

A Weed Warrior's Guide to Crook County

*A Compilation of Essays on the identification,
control, and impacts of noxious vegetation
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Crook County Weed Master

TABLE OF CONTENTS

FOREWORD	5
SECTION 1: THE ASSORTED BARBARIANS	6
DALMATIAN TOADFLAX	7
<i>A Million and One Dalmatians</i>	7
ORANGE HAWKWEED	9
<i>So What's New in the Neighborhood?</i>	9
AFRICAN RUE	11
<i>Now That's What I Call A Weed!</i>	11
THE CONTROL OF SAINT JOHNSWORT	13
HOUNDSTONGUE.....	15
<i>The Dog That Bit You</i>	15
THE BEAVER-STATE TRIFECTA.....	17
THE FINE ART OF GETTING SUCKER-PUNCHED	19
WILD CARROT	21
<i>It Pays to Know Your Enemy</i>	21
SECTION 2: THE OUT OF TOWNER'S	23
KUDZU.....	24
<i>The Weed That Ate The South</i>	24
GIANT HOG WEED.....	26
<i>"Mighty hogweed is avenged... human bodies soon will know our anger"</i>	26
GIANT REED GRASS	28
<i>In Place of Coal as a Bio-fuel</i>	28
SECTION 3: THE HEMLOCKS	30
CONTROLLING POISON HEMLOCK.....	31
WESTERN WATERHEMLOCK	33
<i>With Friends Like These</i>	33
SECTION 4: THE THISTLES	35
SCOTCH THISTLE	36
<i>A New Approach to an Old Problem</i>	36
CANADA THISTLE.....	38
<i>Think Outside the Box to Control Canada Thistle</i>	38
SECTION 5: THE PERENNIAL MUSTARDS	40
PERENNIAL PEPPERWEED	41
<i>This Pest is Coming and it's Coming With All the Subtlety of a Freight Train</i>	41
HAROLD TALLEY AND THE CONTROL OF WHITETOP	43
WHITETOP CITY	45
<i>To Everything There is a Season and, if You've Got Whitetop, Yours Has Arrived</i>	45
SECTION 6: THE ANNUAL GRASSES	47

CHEATGRASS	48
<i>The Fuzz That Won the West</i>	48
MEDUSAHEAD RYE	50
<i>Not Just Another Pretty Face</i>	50
SECTION 7: THE KNAPWEED.....	52
ABOUT SPOTTED KNAPWEED IN CENTRAL OREGON	53
"FROM RUSSIA WITH LOVE"	55
YELLOW STARHISTLE	57
<i>"We Would be Foolish Not to Feel Threatened by its Presence"</i>	57
DIFFUSE KNAPWEED.....	59
<i>Better Living With Diffuse Knapweed</i>	59
SECTION 8: THE SPURGES.....	61
LEAFY SPURGE IN CROOK COUNTY	62
<i>Control Leafy Spurge While You Still Have the Opportunity</i>	62
MYRTLE SPURGE	64
<i>All That Glitters is Not Gold</i>	64
SECTION 9: THE ANNUAL BROADLEAF'S.....	66
THE CONTROL OF RUSSIAN THISTLE	67
<i>A Tale of Two Pity's part one</i>	67
THE CONTROL OF KOCHIA	69
<i>A Tale of Two Pity's part two</i>	69
THE ANNUAL MUSTARDS	71
<i>The Attack of the Angry Mustards!</i>	71
SECTION 10: DOMESTIC WEEDS.....	73
CONTROLLING BUTTONWEED.....	74
<i>Because You Hate This Stuff</i>	74
COMMON PURSLANE	76
<i>"Tis the unweeded garden that goes to seed; things rank and gross possess it merely"</i> Hamlet ...	76
SECTION 11: AQUATIC WEEDS	78
YELLOW FLOATING-HEART	79
<i>"Okay, it's here; now what?"</i>	79
EURASIAN WATERMILFOIL	81
<i>Coming Soon From an Aquarium Near You</i>	81
SECTION 12: ASSORTED CRUD.....	83
COMMON MULLEIN	84
THE CONTROL OF BUR BUTTERCUP	86
<i>Make Plans to Control This Pest in March or Live With it for the Rest of The Year</i>	86
THE PAINFUL TRUTH ABOUT PUNCTUREVINE	88
THE BOTTOM OF THE BUCKET....LIST	90

<i>The Stuff That Didn't Make the "A" or "B" Noxious Weed List</i>	90
WHITE HOREHOUND	90
STINGING NETTLE	91
COMMON TEASEL.....	91
SECTION 13: APPLICATION.....	93
HERBICIDE SELECTION MADE EASY	94
IT'S TIME TO RETHINK WEED CONTROL STRATEGIES	96
<i>Why Fall Can be the Most Effective Season for Controlling Certain Plant-Pests</i>	96
ROUND TWO	98
<i>Taking Advantage of Fall Application Can Yield Some Fantastic Results</i>	98
HOW TO USE SOIL APPLIED HERBICIDES CORRECTLY	100
<i>"We're Going Brown"</i>	100
HERBICIDE LABELS 101	102
<i>"Label is the Law"</i>	102
HERBICIDE APPLICATION NEAR TREES.....	104
<i>Of Herbicides, Trees, and Harvey Updyke</i>	104
ROADSIDE RESIDUAL HERBICIDES 101.....	106
<i>What a Difference a Year Can Make</i>	106
WEED-FREE FENCEROWS AND OTHER LOFTY GOALS	108
<i>Timing of application and product selection can mean everything</i>	108
APPLICATION GONE WRONG	110
<i>If All Else Fails...Read the Instructions</i>	110
SECTION 14: PROGRAMMATIC STUFF	112
CROOK COUNTY'S NOXIOUS WEED LIST.....	113
<i>How We Got This Way</i>	113
NEW PROGRAMS FOR THE CONTROL SCOTCH THISTLE IN POWELL BUTTES	115
GRANTS A GO-GO	117
<i>Got Weeds? There May Be Financial Help on the Horizon</i>	117
THE CITY OF PRINEVILLE WEED ORDINANCE	119
<i>What You Need to Know to be Compliant and What May Happen if You're Not</i>	119
" <i>...AND WE'RE HERE TO HELP YOU</i> "	121
<i>The Role of the Federal government in Controlling noxious weeds In Crook County</i>	121
SECTION 15: BIO-CONTROLS.....	123
THE BIOLOGICAL CONTROL OF WEEDS IN CROOK COUNTY	124
INDEX.....	126

FOREWORD

Crook County, Oregon is home to boundless recreational, agricultural, and development opportunities along with the transportation arterials necessary to implement them. These arterials come in the form of five state highways and numerous County, private and Federal roads. The roads that have augmented those opportunities have served as a conduit for the continuing influx of noxious vegetation into and within Crook County. An examination of abbreviated County noxious weed lists from 1939 compared to the expanded versions of present day makes that condition evident.

In order to stem the tide within Crook County it has become necessary to increase our awareness in regards to the identification, and control of noxious vegetation and to develop a keen understanding as to the potential detriment that noxious weeds pose to all of our pursuits. With this need in mind, monthly articles were written over a seven year period which was intended to be comprehensive of noxious weeds and all pertinent issues associated with them. It must be remembered that recommendations for the chemical control of weeds is largely based on the experience of the Crook County Weed Master and are often presented to the reader as the most economical and convenient methodology. This does not mean, however, that those recommendations are always the most effective.” Cost-effective” is often related to depth of one’s pockets; I have taken the liberty to assume that yours may be as shallow as mine.

I wish to thank OSU Extension and the Oregon Department of Agriculture for their devoted input into the field of noxious vegetation management and to whom the East-side vegetation management programs owe much of their success. Special thanks go to Jody Stills and Deb Maferra for their assistance in the preparation of this document and to the people of Crook County and the Crook County Court for their continued and expanded involvement and support.

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Section 1: The Assorted Barbarians

DALMATIAN TOADFLAX

A Million and One Dalmatians

Back in the mid 1960's LBJ was the president of these United States and Ladybird Johnson was the First Missus. Those of us that can remember back that far recollect that Ladybird was a conservation- minded woman who was constantly shutting off light switches at the White House, to save energy, and reminding us that we all had to do our part to make this country a more environmentally friendly place in which to live. Unfortunately, one of her public cooperation projects would come back to haunt us years later. The project was called "Let's Beautify America" and a part of that plan was simple: when you filled up your car with gas, the environmentally conscious Shell Oil Company would give you a package of wildflower mix seeds which you could distribute as you saw fit and, thereby, help to "beautify" this great country of ours. Unfortunately, a later analysis revealed that many of those packages contained the seeds of Dalmatian Toadflax, a noxious weed, which at one time was considered to be an ornamental plant.

Over the past three centuries invasive plant species have come to us in a multitude of ways: they've been flown in, blown in, floated in, come in on the hooves and hides of domestic stock, ships ballast, agricultural seed, and, during the Johnson administration, unceremoniously ejected from the windows of station wagons and sedans as they traveled across the western states. Weather you call it "Beautifying America" or job security in a package, this program would change the way many people would view ornamental plants in the future.

This troublesome pest now infests lands in twenty-two western states and seven Canadian provinces, but we shouldn't place all of the blame on Ladybirds well intended program. Dalmatian Toadflax (*Lineria dalmatica*) first arrived in the United States in 1874 as a garden variety ornamental and by the 1920's had escaped domestication. Information provided by the Oregon Department of Agriculture indicated that infestations of this pest were found in the 1980's in the proximity of old, unkempt cemeteries in Central and Eastern Oregon where the flower would have been used on grave sites.

Today, in Crook County, populations of this pest tend to be small and, somewhat, manageable. For that reason, and given its aggressive nature, Dalmatian Toadflax has been rated a class "A" noxious weed and is given a top priority status for control.

This wild version of a yellow Snapdragon grows to about three feet in height and the flowers appear along spikes which unite at the base of the plant. This pest is a short lived perennial which can reproduce from either seed or rootstock and may produce as many as five hundred thousand seeds over its two to three year life-span. What makes this plant difficult to control manually is that the roots, or solons, are difficult to pull, in their entirety, and break off allowing the plant to reproduce from the remaining rootstalk. Be persistent and eventually you will succeed. What makes this plant difficult to control chemically is that the leaves have a waxy cuticle. These spade shaped leaves tend to repel herbicides, so use a superior surfactant such as Phase or Sil-tac which will allow your herbicide to spread across the leaves and be taken into the plant. Herbicides such as Banvel, Telar, Tordon 22-K, and Plateau will work well, particularly if you spray in the morning when the stomata are open. The plant will, then, be more receptive to the herbicide. The optimum time to treat Toadflax is from late May to late October.

A biological control program conducted by Crook County and the Oregon Department of Agriculture has proven to be fairly successful. The Toadflax stem weevil (*Mecinus janthinus*) which feeds on the leaves and stems was released on two of the larger infestations and the little critters have done quite well. I have reserved a place in my heart for a bug that's willing to give his or her all for the good of the County weed program. The unfortunate thing about biocontrols is that they will, at best, keep the plant populations down to a dull roar.

Over the past fifty years or so Dalmatian Toadflax has gobbled up tens of thousands of acres of private and public lands in Central and Eastern Oregon. Grant County alone has in excess of ten thousand acres of this plant pest. Ask the good people of that county what they think of Dalmatian Toadflax and they may call it many things, but they won't call it *ornamental*.

So, was there more to this Ladybird thing than meets the eye? Could this have been her clandestine way of striking a blow against a nation who for ninety-five years called her *Ladybird*...a name better suited to a Cocker Spaniel? I doubt it. Seed mixes are notorious for containing contaminants and some dolt who developed the seed mix probably screwed up. The truth is that Claudia; *Ladybird* Johnson was an exceptional conservationist and, today, has a center for wildflower studies named in her honor at the University of Texas. So, let us not let this blot on an, otherwise, impeccable reputation ruin her legacy. Sadly, Ladybird Johnson passed away on July 11, 2007 and nobody was more surprised than I was. I had no idea she was still alive.



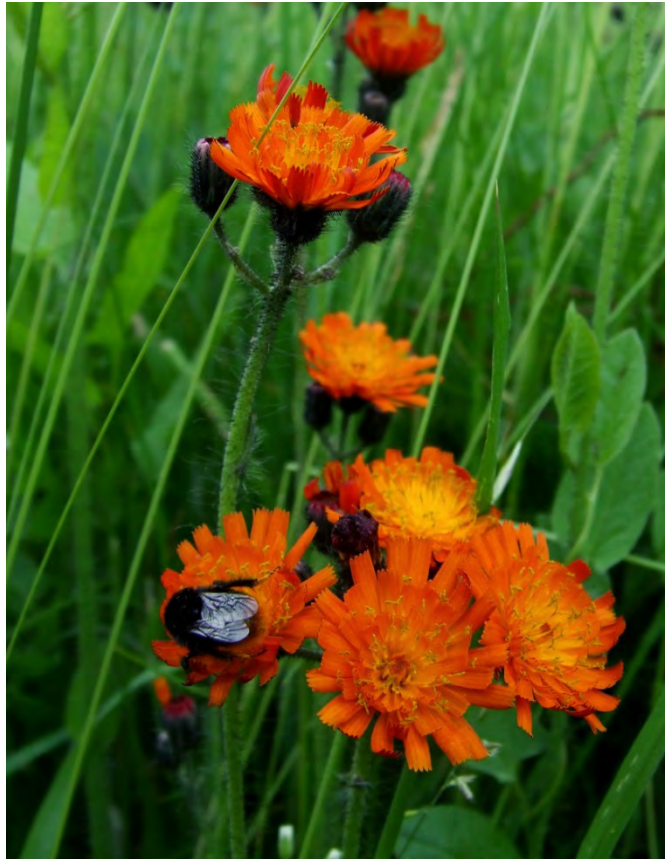
ODA Photo



ORANGE HAWKWEED

So What's New in the Neighborhood?

Here we go again. Yup, once again our insatiable appetite for botanical bling has gotten us into deep doo-doo. It's really quite understandable when it involves the layperson; a plant which seems so attractive and innocuous in one part of the world is introduced to another part where it has no natural enemies and what once seemed so beneficial now becomes the monster. What I do find difficult to understand is how the nursery industry, the ones mostly responsible for the distribution of ornamental plants, can be as unwitting as the general public. You would think that it would be incumbent upon the nurserymen to have some idea of how a plant might behave in a new environment. You would think. But so it happened around 20 years ago that a nursery in Bend began selling orange hawkweed to an unsuspecting public and, thereby, opened the proverbial can of worms. What the patrons of that nursery would soon discover was how aggressive the pretty orange flowered plant could become. What was not intended to be ground-cover now was and arresting the movement of this new pest would amount to a lot more than a little elbow-grease. With the exception of the pumice-type soils in southern Deschutes County, the manual removal of this rhizomatous perennial can be anywhere from very difficult to impossible. Many of the homeowners soon realized that orange hawkweed not only invaded their flower beds, but their lawn as well. Ultimately, this pest will colonize and negatively impact desirable forage in hay fields, meadows, and riparian areas.



Orange hawkweed (*Hieracium auranticum*) also known as devils paintbrush, is a showy member of the sunflower family and is distinguished by its bright red-orange flowers which become evident throughout the summer and early fall. Each plant can

produce five to 30 flower heads in clusters at the top of each stem. The stems are single and unbranched leafless and grow from 10 to 36 inches tall and contain a milky fluid like dandelions. The name hawkweed is derived from the ancient Greek word hierax, "hawk", because the Roman naturalist Pliny believed that hawks fed on the sap of this plant to improve their eyesight....of course he also believed that Romans fed on pizza to trim their waistlines.

Orange hawkweed is a native to Europe and was introduced to North America as an ornamental around the early 1800s. In the U.S., Canada, Australia, New Zealand, and East Asia it is considered to be ecologically invasive. In Oregon, it's on the ODA "A" list which gives orange hawkweed the highest priority for control. In both Deschutes and Crook counties it is "A" rated as well. Although the pest can still be found for sale on some internet sites, the sale of orange hawkweed has been made illegal in Oregon.

Over the past two decades, orange hawkweed has escaped domesticity and as many as 100 or more populations now plague Deschutes County including the riparian areas along the Deschutes River south of Bend. The ODA, U.S. Forest Service, and Deschutes County have mounted a charge to control orange hawkweed, but the possibility of eradicating the pest seems, at best, remote.

In Crook County, the fact that there had been no reported sightings of orange hawkweed produced an aura of smugness; a sensation that I found to be most pleasing. This entire pleasantry, however, was trashed a few weeks ago with a call from the ODA. The sequence of events went something like this: KTVZ News did a piece on the evils of orange hawkweed, a Prineville lady recognized it as the stuff that was overrunning her garden, she then called the contact number given for Deschutes County, Deschutes County said to call the ODA and the ODA called me. "Stuff" definitely runs downhill and it seems like I'm always there to catch it. The infestation was treated two days later....and the circle of life was complete.

What this observant citizen discovered was the futility of trying to dig-out a rhizomatous perennial. You have a fighting chance of succeeding providing that the infestation is very small and the soil is agreeably sandy; otherwise use a herbicide. For non-domestic infestations clopyralid in the form of Transline or Stinger at 15 to 21 ounces per acre will work nicely as will aminopyralid in the form of Milestone at 7 ounces per acre. If your infestation is domestic then you will need a product with a turf and ornamental label; Speed Zone at a four pint rate will work nicely in both flower garden areas and in lawns. Whatever your situation, always use a non-ionic or organo-silicone surfactant with your mixes.

Although the sale of orange hawkweed is illegal in Oregon, you can still purchase the seeds on-line. This should be worrisome to all of us here in the U.S. of A, but to some it is a misguided convenience. On the Meadows and Prairies Forum of the Garden Web; Kenneth M. of New York writes: "I'm thinking about planting some orange hawkweed around my home in central N.Y. I know that it's considered a pest out west, but I don't live out west. It's also not native, but 10,000 years ago there were no native plants here so I'm not worried about it." It was heartwarming to read the outpouring of responses that were posted from all over this great country of ours telling Kenneth what we already know....Kenneth is an idiot.

AFRICAN RUE

Now That's What I Call A Weed!

It's been said that the road to hell is paved with good intentions and never was that more true than in the case of invasive species. Over the past three centuries well intentioned do-gooders have imported a multiplicity of plants and animals into this great country of ours with the intention of *improving* things. Nutria, Silver Carp, Starlings, Kudzu, and Scotch Broom are all prime examples of how things can go terribly wrong when we humans take a shine to something from a different geographical area and then try to *improve* things, domestically, by importing it. It is, indeed, unfortunate that it has taken us so long to realize that plants and animals that have no natural enemies do remarkably well here. Useful or cute doesn't necessarily mean good in the long term.

In 1928 a well-intentioned farmer near Deming New Mexico imported a plant, for cultivation, that could be utilized for the production of dye for the coloration of wool yarn. The color is called "Turkey Red", the plant is called African Rue, and the farmer, by now, is probably called the something that we can't print here. Unfortunately for him he now has the dubious distinction of being responsible for an infestation that covers half of the state of New Mexico!

African Rue (*Peganum harmala*) is a perennial plant with spreading taproots that can grow to a depth of greater than twenty feet. The plant tends to grow in very dry soils and does a good job of outcompeting desirable range vegetation. African Rue also contains alkaloids which make the plant extremely toxic to domestic ruminants. This pest is a green shrub that grows up to a foot tall and two to four feet in diameter. It has succulent, thin leaves growing alternately and white flowers with five petals.

So, a new weed had arrived and set up shop in the western U.S. So, what's new? Over the past two centuries we've been invaded by noxious thistles, knapweeds, annular grasses, and a host of other botanical monstrosities. What would separate African Rue from the rest? In the mid 1990's we got an education on the subject.

Over the course of the next several decades African Rue, somehow, managed to wiggle it's way to Crook County and in 1994 was sighted and correctly identified by a lady from Sun River who belonged to a native plant society. Thanks to that individual's awareness, the infestation of African Rue was no larger than two acres spread over twelve acres when first sited. Although there was sufficient information concerning the plant itself, precious little information was available concerning its control. Without clear direction I decided to treat the plant with a formulation that had been successful on tough to kill perennials in the past and with the usual bravado I set out on the task of eradicating this unwelcome intruder.

I've always liked to consider myself the Betty Crocker of vegetation management....a cup of this and a dash of that and I can bake you cake that can kill an Elephant. So, you can imagine my surprise when my first attempt at killing this pest failed. Oh sure, it looked dead enough initially, but as the season progressed I began to notice a little sprig of green growing from the center of an otherwise dead looking plant. As I stared down at the plant it seemed to be staring back at me and giving me a gesture of some sort. Infuriated, I opted to abandon known science and implement the kitchen

sink approach. As many as six formulations were utilized and still the pest would “not go gentle into that good night”. The culprit proved to be the plants taproot which is about size of a Zucchini squash and has an amazing carbohydrate reserve that helps the plant pest to regenerate after it`s been treated and after seven years of, at best, marginal success about fourty per cent of the original plant population was still intact.

