEDULE

NOVEMBER 16-18, 2010
REGINA, SASKATCHEWAN

WEBSITE: <http://www.weedscience.ca/home>

REGISTRATION: <http://www.weedscience.ca/social/pg/file/assistant/read/1807/program-highlights-for-the-2010-cwsscm-annual-meeting>