# **Washington County Weed Warriors**

Working Together to Fight the War on Noxious Weeds

Volume XIV: Issue I April 14, 2015

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## **Annual Recertification Class for Private Applicators**

By Calvin Hickey, Board Member



A full house listens to presentations at the annual recertification workshop. Once again, this was a very informative evening.

The Washington County Weed shop had a full house for the annual recertification class hosted by Washington County Weed and the Lower Weiser River CWMA. Brandon Smith, Field Inspector, for Idaho State Department of Agriculture started the evening by reminding everyone of some safety precautions to help them stay out of trouble. Things such as proper clothing or PPE (Personal Protection Equipment), long pants, long sleeve shirt, rubber boots, gloves, and eye protection. Weather conditions are very important too. Always watch wind speed to avoid drift onto an unwanted area. Some chemicals are volatile so be careful in hot weather; they can vaporize and

move off target. Brandon also reminded us to always keep good records when spraying, including the type of chemical, the rate you applied, weather conditions, time of day, etc. Always store your chemicals in a proper place. ISDA offers container chipping and pesticide disposal.

Brent Bozeman, co-owner of Big Valley Supply, brought over some spray equipment and newest technology their spray equipment business offers. One of the items Brent demonstrated was an air jet nozzle that allows one to spray during wind speeds up to 12 mph (just remember, 11mph is the legal limit in Idaho). Along with several other new items, Brent had with him a new electric pump for your four wheeler spray tank. He said if those new pumps quit

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prizes

were

working, you can buy a kit to rebuild it for much less than a new pump. Brent's company offers a complete spray equipment service from parts and service to building complete new spray systems.

Mike Stafford from Simplot Partners spoke about aquatic herbicide treatments and if there would be any effects on livestock that may later drink the treated water. Mike said it would be highly unlikely that any chemical would ever be approved for use if it could potentially be harmful to livestock. You can read Mike's article in this newsletter.

#### Inside This Issue:

Small Acreage Workshop......pages 3

IWCA 2015 Conference.....pages 4-5

The Monarch Butterfly.....page 7



CWMA board members draw tickets and award door prizes at the end of the workshop. Lots of great prizes went to the lucky winners!

drawn and cookies and punch were offered. Everyone attending received 3 credits for their private applicator license. A big thanks to Bonnie, Jim and Damian of Washington County Weed and to our pre-

#### **Commissioner's Corner**

By Kirk Chandler, Washington County Commissioner

It has been a different winter this year. With winter being so warm and going right into spring, the weeds have really gotten a head start. Everything seems to be a good month early. The rains we received this last week have really helped things grow faster.

I went to the small landowner workshop on the 19th of March. It was a great evening and I learned a lot of good information. Mike Stafford from Simplot came and talked to us on weed control. It was real interesting all the different kinds of chemicals that



are available and the different weeds that they work the best on. He went through a lot of the weeds we have to deal with in our county and explained the best times to spray them and the chemicals that work best to control them. So, this spring as you are out and about looking at the weeds you need to spray, contact Bonnie and see if there is something new and different you can use that may do a better job. I learned quite a bit about different chemicals I could try that would do a better job on the weeds I spray. Anything we can do to better control the weed problems we have, the better. Remember, the Washington County Weed Department is there to help you. Give them a call and they will do what they can to help guide you in the right direction with controlling your weeds.

The commissioners wish you a good spring and summer!

#### A New Weed Warrior!

By Sarah Funk, Idaho Power Company

Idaho Power Company has a new weapon to fight weeds in Hells Canyon—Libby Thomas! Idaho Power controls noxious and obnoxious weeds in our parks, roadways and facilities at the Idaho Power complexes in Hells Canyon. Recently, it has become more apparent we needed someone to treat weeds outside of designated park and facility areas. This is where Libby comes in; she is an Idaho Power groundskeeper whose main focus this spring and summer will be to inventory and treat noxious weeds in dispersed recreation sites. Libby will also conduct weed inventories and treatments on other Idaho Power properties in the Hells Canyon area. So, if you see someone battling those 6-foot tall scotch thistles, its probably Libby, give her a wave! We are glad to have our Hells Canyon groundskeepers, camp hosts, maintenance specialists and biologists as part of the Idaho Power Noxious Weed Warrior Team!