Fortunately for us, an effective formulation was finally found to control African Rue. Around the year 2001 liberal amounts of the chemical Metsulfuron Methyl (Escort) was utilized in combination with an organo-silicone surfactant and our fortunes began to change. Today, as few as a dozen plants are treated in a given year and the only known infestation of this pest in the state of Oregon is on its way out of existence. The range has been secured and my ego and confidence restored.

Wait! Hold the phone! In the fall of 2008 a Prineville man working for a natural resources company found an infestation of a pest, that he couldn`t identify, six miles east of Burns and reported it. The Oregon Department of Agriculture confirmed that it was, indeed, African Rue. The good news is that someone had a keen enough sense of weed awareness to recognize a plant that did not belong in a particular plant community and report it. Also, the Oregon Department of Agriculture is doing all the right things: securing funding for the project, identifying and involving the players, and developing strategies for control. The bad news is that the African Rue wasn`t reported twenty years ago. Harney County doesn`t have two acres scattered over twelve it has three hundred and fifty acres scattered over two thousand seven hundred!

I hope, with all sincerity, that Harney county and the O.D.A. get off to a better start than we did. If not, and my math is correct, I will be one hundred and eighty years old by the time this infestation is completely under control. I should be very near retirement by then.



ODA Photo

THE CONTROL OF SAINT JOHNSWORT

You hear a lot of buzz these days concerning natural medications. I guess there's a notion that any herbal medication has got to be better for you than one that is synthetic, but I don't get into the all-natural thing all that much. I always figured that the best medication was the one that worked best, but what if I am already taking herbal remedies and just don't realize it? With this in mind I checked the label on a bottle of my own medication and right below where it says: Flintstones Chewables I found only letters and numbers. So, I guess that I'm not part of this herbal thing, but there are millions of Americans that are.

One of the most popular herbal remedies used worldwide is St. Johnswort. Saint Johnswort (*Hypericum perforatum*) is a perennial plant that is commonly used to treat depression, chronic fatigue, and other ailments. St. Johnswort is also a noxious weed which infests every one of the lower forty-eight states and tens of thousands of acres of rangeland in the west.

St. Johnswort first arrived in the United States in June of 1696 with Germans who were fleeing from religious persecution. These immigrants believed that St. Johnswort could exorcise the devil, ward off imps and demons of melancholy, and protect newborns. Today, these people would not be facing persecution, but they might be facing prosecution.

St. Johnswort, also known as Klamath weed, is a perennial herb that grows from one to two feet tall and reproduces by seeds or short runners off of the root system. The plant is erect with numerous branches topped with bright yellow flowers which are $\frac{3}{4}$ of an inch in diameter. One easy identifying characteristic of this pest is the leaves. If the leaves are held up to the light you will plainly see tiny holes or perforations, hence the species *perforatum*.

In spite of all of the benefits the plant was to provide it, unfortunately, also carries its fair share of negative baggage. Besides being a prolific invader of rangeland, St. Johnswort is also toxic to livestock. St. Johnswort contains a phototoxin called hypericin which is responsible for inflammation of the mucus membranes, dermatitis, swelling, blisters and open sores. I'm sorry, were you eating? Light skinned livestock such as horses, cattle, and to a lesser extent, sheep are affected and the effects can be cumulative leading to severe infections and dehydration. Fortunately, St. Johnswort is not palatable to livestock, but it will be consumed if desirable forage is not available. Some people may experience the same reactions as livestock by using herbal remedies that contain hypericin which spawns the question: are synthetic medications really all that bad?

St. Johnswort was first collected without cultivation in Pennsylvania in 1793. Since then this pest has managed to occupy areas in every state from sea to shining sea. It's no small wonder. Each plant may produce up to one hundred thousand seeds which are viable in the soil anywhere from six to ten years. By the time the 1950's rolled around California had as much as two million acres of St. Johnswort which accounted for more economic loss than any other weed in that state. Today, most western states, including Oregon, have infestations exceeding 100,000 acres. In Crook County, St. Johnswort is commonly found on County rights-of-ways and the Ochoco National Forest where it is

being treated on a regular basis. Private property owners who have this pest on their lands would be well advised to do the same.

So, now that we've determined that St. Johnswort is a bad thing how do we go about removing this botanical crud from our landscape? Control measures depend greatly upon the scale of the problem. A few plants on your back forty can easily be pulled providing that you are willing to repeat the process annually. For larger infestations consider a chemical alternative. Applications of Tordon 22-K at two pints with a kicker of 2,4-D also at two pints will amply do the job as will Cimarron, Escort, and Ally at a one ounce per acre rate. Round Up at 2 to 4 pints per acre is fine, but glyphosate is not selective and will kill desirable vegetation as well, so choose wisely.

For the big picture stuff, bio-controls are the only viable alternative. Leaf and root-feeding beetles and one root borer have done considerable damage to large St. Johnswort populations over the years. In 1946 the Klamath weed beetle (*Chrysolina quadrigemina*) was imported and released in Northern California. The results of that release were so spectacular that, at one point, St. Johnswort was removed from noxious weed lists. So impressed were the people of Eureka, California that they dedicated a large bronze plaque in honor of a bug. I'm not kidding. Is it just me or does it seem a bit weird that the, somewhat left of center, community of Eureka erected a monument to a bug and not Nancy Pelosi? That speaks volumes about the Klamath weed beetle.

So, the war against St. Johnswort rages on. Today, oodles of Americans are engaged in a seemingly endless struggle to protect and reclaim rangeland while having to endure the hardships associated with the tragic loss of livestock all caused by a plant that was imported to treat depression. Now that, buckaroos, is what I call a viscous circle.



HOUNDSTONGUE

The Dog That Bit You

We've talked in the past about getting sucker-punched by a weed species that turned out to be particularly problematic and the embarrassment associated with having to admit: "Hey, we simply didn't see it coming." Fortunately our sense of weed-awareness has developed to the stage to where that's not happening to us as frequently as it once did. We've become skeptical about the innocence of non-native plants and a little skepticism is a good thing. It keeps us on our toes, keeps us wary, and generally makes us question the role of everything botanical in the big picture. This is not paranoia, it's prevention. There was a time, however, ten to twenty years ago when we tended to focus more on known quantities; the noxious weeds that we knew already existed in our area and the people actually looking for new invasive species were few and far between. It was then in 1998 that the noxious weed houndstongue was first sighted on the Ochoco National Forest and it's quite probable that what was observed was tip of the iceberg.

Houndstongue (*Cynoglossum officinale*) is a biennial in the Borage family and a native of Europe. The name originates from the Greek words "kynos" meaning dog and "glossa" meaning tongue which works for me because the plant leaves do, somewhat, resemble a hounds tongue, providing, of course, that the dog is green. But the name has another connotation in that, according to folklore, the leaves of the plant could be placed in ones shoes and would keep the hounds from howling as you walked by. I wanted to put this theory to the test, but discovered that it was removing my shoes that made the hounds howl in the first place. Houndstongue leaves develop on a single stalk that grows from two to three feet tall and produces small, magenta colored flowers at the terminus of the stems.

Amongst the weeds most impressive characteristics is its ability to spread seed. The seeds are roughly the size of the end of a pencil eraser, resemble a pin cushion and have little velcro-like hooks that seemingly stick to everything. Boot laces, flannel, and, worst of all, the hair of wildlife and domestic stock which can be marvelous vectors for transporting houndstongue seed. As a rule, noxious weeds are not all that difficult to find; follow the vehicle traffic and you'll find the weeds. But when seed is transported by foraging animals the infestations can spring up anywhere, and on the National Forest that's a lot of "anywhere". It's not surprising that large infestations could go undetected, they simply are not growing close to where anyone would normally be looking. I have witnessed cattle that had been grazing in houndstongue infestations that were covered in seed from hoof to horn, so much so that the cattle had the appearance of wearing chain mail.

Forest practices provide favorable conditions which are conducive to the propagation of houndstongue. The duff and bare ground produced from logging operations provides excellent bedding for the pest and the burning of slash and overgrazing seems to contribute as well. These conditions coupled with the fact that houndstongue is shade tolerant makes the weed well suited for the forest, particularly on the Rager Ranger District and to private lands east of the National Forest in Wheeler County. Of course nothing is ever that simple and "well suited for" is not the same as "exclusive to". Houndstongue can also be found on the margins of ag fields in the Grimes flat area, around Lone Pine, and in the Mitchell Country.

Aside from weed spread, the whole grazing thing in infested areas has another serious drawback: houndstongue is poisonous to livestock. The weed contains pyrrolizidine alkaloids which affect the livers ability to reproduce cells and cattle consuming as little as a cumulative 5-10% of their body weight of green material can suffer irreversible liver damage. That damage will, likely, result in the snuffing-out of your bovine meal ticket. The symptoms of poisoning include: weight loss, jaundice of the skin and mucous membranes, photosensitivity of non-pigmented skin, rough coat, depression, diarrhea and abdominal discomfort due to the presence of large quantities of fluid in the abdomen. Horses, like so many of my colleagues, may develop signs of head pressing, excessive yawning, and constant aimless walking.

So now comes the fun part....killing the stuff! If you`re one of the folks that will not or cannot use an herbicide then there is good news: houndstongue can be controlled by pulling or using a digging implement. Because houndstongue is a biennial you can control it much the way you would any other biennial by breaking or severing the taproot when the plant is in the second year of its life cycle. This manual thing may not be practical if you`re trying to treat copious ammounts of the stuff. If you`re like me and you would rather spray your foe into submission then careful product selection is in order. Sulfonylurea products such as Telar at 1 ounce per acre or Escort at the same rate will work well with the assistance of a surfactant such as a non-ionic or, preferably, an organo-silicone such as Phase or syl-tac. These products can be purchased at any ag-chemical dealership. Treat plants prior to full bloom which usually occurs in early July.

With me, killing weeds has always been a hate-love relationship; I hate the weed, love the kill, and then, triumphantly, move on. Where houndstongue is concerned you don`t get the opportunity to savor the kill. You hate the weed, love the kill, and then spend the next fifteen minutes picking the seeds off of your socks and boot laces. The whole thing seems rather undignified to me. I`ll bet Sitting Bull didn`t have to pick these seeds off of his socks.



ODA Photos

THE BEAVER-STATE TRIFECTA

May 1st and the 136th running of the Kentucky Derby has come and gone. Any of you who witnessed the race had to be amazed at how easily Calvin Borel atop a great mudder named Super Saver spanked the field at a rain-soaked Churchill Downs. Even the torrential rain couldn't dampen the spirits of the gentlemen dressed in suits that cost more than my truck or the ladies wearing hats the size of throw-rugs, and all donning a glow that only the finest liquor can provide. Derby Day is truly something to behold, but what does the "Run for the Roses" have to do with the world of noxious weeds? You have to spend a heck of a lot of time in a spray truck to find a parallel. However, if horses were weeds and jockeys were idiots we could have a competition to determine the dumbest weed-related incidents in Oregon history and it could go something like this: "AND THEY'RE OFF! And orange hawkweed jumps to an early lead...."

In 2005 it was discovered that Orange hawkweed had been unceremoniously introduced to Central Oregon. The usual suspects were not at fault. It did not come in on a rig or with livestock or as a seed contaminant....it was sold! That's right, some less than informed entrepreneur used his or her place of business as a puppy mill for a noxious weed which should prove to be, at best, difficult to control.

Orange hawkweed (*Hieracium aurantiacum*) is an ornamental, perennial herb of the sunflower family which is native to Europe. Among orange hawkweed's endearing qualities is its ability to move quickly and dominate large chunks of real estate. The plant can reproduce from both rhizome and seed which is disheartening because the pest can seed multiple times in a given year. According to Dave Langland of the Oregon Department of Agriculture, there are sixty-six known sites in Deschutes County alone and that may be just the tip of the iceberg. Because orange hawkweed is an ornamental, plants are often discarded at the end of the growing season. Plant material that is piled anywhere, aside from composting, increases the likelihood of spread.

The odds that orange hawkweed will ever be eradicated in Central Oregon are about the same as being struck by lightning....on the day that you actually do win the trifecta. The invasive nature of this noxious weed coupled with a moronic act of irresponsible capitalism makes orange hawkweed a top contender.

"AND HEADING DOWN THE BACKSTREACH THE NEW LEADER IS... OUR PAL GORSE!" In 1873 an immigrant named George Bennett established a settlement at the mouth of the Coquille River and named it for his home town of Bandon in County Cork, Ireland. With him, George brought gorse, a shrub that reminded him of his home, (Kangaroo rats remind me of my home town of Boardman, Oregon, but at least I had the good taste not to bring them to Prineville). Gorse (*Ulex europaeus*) has no natural enemies in North America and it wasn't long until Bandon reminded him more of home than his home did.

Gorse is a perennial shrub of the Pea family and is a very attractive plant, at least from a distance. A closer inspection reveals gorse as being a painfully thorny invader of pasture land which provides an impenetrable barrier to domestic stock and wildlife. Gorse is also an extremely resinous plant which burns like kerosene, an attribute that the residents of Bandon became painfully aware of in 1936. Georges gorse grew around and between the buildings of Bandon, and when the infestation was ignited by a nearby forest

fire, the city of Bandon was ignited with it. Sadly, fourteen people lost their lives in that fire which gutted most of the town. Today, there are more than 25,000 acres of gorse on the Oregon Coast. Atta-boy, George! How will we ever thank you?

“AND ROUNDING THE TURN AND HEADING FOR HOME, IT`S SCOTCH BROOM WITH THE LEAD!” Scotch broom (*Cytisus scoparia*) was already problematic in Western Oregon when Interstate-5 was being constructed in the mid 1960`s. Nonetheless, the Oregon Department of Transportation, in their unparalleled wisdom, elected to utilize scotch broom as an ornamental shrub for the median strip. It soon became a hedge on the median...and on the shoulder and on adjacent hillsides and on forested lands from Roseburg all the way to Portland.

Scotch broom, like gorse, is an extremely aggressive, perennial, member of the Pea family which produces seed that has viability in the soil for up to 75 years. Like orange hawkweed, scotch broom was, until recently, available in nurseries. Fortunately, both species have been quarantined by the Oregon Department of Agriculture. Unfortunately, the quarantine came far too late to save us from ODOT. At present, we spend more money controlling scotch broom than any other noxious weed in Oregon.

“AND DOWN THE STRETCH THEY COME!” “It`s our pal gorse on the rail with orange hawkweed and scotch broom on the outside followed by intensive labor, ignorance, economic burden, good intentions, and unexpected consequences!” “And at the line the winner is....is....is....scotch broom by a nose!”

Gorse, as destructive as it`s been, is still the product of one mans ignorance and that was in the 1800`s when it was, somewhat, acceptable to be ignorant in regards to invasive plants. The orange hawkweed thing is much easier to condemn. It, too, was an act of ignorance, but occurred in a time when the purveyor should have known better. This caliber of irresponsibility is the exception rather than the rule in an industry that has made significant strides to improve its standards.

Scotch broom is clearly the winner in the Beaver- State Trifecta with orange hawkweed to place and gorse to show. The scotch broom fiasco was not the result of a couple of misguided individuals, but rather a state agency that had ample economic resources to produce sound decisions. But in all fairness to ODOT, that was the 1960`s and noxious weed awareness was not what it is today. ODOT has, actually, developed a strong weed program and has become a diligent partner. It is not altogether fair that ODOT should be criticized for the sins of the fathers, but who said that life`s fair? Mint julep, anyone?



Gorse

THE FINE ART OF GETTING SUCKER-PUNCHED

We, the vegetation managers of this country seem to have an affinity for complacency. If we didn't already have baseball as a national pastime I'm confident that "sitting on the fence" could easily take its place. All things considered, it's pretty understandable though. Worrying about what is happening always takes precedence over what may happen. The same thing holds true for weed programs: we examine the evidence, compile our lists of villains, and punish the guilty. Unfortunately, this is where our complacency gets the better of us. Punishing the guilty is a right and just thing to do, but not searching for new suspects condemns us to a pattern of errant management tactics. If this were not the case, than a noxious weed list that consisted of five widespread weeds in 1939 would not have ballooned to four times that number by 2010. The tendency has been for us to race around extinguishing the hot beds of known noxious weeds with little or no regard for what's coming down the pike, or worse yet, what's already here, but is not recognized as having the potential for being noxious.

The notion that the only weeds we will ever have to worry about are the ones that we are dealing with now is how we got in this mess in the first place. Case in point: in 1985 perennial pepperweed (*Lepidium latifolium*) was considered to a weed of little importance. It was relegated to the category of a "backburner" weed and was seldom, if ever, targeted for control. This "low profile" plant gave us very little cause for alarm. Then, in the late 1980s, this seemingly innocuous weed underwent a population explosion of biblical proportions, and not just here in the U.S.A., but on similar latitudes worldwide. Somehow, the dynamics changed and the pest was transformed into a botanical monster on steroids. Since the late 1980s thousands of acres of land have been consumed by perennial pepperweed and the best that we can do is to implement more knee-jerk tactics in hopes of stemming the tide. We didn't see it coming.

About the same time that the perennial pepperweed was doing its thing another weed that had garnered little enthusiasm made its presence felt in many areas of the Western United States. Houndstongue (*Cynoglossum officinale*) is a poisonous biennial of the Borage family with Velcro-like seeds that are nuisance to humans and animals alike. For many years houndstongue was simply considered to be an annoyance, but by the year 2000 it began to demonstrate its voracious appetite for good rangeland. What made the matter even more disconcerting was that houndstongue occupied a completely different geographic niche than the perennial pepperweed. Today, in Crook County, houndstongue infests hundreds of acres of public and private land. Once again, we didn't see it coming.

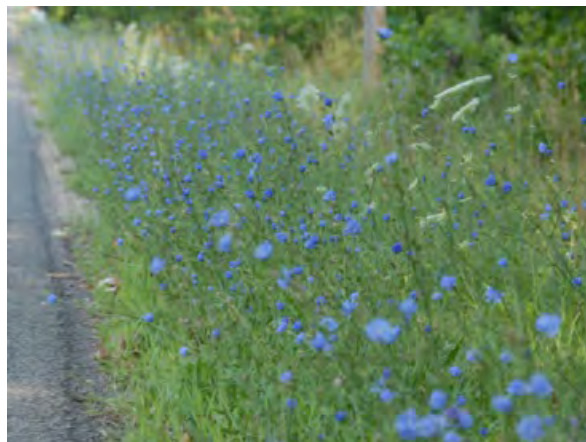


Perennial Pepperweed – ODA Photo

Getting sucker-punched by a stupid weed is not only frustrating it's humiliating and over the past several decades vegetation managers nation-wide have been taking a pounding. Neither I nor my colleagues invented the fine art of getting blind-sided, but we have become masterful students of the game. We generally invest our time dealing with a known quantity; the weeds on our noxious weed lists, and do so with little deviation. It's this dogmatic approach to vegetation management that gets us in deep doo-doo.

The question is how do we prevent getting sucker-punched in the future? How do we know which weeds will become troublesome and which will be benign occupants? In truth, unless a weed is growing in profusion or has a history of being problematic elsewhere, we don't know. The best that we can do is to become more observant and more cognizant than we have been in the past. What we need is to find some comfortable ground somewhere between being complacent and being full blown paranoids; somewhere between "don't worry, be happy" and "the sky is falling!"

Ideally, a more cognizant approach could work something like this: In the early 1990s I observed a colony of plants thriving on an abandoned dirt road on BLM land. I identified the plant as chicory (*Cichorium intybus*) a perennial weed in the Sunflower family and of European origin. Chicory was often planted by the pioneers and used as a salad green and as a substitute for coffee. The absence of pioneers and the advent of Safeway render the weed somewhat useless these days. In recent years chicory has become more and more prevalent on rangeland, pastures, and even in tilled grain fields. There are now enough negative criteria pertaining to chicory as to make it a candidate for the County noxious weed list. Does chicory have the potential to become as detrimental as, say, a knapweed? Probably not, but this time were not going to wait for the answer. Private properties in Crook County have already been treated specifically for this pest.



Common Chicory

Knowledge is power and, hopefully, what we're generating here is enough power to recognize the bad guys when we see them, and to kick the snot out of this pest and others like it before they become the biological disasters we've suffered through in the past.

The trick to dealing with potential invaders is to become acutely aware without becoming paranoid of everything that grows. I will be vigilant, not paranoid. I will be cognizant, not paranoid. I am not paranoid. I know that I'm not paranoid.....the voices told me so.

WILD CARROT

It Pays to Know Your Enemy

In 1990 we made the decision to place wild carrot on the County's "A" noxious weed list. This designation gave the weed the status of being amongst our highest priorities. This plant-pest was not so-designated because it was particularly poisonous, or because it was an aggressive competitor with desirable species. In fact, or at least outwardly, wild carrot appears to us as a benign and somewhat attractive plant. In fact, one popular common name for wild carrot is Queen Anne's lace because of the lacy appearing leaves and the fact that the weed is common to Great Britain. As the story goes, Queen Ann had a royal knack for embroidering lace... (no doubt creating undergarments for Queen Victoria's Secret). But beneath the broad umbel with the pretty white flowers lies a bona fide threat to local agriculture.

Wild carrot (*Daucus carota*) is a biennial herb in the parsley family and is native to Europe which grows to a height of three to four feet. Wild carrot also bears a striking resemblance to domestic carrots, and with good reason...domesticated carrots are a cultivar of a subspecies *Daucus carota ssp. sativus*. The plants are relatively alike in that they both produce a root and foliage which appear somewhat similar to one another, but the similarities end there. The color, shape and texture of the wild carrot root differ from that of its domestic brethren. So, the crux of the matter is that these "birds of a feather" will flock together and create something that we consumers consider less than desirable.

In the early 1970's the seed carrot industry got a foot-hold in Central Oregon and by 2009 its value came in at a whopping 14.7 million dollars. The 2010 value is certain to be higher yet and expansion of the industry seems eminent. Today, Central Oregon produces 85 percent of all the hybrid seed carrot planted in the United States and local seed is exported worldwide.

The soils and climatic conditions in Central Oregon are well suited for the production of seed carrots. We're not alone in that regard; there are other areas in the Northwest with similar environmental conditions. What sets our area apart, however is the absence of cross-pollinating plants such as, you guessed it, wild carrot. The success of the seed carrot industry is totally dependent upon genetic purity and often demands a zero tolerance for seed impurities. Noxious weeds often have a negative effect on agricultural pursuits, but seldom does the presence of any particular weed species dictate the course of an entire industry. The world market demands that carrots be firm, symmetrical, and orange as opposed to the cross-pollinated version which has the texture of balsa wood, shaped something like a crooked swizzle stick, and has the color of egg-nog. I don't know about you, but that's not the sort of carrot I want adorning my pot roast.

If by some chance you have not noticed, our regional economic picture is not all that rosy and anything we can do to protect what industry we have and augment its future development should, in my opinion, be considered a priority. In our case the priority is the immediate control of wild carrot whenever and wherever it is located. Oftentimes, "search and destroy" is the role of the growers themselves, but in Jefferson County the seed carrot industry has actually provided funding for a wild carrot "Rat Patrol" which implements early detection and rapid response (EDRR). Crook County has its own ED RR folks. These are volunteers who serve as a vigilant weed group that understands

that EDRR is the most effective form of prevention. Another form of prevention is monitoring agricultural imports from areas, such as the Willamette Valley, where wild carrot grows in abundance. These imports would include grass hay and bedding straw which may be contaminated with seed from wild carrot.

Once properly identified, wild carrot is not the toughest kid on the block to deal with. A mature plant would be in the second and last year of its life cycle. The plant, when it's in this stage of development, can be pulled, bagged, and disposed of. If you have a site large enough to spray, products such as Weedmaster, Cimarron, or Telar will work nicely.

The most effective measure in the effort to eliminate wild carrot is a keen sense of awareness in regards to the plant- pest itself and the industry that is so dependent upon its absence. Our ability to properly identify and our willingness to remove or report wild carrot is the best insurance we have for maintaining a facet of agriculture that has proven to be so lucrative in a struggling economy.

It is indeed curious that the consumption of domestic carrots actually improves our vision so that we may better see the pest that threatens its integrity. Besides being good for the peepers, domestic carrots also help to prevent cancer, heart disease, macular degeneration, stroke, and diabetes. Those positive attributes should provide enough incentive for you to consume carrots by truck-load. The only redeeming quality in regards to wild carrot is that the seeds can be used as a contraceptive...a factoid which, at my age, means pathetically little.



Section 2: The Out of Towner's

KUDZU

The Weed That Ate The South

In past articles, we've often discussed noxious weed issues in terms of impact and distribution in order to illustrate the magnitude of their presence in Oregon. That would be the tens- of- miles of knapweed, or the thousands- of- acres of medusahead thing. That helps us to understand how bad things can really get. But I thought that this month it might be prudent to examine the botanical misfortunes of another part of the U.S. in order to better put into perspective just what "how bad things can really get" means.

In 1876 a new plant called kudzu (*Pueraria montana*) was introduced to the United States at the Centennial Exposition in Philadelphia. Kudzu was one component of a garden exhibit, constructed by the Japanese government, which was comprised of plants from their homeland. The American public became enamored by the beautiful vine with the large leaves and sweet-smelling flowers. By 1905 nursery operators Charles and Lillie Pleas began importing kudzu and discovered that, besides being a real eye-catcher, it even had some value as forage for livestock. Kudzu became an overnight sensation and Americans in the Eastern U.S. lined up to drink the kudzu Kool-Aid... and drink it they did. Everyone was ga-ga for kudzu and by the 1940s there were even kudzu festivals where they would ceremoniously crown a kudzu queen (which should bolster any girls resume). And of course there had to be a "Father of kudzu" and indeed there was..... Channing Cope of Covington, Georgia founded the Kudzu Club of America with its 20,000 kudzu loving members nationwide.

Even the feds got on board. During the Great Depression the Soil Erosion Service (now the NRCS) began utilizing kudzu with its tuberous roots for soil stabilization, and employed the Civilian Conservation Corps to plant 85,000 000 seedlings in areas where cotton had been improperly farmed. The government was actually giving farmers eight bucks an acre to plant the stuff. Channing Cope declared that "cotton isn't king in the South anymore...kudzu is king!" What could be more perfect? Kudzu served as an ornamental, provided forage, stabilized soil...and it also had no natural enemies. Whoops!

By the early 1950s the new "king in the South" became the new "pain in the rear". The problem with kudzu is that it did its job all too well. It outcompeted native vegetation and dominated the landscape. Kudzu is a semi-woody, trailing or climbing vine and is a member of the pea family. Its vines can grow up to 60 feet in just one season and as much as one foot in a single day in the early summer! The roots grow from a single crown, grows in all directions, and root again at the nodes forming new plants. The root system can weigh between 200-300 pounds for a single plant.

The most impressive characteristic of kudzu is its ability to climb up and over objects and I'm not just talking about park benches, stumps, and slow children, I'm talkin` telephone poles, heavy equipment, school busses, and houses! What Channing Cope once called "the wonder vine" now has other less flattering monikers such as: foot-a-night weed, mile-a-minute weed and, of course, the weed that ate the South.

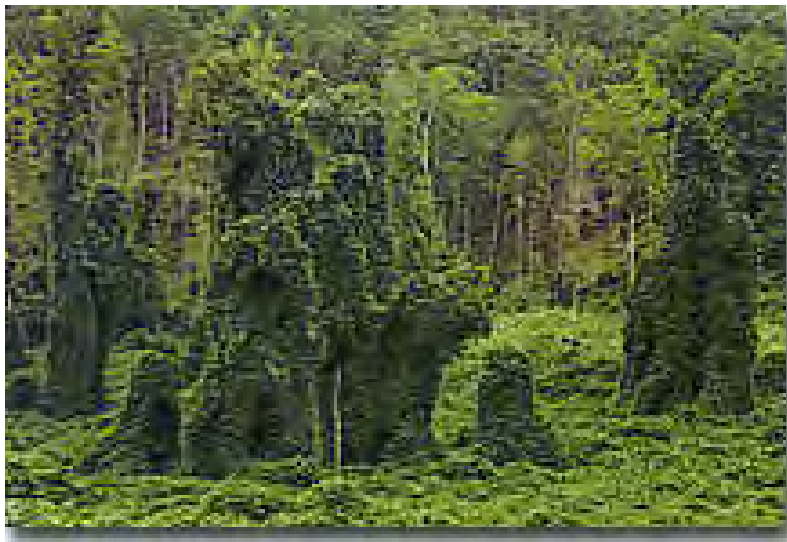
By the early 1950s Kudzu had become so problematic that the United States Department of Agriculture finally whiffed the coffee and quit using it as a ground cover. By 1970 the USDA had listed kudzu as a common weed of the South and by 1997

Congress placed kudzu on the Federal Noxious Weed List. The kudzu party was over...then came the time to deal with the 7,000 000 acre hangover. The problem is that kudzu doesn't die nearly as well as it grows. Chemical, mechanical, and cultural controls have been, at best, marginally successful and are not keeping up with the spread of this once beloved pest. It is indeed fortunate for those of us in central and eastern Oregon that kudzu requires a warm, moist climate in order to thrive. It is unfortunate however for those in the Willamette Valley that those climatic conditions do, to some extent, exist there.

In 1990 the Oregon Department of Agriculture was asked to approve the importation of kudzu as a forage crop. This inquiry prompted the development of a risk assessment that led to a quarantine that prevented the import, transport, or sale of kudzu within the state. In 1995 the ODA placed kudzu on the State noxious weed list and in 2001 Oregon had its first sighted infestations: one near Aurora and, a year later, two in southwest Portland. The State was prepared. The ODA had identified kudzu as a potential problem, took safeguards to prevent its movement to and within the state, and gave it a priority rating so that the pest could be (and was) properly spanked within a brief timeframe. You can't script it any better than that.

Pardon the oxymoron, but it's the things that we do accidentally on purpose that gives me the most heartburn. In the good old days it was common and considered somewhat forgivable to import whatever organism we wanted in the name of "improving something". But the "consequences be damned" attitude of the few has changed the biological complexity of this country and some of the impacts may be irreversible.

These days, with the lessons of the past hopefully learned, ignorance is no longer a viable excuse and that knowledge should prevent any kudzu-like bio-disasters in the future.... right? As of this writing a project is under consideration near the town of Boardman to grow three hundred acres of giant reed grass (*Arundo donax*) to serve as a biomass fuel to replace coal for the power plant belonging to PGE. We have assurances from the ODA that the risks associated with this non-native plant are quite low. I hope they're right...I'd hate to see a nasty outbreak of *Arundo* spawn the need for a queen of the giant reed grass festival.



ODA Photo

GIANT HOG WEED

“Mighty hogweed is avenged....human bodies soon will know our anger”

From the song: “The Return of the Giant Hogweed” by Phil Collins and Genesis

I have never considered myself all that easy to impress. What I mean here is that I'm a fairly well-traveled individual and the man-made and natural wonders of this planet have not left a huge imprint on my psyche. There are, of course, exceptions to the rule. Take, for instance, my pilgrimage to the eighth wonder of the world: the Corn Palace in Mitchell, South Dakota. Now that, my friends, was truly humbling. Noxious weeds can leave me equally jaded and oftentimes I'm left unimpressed by my daily encounters with my botanic adversaries. But here too there are exceptions to the rule. Giant hogweed impresses me. Any plant that can grow to twenty feet in height and have toxic capabilities which can land an unsuspecting sap in the hospital by coming in contact with it is impressive. If we are to believe that all plants are here on this Earth for a reason then I can only assume that giant hogweed is here to impress the heck out of those who have become bored with poison oak.

Giant hogweed (*Heracleum mantegazzianum*) is a member of the parsley family (*Apiaceae*) and is native to the Caucasus Mountains of western Asia. The British Victorians were so impressed with the plant that they imported the giant hogweed as an ornamental for arboretums and private gardens. Giant hogweed has since infested Western Europe, Scandinavia, the northeastern portions of North America, and finally the Pacific Northwest. There are now fifty-one sites in eleven counties in western Oregon that are infested with giant hogweed. Once again the law of unforeseen circumstances has been put to the test.

Giant hogweed is an herbaceous perennial which has multi-flowered stems or umbels which exhibit a white flower. The plant spreads only by seed and each plant can produce as many as 100,000 of them. The plant is sometimes confused with cow parsnip which is similar in appearance, but much smaller. One easy identifying characteristic is the leaves which can be from two to four feet in width; very impressive.

What is perhaps the most impressive attribute of giant hogweed are its toxic properties. The stalk of the plant contains toxic chemicals which are known as furocoumarins which are carcinogenic and teratogenic which means they can cause birth defects. Skin coming in contact with the sap produces a condition called photodermatitis which is a reddening of the skin followed by burns and blisters. What can be confusing is that there are no immediate effects. It may take 24 hours or more before the ill effects become apparent. What has taken place is a changing of cell structure of the skin reducing its ability to protect against the effects of UV radiation. Several years may pass before the skin becomes normal and, in that time, new blistering may occur with even moderate exposure to sunlight. One man had visible scars fourteen years after giant hogweed burns and a woman, in her fifties, still exhibited pigmentation scars forty-three years after contact. A British man who had received burns reported receiving new burns after removing his shirt on a hot day two years after the initial exposure. Giant hogweed is hollow stemmed which make seemingly ideal pea shooters and telescopes for children to play with and one Oregon man actually made a musical instrument from a hogweed stalk and attempted to play it; the results were appalling. The gruesome effects of exposure transcend “impressive.”

The Oregon Department of Agriculture has done all of the right things. They first conducted a risk assessment and determined weed was worthy of an “A” rating which gives it the highest priority, then compiled locational information, and finally initiated control efforts. One large infestation was treated at Hartley Elementary School in Gresham, Oregon. This project rightfully received considerable media coverage.

Controlling giant hogweed can prove to be a considerable challenge. The plant is quite persistent, but treatable with systemic herbicides such as the glyphosate products: Round up, Aqua Neat, or Rodeo, triclopyr products: Garlon-3A or Garlon-4, or mixes of triclopyr and aminopyrachlor labeled as Capstone. But because giant hogweed tends to favor riparian areas accessing the infestations can be difficult. The largest infestation of giant hogweed in Oregon is on Fanno Creek which is an urban waterway in Tigard, Oregon. This drainage is so choked by blackberries and other brush species that over a period of ten years only portions of the infestation had been treated. Finally, crews had to be hired to clear enough brush to access the infestation in its entirety. Once this had been accomplished and the weeds treated the hogweed numbers declined 60% in one year. Similar problems exist in the northeast and in Great Britain.

Getting all people to agree on anything is a virtual impossibility; what impresses the heck out of one person doesn't mean diddly squat to the next. But, hopefully, you now see what it is that impresses me in regards to giant hogweed. Certainly it's not that lofty impressiveness one experiences when witnessing the greatest, most iconic attractions of the American landscape such as the House of Mud in Shoo Fly, Oklahoma, the world's largest chocolate moose in Scarborough, Maine or the Earwax Figurine Arcade in Terre Haute, Indiana. But for the life of me, I'll never know what impresses people about the Grand Canyon.



ODA Photo

GIANT REED GRASS

In Place of Coal as a Bio-fuel

In the late 1970`s Portland General Electric constructed a coal-generated power plant near the berg of Boardman in northeast Oregon. The plant provided relatively inexpensive power to its customers and also provided the locals with sorely needed, good paying jobs. But on the heels of this success story came the ultra-green naysayers who felt it incumbent of themselves to protect us from the green-house gasses the plant was emitting. Unfortunately there was no one to protect the people of Boardman from the naysayers. Eventually PGE found themselves in court with opponents like the Sierra Club and every other anti-outfit that cared to climb aboard the anti-coal train. Of course the anti`s won and the fallout of the court decision was substantial. PGE was ordered to make over 60,000,000 bucks worth of improvements in order to operate until December 31st of 2020 when the plant would, by order, be boarded up for good and at which time 200 people of northern Morrow County would be jobless. Now that`s progress.

It was shortly after the court decision that some forward thinker hatched the idea of using a coal- fire generation plant to burn something other than coal. The stuff that showed the most promise as a bio-fuel was *Arundo donax* or what is commonly known as giant reed grass or giant cane. Giant reed grass is a non-native perennial grass that can grow to a height of thirty feet and do it quickly and can produce as much as 35 tons dry-weight per acre. The plan goes something like this: the giant reed grass would be grown in close proximity to the original PGE plant, harvested, torried or roasted, and utilized much the way that the coal was. Sounds so simple; what could possibly go wrong? According to many scientific weed nerds plenty can go wrong!

At one time giant reed grass was planted in California to be used for soil stabilization much the same way that kudzu, “the weed that ate the South”, was used in the southeastern U.S. and with much the same result. The plant did not remain where it was planted and eventually spread throughout riparian areas where the state of California has spent \$70,000,000 dollars trying to control it. That`s a pretty flat learning curve even for a Californian. In contrast to California, giant reed grass is not well suited to the cold and dry climate of eastern Oregon and must be irrigated in order to produce sufficient yields.

Weed awareness has progressed greatly in recent years and the vegetation management and agricultural communities have learned to question the introduction of any new species to an area for any reason. It`s about time, many of our past mistakes have changed the American landscape. But should a poor utilization track record of a given plants utilization in one part of the country dictate the use of the same plant in a different capacity in another part of the country? From the standpoint of a vegetation manager the smart-money usually goes to “yes, why risk it?” But in this case it`s not for use as an ornamental or for soil stabilization or for a feed source; it`s for bio-fuel and from the standpoint of the layperson, utilizing “green energy” is what we`ve been told we should be doing for as long as we care to remember. Now that we have a viable source of “green energy”, should we bypass this opportunity because there are risks involved?

Weighing the costs vs. risks can be a complicated affair. Giant reed grass has not been known to produce viable seed at latitudes as far north as Boardman, but the plant

can regenerate from rhizome or stem fragments. To supply the needs of the PGE plant between 30,000 and 50,000 acres of Giant reed grass will have to be grown. The chances that some plant material could be lost in transport from field to the facility are very real. Still, being able to quantify what the magnitude of those risks will be is difficult to ascertain. One could argue that the nearby Columbia River could serve as a vector to distribute plant fragments downstream and result in isolated infestations. It could also be argued that a plant as conspicuous as giant reed grass in an area where the vegetation seldom exceeds waist-height would be found and treated before large infestations could be established. I've seen giant reed grass first-hand and it's the biggest plant I've ever seen that wasn't a tree. It's hardly a needle in a haystack; it's more like an elephant in the living room.

Outwardly it would appear that PGE has done all the right things; they were granted a permit by the Oregon Department of Agriculture to grow, on a trial basis, 90 irrigated acres of giant reed grass and posted a \$1,000,000 dollar bond to eradicate satellite populations should they occur and the ODA has imposed an Oregon Administrative Rule which makes it illegal grow giant reed grass without a permit. PGE has been reassuring in terms of their commitment to a biologically safe program; in my opinion a project of this scale should be contingent upon a long-term monitoring plan that includes all of the financial bells and whistles. But this "we'll be there for you" concept is not something that we have not heard before. In 1997 Texas-based Viridian Resources LLC, in concert with the USDA, planted yellow-tuft alyssum in an effort to recover nickel from the serpentine soils in Josephine County. Viridian said they would be responsible should the plant escape domestication. The operation went bust, Viridian skipped town, and the alyssum went berserk. At this point the Forest Service has spent \$300,000.00 controlling the new pest and Viridian isn't taking any calls. Despite the fore mentioned nightmare I have little doubt that PGE will be more responsible than Viridian. A trial firing using giant reed grass is scheduled for later this year.

This one really tugs at me. Introducing a non-native species as something deemed beneficial is something I would generally consider oxymoronic and nobody wants to be the idiot proponent of a botanical boondoggle, but at some point we need to put up or shut up. If "green energy" is to ever become something more than what happens when the wind blows then we need to commit to a new approach. It's my opinion that the body of evidence suggests that the potential benefits of utilizing giant reed grass outweigh the potential risks. This viewpoint may not be shared by the popular majority of my colleagues. Oh well, it's my funeral.



ODA Photo

Section 3:

The

Hemlocks

CONTROLLING POISON HEMLOCK

One day in the year 399 BC the Greek philosopher Socrates stood trial before 500 of his fellow Athenian peers. His charge was promoting anti-democratic views and the corruption of youth. Indeed, a few of his disciples did, briefly, overthrow the democratic government of Athens. So, with malice in their hearts and a dash of McCarthyism thrown in for good measure, the jury found him guilty and sentenced him to death. The method of execution was to be the lethal injection of its day...the consumption of Poison Hemlock. Socrates was no sissy. It is said that when he was given the cup of Poison Hemlock he eagerly drank it down. It is also said that the final words he uttered were "Does your beer taste funny too?"

Conium maculatum, the same species of Poison Hemlock used to off Socrates, grows in large numbers right here in Crook County. This noxious pest occupies the riparian areas along the Crooked River, Ochoco Creek, and McKay Creek, as well as roadsides, ditch banks, waste areas and other sub irrigated areas in the western portion of the County. Poison Hemlock is a native of Europe and member of the Parsley family which bears a striking resemblance to Wild Carrot.