One of the many dispersed campsites that Idaho Power's newest weed warrior will be working to control weeds on.

### **Small Acreage Workshop**

By Bonnie Davis, Washington County Weed Supervisor

Mid-March a small group gathered at the weed department to learn more about how to care for small acreages. The seminar was geared to those owning 20 acres or less. It addressed the three things that landowners typically deal with: gophers and other burrowing rodents, irrigation water and of course weeds.

Sherm Takatori, Idaho State Department of Agriculture, shared his vast knowledge regarding rodent control. He stated facts such as pocket gophers typically have one litter per year with three-four babies per litter. He noted the disclaimer that years like this with an early spring they can easily produce two litters. Their man burrow is a gopher highway, lateral runs are for maintenance and the deep burrow is for storing food and denning purposes. A single pocket gopher can make 300 soil mounds, moving four tons of dirt per year. They are not social animals, they do not care for other gophers and there is typically only one gopher per system. They are active all year long and typically do not live to be more than three years old. Voles are often mistaken for gophers but are smaller in size and are prolific breeders. When they are 30 days old they are ready to breed and have an average of five offspring every three weeks. They need a great deal of food and space. Voles can live up to two years but the typical life span is three-four months. Voles live



Local landowners starting to gather prior to the start of the Small Landowner Workshop. primarily above ground and often seek shelter in debris piles. They will feed on plant seeds, tubers and even grasshoppers and they too are active year round, working day and night. Voles have above ground runways and tunnels, they do not care for structures and homes.

Volume XIV: Issue I

Sherm also touched on ground squirrels and marmots (rock chucks) which can be extremely damaging to range and pastures. Numerous types of control methods exist including cultural - crop rotation, weed control, grain buffer strips on field edges and flood irrigation. He is not a fan of repellents such as moth balls and sonic devices. Traditional controls include traps and he demonstrated a variety of traps that are available at various farm stores. Baits were discussed, how to place and which bait has what mode of action. Fumigants are another option but require a restricted use pesticide license with record keeping requirements. For more information on these rodents Google, University of Idaho Rodent Control and look for the PNWP Gophers and Voles publication. This is a great resource.

Ron Shurtleff, Water Master, Water District 65, presented the history of water and how irrigation systems came to be. Canals and ditches began in 1870 and brought life to this area which before was a desert system. He covered things such as the Carey Act of 1894 which allowed private companies to develop irrigation systems and sell water rights so that western states could have irrigation for productive farming. The Reclamation Act of 1902 opened the way to federally financed project using federal money to build irrigation structures. Ron did a brief synopsis of when the various dams were constructed in the Payette Basin. Sagebrush to settlement is something he referred to numerous times in his presentation as irrigation water became more available. Each year the flow of the rivers fall off and he discussed the importance of capturing spring run-off for later use. Irrigation has in fact come a long way, and he explained terms such as water accounting, natural and stored flow, day of allocation (this is when the river water is gone and reservoir water is needed), natural and part stored flow, measurement and monitoring. He also explained that water accounting, good or bad, has made us more accountable and better use of this resource.

Mike Stafford, Simplot Partners, dazzled the group with his scientific brilliance explaining how molecules split and how various control methods work. He covered such general use products as Curtail, Milestone, Dicamba, Range Star, Escort and Telar. He touched on Tordon 22K which is restricted use but very effective. He shared what herbicide works best on what plant, why, and growth and timing. He covered a variety of noxious and nuisance weeds such as Canada Thistle, Poison Hemlock, White Top, Perennial Pepperweed, Puncturevine, Rush Skeletonweed, Leafy Spurge, Hounds Tongue. He then went into problem weeds not listed as noxious such as Kochia, Russian Thistle, Prickly Lettuce, Red Root Pigweed, and Buttonweed. He answered various questions from the audience and spoke of particular mixtures that work best at various times of the year.

This was an informative evening and we would like to thank those who attended and our presenters for participating.