Poison Hemlock is a biennial which means that the plant will complete its life cycle within two years. The first year rosette grows prostrate with carrot shaped leaves, but in the second year the plant will bolt and reach a height of six to eight feet. The plant generally flowers in mid to late summer and produces small white flowers arranged in an umbrella-like cluster. When Poison Hemlock is in full bloom the plant gives off a distinctive odor which is somewhat reminiscent of the aroma of the locker room laundry bag from your High School gym class. This is nature's way of reminding us that our control efforts are a wee bit tardy, so take care of it prior to full bloom.

All parts of Poison Hemlock are toxic. The new spring growth and the fall flowering parts tend to be the most toxic with the root system being the least toxic. Cattle need only ingest one to two pounds of Poison Hemlock to cause a fatality. Horses may consume as much as five pounds and sheep as little as four to eight ounces to be lethal. Within two to three hours of ingestion the animal can develop respiratory paralysis. The symptoms of Poison Hemlock may include intestinal irritation, uncoordination, dilation of pupils, loss of appetite, rapid and weak pulse, salivation, a blue coloration around the mouth, and bloating. Much the same symptoms you get from dining at some fast food dives.

You would think that toxic poisoning caused by this plant would be limited to animals because we humans are far too intelligent to consume a plant that we couldn't properly identify, right? Unfortunately, many deaths have been attributed to some people (*Nitwittus maximus*) who mistook Poison Hemlock for wild Parsnip. This human condition of some people stuffing improperly identified vegetative matter into their collective pie-holes gives rise to the question: did Safeway run completely out of vegetables? This must be what some scholars would refer to as accelerated Darwinism.

Okay, it's safe to assume that Poison Hemlock is a bad thing and we would all be better off without it. Fortunately for us this is not the most difficult pest in the world to contend with. Quite inadvertently, a defoliating inchworm (*Agonopterix alstroemeriana*) was introduced into Eastern and Central Oregon some time ago. The bugs don't take out

large numbers of Poison Hemlock, but do an acceptable job of control in some areas providing that early summer months are warm and dry. Because Poison Hemlock is a biennial, first or early second year plants can be controlled with a garden shovel or hoe providing that the infestation you're trying to control is not too large. As usual, my preferred weapon in the arsenal is herbicides. A number of herbicides are effective for controlling Poison Hemlock, but let's keep it simple. 2,4-D amine is the material of choice here; it's cheap, readily available, and extremely effective. If applied at a rate of four pints per acre you can achieve visible results in as little as one day. The plant begins to look as if it's deflating. If your ego is still smarting from getting the snot knocked out of you in the seventh grade then spraying this plant will be a golden opportunity to restore your self esteem.

Considering all of its negative attributes, Poison Hemlock really is an easy plant to control if the plant can be accessed. Unfortunately, there will always be plants that we cannot access which means that Poison Hemlock will prevail in Crook County for some time to come. You may want to take that into consideration the next time you want to do something cutsie like overthrow a democracy or corrupt our youth. We know just how to deal with your kind around here. Cheers.



ODA Photo

WESTERN WATERHEMLOCK

With Friends Like These...

Oh, how we love our native vegetation! In a physical world fraught with noxious organisms' intent on disrupting our pursuits and threatening our well being, there are those botanical friends out there that will never do us harm. Such is our reverence for native plants that we seldom, if ever, refer to them as weeds at all. These are the plant species that evolved right here in the good ol' U.S. of A or thereabouts and have been provided with all of the natural checks and balances that keep their existence down to a dull roar. Yes, these natives are our innocuous compadres that stand guard and protect us from all of the bad-nasty exotic weeds that threaten to inundate our landscape. In the world of good plant-bad plant the natives are considered to be the guys with the white hats, but I wouldn't tell that to the family and friends of the dearly departed that, sadly, mistook western water hemlock for something edible.

Western water hemlock (*Cicuta maculata*) is a perennial that is native to the Western United States that has, on occasion, been mistaken for water parsnip. Unfortunately, this native member of the carrot family (Apiaceae) comes with a little bit of negative baggage; it's one of the most poisonous plants in North America. Much like poison hemlock, all parts of the plant are toxic both species can be found in close proximity to irrigation canals and riparian areas around Crook County.

A toxic, yellowish sap called cicutoxin inhibits all parts of this eight foot monster, particularly the roots, and ingesting any part of the root system can kill a human within one hour and oh what a joyous hour it will be! It all begins with a little nausea, vomiting, abdominal pain, tremors, confusion, weakness and dizziness, but wait! It gets even better! Here come the seizures! Complications of the seizures include: swelling of the brain, blood coagulation disorders, muscle breakdown, and kidney failure and we're not through! Additional symptoms may include: hallucinations, delirium, tingling, numbness, excess salivation, wheezing, respiratory distress, absence of breathing and, finally, coma. Wouldn't it be better if the coma came first?

What overly-optimistic Neanderthal puts vegetative matter in his or her mouth that they can't properly identify and speculate that it is edible? I mean, if you see something that looks like a Snickers bar floating in a swimming pool it could very well be a Snickers bar, but I wouldn't eat it to find out. Livestock, at least have an excuse for getting poisoned; they're not supposed to be "the paragon of animals", they're supposed to be stupid.

Ingesting as little as one western water hemlock root can be fatal to cattle and many livestock fatalities have occurred locally and in other areas of the Western United States. Most livestock poisonings occur when the plant is in the rosette stage in the early spring and very little desirable forage is available. Given an option, cattle will choose to graze on something else, which puts them heads above some, easily beguiled, humans. So, if you happen to see a cow in a swimming pool eating something that looks like a Snickers bar, try to understand, cows are built that way....we humans are supposed to be smarter than that.

Controlling western water hemlock is not an extremely difficult task and aquatic glyphosate products such as Rodeo, Aquaneet, and Aquamaster at 2% solutions will work just fine. For large infestations, use an aquatic formulation of imazapyr such as Habitat.

The purpose of this exercise is not to vilify native vegetation or attempt to level the playing field between native and exotic plants; it can't be done. By-in-large, our predilection for native plants is well founded and they are still the guys in white hats and exotics are the bad guys, but a weed is a weed and place of origin does not always dictate what impacts any given species may impose. Any vegetation that interferes with our cultural pursuits may be deemed a weed, although we may never, collectively, agree upon such a designation. Confused? Please allow me to try to shovel out of this one. Cattail (*Typha latifolia*) is a native plant that provides excellent habitat for wildlife, filters water, and adds an aesthetic quality to the landscape, it also clogs canals, drainage ditches, and culverts and causes flooding along roadways which costs agencies a small fortune to remove on an annual basis. To some folks, cattail is the integral component of any wetland, to others, those who must deal with its maintenance, it's become the bane of their existence. Some people consider Western juniper (*Juniperus occidentalis*) to be a native that adds beauty and shade to an otherwise bland and treeless desert, while others, myself included, consider junipers to be an obstinate, moisture sucking, nutrient depleting, range wrecking, scab on the kneecap of Central Oregon. Whether you love or despise junipers there's no denying that they are invasive. Check out a photo of this area from the early twentieth century and note the absence of junipers.

So, native plants can be invasive and troublesome and exotic plants, such as wild asparagus, can be desirable and non-invasive. What makes a weed a weed is, simply, our point of view. One mans junk is another mans treasure. One mans western water hemlock is another mans wild parsnip....okay, poor example.



Section 4:

The Thistles

SCOTCH THISTLE

A New Approach to an Old Problem

About fifteen years ago a gentleman called my office with concerns about the vegetative condition of a property in the Powell Buttes area. The man said he was interested in purchasing the twenty-five acre parcel but he had observed that the property was completely overrun with Scotch Thistle. The question the man had was whether or not the expense of controlling the plant pest would make the purchase of the property cost prohibitive? I explained to the gentleman that the property that he had chosen was, at the time, the largest, single, infestation of Scotch Thistle in Crook County and that this project could prove to be a considerable challenge. I then further explained that the size of the infestation does not relate to the cost of control as much as the ease of controlling the pest itself. With these ideas in mind and armed with some product and application information that we provided the man purchased the property and embarked upon his great crusade to rid his land of this European invader.

Scotch Thistle is native to Europe, the national flower of Scotland, and the regional flower of Powell Buttes. This spiny biennial was imported from Europe in the 1800's as an ornamental which just goes to show that there is no accounting for some peoples taste when it comes to gardening. This plant can produce up to forty thousand seeds per plant, grow to twelve feet in height, aggressively take over pasture and rangeland, and provide a barrier which can be impenetrable to livestock. In other words, you could very well be paying taxes on a piece of property which is of no value to you whatsoever. Besides all of these fine qualities, a close physical encounter with this botanical pin cushion makes acupuncture a wimp by comparison.

Like all noxious weeds Scotch Thistle has little regard for property boundaries and the multitude of infestations in and around Crook County did not all generate independently of one another. The process is more akin to a form of locational impetus where seeds from one infestation are transported from one site to another by wind, vehicles, wildlife, livestock, or some other insidious means. Over time the situation has worsened from having a few localized infestations to having a great number of them over a large geographic area. The bottom line is that weeds spread. Either get used to it or do something about it.

Besides the obvious environmental and domestic concerns associated with this pest there are possible legal ramifications if this "A" listed noxious weed is allowed to go to seed on your property and no attempt is made to control it.

The best defense in the battle against noxious vegetation is education relating to plant identification, proper control techniques, timing of application, the correct selection of equipment and products, and an awareness of how particular plants can impact us. Crook County Weed Control and the Crooked River Weed Management Area have developed a Scotch Thistle education and awareness/ cost /share program which will be implemented this spring. With assistance from the Crook County Court, Title II and Title III funding, and a grant from the Oregon State Weed Board two technical assistants will be employed to identify Scotch Thistle properties throughout western Crook County and distribute information concerning identification and control to land owners. A cost/share program has also been funded where land owners will be reimbursed for product used to

control Scotch Thistle. In all likelihood this is going to be the least expensive and most effective opportunity that you will ever have to rid your property of this pest.

Another plus in terms of control is how well this plant responds to treatment. As imposing and menacing as this plant appears to be it actually is quite easy to kill and results are usually apparent within a couple of days. This can do wonders for your ego and even your spouse may take notice of your new found confidence. Even a shovel works well for removing the rosette in the fall and early spring before the plant bolts.

Ultimately what kind of results can you hope to attain? The gentleman we referred to at the beginning of this article sprayed his Scotch Thistle in late spring and again in early fall and by the following year his spray program had turned into more of an Easter egg hunt. Today that property is an outstanding example of what a little knowledge and determination can accomplish.



ODA Photo

CANADA THISTLE

Think Outside the Box to Control Canada Thistle

So what's in a name? I guess that depends upon one's perspective. Several years ago I spent an afternoon in a watering hole on the South Island of New Zealand chit-chatting with some of the local ag-types about farming in the area and, eventually, weeds. When I mentioned the abundance of Canadian thistle growing along roadways and fence lines they seemed puzzled. They looked at one another, collectively shrugged, and sheepishly admitted that they had no idea what Canadian thistle was. In an attempt to bridge the communication gap I used the Latin name *Cirsium arvense* and this time I struck pay dirt. "Ohhhhhhhh...you must mean American thistle" one of the gentlemen said. "American thistle I queried?" "Yeah, that's what we call it here" The hackles on my neck stood on end as I felt as though my new friends from down under had just insulted the U.S. of A., but being outnumbered four beers to one I decided to keep my cool.

Perhaps we shouldn't take these things so seriously. After all, it's not as though we're the first country to be maligned in such a fashion. I don't know who named Canadian thistle Canadian thistle, but it's a pretty safe bet that it wasn't the Canadians. The Canadians call it California thistle, which doesn't seem to bother anybody that I know. Welcome to the Canadian Club.

In fact, many countries around the world have been burdened with the stigma of having a botanical abomination named in their honor. Let's see now, there's Scotch Broom, Scotch thistle, French broom, Portuguese Broom, English Ivy, Russian knapweed, Russian thistle, Italian thistle, Mexican whorled milkweed, China lettuce, Japanese knotweed, Armenian blackberry, and Syrian bean caper, just to name a few.

So, maybe the entering of American thistle into the New Zealand nomenclature isn't such a bad thing after all. Besides, the new bad kid on the block that's wreaking havoc on the food chain in the waterways of the western United States is the New Zealand Mud Snail. I guess what comes around goes around.

Canada thistle, which is actually a native to south eastern Eurasia, has been a nuisance in Crook County for about the last one hundred years or so. This plant pest likes life a little bit on the damp side and is frequently found in areas of poor drainage, canals, ditches, roadsides, pastures, riparian areas and the like and it's safe to say that Canada thistle is approaching ubiquity within the County.

Canada thistle is a perennial which competes quite well with desirable forage in pastures and rangeland and, judging by the number of complaints my department receives, is a pest we all could do without. Mid to late summer is when the plant begins to seed and the breeze carries the seed like so many snowflakes from place to place. This scattering effect has a tendency to cause a general panic amongst the citizens of this county and with good reason. Seeds being carried from place to place isn't so bad unless their being carried from someplace to your place!

O.K, so the polls have closed and the votes have been counted and we all agree that we have a problem here. Now what? First things first, don't panic over the seed thing. Canada is the only one of the true thistles that reproduces asexually, this means that entire colonies of Canada may produce either female or male seed. Unless there is a close

proximity of both sexes Canada has a tendency to produce gobs of seed which are, in fact, sterile. Because of this phenomenon, Canadian thistle has a tendency to be the seeding wimp of the weed world, reproduction from seed is, of course, possible, but more often than not, improbable.

Canada thistle does reproduce well from its root system which consists of a tap root with lateral or adventitious roots which, when severed actually stimulate plant growth. What this should tell you is that when you try to control this pest mechanically you're sending a signal to the root system that says: "hey, let's make babies!" So, no shovels please.

Over the past several years, a concerted effort between Crook County Weed Control, the U.S. Forest Service, B.L.M., and the Oregon Department of Agriculture to establish a biological control program for Canada thistle has been underway. Copious quantities of gall flies and stem borers have been released and have yielded some successes. This project is, as most biocontrol programs are, is a long term, big picture sort of a thing.

So, if manual and mechanical controls are impractical and biocontrol are of little help in the immediate future then our only recourse is to spray it. Fortunately for us it's September and September is the optimum month for Canada thistle control. For the control of most species of noxious vegetation, treatment of the plant prior to budding or bloom is essential in order to prevent seeding, but remember that seeding is not as big an issue with Canada as it is with most weeds. The trick is to kill the entire root system and this can best be accomplished just before the first killing frost when carbohydrates are being pulled from the surface plant to the roots to sustain them for the winter. Spring and early summer applications often kill the surface plant, but do not kill the plant in its entirety. For killing Canada thistle September is party time!

Use products such as Round Up, Curtail, Telar, or Milestone and apply them to the fall regrowth at the base of the plant. Be sure to use a good surfactant if the label calls for one. For more information concerning product selection call this office or your local ag chemical dealership.

So, whether you call it Canadian thistle, American thistle, California thistle, or just that green spiny crap with the purple doo-hickies on top, *Cirsium arvense* is controllable and I think you'll be pleased with fall application results.



Section 5: The Perennial Mustards

PERENNIAL PEPPERWEED

This Pest is Coming and it's Coming With All the Subtlety of a Freight Train

Periodically, I make the drive from Prineville to Reno, Nevada to hone my keen accounting skills at some of their fine institutions dedicated to the pursuits of the mathematically challenged. On the trip down on highway 395 near the town of Susanville, California you come across two little bergs with one big thing in common. The entire countryside between and surrounding the towns of Litchfield and Standish, California are completely inundated with perennial pepperweed. Pasture land, crop land, rangeland, wetlands, riparian areas, waste areas, canals, roadsides, driveways, and that little place they used to mow once a week and call a lawn have all been impacted in a negative way. Either a lack of weed awareness or apathy regarding the control of noxious vegetation has left the good people of that area in a situation that can never be fully rectified.

A little closer to home, in Umatilla County in the 1980`s perennial pepperweed was relegated to the distinction of a backburner weed. It was a weed that was seen occasionally and occupied areas that were considered relatively unimportant. Then something remarkable happened and not just in Umatilla County, but on similar latitudes world wide. The populations of perennial pepperweed ballooned, seemingly, overnight. Today, in areas northwest of the town of Pendleton, miles of floodplain are blanketed by hundreds of acres of perennial pepperweed. Harney County has major issues as well.

The question is: “how an invasive plant pest could be permitted to propagate to the extent that it did right under the noses of property owners?” That is actually a question that is becoming more and more common throughout the Western United States. I think that the answer to the question lies in human nature. We the people have enough to worry about without becoming paranoid about every new plant that shows up behind the barn. What we don`t understand we don`t worry about. We are dependent upon someone whose job it is to warn us to do just that. Consider yourselves warned. But, unless a weed problem has been observed somewhere else how do we know which weeds to fear? In truth, we don`t. So, we are indeed fortunate in Crook County that the pepperweed bomb dropped somewhere else before it hit here.

So, who is this perennial pepperweed guy and why should the property owners of Crook County be so concerned? Perennial pepperweed (*Lepidium latifolium*) is a perennial member of the mustard family (*Brassicaceae*) that grows from one to four feet in height. The plant resembles and is often referred to as tall Whitetop. Both are perennial mustards and reproduce from rootstock as well as by seed. Root fragments and seed are easily transported by flood waters from place to place and new colonies begin. Pepperweed seems to prefer saline soils as evidenced by the plants success in the Buck Creek area of Crook County near G.I.Ranch, but this pest can occupy a wide range of soils. Pepperweed also has the ability to alter soil salinity to a state that promotes dense monocultures of its own kind. Wherever the plant resides the impacts to pasture, range, wildlife habitat will be substantial.

Perennial pepperweed is a native of Europe which first arrived in North America in the early 1800`s and to Yolo County, California in the 1930`s as a contaminant in sugar beets. The plant pest now occupies areas in most western states at altitudes as high

as Donner Pass in the Sierra, and as low the San Francisco Bay. In Oregon several Counties including Crook County are infested.

In Crook County it is reasonable to assume that we are a blink of an eye from having a sighting of pepperweed here and there, to “Oh look Margaret! There appears to be an Elephant in our in our living room!” This weed is coming and it’s coming with all the subtlety of a freight train. If none of this information alarms you then you are a “let the bullets fly, I aint’ worried” kind of a person, but the rest of us had better duck for cover.

In Crook County infestations are still relatively small and treatable, but the method of control must be specific. Manual, mechanical, cultural, and some chemical controls are ineffective and are doomed for failure. The only control method worthy of implementation is the use of the herbicide chlorsulfuron with the trade name Telar. Telar, used at a 1.5 ounce rate per acre with a surfactant will properly adjust the attitude of this would- be threat to your property. Your herbicide treatment program should begin no earlier that June first and conclude no later than October first, providing that the foliage is still succulent.

The herbicide Telar is in of a class of herbicides called sulfonylureas. These do a marvelous job of mass-murdering the likes of whitetop and perennial pepperweed, but they have one annoying drawback, they’re not fun to use. They work very slowly almost imperceptibly so. Gone is the instant gratification that we experience with other products; the curling and the drooping. Gone are the colors of victory that other products produce; the reds, the oranges, the yellows and the browns. All that can be seen is the slow, whitish, bleaching effect from the chlorosis as the plant slowly succumbs. Slowly, slowly, day after day week after week....slowly....you are getting sleepy....sleepy....



ODA Photo

HAROLD TALLEY AND THE CONTROL OF WHITETOP

O.K., most of us have heard of the noxious weed Whitetop but, who in the Sam Hill is Harold Talley? Harold Talley was none other than the first ever weed honcho for Crook County. That's who.

In 1939 Crook County formed a noxious weed district and Harold was appointed the new county weed inspector. At that time, the Weed District determined that there were only five species of noxious weeds that required control. Imagine, only five species! Over the years, a steady increase in transportation and other activities conducive to the movement of noxious vegetation has allowed for the introduction of an additional twenty, or so, new species.

So, old Harold must have had it pretty easy, right? Guess again. Of the five noxious species listed in 1939 all five are difficult to control perennials. The five, (Whitetop, Morningglory, Canada Thistle, Russian Knapweed, and Leafy Spurge), are not susceptible to manual or mechanical controls and only the most rudimentary of herbicides were available at that time. Waging war against an adversary that you have very little chance of defeating could not have been amusing. Poor Herald; he probably never knew what hit him.

One of the more difficult weeds for Herald to contend with would have been Whitetop, a.k.a. hoary cress. This perennial, a member of the mustard family, grows in profusion along the Crooked River from Prineville Reservoir to Paulina, and has populations in excess of four thousand acres. Whitetop is an excellent competitor and easily replaces desirable vegetation. At one time this weed was considered to be a range problem only, however in recent years Whitetop has become more and more prevalent in and around the city of Prineville.

The plant is actually quite easy to identify with its white inflorescence and blue-green leaves. So, finding the plant was never the problem for Harold; killing it was. No matter how diligent his endeavors, his manual, mechanical, and chemical applications would have been, by in large, unsuccessful. This pattern did not change much over the next forty years. Some moderate success was achievable using phenoxy herbicides like 24-D esters in the pre-bud stage, but finding the plant in April amongst the other greenery is, at best, challenging. The solution to the problem arrived in the 1980's when Dupont developed a line of products based on a new chemistry. Sulfonylurea's, as they were called, were the panacea everyone had been waiting for. Application times went from pre-bloom to the flowering stage. This meant that the plant would be plainly visible when it was time to spray it. Besides this obvious advantage, these ultra low volume herbicides, as they were dubbed, could be applied at rates of one ounce, or lower in some cases, per acre and deliver excellent performance. Products such as Ally, Escort, Cimarron Plus, Cimarron Max, and Telar are all examples of products that will knock the peewaddles out of Whitetop. You can either call this office or talk to your local ag-chemical dealer for information concerning product selection, mixing instructions, or application techniques.

Suppose you live in the Prineville area and have a small patch of Whitetop, but have no means of controlling it? What are the options? You can pull it or cut it, probably for the rest of your natural life, and this would prevent the plant from going to seed and prevent you from getting in legal Dutch for allowing a "B" listed noxious weed to

propagate. But, because this plant can regenerate from rootstock you won't be getting rid of it any time soon. Spray it. Products that control Whitetop are sold in denominations as small as two ounces. Maybe you can even split the costs with a neighbor who has a similar problem. If you don't have any equipment to spray with you can always check out a backpack sprayer from O.S.U. extension on Lynn Boulevard by calling in advance @ 447-6228. Just use it, rinse it, and return it at no charge. Always use a surfactant when applying foliar herbicides they're generally inexpensive and will make your product perform better. It's what we call cheap insurance and your local ag-chemical dealer can fix you right up.

The best time to treat Whitetop is from late April to early June when the plant is in full bloom which should be soon. Remember, this noxious, aggressive, pest has absolutely no redeeming qualities as forage or ground cover. It's your land and you're paying taxes on it so reclaim it and make it productive again.

Now is the time to take retribution! Equipped with the information you've been provided with you can now go fourth and conquer. Take no prisoners and show no mercy and you can, once and for all, vanquish this botanical barbarian. Harold Talley would be pleased.



ODA Photo

WHITETOP CITY

To Everything There is a Season and, if You've Got Whitetop, Yours Has Arrived

We tend to think of noxious vegetation as agri-warfare; the stuff that farmers and range folks have to go through to keep the bad guys in check. Unfortunately, some of our noxious adversaries are just as well suited to urban environs and Whitetop is one of those. Whitetop (*Cardaria draba*) is a perennial member of the mustard family and no stranger to city life. A quickie survey of Prineville revealed that over sixty properties were infested with whitetop within the Prineville City limits alone, and that number could easily exceed one hundred! The lion's share of these properties is on the west side which does not mean that whitetop finds the east side distasteful; it simply means that the west side is where this pest got a foothold and no one has lifted a finger to stop it. Maybe it's time we did.

Whitetop is primarily known as an invader of pasture and rangeland where it has proven to be most prolific. In these settings, and given a little time, whitetop tends to do what it does best...develop monocultures. This pest has a deep predilection for its own kind and, if plants could loathe, a loathing of biodiversity. Its nicknames the white plague, the weed that ate Malheur County and a few others too colorful for mention here are well earned. The only safe havens from whitetop have been those areas of intense agriculture, areas too dry to support the pest, and, until recent years, peoples yards.

The whole noxious weedy-yard thing may seem innocuous enough because the proximity of your yard is probably not that close to agricultural lands, but it is likely to be close to other yards or back lots, that's how this whole mess got started in the first place. If you have whitetop on your property and you've grown fond of the white mustards where your lawn used to be or you simply don't give a rip about your neighbors, keep doing what you've not been doing. But if, on the other hand, you have had enough of being bullied by a stupid weed or neighbor then maybe it's time for a little urban warfare. Hand pulling or mowing whitetop will not feed the bulldog; you can't prevent it from reproducing by simply removing the flowering parts of the plants. Whitetop is quite capable of reproducing from rootstock. The only recipe that shows promise involves the use of herbicides. If you have range or pasture issues with whitetop then products such as Telar, Escort, and Cimmaron Max coupled with a good surfactant like Phase, Syltac, or Dyne-Amic will kick the livin` peewaddles out of this mustard menace. But, if your whitetop is a domestic issue then a little more discretion must be employed.

“So, you may be wondering, why do the ag guys get to have all the fun and we get all the discretion stuff?” “What are we...chopped liver?” No, minced ham, maybe, but not chopped liver. The discretion comes into play anytime you chemically treat a target pest in an area that is, or is supposed to be ornamental. The greatest concern here is collateral damage. The fore mentioned herbicides do a marvelous job of controlling whitetop. Unfortunately, they will also put the kibosh on shrubbery and other ornamental plants if the spray solution should land off-target. If that material should lite on plant leaves or on the soil where it can be root-absorbed, the desirable plant is history. Herbicide labels are intended to protect us from ourselves and, in this case, they are doing exactly that by not being registered for domestic use. The trick here is to find the product that is the most effective with labeling that that will match the site. In this case the product Latigo, which is a combination of Dicamba, 2,4-D, and a surfactant, fits the bill

pretty well. Mix about one and a half ounces of this product to a gallon of water in a hand-held sprayer or 4-5 ounces in a three gallon back-pack sprayer; put on your game face and you`re loaded for bear. If you don`t have a sprayer then a back-pack sprayer can be checked out free- of- charge at the OSU Extension office on Lynn Boulevard. A little repeat application may be necessary the following year, but because Latigo doesn`t come in quantities smaller than one gallon you should have plenty left over. To cut costs you may even want to go in sharezies with one or several of your neighbors. This shouldn`t be a problem, after all, you`ve been sharing whitetop seed for years.



Alexanian Photo

Section 6: The Annual Grasses

CHEATGRASS

The Fuzz That Won the West

Over the past several years we've discussed a number of noxious nasty's from the apex of the weed world. I have selected what I thought to be the crème de la crème of weed culprits, the Ferrari's and Porches of invasive vegetation, and the weeds that conjure visions of doom and destruction. Weeds with names like spiny this, poison that, or giant whatever, that strike fear into the hearts of us mortal men. Fortunately for us, cheatgrass is none of the above. If appearances really count then cheat grass is a rather unassuming little grass with no apparent antagonistic qualities whatsoever. It is not spiny or poisonous or giant and it's certainly no Ferrari.... a Ford Escort maybe. And its other common name is downy brome. *downy*? C`mon man! The name doesn't do much for the whole doom and destruction thing. "Cheatgrass" at least implies that something underhanded is taking place. So, obviously, there's more to Ol' Downy boy than meets the eye or there wouldn't be so many folks complaining about it.

Cheatgrass (*Bromus tectorum*) an annual grass from Europe, first showed up in Colorado in the late 1880's and was believed to have been a contaminant in crop seed and hitch-hiker in ship ballast. Its spread was one of those symptomatic events that resulted from heavy rangeland grazing.... and spread it did! The spread was further augmented by the disturbances caused by homesteading and the cultivation of winter wheat. Anywhere the soil was disturbed this pest flourished.

The name "cheatgrass" is attributed to the way this winter annual competed with grain crops and "cheated" wheat farmers out of their yields. This cheating is a natural phenomenon and should not be confused with the cheating of farmers by the Federal government during the 1990's wheat embargos. The weed has the excuse of being a mindless organism while the Federal government directing the embargos was...was...I'll quit there. The cheating has been taking place over the last 125 years and not much has changed other than the amount of cheating which has increased dramatically in scale. In 1949 conservationist Aldo Leopold wrote in his Sand County Almanac: "*I listened carefully for the clues whether the West has accepted cheat as a necessary evil, to be lived with until kingdom come, or whether it regards cheat as a challenge to rectify its past errors in land-use. I found the hopeless attitude almost universal.*" I'm afraid I have more bad news for Aldo, although land-use has improved radically attitudes have changed little and today, Cheat grass can be found in all 50 states and the acreage infested totals a whopping 100,000,000 acres!

So what makes this seemingly innocuous, fuzzy little grass such a threat? Because cheat grass is a winter annual which germinates in the fall, it actively utilizes moisture and nutrients in the soil before the more desirable perennial grasses start growing which inhibits the development of the perennial grasses. Although cheat grass is briefly palatable, it is far less desirable forage than native perennials. Another drawback of annual grasses is their lack of root mass which does an inferior job of stabilizing soils. More dirt on cheat grass includes the fact that it burns like jet fuel; just ask the folks on the Warm Springs Reservation who must battle grass fires several times per year. Those fires, fueled by cheatgrass and medusahead rye, another winter annual grass, consume thousands of acres and numerous structures every year. The sagebrush-native grass regions of the Great Basin and the Pacific Northwest used to burn on average of once

every 30-70 years, but wildfire return intervals on rangelands infested with cheatgrass is less than five years. This frequency destroys any remaining perennial grasses which open the door for an even greater influx of cheatgrass and other noxious vegetation such as knapweeds.... so much for “seemingly innocuous”.

Here I will state the obvious: we are not going to control 100,000,000 acres of anything. We are not going to win the war with cheatgrass, but we can win selected battles. The trick is knowing which battles to fight; where to draw a line in the sand. As always, the moolah you spend cannot exceed the benefits you hope to achieve. So, the bottom line of any project whether it is control or restoration or both is price and large-scale projects can very pricy indeed. But just because a project is large in scale and carries a hefty price tag doesn't mean that it's not economically viable. In the Palouse Hills, which is winter wheat country, cheatgrass has reduced yields by as much as 27% and winter rye by 33%. Control programs in this geographic area pay off handsomely. The re-establishment of healthy range may also produce the economic reward desired. On the other end of the scale is the vast majority of land owners who simply want to protect their land from further invasion or protect their structures from fire or maybe just clean up around the place. Whatever the circumstance, product selection should be the same and so should the timing of application. Because cheatgrass is a winter-annual, the application of a pre-emergent herbicide such as Plateau or Panoramic at a 4 ounce per acre rate should take place in the fall which would be comprehensive of all germination. However, late winter-early spring applications are quite acceptable for plants 1-3 inches tall providing you include a knock-down component in your formulation. An example of this would be a glyphosate product such as Round-up at a 1 quart per acre rate. You can apply a product such as Journey which is the same formulation pre-mixed, but you'll want to check with your local ag- dealership like the pro's at Round Butte Seed Growers for availability. The idea is to treat what is green and what is yet to come in one application. This means no later than mid-March. If you wait until April that ship has sailed and you'd be better off waiting until the next season. In April the plant will mature and treatment will not prevent seeding or provide fire protection.

The key to controlling cheatgrass or any weed for that matter is timing, product selection, and attitude. If you develop an intense hatred for any weed then killing the pest will become a sheer passion for the game. Of course, I fully realize that it's tough to develop a stout hatred for a weed with the same name as a fabric softener, so forget the downy thing. But the name cheatgrass works. It's rather easy to generate substantial disdain for anything that we believe is cheating us.....federal or otherwise.



MEDUSAHEAD RYE

Not Just Another Pretty Face

In 2002 I attended a seminar dedicated to the control of Medusahead Rye, a noxious weed common to central Oregon. For two days I listened intently as doers and thinkers from the western United States and Europe expounded on every aspect of the plants existence. By the conclusion of the seminar I had been formally educated on the negative impacts that this pest has on fire management, native plant communities, erosion, rangeland, livestock, and vegetation biodiversity in general. About the only thing I didn't learn during the sixteen non-refundable hours I spent at this meeting was how to get rid of this stuff once you've got it. As it turns out, a formula for success in combating Madusahead would be a little hard to come by. To this day there has never been a large scale eradication effort that has succeeded, but it hasn't been for lack of enthusiasm or funding. An infestation of an annular grass that can produce as many as two thousand plants per square foot is going to present some challenges.

A few months ago I attended another seminar. This one was dedicated to the study of mathematical probabilities and the classes were held daily at the local casinos in Reno, Nevada. On the way there I passed through the berg of Likely, California and the view there on both sides of highway 395 was quite impressive. Medusahead Rye dominated the landscape as far as the eye could see. What once was pretty fair rangeland on both federal and private lands is now, relatively, worthless. The entire countryside had a blonde appearance which, I suppose, is okay if you're in Sweden, but here it represents the demise of the rangeland.

Medusahead Rye (*Taeniatherum caput-medusae*), is so named because the long awns on the head of this plant are reminiscent of the snakes on the head of the goddess Medusa, a goddess so hideous that she could not be looked upon. This plant pest could be considered equally as hideous unless, of course, the goddess Medusa reminds you of a blind date from your past, and then it's no contest.

Medusahead is a winter annual grass that has invaded millions of acres in the western United States and has changed rangeland ecology. Medusahead has a tendency to grow in very dense mats which are quite combustible and produces unnatural, more frequent, fires that not only kill desirable rangeland species, but also renders the land more susceptible to further infestation. Because Medusahead germinates in the fall and early spring it tends to deplete nutrients and soil moisture which would, otherwise, be available to desirable range species.

Medusahead is, somewhat palatable to livestock in the early spring, but due to it's high silica content is spurned by cattle as the plant matures. When it is grazed, that same high silica content also increases tooth wear which can ultimately shorten the life of the animal and the awns from the seed head can become imbedded in skin causing a disorder called lump jaw.

So, if large scale control programs have not succeeded then other strategies must be implemented to protect rangeland from botanical decimation. The most effective method for preventing the spread of Medusahead is through containment and the

treatment of smaller, isolated, infestations. In order to protect what rangeland is still not infested, a line in the sand must be drawn and chemical controls must be utilized.

Because Medusahead has the ability to germinate over a long period of time during the year, good control with foliar herbicides is difficult to come by. Products like Round Up do a fair job providing they are applied repeatedly as seeds germinate; however, the best approach is to use residual herbicides such as Plateau, Panoramic, or Landmark. Residual herbicides can be applied once anytime from fall to late winter, providing the ground is not frozen, and excellent control can be achieved. Repeated, smaller scale, applications will be necessary over next several years.

There does seem to be some promise in controlling large scale infestations by incorporating spray programs with the competitive seeding of, primarily, non native species of fescues and wheat grasses which have a similar life cycle to that of the Medusahead, but even if this strategy succeeds the rangeland will never be quite the same.

Medusahead adversely effects more than just ranchers. Home owners in the Grizzly area have had their homes singed in the past and, on the Warm Springs Reservation where they have one hundred and fifty thousand acres of this stuff, range fires and house burnings have become a common occurrence.

The best strategy, as usual, is prevention. This means understanding how to identify pest, control the pest, and having some clue as to what will happen if we sit on our collective duffs and do nothing. The future of rangeland in many areas of the western United States will be, largely, dependent upon our ability to contain this plant pest and our failure to do so will have enormous economic impacts.

As usual I do see a bright side to all of this. That's why I'm often referred to as the Pollyanna of weed control. At two thousand plants per square foot you, too, can experience the unparalleled joy of annihilating as many as eight million one hundred and twenty thousand plants by spraying just one acre! I don't know about you, but slaughtering weeds on that scale just makes me feel warm and fuzzy all over. Oh, and a merry Christmas to everyone.



Alexanian Photo

Section 7:

The

Knapweed

ABOUT SPOTTED KNAPWEED IN CENTRAL OREGON

Around the year 1966 a weed never before seen in central Oregon reared its ugly purple head for the first time to anyone's notice. The plant was Spotted Knapweed and the location was near Bend. From the time the pest was first discovered until the 1980's nothing was done in the way of controlling this pest, it was simply observed from time to time. At the same time we were "observing", Spotted Knapweed in the state of Montana was reaching epidemic proportions. Today as much as 10 million gross acres of Montana are infested with this plant pest. It would appear that the Montanans, too, did their fair share of "observing".

The question is not whether the Spotted Knapweed problems of Montana can be mended or not. They can't. The question is: why didn't we learn a lesson from what was already taking place in a state so close to us? Unfortunately the truth probably lies in human nature. We humans have enough on our collective plates, so the tendency seems to be that we never seem to care about the rattlesnake in the grass until the snake bites us. Perhaps that's why what were small patches of spotted knapweed in Jefferson and Deschutes County in 1966 has ballooned into an infestation of around 150,000 gross acres in 2008. Rattle, rattle.

So what is it that makes this invasive plant so undesirable to us humans? Spotted Knapweed is an aggressive botanical bully that has the ability to devour large tracts of real estate and displace the desirable grasses and forbs laying waste to what was good rangeland for livestock and wildlife. In western Montana, once pristine habitat for Elk has become a biological monoculture in purple. This tap rooted perennial does a poor job of holding soil in place unlike the rhizomatous plants that it replaces. Besides all these charming attributes it is also not palatable to livestock or wildlife. In short, it simply occupies much needed space and devalues the lands of Crook County. In Deschutes County, until recent years, the strategy was to pave it out. Obviously they have yet to succeed, but lord knows they've tried.

Currently, approximately 2300 gross acres of Crook County are infested with Spotted Knapweed. The distribution, in general, ranges over the western two thirds of the county on Forest Service, BLM, and private lands with the highest concentrations in the areas of Allen Creek and Powell Buttes. The federal agencies in Crook County have had control programs in place for several years as has the County Road Department and this year a cooperative effort to control Spotted Knapweed in the Allen Creek area will be underway. This effort will involve the Crooked River Weed Management Area, The Oregon State Weed Board, Oregon Department of Agriculture, Crook County Weed Control, and the private property owners in the Allen Creek area including Ochoco Lumber.

With so much control taking place in Crook County there are still many areas that have gone untreated for years. Many of the older subdivisions in the Powell Buttes and Grizzly areas are in desperate need of attention. To an extent, the present situation is understandable. These subdivisions were established before many noxious weeds were present so no funding was ever dedicated for their removal. Unfortunately, even the best of excuses won't feed the Bulldog. Homeowners associations and private property owners alike in western Crook County need to address this problem, and soon! What

happened in Montana should not have happened in Deschutes County and what happened in Deschutes County should not happen here, but it most certainly can.

So, now comes the fun part, getting rid of the stuff. As is the case with many noxious weeds, your options are limited as to how you control it. The plant can reproduce from as little as a half an inch of tap root, so pulling large numbers of plants can prove to be a lesson in futility. Let me save you some time. Spray it! There are gobs of products out there that will control Spotted Knapweed. Milestone, Banvel, and Curtail are a few of the effective Knapweed killers and either myself or your local ag chemical supplier can assist you with product and application information.

As important as product selection for the control of Spotted Knapweed is the timing of application. It's June and June is an ideal time to control this pest. The Spotted Knapweed should will be in the rosette stage or will have bolted and be in the early bud stage and the plants will be very susceptible. A repeat application might be necessary in August or September of the first year because the seed bank will germinate again and produce fresh rosette. After that, control should consist, primarily, of maintenance applications in the spring.

Controlling unwanted vegetation should not be considered a daunting task; it can actually be, dare I say, fun. Over the past thirty years I have found great peace and tranquility in my domestic life because I've slaughtering weeds by the untold millions during my work day and I would like you all to experience the same sense of contentment that I have. In fact, don't think of it as work at all. Think of it more like hunting....with no bag limit. Enjoy.



ODA Photo

“FROM RUSSIA WITH LOVE”

You’ve probably heard of the expression “beware of Greeks bearing gifts”. Well, let me be the first to tell you that it’s not the Greeks we should be worried about, it’s the Russians. That’s right comrades. It’s those fun loving, benevolent, pranksters from the land of the bear. It’s unfortunate that the same fine folks that gave us caviar, stroganoff, vodka, and borscht also gave us the threat of a nuclear holocaust during the Cold War, and an invasive plant called Russian knapweed...the peoples weed. Of course, I’m stating the obvious, but the more frightening of the last two gifts has to be the Russian knapweed.

Russian knapweed (*Acroptilon repens*) arrived in the United States in the late 1800’s as a contaminant in alfalfa seed and, today, most of the lower 48 have reported having infestations of this plant pest to some extent. In Crook County we have been particularly blessed with over 4,000 acres of this stuff...the gift that keeps on giving. It’s difficult to say exactly when Russian knapweed became established in this county, but there is documented evidence that this plant pest was considered a major player in the 1930’s. Since then, Russian knapweed has, pretty much, had its way with the property owners of Crook County by invading rangeland, pastures, crop land, riparian areas, vacant lots, roadsides, ditch banks, your back yard, and the bed of your pick-up truck if you don’t clean it out once in a while. I guess that covers everything.

Russian knapweed is a perennial which grows to a height of only two to three feet yet has a root system that can grow to a depth of twenty-three feet. It’s this root system that serves as the plants major means of propagation. The seed head of this pest is oval shaped with small pink or purple petals and may produce as many as 1,200 seeds per year, but very little of that seed is viable and the vast majority of it will not germinate. The black roots of Russian knapweed are brittle and break when you attempt to pull the mature plant. This makes the manual control of this plant impossible.