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#### **Idaho Weed Control Association Conference 2015**

By Anna Owsiak, IDFG

It was a beautiful week for the annual Idaho Weed Control Association meeting in Boise. Once again the venue was full with attendees who represented government agencies, weed control districts, private landowners, researchers and other organizations with a stake in managing weeds. It was noted at the meeting welcome that the name of the meeting had been changed from "Idaho Weed Conference" to "Idaho Noxious Weed Conference" to differentiate this meeting from others in neighboring states that were not related to noxious weed control. Seems there had been a few folks drop-in last year whom thought "weed conference" meant something a little different.



The vendors booths were popular gathering spots during breaks throughout the conference.

Day one plenary talks began with Dr. Jim Gray on the 2,4-database and current 2,4-D research with pollinators.

Next was Todd Transtrum's presentation on the Highlands CWMA phragmities control program. Matt Voille rounded out the morning session with updates on ISDA programs:

- Idaho gave out \$1.65 million in cost share dollars
- Purple star thistle was found in Twin Falls County in southern Idaho; it and Iberian star thistle were emergency listed as noxious weeds; they will be officially listed in EDRR in Idaho next year
- Letchi tomato (a nightshade) is being tested this year as a potential suicide crop to trap nematodes in infected potato fields.

Matt left everyone with a final thought for all of us to "Educate to Compel Action", so our educational efforts don't just impart knowledge, that they create a desire to take action to make a positive difference.

In the afternoon, an excellent presentation on Colony Collapse Disorder and Bee Health was given by Veldon Sorensen. Did you know most U.S. bees are of Italian descent and that 90% of flowering plants require pollination? For those of you who raise sunflowers, they are excellent for bees to forage on for food. This was followed by Trent Clark's talk on Managing for Peak Phosphorus. Did you know phosphorus has the same chemical hardness as your teeth. It's a component of toothpaste; it will clean teeth without wearing them down. And, all the phosphorus used to make Coke and Pepsi is from Soda Springs, Idaho.

The IWCA Business Meeting honored this year's Hall of Fame winners. Jeff Gould, Idaho Fish and Game Wildlife Program Bureau Chief, was honored for his work to

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Valentine's Day was a popular theme among many of the raffle basket donors.

include noxious weed information in agency hunting and fishing regulations and his participation in the rewrite of Idaho's noxious weed strategic plan. The second Hall of Fame award went to Kali Sherrill, outgoing President of the IWCA. Her years of service to both IWCA and IAWCS have produced many positive results and she currently serves as the Twin Falls county Weed Superintendent, where she continues to advance new ideas in noxious weed control and education. (Continued on next page...)

#### (IWCA Meeting 2015 Continued from previous page...)



Jeff Gould (center), from the Idaho Department of Fish and Game, was one of two awardees honored for their noxious weed work and for partnering with others in that work.

Roger Batt ended the day's presentations with an update on the various projects and activities of Idaho Weed Awareness Campaign. The ever popular Idaho Weed Quiz and Bio-Control Quiz were a challenge for test takers. However, numerous hints were given to help folks complete the quiz, as its real role is to help folks better learn their weeds and bugs!

Day two's concurrent sessions offered a variety of topics including herbicide product updates and management applications; bio-control updates; seed movement via vehicles; plant identification (along with a practice session using XID plant identification software); new invaders to small acreages. Some of the interesting information gleaned from these include:

- Salt Cedar bio-control agents have been found as far north as Farwell Bend, Oregon
- Spotted knapweed is declining in Idaho
- BONAP.org is the website to go to too see plant records of occurrence, by county, for the United States
- Our current level of plant occurrence detection is 30 years and 10,000 acres its been here that long before it is recorded and infests at least that much acreage
- In dry conditions, most weed seeds do not fall from vehicles they are hitching rides on
- In wet conditions, hitchhiking seeds fall off rapidly, especially from wheel wells
- ATV's move as many as 400 seeds per mile when driven off road in the fall, and there is no upper limit on the number of seeds that can potentially hitchhike on an ATV at any one time.

Applicator credits were given for Idaho, Oregon and Nevada at the end of both days. This year a .22 gun was raffled along with an assortment of raffle baskets, all to benefit the IWCA scholarship fund. A special thank you goes out to all donors of this year's raffle items!