Amongst Russian knapweeds’ charming attributes is the fact that it is unpalatable to livestock in general, but horses will eat it if nothing else is available. The consumption of this plant in large quantities can cause chewing disease (nigropallidal encephalomalacia) which can result in the death of the animal. Wait, it just gets better. Russian knapweed also does a fabulous job of competing with desirable vegetation. It uses a combination of the lateral growth of roots and the excretion of a chemical called polyacetylene into the soil which helps the plant establish in an area previously occupied by other species. The process is called allelopathy and knowing that won’t get you a free cup of coffee anywhere, but what it means is that this plant can actually excrete something into the soil that can make the competition go away. Eventually, what is left is a dense monoculture of one species of plant which in this case is Russian knapweed. It may sound like science fiction, but it really happens this way.

So, it seems that what we have here is a botanical monster that gobbles up large chunks of real estate, displaces desirable vegetation, threatens livestock, economically impacts us and...oh, I’m sorry, did I forget to tell you that it’s also difficult to control? That’s right. Burning it doesn’t work, pulling it makes it angry, biological controls have been a flop, mechanical controls make the situation worse, and success with chemical controls using the best herbicides has been, at best, marginal. Now what?

Several years ago a forward thinking weed guru (or a chronologically challenged dolt) decided to think a little outside the box. Instead of using traditional spray windows in the spring and summer, which didn't work well, the decision was made to utilize herbicides in a residual fashion. By applying herbicides such as Tordon 22-K, Transline, or Milestone in the months of October and November the material situates itself in the soil and becomes available to affect the new shoots as the knapweed begins its regrowth in the early spring. The new shoots are very sensitive to the herbicide and kill rates tend to balloon from the sixty to eighty per cent kill you're used to, with foliar applications, to ninety to one hundred per cent with residual applications. Treat Russian knapweed from October to December after the first hard frost. When the plant is in senescence and it looks like you couldn't possibly do any good at all the conditions are just right. Trust me, it works.

So, when weeds run amok and traditional solutions fail should we be proactive and seek alternatives to the norm or should we recklessly place blame on the folks who gave us the problem in the first place? Personally, I like the reckless blame thing. The Rooskis' not only gave us Russian knapweed, but also Russian olive and Russian thistle. That's a fine how-do-you-do after we were good enough to give them McDonalds.



ODA Photo

YELLOW STAR THISTLE

“We Would be Foolish Not to Feel Threatened by its Presence”

In the mid 1850`s a new weed arrived in the Central Valley area of California. New arrivals were not exactly a rare occurrence in that neck of the woods and newbies were making their way to the “land of fruits and nuts” on a regular basis. The way it got here, a contaminant in alfalfa seed from the middle-east, was nothing new and even the way we responded to its presence was nothing new. We the people seem to need a good smash-mouth crisis before we respond to anything and the arrival of this plant pest was no exception. The ensuing botanical disaster, however, would be something new that California, or any other state for that matter, had ever experienced. That state, like many others, exhibited a pretty flat learning curve and by 1958 yellow star thistle populations reached one million acres. You would have thought that a state with an agriculture envied by most nations would assume a proactive posture and put the skids on the advancing tide of yellow star..... You would have thought. When this did not happen the advancing tide became more of a tsunami and today in California yellow star populations have escalated to over 15 million acres! On public lands alone the state taxpayers shell out around \$12.5 million a year to treat only one half million acres of yellow star. The impacts to water resources in the Sacramento River Watershed, due to this pest, total an economic loss of around \$75 million annually. Of the 58 counties in California 57 are infested with this plant pest.

Armed with the knowledge of what took place in California; a similar invasion could not possibly be allowed to take place in Oregon could it? Jackson County, right up the I-5 Corridor, already has as much as one half million acres and Umatilla County, at the extreme opposite end of the State, has acreage reaching into the tens of thousands of acres of the gift that keeps on giving.

Now comes the “nuts and bolts” segment when we finally get to discover what it is about yellow starthistle that makes it so endearing to us Western folk. For starters, yellow starthistle (*Centaurea solstitialis*) is not a thistle at all. Any plant of the genus *Centaurea* is actually a knapweed, which makes yellow star akin to other pests that we`ve enjoyed killing in the past. The confusion is derived from the erroneous assumption that any plant that perforates your skin is either a thistle or a cactus. Yellow star has spike-like awns located below the flower and they are not to be taken lightly. They`re as sharp as a sewing needle, about a half inch long, and they mean business. I`ve had people call my office and say “hey, I`ve got this stuff growing around my place and it might be yellow starthistle, but I`m not really sure” “No?” I would reply. “Well then, grab the seed head and give it a good squeeze; if you gush blood it`s yellow star if you don`t it`s something else”. It also has a yellow flower, hence the name yellow starthistle. If it has a purple flower we call it purple starthistle, but that`s a story for another day. It is, honestly, one of the easiest plants you will ever need to identify. It is also an annual and as such is a prolific seeder. The seed bank of an infestation of yellow star can have as much as 29,000 seeds per square meter and have a 95% germination rate. That coupled with the fact that yellow star has no natural enemies helps explain the California fiasco. It may also help you visualize the way it crowds out native vegetation, trashes range land, and creates seemingly endless monocultures. In addition to yellow starthistle`s other fine attributes, the plant is also toxic to horses. Consumption of yellow star by horses causes an affliction known as “chewing disease”. Once horses are relegated to eating this pest they begin to

prefer it over more desirable forage. Eventually, the consumption of yellow star will cause the horse to develop a neurological disorder that often results in death.

As a knapweed, yellow starthistle is one of the easier ones to kill. Products such as Milestone (aminopyralid) at 5 ounces per acre, Transline (clopyralid) at 15 ounces, and Banvel (dicamba) at 2 pints will put the hurt on yellow star in a big way. But applications must be repeated annually until the seed bank is exhausted, which can take five years or more. Hand-pulling can be effective providing that the plant numbers are small, you've got a good pair of gloves, and you don't mind a little pain. I prefer to control yellow star from as far away as possible. A close encounter with yellow starthistle is the stuff that sopranos are made of.

What frightens me the most about yellow star is not just the impacts that have been felt in other places, but the fact that the pest exists in Crook County as well and we would be foolish not to feel threatened by its presence. For the past 25 years we've done a fair job of keeping the pest in check, but as the county grows and human activity increases, the likelihood that more sites are going undetected is very real. Any suspected sightings should be reported to me and I promise I won't subject you to the "squeeze test". If we can't locate existing populations we can't act and the ramifications of inaction are sobering.

The yellow starthistle travesty in California is one of great ecological disasters of our time, but in spite of this there are factions out there who not only fail to discourage the spread of yellow star, they endorse it. They are Californians who believe that the benefits of yellow starthistle derived honey outweigh the negative impacts of the pest on agriculture, water resources, native species, horse losses, and domestic pursuits. According to honey purists in California, yellow star monocultures produce a consistently superior honey. They have described yellow star honey as, and I quote: "sunbeam in a bottle, actually glowing of yellow gold", and has been heralded as "taste bud fantasy." "For the sake of the yellow star honey it should not be eaten with anything other than sultry background music." "Just draw the drapes and let the symphony play while you and the spoon dip into the yellow star honey." Did I mention they were from California?



ODA Photo

Alexanian Photo

DIFFUSE KNAPWEED

Better Living With Diffuse Knapweed

Many moons ago when I was a peon working for the man, or in this case the woman, I was led to believe that sizeable diffuse knapweed populations distributed over an entire county could actually be eradicated. I believed that because my supervisor told me they could and we all know that your supervisor would never lie to you. Such naïveté! Today, I'm still a peon working for the man, who in this case is me, and as a supervisor I too have participated in a few departures from the truth. I have learned that sometimes it's necessary to fib in order to dispel the sense of hopelessness often associated with knapweed eradication efforts. If you feel that you have a reasonable chance of achieving your objectives, based upon information given to you, then you are more likely to approach the problem with greater enthusiasm. If I were to tell you that eradicating an infestation of diffuse knapweed could take seven to fifteen years it might take some of the wind out of your sails.

Eradication, by definition, means to root out or destroy completely. So, if you are trying to eradicate a plant species in a given area you must not only kill all of the existing plants, but also every plant that germinates from that seed bank every year until that seed bank has been exhausted. If some plants are missed and allowed to go to seed then the process starts all over again. Get the picture? Eradication of small infestations is, at best, difficult and on a county wide basis, impossible. Perhaps the concept of eradication is one that we would be better off replacing with control or management. This way your expectations will not be quite so lofty and I won't have to lie to you so much. Either way, diffuse knapweed is here to stay, but how much of it we are willing to live with is completely up to us.

Diffuse knapweed is a noxious plant pest native to Eastern Europe and Asia Minor. *Centaurea diffusa* was first identified in the United States near the hamlet of Bingen, Washington in 1907. The seed from this Knapweed was apparently imported as a contaminant in Alfalfa seed. The range of this pest in the U.S. is primarily west of the Mississippi and includes all of the Western States. In Crook County, the distribution of diffuse knapweed is county wide with the greatest concentrations being in the vicinity of Van Lake and the south Powell Buttes area and totals an estimated 837 acres.

Diffuse knapweed can be an annual, biennial, or short lived perennial and apparently is undergoing an identity crisis. This bushy, white flowered knapweed can produce as many as 18,000 seeds per plant and distributes its seed by breaking free from the root system in late summer or fall and tumbling across the landscape. This tumbling action is what shakes the seed free from the seed heads. Several years ago my folks drove from the Morrow county area to Prineville for a visit. Upon their arrival I noticed that a large diffuse knapweed plant was plastered across the grill of moms' sedan. Obviously her car intercepted the plant as it tumbled across the highway. I thanked her for the job security.

Diffuse knapweed is an efficient hitchhiker which readily picks up on vehicle tires and is rapidly redistributed elsewhere. This helps account for the fact that in less than one hundred years diffuse knapweed has managed to infest over 1.2 million acres of rangeland and other real estate in Oregon alone.

So, exactly how do you control a botanical calamity of this magnitude? Bugs! That's right, bugs. In 1992 the Oregon Department of Agriculture began releasing the lesser knapweed flower weevil, (*Larinus minutus*) in the Columbia River counties of Eastern Oregon to help control an infestation that was too large to treat chemically. Ten years later the insects have controlled tens of thousands of acres of diffuse knapweed. Mission accomplished, right? Wrong! What was an unparalleled success in the northern counties has proven to be a dismal flop here. The high altitude and harsh winters here are simply not to the critters liking.... so much for a silver bullet.

Physical control of diffuse knapweed can be laborious and only marginally productive, chemical treatments, at least in the short term, will not eradicate this pest, and bio-controls are thus far ineffective in Central Oregon. So what's the answer? Because diffuse knapweed, or any weed for that matter, is difficult to eradicate does not make it difficult to control. Herbicides such as Weedmaster, Curtail, and Milestone are very effective in controlling this pest. Eradication may take years, but control and a radical reduction in plant numbers is easily achieved after one application. If you could wave a magic wand and make everything that you dislike disappear overnight I would have vanished years ago. So, don't be discouraged and learn to live with a little bit of light maintenance and small plant numbers.

Okay, so I've finally come clean, publically, and told the truth concerning what you can expect from your battle with diffuse knapweed. If I, in any way, sugar coated your expectations in the past try not to think of it as a blatant lie intended to deceive you, but rather as gentle euphemism intended to deceive you. It has a much nicer ring to it don't you think? If I was to tell you that I was six foot even and weighed one hundred and seventy-five pounds...now that's a lie!



Alexanian Photo

Section 8: The Spurges

LEAFY SPURGE IN CROOK COUNTY

Control Leafy Spurge While You Still Have the Opportunity

Leafy spurge is a noxious weed that has plagued Crook County for the last one hundred years. Leafy spurge, like other spurges is a member of the family *Euphorbiaceae* just like its cousins the Poinsettia and the rubber tree. Yes, the same fine family that brought us the pretty plant that we most associate with Christmas and the plant that produces the rubber that keeps America rolling on fine American tires like Firestone, Goodyear, and Yokohoma also gave us one of the most undesirable noxious plant pests in American history.

This native of Russia probably arrived as a contaminant in grain seed and established on the east coast United States in the early 1800`s. By the end of the 1800`s, leafy spurge had been distributed to many of the lower forty-eight states including Oregon. Today, the most heavily infested states are Montana, Wyoming, and the Dakotas. In that four state region leafy spurge is responsible for hundreds of millions of dollars in losses annually. The impacts from this plant pest are so great in that region that some folks from that region actually distributed a periodical newspaper, which I subscribed to, called Leafy Spurge News. So, the next time someone tells you to get a life, just remember the folks that published Leafy Spurge News ...and the people that subscribed to it and I promise that you`ll feel a lot better about yourself.

In Oregon some of the greatest concentrations of leafy spurge are found right here in Crook County on the flood plains of Mill Creek and the lower Crooked River is heavily infested. Leafy spurge is a relatively easy plant to identify due to its bright green bracts and infestations are plainly visible at distances. If you are driving down the hill into Prineville in the month of June and look along the riparian area that runs through the golf course and do not see this pest you just flunked the course. It`s that visible.

Leafy spurge (*Euphorbia esula*) has a number of endearing attributes that, collectively, make this plant pest a favorite of property owners nationwide. For starters, it has a root system that can extend as long as thirty feet. Oh the joy of trying to control a three foot plant with a thirty foot root. But wait, there`s more! The name *Euphorbia esula* translates from Greek as “good for eating” which is surprising since the plant is poisonous to both humans and cattle. Remember this if you should ever wish to purchase a used car from a Greek. The creeping perennial can also reproduce from both seed and rootstock. Leafy spurge is what is termed a ballistic encapsulate. This means that, at maturity, that seed pod will burst and cast the seed as far as fifteen feet. Explode-o-weed! It`s easy to imagine the potential impacts of an infestation in close proximity to a waterway. About twenty years ago leafy spurge infestations on the John Day River were rare, but today they have become a common occurrence due to this plants ability to distribute seed near moving water.

Leafy spurge, like all spurges, contains an acrid latex sap which is poisonous. If you break the plant, at any given point, the white sap will exude and be plainly visible. The sap can cause rashes on human skin and even blindness if rubbed in the eyes. The plant is also considered carcinogenic if handled excessively. The toxic sap can weaken cattle, damage the digestive tract, and eventually kill the animal.

So, the bottom line is that leafy spurge is a noxious weed that can poison you and your cattle, reduce your forage production by seventy-five percent, and devour acres and acres of quality farm and range lands. Weeds are supposed to be devoid of personality, but I truly believe that this one hates us. Oh, and did I mention that it's hard to kill?

It is, indeed, fortunate that at least one animal will graze effectively on leafy spurge. Goats, in particular Angora goats, can impact infestations of leafy spurge without suffering ill effects from the toxic sap. It is, indeed, unfortunate that we don't have ten thousand Angora goats.

Bio-controls have been effective in controlling leafy spurge in other parts of Oregon as well as other states. The same insects that keep spurge at bay in Russia have been deployed in the U.S. to attempt to achieve similar results. In all, five species of flea beetles have been released in Crook County in large numbers. All attempts thus far have failed. Most of the insects have either died or, as I suspect, tried to hoof it back to Russia. The poor little fellas didn't realize that it would take them the rest of the century to make it as far as Redmond.

Mechanical controls such as mowing have succeeded in only stimulating the plants growth and attempts to manually control a plant with a thirty foot root system is somewhere between futile and laughable.

The most practical method for control is to treat leafy spurge chemically. Products such as Panoramic and Plateau are effective and available to property owners without licensing. Tordon-22K is, in my opinion, the product of choice, but is a restricted use herbicide and you will need a private applicators license to purchase and apply it. The window for application is from the end of May until September. I urge you to take advantage of your opportunity

The control of leafy spurge is neither inexpensive nor easily achieved. In the Klamath Falls area some ranches have become so inundated with leafy spurge that the cost of restoration has paralleled the value of the land itself. In fact, properties have sold for as little as ten cents on the dollar. If I can't appeal to your sense of good stewardship then perhaps your sense of good economics will inspire you to take control of the situation while you still can.

Maybe there's a plot behind this whole weed invasion thing from Russia. Could it be that the Russians infested the U.S. with leafy spurge intentionally? I mean, think of it! First they sneak the seed into the country and then the spurge spreads and spreads until it reaches and takes over the whole state of Alaska! And then we end up selling it back to the Rooskies for what we paid for it. Why am I the only one who possesses the vision necessary to see this?



ODA Photo

MYRTLE SPURGE

All That Glitters is Not Gold

Do you ever stop to ponder the plight of a botanical organism that we may consider imposing, detrimental, and, in general, unfit for cohabitation with ourselves? Do you ever consider that these plants of dubious merit may have been placed upon this earth for a reason and that our indiscriminate slaughter of them should be viewed as insensitive and barbaric? Do you ever think that its high-time that we got in touch with our feelings and became more considerate of all flora and declare a new-found respect for the rights of plants to exist in our midst although we may consider them weeds? Or are you like me and you just want to grease the punks?

For folks like me it's easy to delineate the good from the bad because I'm not emotionally tied to any particular species. If I have preponderate evidence suggesting that any plant species is detrimental than I have no qualms in regards to destroying that plant. But in the case of ornamental vegetation, many people do have an emotional attachment regardless of the threat that that plant species poses. If you don't buy that then try telling someone that they need to dig-up their scotchbroom or butterfly bush or Japanese knotweed and observe how a once poised property owner becomes all-to willing to threaten you with the business end of a shovel.

People love their noxious ornamentals and myrtle spurge certainly fits the bill as a beautiful plant with problematic characteristics. Myrtle spurge is a handsome groundcover that likes things a little on the dry side and is widely used in xeroscaping in the western United States. In Crook County, myrtle spurge can be found in domestic settings County wide, but is most prevalent in the Deer Ridge area of north east Prineville.

Providing that ornamental plants stay put, their introduction is generally a no harm no foul situation, unless, of course, the plant happens to be poisonous. This plant does happen to be poisonous, so any amount of it cannot be viewed as a positive thing. As far as the staying put thing goes ...it doesn't. Myrtle spurge has become legendary in the state of Colorado for escaping domesticity. In this area, resident ag- type and trouble maker, Lynn Breese, found Myrtle spurge growing adjacent to her poplar grove, miles from the nearest infestation. In fact, Coloradoans so fear this plant that it has been placed on that state's "A" noxious weed list. In Oregon we don't scare quite so easily, but myrtle spurge is still, generally, considered a "B" listed weed.

So, who is Myrtle Spurge and why am I saying all those nasty things about her? Myrtle spurge (*Euphorbia myrsinites*) is a perennial, native to Eurasia which blooms in the early spring. This plant pest grows from 6 to 14 inches tall and has alternate leaves arranged in close spirals around a fleshy, trailing, blue-green stems. Like all spurges, myrtle spurge contains gooey, milky latex and when the plant is broken at any point, that latex is exuded. Unfortunately, that latex is also toxic and ingesting the plant will cause nausea, vomiting and diarrhea. I know what you're thinking.... "Who in their right mind would ingest the stuff in the first place?" My mom accused me of being many things when I was a child....being in my right mind wasn't one of them. Don't tell me that when you were a kid your folks have never asked "are you out of your mind?" and, personally, I wish my mom would quit saying that to me. The milky sap, besides being a real

attractant to children, can cause swelling, redness, blistering of the skin, and, in some cases, anaphylactic shock. Equally frightening is the possibility of blindness if the sap comes in contact with the eyes. Hopefully, the aforementioned, savory details will inspire you to remove this pest before you experience some unfortunate consequences like a couple of local citizens who, in recent years, have made a trip to the hospital as the result of exposure to myrtle spurge.

So, now that you've determined that safety and good stewardship should trump aesthetics you'll need to know how to get rid of this stuff. If you elect to do the manual removal thing, please bear in mind that doing the manual removal thing is what sent folks to the hospital in the first place. A long sleeve shirt and a good pair of gloves and eye protection should mitigate the ill effects of up-close and personal contact with myrtle spurge. Your failure to don the proper attire can result in a quick trip in the meat wagon. Remember, myrtle spurge can reproduce from both seed and rootstock, so manual control may require repeated efforts. If you choose to utilize the Kev method and spray it out then a fall application of Weedmaster, which is 24-D amine and Dicamba should do the trick. As always, be sure to use a surfactant with your formulation.

From Denver to Salt Lake City to John Day every area with an abundance of myrtle spurge has a program dedicated to its removal and they all have the same title, "Purge Your Spurge!" It's a catchy slogan, but since we Americans will never overcome our addiction to botanical bling-bling, maybe we need a program directed more towards prevention. We need to understand that all of the glitter that the nursery sells is not necessarily gold. Maybe a program entitled "Purge Your Urge" would be more appropriate.



ODA Photo

Section 9: The Annual Broadleaf's

THE CONTROL OF RUSSIAN THISTLE

A Tale of Two Pity's part one

There are some noxious weeds which are not particularly detrimental to the well being of humans and livestock and, aside from being an agricultural nuisance, are little more than a royal pain in the keester which seldom provide good fodder for conversation. Some weeds seldom represent more to property owners than redundant, boring, tedium. Of course, were talking about annuals, here, and there are dozens of species of these little tedium makers county wide. In this and next months articles we will examine the characteristics and control of two of them.

Who says there's no benefit to noxious vegetation? If there was no Russian thistle there would be no "Tumbling Tumbleweeds" and the Sons of the Pioneers would have never written the hit single that warms the collective hearts of cowpokes and weed warriors everywhere. Okay, so one hundred million acres of infested land in the Western United States might seem like a pricy trade off, but great western songs don't come cheap.

In the fall or early winter the plant breaks free from its tap root and tumbles whichever way the wind carries it. Although the image of a tumbling tumbleweed tends to conjure up a romantic vision of the Old West, remember, it's this tumbling action that allows the plant to seed...and seed it does...up to 200,000 seeds per plant worth! Here's another factoid for you buckaroos: Russian thistle didn't even arrive in the U.S. until the late 1870's, so the tumble weeds that you see blowing across main street just before the big shootout in the westerns probably didn't happen. Sorry for the news. It's also this tumbling motion that allows tumbleweeds to plug barbed wire fences and pile up against houses and out buildings.

Another endearing characteristic of Russian thistle is its ability to burn. Once ignited, Russian thistle burns in a fashion akin to the first stage of a Saturn rocket. This can be a rather handy attribute when you're trying to dispose of this weed. Unfortunately, a plant that cooks like a botanical form of Napalm is not the most desirable thing to have piled up against your house and outbuildings. Tumbling tumbleweeds in the wind may seem innocuous enough, but once ignited they can be downright terrifying! This tumbling and burning action can greatly enhance the spread of a range fire. If you're walking along a barbed wire fence sometime and notice that seventy per cent of the fence posts have been charred, rest assured that the property owner did not purchase them that way.

Russian thistle (*Salsola iberica*) is a prickly member of the goosefoot family and is not a true thistle, but no one really cares. We have a tendency to refer to any plant that is spiny and pokes us as either a thistle or a cactus. This may drive a botanist to the brink of insanity, but it works just fine for the rest of us. This spiny nature of Russian thistle prevents domestic stock from browsing on it once it begins to mature. In terms of palatability, Russian thistle is only marginally desirable in its infancy.

So, what we have here is a weed that encroaches upon desirable vegetation, presents a major fire hazard, requires a great deal of labor to remove, provides very little in the way of forage for livestock, and makes close encounters with we humans an uncomfortable, if not painful, experience. At this point can we all agree that we should

control this stuff before it becomes a nuisance? Good; glad to hear it! Now comes the fun part.

When it comes to controlling weeds, there are a lot tougher kids on the block than annual broad leaves and I've always harbored a great deal of fondness for weeds that will curl on command. The trick to achieving good control of annual broad leaves is to treat them before they reach maturity and then monitor your handiwork. Oftentimes, annual weeds will germinate in multiple flushes during the growing season depending upon the frequency of rainfall. So, plan on performing a little touch up after the initial application.

There are numerous products that will control Russian thistle, but the best product, in my opinion, is usually the one that is the least expensive that will get the job done. In this case the product of choice is 2,4-D amine. 2,4-D amine at a four pint per acre rate is inexpensive and will knock the living daylights out of Russian thistle. It's all about the timing. Spray it early, touch it up occasionally, and then sit back and marvel at your glorious achievement. Of course, if you're the type who thinks that pulling or hoeing weeds is good therapy for the soul then annual broad leaves will prove to be easy victims. Whichever method you choose the same rules will apply: implement the control early and then follow up.

Sometimes conducting research provides us with unwelcome consequences, I'm talking about the tumbleweeds in the old westerns thing. If correctness was that important I guess that we could substitute a similar tumbling, annual weed that did exist in the old west a little earlier, one that is not as chronologically misplaced as the tumbleweed. Unfortunately the only one that I can think of is baby's breath. Baby's breath? Drifting along with the tumbling baby's breath? Well, so much for correctness.



THE CONTROL OF KOCHIA

A Tale of Two Pity's part two

Way back in 1979 I was working as a commercial applicator killing weeds in North East Oregon. One late spring morning the honcho handed me a work order for the treatment of weed that none of us had ever heard of before. The work order said that I was to spray three and a half acres of a plant pest called Mexican fireweed. "Well now", I beamed. "I thought they saved that kinda stuff for federal agents and the like". My immediate supervisor, after expressing some rather impertinent sentiments regarding my intellect, assured me that it was not the kind of weed that some people might smoke. It was just a new annual broadleaf on the scene that nobody knew much about. Feeling deflated, my sense of importance diminished, I set about the task of ridding this newbie broadleaf from the customers property.

The Mexican fireweed appeared to be a somewhat benign intruder. It wasn't particularly sinister in appearance, it wasn't poisonous to humans, it wasn't present in the ag- fields, and it wasn't difficult to kill. What the pest turned out to be was about a nine out of a possible ten on the bland-o-meter. Why make such a fuss over a plant that seemingly had such minimal impacts? We just didn't get it. We get it now.

Mexican fireweed, also known as burning bush, belvedere, summer cypress, and kochia, was imported to the U.S. around 1900 as an ornamental because folks liked the red foliage in autumn. Some farmers, particularly in the Southwest, utilized kochia as drought resistant forage and the plant earned the nickname "poor mans alfalfa". In an attempt to design a better mousetrap we humans introduced a plant into this country that we thought could satisfy multiple needs. What we failed to do was to first consider what the negative impacts of this plant might be....again! After many years the official moniker of the weed eventually became, simply, kochia.

Kochia (*Kochia scoparia*) is an annual broadleaf forb of the Goosefoot family or Chenopodiaceae, the same as the Russian thistle we talked about last month. As an annual kochia reproduces only from seed.... and boy does it! Kochia produces anywhere from fifteen to twenty-five thousand seeds per plant and has remarkable germination efficiency. As a rule, kochia germinates in Crook County anywhere from the beginning of April to the middle of May and initially the seedlings appear as a silvery mat. Kochia, which can grow to a height of seven feet, can either drop its seed or break off at the root and disperse it's seed in much the same fashion as a tumbleweed. Kochia produces plant densities that have to be seen to be believed. No problem....we have plenty to see.

In the last thirty years kochia has gone from a weed of dubious detriment to a botanical monster that occupies any space where attempts are not made to control it. It's gone from a pest that was controlled by cultivation to one that is only discouraged by it. It's a plant that can occupy waste areas, roadsides, disturbed sites, canal banks, ag fields, driveways, vacant lots, gardens, and that little spot between your shoulder blades that you can't reach with your washcloth. Unfortunately for me, it's also the hedge on the periphery of my spray pattern on County rights-of-ways.

So, how about that "poor mans alfalfa" thing? It's true that kochia has a fairly high protein content that ranges from eleven to twenty-two per cent, but unfortunately, it

also has some negative baggage. Cattle that graze primarily on kochia can develop oxalate toxicity which causes humpback, rough hair, photosensitization, jaundice, and a stiff gait....charming.

Now that we've established that we have a real stinker on our hands the question becomes: what do we do to correct the situation? The idea that we are ever going to get rid of kochia is borderline laughable, but control of the pest is achievable. Despite all of the negativity surrounding this pest it does have two encouraging attributes: the seeds have a very brief viability in the soil and the plant dies extremely well. The seeds are only good in the soil from one to two years which makes it easy to mop up an infestation in short order. As far as killing kochia goes, four pints of 24-D amine per acre will spank this bad boy into submission and do so overnight, but the application must take place prior to mid summer before the plant becomes woody. Within twenty-four hours after application you can make a healthy kochia plant look like cooked spinach. I don't know about you, but that sort of thing just does it for me.

If you're the kind that prefers to control weeds manually or mechanically remember, kochia is an annual and won't reproduce from rootstock so you will have a fighting chance. As I recall, manual control equates to manual labor. As a seasoned professional I have, of course, heard of manual labor, but I've never actually tried it.

Life's tough. The economy stinks and you're over worked, over taxed, over stressed, and under paid. The last thing you need is to be disrespected by a stupid weed. Here's your chance for a little redemption in an unjust world. So get out there and kick some kochia tail! Create some carnage and cause some suffering. Do this and I promise you that you'll feel a lot better during these days of struggle and strife....at least it works for me.



ODA Photo

THE ANNUAL MUSTARDS

The Attack of the Angry Mustards!

Where did they come from? What did they want? What am I talking about? Why, we're talking about, none other than, the Great Mustard Explosion of 2010, that's what! Usually, when mother nature has a surprise for us, it's not something nice and this one is no exception. Take a look at any piece of property in Crook County that isn't lawn and you're apt to find it occupied by mustards, and by lawn I mean good lawn. This year, like no year in the last twenty years, annual mustards have taken off in what appears to be, nothing less than, an assault of biblical proportions. The question is: what inspired this attack; could it be a need for expansion or maybe, a deep-rooted loathing for all mankind? My guess is that it's because we got oodles of rain this spring, but I wouldn't rule out the loathing thing.

You have to take a cruise through the countryside outside of Prineville to appreciate the magnitude of the problem. The layperson may even suspect that all the yellow is some kind of cash-crop. But exactly what is all that yellow? I've got it narrowed down to three species which are all quite content to occupy the same space. "And out of the east rode the Three Amigos": pinnate tansey mustard, flixweed, and tumble mustard. All three are annular broadleaves and are relatively easy to control. This is good to know, particularly on an extremely wet spring like this when practically any seed that can germinate, does. Sometimes the overabundance of vegetation that results from the wet conditions can be viewed as a good thing, that is, if you spray your weeds. These conditions can actually be considered a double-edged sword of sorts. Right now, the output of vegetation is at its highest and, consequently, the seed bank is at its lowest. If you take advantage of this opportunity to destroy your mustards, the depleted seed banks will not recharge. However, if you opt not to, the seeding populations from this year's mustard crop will put you in some serious doo-doo, my friend.

So, what do we know about The Three Amigos? Tumble mustard (*Sisymbrium altissimum*) is also known as Jim Hill mustard. Jim Hill was a railroad tycoon turned shyster that conned eastern folks into moving to Montana and the Dakotas to farm. Most of the land was junk and the settlers soon failed and lived miserable lives. It was in his honor that they so named this pest. Still, getting a weed named in your honor is no small potatoes. I've been at this for over thirty years and there's no Kev thistle or spotted Kev-weed or any such thing and I must admit, I'm a little miffed. Tumble mustard is so named for the manner in which the plant breaks off at the stem in late maturity and tumbles along in windy conditions, often collecting in fences or any other obstruction much the way that Russian thistle does. Both plants scatter seeds in the same fashion. This plant-pest is an import from Europe and every state in the lower forty-eight has it. It grows from two to five feet tall, is bushy, and has small yellow flowers and I've just described most of the weedy mustards in North America.

Pinnate tansey mustard (*Descurainia pinnata*) and flixweed (*Descurainia Sophia*) are the Darryl and Darryl of the mustards. They look enough alike to share a common photo. The only difference of any significance is the fact that pinnate tansey mustard is native to North America and flixweed is European. However, as we've discussed in the past, native does not always mean better and both species can be problematic.

What distinguishes pinnate tansy mustard and flixweed from other mustards is their finely dissected leaves. Both species spread by seeds from early to late summer to disturbed sites and cropland. I've seen a lot of hay out there that is being cut which is largely comprised of mustards which diminishes the quality of the product

Okay, so we know who the bad guys are, now how do we get rid of them? There are a number of products that are effective on annular mustards, so why not use the cheapest? 24D-amine at two quarts per acre can make light work of The Three Amigos. Even with the use of a non-ionic surfactant with your formulation, which you will need, your cost per acre should run anywhere from seven to twelve bucks. Because mustards grow in exceptionally dense stands, this means that you can lower the boom on mucho Amigos for next to nothing. It's just the matter of getting out and doing it.

The Three Amigos aren't the only mustards that tend to be problematic: purple mustard, black mustard, and white top all have had a banner year. The purple mustard has come and gone, but the black mustard and the white top are still quite treatable. White top is a "B" listed weed in Crook County and is unenforceable by ordinance. However it is a perennial and should be controlled pronto or, on a wet year like this, you're going to end up with more of a mess than you bargained for. This year, I've counted more than forty properties within the Prineville city limits that are infested with white top. Seriously folks; you're better than that. One ounce of Telar, Escort, Ally, or Cimarron per acre will alleviate white top problem.

So, you've just completed mustards 101 and now you know what all the yellow stuff is that you seeing in your travels and, hopefully, you can extrapolate from the subject matter that the only good mustard is a dead mustard. There is, however, one particular mustard that that is worthy of our praise....one mustard that is truly desirable and the only one that, dare I say, should be held in reverence.... French's!



Alexanian Photo

Section 10: Domestic Weeds

CONTROLLING BUTTONWEED

Because You Hate This Stuff

Crook County, like most counties in Oregon, has a multiplicity of noxious vegetation. Amongst the biotypes that we take to task are those that will devour rangeland, clog waterways, perforate your skin, kill your livestock, and, if you're not careful, kill you! Unfortunately, over the course of the past twenty-two years, the most frequently asked plant control question does not pertain to any of the afore-mentioned bad-nasty's. What I would like to hear are query's regarding those weeds that most greatly impact us. Instead, what I hear is: "how do ya get rid of that buttonweed stuff? This crud's take `in over and the stuff I'm using won't touch it." As a rule I try to stay clear of turf and ornamental questions and leave that for those who specialize in that sort of thing. But if the question is not being answered then I'll take a stab at it.

By now you know the rules: if you're going to kill something then know your enemy. In this case your enemy has a few surprises. What is generally referred to locally as buttonweed and back east as cheeseweed is so-named because the somewhat flattened and round receptacle or fruit beneath the flower resembles a button or cheese wheel. The old-world name for the plant is common mallow (*Malva neglecta*) which is one of about 25-30 herbaceous annual, biennial, and perennial plants in the family Malvaceae. The leaves are long-petioled, rounded with a heart shaped base with erect branches from 2 to 20 inches long. The flower petals range from white to pale lavender. Common mallow was introduced from Europe and grows in much of the temperate regions of the world. This plant pest is also referred to as dollarweed...most commonly by rich people that I can't afford to associate with, but for most of us local yokels it's buttonweed.

Buttonweed has a couple of characteristics that separate it from the average yard weed. Most yard weeds are, both, easy to kill and inedible; this weed is neither. If buttonweed was easy to kill Then I wouldn't be constantly hounded with questions pertaining to its demise. The questions have merit and buttonweed is not an easy kill. The pest is endowed with a substantial taproot that tends to break when you pull it. The plant then can regenerate from the portion of the root remaining in the soil. Buttonweed's ability to regenerate after pulling coupled with the fact that most herbicides are ineffective in its control is what makes you hate the stuff. All the animosity towards buttonweed sounds perfectly reasonable to me, but would you change your opinion if told you that the plant was edible? No? I'll tell you anyway. Common mallow is consumed world-wide as a green in a number of dishes and is also used as a thickener for soups and stews. Most folks don't realize that culinary confection marshmallows was originally made by the Egyptians from an extract of the plant marsh mallow (*Althaea officinalis*) which is a close relative of common mallow. In fact, the fruit of common mallow makes a suitable substitute and is still used today to make marshmallows. I see that you're still not impressed. Maybe if there was a smoresweed or a moon-pie mallow or something.....

Okay, so you have all the greens that you need, your stew is thick enough, and marshmallows give you gas and all you really want to do is kill this annoying little pest. You can't say that I didn't try to demonstrate its value as a precious botanical commodity, but I'm glad you're not buying this. Buttonweed can be extremely annoying and I probably hate it as much as you do. Now, let's all have some fun and kill this stuff. As we've already discussed, buttonweed is very difficult and laborious to control

manually and most products do not work well on this pest. Fortunately most products do not mean all products and one herbicide formulation does work quite well: speedzone. Speedzone is actually four herbicides incorporated to form a buttonweed killing concoction which is labeled for domestic use and won't harm your lawn. Just mix 1.5 ounces of speedzone to one gallon of water in a hand-held or back-pack sprayer and go do that voodoo that you do. Speedzone is available in 20 ounce containers and can be purchased at Round Butte Seed Growers here in Prineville.

We have enough going on in our lives without having to put-up with an annoying weed. Call it common mallow or buttonweed, or cheeseweed or even dollarweed what it really amounts to is a major annoyance and we shouldn't have to put up with anything that annoys us. And there are few things in life more annoying than....than....okay, I'll shut-up now.



Alexanian Photo

COMMON PURSLANE

*“Tis the unweeded garden that goes to seed; things rank and gross possess it merely”
Hamlet*

A few weeks ago I had the privilege to speak to the “What’s Brewing” gang at Meadow Lakes. The noxious weed dog-n-pony show was standard fare and I thought that the attendees performed admirably. Despite the subject matter and the fact that the presentation began at 7:00 sharp, most everyone managed to stay awake. These are nice people so I mercifully, pulled the plug after forty-five minutes or so and allowed for questions. To my surprise I fielded two questions regarding common purslane. Common purslane? I’ve just exhausted forty-five, non-refundable minutes of their lives expounding on the evils of weeds that will puncture your flesh like a pin cushion and gobble up range like it was free pizza and you want to talk purslane? Well okay then! Actually it’s quite understandable; purslane, also called chickweed and little hogweed, is one of those pests that will make your, otherwise, organized vegetable garden more akin to botanical chaos. The pest grows in profusion taking center-stage in gardens and in yards where it competes with your summer crops for moisture and nutrients. Therefore, animosity towards common purslane is well founded.

Common purslane (*Portulaca oleracea*) is an annual that emerges from a heavy taproot to develop succulent, smooth, fleshy stems that are usually purple-red. These many branched stems reach up to 24 inches long and grow prostrate to form a dense mat. The leaves are opposite, fleshy, and grow up to 1 ¼” in length. The yellow flowers of common purslane are borne individually in the leaf axils or clustered at the end of branches. Flowering occurs from in July through September.

Common purslane has been grown for over 4000 years as a food and medicinal plant and was, more than likely, introduced into North America from Europe as a pot-herb. On a global scale purslane has proven to be quite beneficial to multiple cultures including the ancient Egyptians, Greeks, Romans and Chinese. The positive qualities of common purslane include the nutrients vitamin A, thiamine, riboflavin, niacin, vitamin B-6, folate, vitamin C, vitamin E, calcium, iron, magnesium, manganese, phosphorus, potassium, zinc, and is high in tocophenals (alpha, gamma, delta) and contains two times higher levels of antioxidants than an equal serving of cranberry or grape seed extract. Purslane is also the richest source of omega-3 fatty acids of any vegetable tested and has also been used to treat dysentery, scurvy, urinary infections, headache, and intestinal worms. And the list goes on. The negative qualities of common purslane include the fact that it grows like a knotweed on steroids and it tastes like sheep dung with a lemon twist. Oh sure, it’s good for you, but like so many other weedy edibles the taste to me is appalling. Just because you can eat something doesn’t necessarily mean that you should. That’s why we have Safeway, my friend.

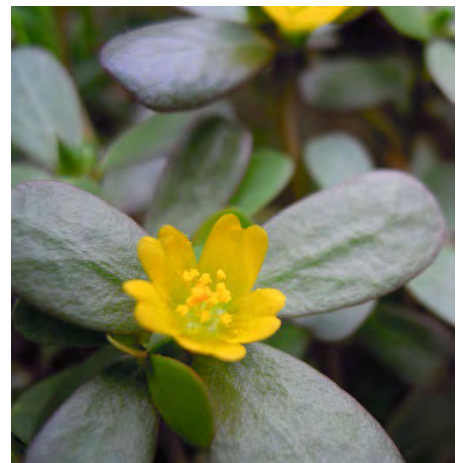
Although common purslane is considered a substantial pest in agriculture, its infamy is generally associated with gardening. Most gardeners in Central Oregon have battled purslane at one time or another and of those who have fought the battle, most have lost. There’s a good reason for this; each purslane plant is capable of producing up to 240,000 seeds and those seeds can have viability in the soil for up to 40 years! What this means to you, the gardener, is that if you have at any time allowed purslane go to

seed, then you`re in for an up-hill battle and there`s a distinct possibility that you may lose this one.