It was another great meeting, as well as an opportunity for folks to network, discuss common weed problems, and strategize for the coming year. A heads up - next year's meeting will be hosted at the Red Lion Inn as the Boise Hotel and Convention Center has been sold to new owners. Hope to see



Lower Weiser River CWMA board members Tom and Dixie Sutton attended this year's meeting. They are enjoying their lunch and the company of other CWMA members at this year's conference.

#### TREATED IRRIGATION WATER—IS THERE RISK TO MY CATTLE?

By Mike Stafford, Ph.D

In February I spoke to a group of Washington county producers on the use of aquatic herbicides and this attentive group asked some excellent questions regarding the toxicity of Magnacide H (acrolein) and Aquatic Weed Killer (xylene) to cattle drinking out of treated irrigation canals. These two products are widely used in the PNW to keep irrigation canals free from weeds and algae that impede water flow.

After reviewing pertinent toxicological studies and scientific reviews by the CDC, EPA and others I believe I can more accurately address these questions and concerns as to the risk to livestock drinking from treated canals.

Aquatic Weed Killer (xylene) manufactured by Thatcher Chemical is commonly used in canals in ID, OR, WA, and MT. The label does not contain any language that prohibits livestock from drinking from treated canals. Since common livestock species such as cattle or horses are not used in standard laboratory mammalian toxicology studies, we will have to extrapolate from common white lab rat results. Keep in mind that, in general, mammalian systems react to toxicants similarly.

Published studies show the rat acute oral toxicity (a single high dose), expressed as a LD50 which would kill 50% of the population subjected to the trial, varies from 3523->5000 mg/kg or parts per million. Using the low end (more toxic) figure of 3523 ppm, a 1000 lb cow would need to ingest 3.523 lbs of xylene to reach the LD50. At the application site where xylene is applied, the concentration in the water is such that even a cow would need to drink nearly 65 gals of treated water to ingest a single lethal dose. One study with pregnant female lab rats fed xylene for 10 days straight in their food showed that at concentrations of 2060 ppm, cleft palates were observed in several litters of offspring from these females. Pregnant livestock that drink from a treated canal will have exposure at much lower rates than 2060 ppm. Cattle will be exposed each time canals are treated, usually from one to three times each irrigation season.

Xylene is a very volatile compound and is lost rapidly from irrigation water. One study showed a decrease in xylene concentrations by 50% in 39 minutes in a turbulent irrigation ditch. Lower velocity ditches do not lose xylene as quickly but in a matter of 6-8 hours it is mostly evaporated out of the water.

Xylene is not carcinogenic (cancer causing) nor mutagenic (mutation causing), thus the wealth of toxicological studies on xylene has led the Agency for Toxic Substances and Disease Registry to report "in general, developmental studies in animals reported adverse effects only at concentrations that caused maternal toxicity".

Magnacide H (acrolein) is a Restricted Use Pesticide used in many western states for aquatic weed and algae control in irrigation canals. The label prohibits only lactating dairy animals from drinking from treated canals. The label has no other statements pertaining to non-lactating animals. Acute toxicity of acrolein is high, the rat LD50 is 29 mg/kg. Use rates in flowing canals vary from 1-15 ppm of acrolein. The greatest risk from acrolein certainly appears to be from the inhalation of airborne vapors, however, properly applied to a canal this risk is certainly minimized.

In several studies investigating reproductive effects of acrolein, pregnant rabbits fed 1 mg/kg daily showed fetal resorption and one lab study showed rat pups from mothers fed a daily dose of 6mg/kg had lower body weights than the controls. These feeding studies differ significantly from what a farm animal might ingest in both a rate and duration standpoint.

Acrolein, not quite to the extent of xylene, is fairly rapidly removed from treated water by volatilization. Half-life studies conducted in CA and WA showed acrolein dissipated quickly, 6-10 hours in actual irrigation canals.

Under labeled uses, it seems reasonable to assume that the incidental ingestion of treated canal water does not pose a threat to livestock. Based upon the data reviewed and lack of precautionary statements on these pesticide labels pertaining to livestock watering (other than lactating dairy animals) I believe the risk to cattle is minimal.

## **Everyone's Favorite—the Monarch Butterfly**

Harbinger of warm summer days and outdoor adventures, the monarch butterfly is one of the best loved of insects. Delightful orange and black creatures, they led us on many flights of fancy as we chased them across green meadows and backyards of our youth.



Monarchs make an amazing migration each year—from the northern reaches of North America to the mountainous forests of Mexico. Did you know it is the offspring of the butterflies who started the journey who finally arrive in Mexico, and vise versa, on the return trip north? It takes more than one generation to complete the journey each way, each year. How each generation is able to know where to migrate to, having not been there before, is still a mystery.

Volume XIV: Issue I

Monarch caterpillars depend on milkweed plants for their food and to obtain the toxin that makes them taste bad to insect predators. Monarch caterpillars are not harmed when they ingest milkweed toxin, and their bright orange and black color-

ing serves notice, much like a skunk's black and white stripes, that it is not a good meal. Few predators will eat a monarch a second time.

Although their numbers are in the millions, monarchs are increasingly having to deal with declining habitat and other problems.



Milkweed is considered a weed by many people and is controlled, resulting in less food across much of the monarch's range. Critical forest habitat in Mexico that monarchs winter in and the oyamel trees they cluster on are under increased logging pressure. Insecticides can

kill monarchs and other plant pollinators if they are not carefully applied.

There are ways to help monarchs continue their annual journey. Increasingly, landowners and backyard enthusiasts are planting and protecting milkweed plants. Organ-

izations such as Monarch Watch, the Monarch Butterfly Fund, and Monarch

Joint Venture are working to educate people and improve and secure monarch habitat in the United States and Mexico.

We all can play a role in ensuring monarch butterflies continue to brighten our days and provide us with happy memories of summer. More information on monarch butterflies, what is being done to conserve them, and how you can help, can be found at the above organization's websites. Take a moment to learn about the monarch and it's amazing migration, and what you can do to keep these icons of summer visiting your backyard.



### **Sugarbeets Could Become Blood Substitute**

This article was originally printed in the Sugar Producer Magazine for beet growers. We received permission from the editor to reproduce this article in our newsletter.

Researchers at Lund University in Sweden have discovered that sugarbeets produce hemoglobin. They now hope that this hemoglobin could serve as a blood substitute—a substance that is currently in short supply.

"Previously, it has been presumed that certain plants produce this iron protein only when stressed, such as in drought or frost, because it has been seen that this is the case for certain other plants. However, we have shown that hemoglobin is produced even in a normal state," said Nélida Leiva, a doctoral student of applied biochemistry at Lund University, who has just presented the findings in a doctoral thesis.

Leiva's supervisor, Professor Leif Bülow, has spent many years conducting research on the production of human hemoglobin, primarily with the help of bacteria, because hemoglobin from blood donors is far from sufficient to cover the needs of society.

The process of extracting hemoglobin from sugarbeets is not much more complicated than extracting sugar, according to the researchers. The challenge lies in obtaining sufficient volumes. However, Leiva and Bülow believe there is good reason to think that sugarbeets and other crops could become a realistic alternative.

"From one hectare, we could produce 1-2 tons of hemoglobin, which could save thousands of lives," said Bülow. The human body contains almost 1kg of hemoglobin.

In just over a year, the researchers will start testing the hemoglobin from plants in animal experiments with researchers at University College of London, who have world-leading expertise on blood transfusions. In the work on her thesis, Leiva has also discovered that the hemoglobin in sugarbeet is almost identical to human hemoglobin, especially the form of hemoglobin we have in our brains.

"There is a difference in a small detail on the surface of the protein, but this simply appears to extend the lifespan of the hemoglobin from sugarbeet, which is good news," Leiva said.

But why is there hemoglobin in plants at all? They surely don't need to transport oxygen? Leiva has discovered that the substance has a completely different function, despite it's similarity to human hemoglobin.

"We have found that the hemoglobin in the plant binds nitric oxide. It is probably needed to keep certain processes in check, for example so that the nitric oxide doesn't become toxic, and to ward off bacteria."

In humans, there are several types of hemoglobin. The majority is of the type found in the blood, but hemoglobin is also present in the testicles and the brain. It is the hemoglobin in the brain that is most like that in sugarbeets. Leiva has not only discovered hemoglobin in the sugarbeet root, but also in the leaves and flowers.

#### Hemoglobin as a blood substitute

Following an accident, it is important that additional hemoglobin is quickly supplied to the patient so that oxygen can be transported around the body—the main task of hemoglobin. Hemoglobin (Hb) is needed in the initial period up to five hours after an accident. After this complete blood must be given.

Besides human donations and waste from abattoirs, bacteria-cultivated hemoglobin is the method we have available to create a stock of the vital iron proteins.

In some countries, such as China and India, blood banks are non-existent or very limited, which means that alternatives must be developed quickly. It is especially important to get hold of these substitutes in emergency situations where safe blood transfusions are of vital importance, according to Bülow.

The Ebola epidemic in Africa is a current example where these blood substitutes could save lives," he added.



## The Biological Control Corner

By Joey Milan, ISDA/BLM



Yellow toadflax – Dalmatian toadflax's less conspicuous, equally invasive cousin...

Volume XIV: Issue I

It seems like the more people look for yellow toadflax, the more people find yellow toadflax. If you're not familiar with this particular invasive, it is a perennial that grows up to 3 feet, with erect stems, showy flowers, and creeping roots. The flowers are bright yellow (sometimes whitish) and include a snapdragon-like spur. The big difference between yellow and Dalmatian toadflax is the leaves. Where Dalmatian leaves are lanceshaped and waxy, yellow toadflax leaves are linear without the waxy cuticle. Yellow toadflax is an

escaped ornamental introduced from Europe.

To combat this weed's spread, a variety of biological control agents have been released over the past two decades. One of those agents, *Mecinus janthinus*, or the toadflax stem weevil, is emerging as the shining star of this group.

The weevils overwinter as adults in yellow toadflax shoots and emerge in May. The adults are small, bluish-black that appear somewhat elongated and feed, mate, and lay eggs from the end of May to mid-July. The eggs are deposited inside the shoots where the larvae develop. The larval mining impacts the plants by causing premature wilting of shoots and suppressing flower formation. The adults feed on leaves and stems. The effects of the weevil on the plant are reportedly enhanced under drought stress.

Recent monitoring trips have shown that not only have the insects established, but they are now likely present in collectable numbers. Based on these monitoring results, it is likely that the yellow toadflax in the area will be adequately controlled in the next couple of years.

Continued monitoring at sites where the weevils have successfully controlled the target plant population will reveal whether or not yellow toadflax will be controlled over the long term. Because biological control agents and plants coevolve, plants are not able to develop resistance to biological control



A toadflax stem weevil on top of a plant. This picture shows its relative size compared to a human hand.

agents (which can happen with herbicides). This also means that there will likely be peaks and valleys for the populations of both yellow toadflax and *Mecinus janthinus*. Given time and perhaps additional releases during these lag times, it is probable that yellow toadflax will remain a minor component in an area where it was once dominant.

## LOWER WEISER RIVER COOPERATIVE WEED MANAGEMENT AREA

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Email: bdavis@co.washington.id.us CWMA Website: www.cwma.info

The Washington County Weed Department provides equal opportunity employment on the basis of race, color, religion, national origin, gender, age, disability, or status as a Vietnamera veteran, as required by state and federal laws.

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## **UPCOMING EVENTS ...**

#### **EVERY MONTH:**

The Lower Weiser River CWMA meets the 2nd Tuesday of every month, 7:00pm at the Washington County Weed Department, 1118 E. Court St., Weiser, Idaho. Meetings are open to the public.

#### **April 2015:**

The Poster Contest continues for area youth grades 4-6. Please contact the Washington County Weed Department for more information.

### May 2015:

Neighborhood Spray Projects begin

22nd—Poster Contest Entry Deadline. All Poster Contest entries must be turned in to the Weed Dept. by 3:30 p.m.

#### June 2015:

9th—Poster Contest winners announced with prizes presented.

10th-11th—Teacher's Workshop-contact Weed Dept. for further details.

11th—The 15th Annual Noxious Weed Tour-watch local newspapers for more information or RSVP to the Weed Dept. at 414-1950.