Whether you win or lose the battle depends largely upon your methodology and your tenacity. If you`re the type that takes gardening seriously and believes that weed pulling or wielding a hoe on a daily basis is good for you physically and spiritually then you, or your spouse, may have a fighting chance with a manual control. If you`re like me and believe that you achieve greater spirituality from watching football on T.V., then you may wish to consider another tactic. Mulch, while effective for controlling some weeds, will not prevent purslane from seeding. Tarping with clear plastic, on the other hand, is for more effective and can prevent seeding. Although tarping can be a bit laborious, it`s a snap compared to pulling or hoeing on a regular basis.

Herbicides and gardening may seem like two words that are mutually exclusive, but that`s not really the case. While it`s a no-brainer that spraying in a growing garden is both a risky proposition and contrary to the label; preplant treatments can be a pretty good idea. The folks at Monsanto have a product called Round up Quick Pro which comes in a packet. Each packet of dry material, which is a formulation of glyphosate and diquat, will mix with one gallon of water. That product is registered for the control of common purslane and is just right for a preplant treatment or for a summer fallow situation. The preplant thing is especially practical if you are not planting early varieties such as lettuce or spinach. Elimination of the early varieties will give the purslane a better opportunity to germinate and with that comes the opportunity to kill the weed. You may then plant your garden as soon as three days post-treatment. If the purslane is in any non-crop situation other than lawn, then use the same formulation; if lawn is the target area then use Speed zone. Speed zone is labeled for turf and you can take out your purslane and your button weed at the same time. Whichever herbicide you select the folks here at Helena Chemical can supply your needs.

For me, controlling weeds is about choosing the path of least resistance. If the excessive effort of pulling or hoeing is your thing then be my guest, but I liken exercise to driving a car: the more you drive, the more worn-out the car becomes; the more the car is parked, the more the car is preserved. To you I may appear to be a bit of a “parked car”, but I`m actually just saving myself for the second half.



Section 11: Aquatic Weeds

YELLOW FLOATING-HEART

“Okay, it`s here; now what?”

A few years ago in Southwestern Oregon, a big splash was made over an aquatic weed that until then, was not known to exist in that area. An observant passer-by noticed that the leaves of one aquatic plant were smaller in diameter than those of the native lilies in the same water body. The plant in question turned out to be yellow floating-heart which is an invasive, aquatic weed with a very limited distribution in western Oregon. In fact, the distribution was so limited that the Oregon Department of Agriculture placed the plant pest on the “A” noxious weed list. Such a rating is not an everyday occurrence. To achieve “A” status a weed, as determined by a risk assessment, must be capable of considerable detriment and have a limited distribution with which there is some possibility of eradication. Yellow floating-heart fit the bill. The “A” status thing made the aquatic weed a prime candidate for an early detection/ rapid response (EDRR) program which warrants immediate action. Unfortunately, the infested lake was located on Federal property which made the use of herbicides an unlikely option due to the monolithic documentation necessary to get the okey-dokey for aquatic applications. The rapid response, in this case, came in the way of a weed-pull from watercraft. Manual controls are ineffective in eradication efforts, but they do clear the waterway and slow the reproduction of the plant. So, EDRR was implemented, the plant was removed, and the folks of southwestern Oregon can breathe a collective sigh of relief, at least in the short term.

Nice project with pretty favorable results, but what should any of this mean to us if we don`t have the pest in Central Oregon? Yup, you guessed it....and just when you thought it was safe to go in the water again. In recent weeks a possible yellow floating-heart site was reported to Mike Crumrine of the ODA Plant Division who is located here in Prineville. The infestation, located just west of Redmond on private land, was confirmed and a plan has been put in place to chemically put the kibosh on this watery pest within a brief time-frame. This is how EDRR is supposed to work. It had better work; in the last two weeks four more sites were reported in the Bend area.

Yellow floating heart (*Nymphoides peltata*) is well adapted to ponds, shallow lakes, slow moving rivers, and canals where it tends to spread rapidly, form dense mats and displace native vegetation. In many instances the yellow floating-heart becomes so dense that waters become unusable for swimming, fishing, or other aquatic pursuits. Decreases in dissolved oxygen can also be expected which will, in turn, decrease fish production. The dense mats of yellow floating-heart will also create stagnant areas and provide a haven for mosquitos. Once introduced, yellow floating-heart disperses by rhizomes, seeds and through fragmentation, whereby fragments of the plant break off and establish in new locations. Seeds or fragment may attach to waterfowl and fragments to watercraft and be spread to other water bodies.

Now comes the “who do we blame for this one” section. Yellow floating heart is native to Europe and Asia, but it wasn`t the Europeans or the Asians who brought it to this country. The ones who brought it here was we Americans. It was first reported in the U.S. in 1882 and we`ve been going down-stream ever since. This aquatic crud has been marketed in the U.S. for decades as a water-garden ornamental and with our insatiable appetite for botanical bling, we`ve been all too willing to buy it up and inadvertently

create a nursery for the spread of the pest. This process of importing plants as ornamentals and allowing them to propagate in a land where they have no natural enemies has become a foolish repetition of boundless proportions.

Okay, it's here; now what? In the case of the Redmond and Bend infestations all of the right things have happened: the infestations were reported, correct identification was rendered, a plan was developed, and now all that is left to do is to get rid of the stuff. This can be accomplished by a number of means including: manual control, which is too laborious, mechanical control, which is too expensive, or chemical control, which feels just about right. The chemical control in this case would be glyphosate under the trade names such as Rodeo, Aqua Neat, or AquaMaster applied at a 2% rate with an aquatic surfactant such as LI-700. The chemical control is not expensive, only moderately time consuming, and is very effective. But be advised, you can't control what you can't identify so either take a good look at the photo that's been provided here or go on line and get a feel for what the plant looks like. This one's easy. If you have a pond or largish water feature just look for an overabundance of heart-shaped leaves about 1-4" long and 1" yellow flowers; you can't miss it. If you think you might be the lucky recipient of this pest you can either call my office or the ODA weed guy @ 541-604-6580.

I'm sorry if I've offended anyone with the whole blame thing and the ornamental weeds. If blame bothers you then do what I do...pass the buck; in this case I'd blame Claude Monet. It was Claude Monet, better known to his friends as "Frenchie" who made the entire Western world gaga for water lilies back in the early 1900's with his forty-eight "landscapes of water"; landscapes my foot! Someone should get Frenchie to clean up this mess!



ODA Photo

EURASIAN WATERMILFOIL

Coming Soon From an Aquarium Near You

Do you remember the movie “Jaws?” If so, then you should recall the opening scene where the siren in her birthday suit gets yanked underwater by the Great White menace and shredded like a salami in a blender. That flick terrified millions and made people paranoid about wading into the ocean for fear of having “Ol`Jawsie” doing a number on them. Aquatic weeds don` t have that same effect on people. They are simply considered a nuisance. But as strange as it may seem, in the last ten years there have been more human fatalities associated with one aquatic weed than attacks by all shark species combined. Eurasian watermilfoil (*Myriophyllum spicatum*) is responsible for several deaths each year, nationally, and generally one or two right here in the Pacific Northwest. Milfoil forms a dense mat that entangles unsuspecting water users causing drowning and the drowning`s are becoming much too common. In 2005 a 19-year old male dove into a milfoil choked canal chasing a soccer ball and drown. The milfoil was so dense it took three days to find his body.

Besides posing a threat to human life Eurasian watermilfoil also inundates waterways of every description ruining recreation, destroying fish habitat, competing with native aquatic vegetation, and plugging irrigation head gates. The problem is not just the multiplicity of impacts; the scale is also a problem. Eurasian watermilfoil was first introduced to the U.S. in the 1940`s through the aquarium industry and in that brief period has managed to occupy at least a foothold in 46 of the lower 48 states and some infestations are as large as 200,000 acres.

Much of the problem associated with this aquatic pest is related to one of the plants physical attributes: its configuration. Milfoil is the string bean of aquatic weeds. It has slender stems that can grow to ten feet in length and has feather-like leaves arranged as whorls around the stem. Identifying an aquatic plant as a milfoil is no mean feat; it`s identifying a milfoil as a native or non-native species that can be very difficult, particularly to “yours truly.” It`s my weakness, but at least I` m past the point where all aquatic weeds, out of water, look as if someone just hurled their canned spinach. Fortunately, the folks with the Crooked River Weed Management Area are skookum with aquatic plant identification and have worked extensively with the folks from Portland State University Center for Lakes and Reservoirs. The CRWMA is in the second year of surveying Central Oregon waterways for aquatic species. This program, funded by the Bureau of Reclamation, Oregon Department of Agriculture, Forest Service and Portland General Electric, was designed to catalogue the aquatic species present and scour the river and lake beds for invasive species. Fortunately, the survey is over half-completed...unfortunately; the results were a little unsettling. There were suspicions that Eurasian watermilfoil existed in some Central Oregon waterways, but what the survey proved was that the scale was greater than first imagined. Confirmed sites are Haystack Reservoir, Suttle Lake, Crane Prairie, and the jury is still out on East Lake. The menace is here. The questions now become, “how do we control it and how do we keep it from spreading”?

As you might imagine, controlling a plant that is mostly submerged is a little more difficult than an exposed, terrestrial one. Chemical treatments, however, are still quite effective and products such as 2,4-D and fluridone are common control agents. The

down side of the chemical thing is that treatment can cost anywhere from \$200.00 to \$2,000.00 per acre. Mechanical controls are also expensive and, unlike herbicides, do not kill the plant they simply reduce its mass. There are biological agents which have shown some promise, but only reduce volume rather than remove the pest. What could be a practical solution, at least in reservoirs, is to draw down the water level in winter. Exposure to dry, freezing conditions for a period of up to three weeks may kill Eurasian watermilfoil. Unfortunately, a complete drawdown will kill fish as well and a drawdown coupled with snow would be ineffective because the snow would insulate the milfoil. Natural lakes could not be drawn down at all and.....enough with the negativity. What is most important is to know how to control what you can, when to cut your losses, and above all, to keep the pest from moving to other water bodies. Herbicide control on a small scale can be both effective and reasonably affordable, well timed; partial drawdowns can be effective on a larger scale without destroying fish populations, and an informed, conscientious, public can mitigate the spread. The public thing is where you come in. The signs around boat launches telling you to inspect your motor, hull, and trailer for aquatic weeds upon departure are there for a good reason. Recreational boating is the leading cause of aquatic weed spread in North America. Each milfoil segment that is transported from one water body to another can, and very likely will, develop into a healthy plant whether the segment has desiccated or not. Controlling Eurasian watermilfoil around docks and boat launches will make your job all the easier.

As usual, the control of this pest like any pest is dependent upon our awareness of its ability to do us harm and our willingness to stop it. The potential detriment that Eurasian watermilfoil poses has prompted its placement on the County's "A" noxious weed list giving it the highest priority for control. But regardless of the statistics, I'd still feel safer in milfoil infested waters than in shark infested oceans considering that I myself am a survivor of a vicious shark attack.....well, it wasn't exactly the ocean, it was a reservoir, and it wasn't exactly a shark. It was, however, quite possibly the largest carp to have ever existed and to this day those lips still haunt me.



Alexanian Photos

Section 12: Assorted Crud

COMMON MULLEIN

A weed, by definition, is any plant that grows where it is not wanted. At first glance it would seem as though there isn't a lot of wiggle room here and that a plant is either good or bad and that's that. Unfortunately, it's not that simple and there are, in fact, some plants that are useful to some and disdained by others. One such plant is common mullein. This imposing member of the snapdragon family is often coveted by some for its many medicinal properties and, at the same time, is scorned by many because of its invasive nature. It's a "one man's junk is another man's treasure" sort of a thing. Whereas it might be your treasure, it's my junk and, judging from the calls I receive each year, there's a lot of you who feel the same way I do.

Common mullein (*Verbascum thapsus*) is a biennial herb which spends its first year as a rosette. In its second year the plant bolts and a single stalk can grow to a height of six feet. Common mullein is a conspicuous botanical component of the waste area smorgasbord. It thrives on roadsides, pastures, rangeland, disturbed areas, ditch banks, landscaping, and in the forest is a frequent flyer of areas associated with machine piling in clear cutting. The only areas that seem to be exempt from invasion by this pest are cultivated fields.

So, now that we've established that common mullein is junk to most of us, who then are the select few who consider it to be treasure? I'll give you a hint: you're probably not going to find them lined up for double Whoppers for a buck day at Burger King. You guessed it! It's the all-natural go herbal crowd. Common mullein has been used as an alternative medicine for centuries. Some of the medicinal uses of common mullein include those as an antihistaminic, analgesic, anti-inflammatory, anticancer, antioxidant, antiviral, cardio-depressant, antiseptic, demulcent, diuretic, emollient, expectorant, and hypnotic sedative. Other uses include: dye, insulation, lighting, tinder, and wick. When we were kids we used the long mullein stalks to practice the fine art of fencing. Fencing, which more resembled bludgeoning, was a popular sport of my youth. The mullein stalks did not have great longevity, but they were plentiful and did a lot less physical damage than the rebar we traditionally used when we pummeled one another.

It was the folk use of common mullein as a medicinal remedy that brought this pest from Asia to Europe and, eventually, to America. The first recorded introduction of common mullein was in the Blue Ridge Mountains of Virginia in the 1700's. By 1839 it had spread as far west as Michigan and forty years later had made it all the way to California. Today, common mullein occupies areas in all of the lower forty-eight states.

It is not difficult to understand why common mullein spreads so quickly. Each plant has 200-300 seed capsules which contain 500-800 seeds each which give each plant the capability of producing up to 240,000 seeds! To make matters worse, each seed has viability in the soil from 30-100 years. One report stated that viable seeds had been found in soil samples that were dated from A.D. 1300! The tiny seeds that are produced can easily be transported by the wind or by birds that commonly feed on them. The spread of common mullein seed can also be attributed to the migration of wildlife and domestic stock, road construction, vehicular movement, and children beating one another with the business end of the stalks.

So, if you're not part of the Granola for lunch bunch you may want to consider getting rid of this prolific pest. This is where the fun starts. Mechanical control is extremely effective in controlling common mullein, providing the infestation is in a location suitable for a farm implement. This is why cultivated cropland is generally free of this pest. If the area is not conducive to mechanical treatment then manual controls may be implemented. I've made it no secret in the past that grubbing weeds is not one of my favorite activities, but if you're the get out there and pull or hoe type then you can achieve favorable results in either the first or second year of plant development providing the plant has not set seed. If you're more of the Rambo type and your infestation is extensive you may want to consider a chemical option. Common mullein is no pansy and can be, somewhat, tolerant to herbicides because of its pubescent nature. The fine hairs that cover the leaves have a tendency to support spray droplets and do not allow the material to make good contact with the leaf surface. The solution to the hairy problem is to use copious label rates of herbicide with a good surfactant such as Syltac or Phase. Herbicides such as Telar, Escort, Cimarron, or Milestone at maximum label rates should do the job nicely. If you short-change the rates then expect the results to be short-changed as well

Common mullein is a pest with a multiplicity of common names including: Adam's flannel, beggar's blanket, candlewick plant, hag's taper, Jupiter's staff, and velvet plant. In my learned opinion it's worthy of one more....mountain Charmin! That's right. The "squeezably soft" leaves of this plant have one more use that we've yet to discuss. Trust me on this one. This can prove to be valuable information the next time you're hunting, nature calls, and the only paper products you have on you is a hundred dollar bill and your elk tag.



THE CONTROL OF BUR BUTTERCUP

Make Plans to Control This Pest in March or Live With it for the Rest of The Year

Every so often a weed comes along that is so ominous, so destructive, and so pervasive that it, literally, impacts the lives and destroys the economic well being of all who become subjected to it! O.K., so Bur Buttercup is not one of those, but you talk about a pesky little fellow! Judging from the number of calls that I receive every year concerning this weed I'm not the only one who thinks so.

Bur Buttercup (*Ceratocephala testiculata*) is an annular member of the Ranunculus family and is quite invasive. It first showed up in the Mitchell area in the late 1980's and by the end of the 1990's Bur Buttercup could be found in many areas of Crook and Wheeler Counties. When I say many areas I mean *your* many areas. Like your driveways, your parking lots, and your pastures. Of course, if it's growing on a County right of way it becomes a *my* problem, but I would rather talk about your problems.

Bur Buttercup grows in dense mats no more than two to three inches in height, but don't let it's squatty stature lull you into believing that the weed is innocuous. "Poor mans' Astroturf," as I call it, comes equipped with spiny fruits about the size of a pencil eraser which resemble a mace. Stepping, shoeless, on one of these can change your life in a negative way, but walking barefoot around your premises can be great way to survey for Bur Buttercup. When you get up in the morning just kick off your slippers, grab a cup of coffee, and saunter out across your parking area and down your driveway to check your mailbox. If you suddenly experience an excruciating pain on the bottom of your dawgs, you may have discovered the plant in question...either that or your kids have been playing with your thumb tacks again. At this point you may scream in agony, or you could be the more cerebral type who will, at the point of discovery, realize why the seed is so easily distributed from one place to another. You may think, "Say, if this seed sticks to car tires and animal hair and shoe souls as easily as it sticks to the bottom of my bare feet it could end up almost anywhere!" And you'd be right, but personally, I'm more of a screamer.

The endearing qualities of Bur Buttercup don't end with it becoming a new, invasive, and painful addition to the botanical diversity of your private property. It also happens to be poisonous, as members of the Buttercup family usually are. Although Bur Buttercup is toxic to all livestock it is particularly toxic to sheep. Chewing this plant releases an enzyme that changes a glycoside to protoanemonin which is a highly irritant, volatile oil. An experiment in Utah subjected eight hundred sheep to Bur Buttercup. Of those, one hundred and fifty sheep that ingested as much as five hundred grams of the plant kicked the bucket. Sheep mortality, or "Montana heartache", has become a very real concern, but just because sheep are the most vulnerable to Bur Buttercup poisoning doesn't mean that cattle and horses are not at risk. Livestock that run out of desirable sustenance will eat whatever is available to survive and the consumption of Bur Buttercup can create problems for them as well.

So, now comes the fun part...getting rid of the stuff. Bur Buttercup is one of the first weeds to emerge after the snow is off and controlling it early is critical. When late winter temperatures get to around forty-five to fifty-five degrees the plant will begin to set fruit. If you've waited this long the boat has already been missed and is sailing off

into the sunset. In Crook County the ship sails by the end of March, so make plans to begin your control efforts on or before the second week of this month. The trick is to treat the infestations prior to the plant flowering and Bur Buttercup can germinate as early as the first week in February.

The Cadillac formulation for controlling Bur Buttercup is a product called Cimarron, but other products such as Weedmaster, Ally, 24-D, Round Up and combinations of the above will provide adequate control. As usual, a surfactant should be used with your formulation. For more information concerning products, chemical rates, or surfactants, contact this office or your local ag- chemical dealership. If you wish to control this pest but do not wish to use an herbicide, manual controls work fairly well on annuals, so pulling or hoeing can get you favorable results providing that the infestation is not too large. Of course, if you kneel down in a patch of Bur Buttercup and your kneecaps become impaled, it may prompt you to believe that herbicides aren't such a bad thing after all. No matter which method of control you choose, repeat applications may be necessary because annuals have a tendency to flush more than once in a short period of time. So, keep looking!

The time has come to put on your game face and deal with this pest. So, get out there and make me proud! Of course, I realize that killing plants that are two to three inches tall doesn't exactly elevate you to warrior status, but it's a lot better than telling your buddies at the saloon that you feel threatened by a Buttercup. This could seriously damage your standing with the tribe.



THE PAINFUL TRUTH ABOUT PUNCTUREVINE

When I was a youngster I suffered the misfortune of getting a goathead stuck between my flip flops and the heel of my bare foot while running down a sidewalk. With the seed of the Puncturevine lodged deep into my foot I did an about face and hopped towards home looking much like human Pogo Stick. How fortunate for me that upon my arrival the Chief *Surgeon* was in and ready to operate. The `ol man assessed the situation, removed his pig sticker from his hip pocket, and put my ankle in a death grip. He then began to *surgically* remove the goathead from my heel with all of the indifference of a butcher in a Chicago slaughterhouse. "Stop that howling", he would say, "you`re nearly five years old and it`s about time you started acting like it!" I must admit that Pop handled the crisis pretty well and the *surgery* was a success although the experience left him a little tone deaf in one ear.

This was not to be my last encounter with this pugnacious member of the Caltrop family. Throughout my childhood and that of my daughters there would be so many bicycle flats that riding on the rims would become a viable option to fixing them. Sound familiar? How many times have you or your kid come home with flat bike tires that go clickity-clickity when you push the bike along? Or do your shoes make a sound like those of tap dancers when you walk across the linoleum floor? Okay Mr. Bojangles; it`s time to get even.

Puncturevine, or goathead as it`s sometimes called, is a native of southern Europe that managed to migrate to the west coast of the U.S. in the early 1900`s. The hub for this pest in the state of Oregon is the Hermiston area where its propagation is seldom discouraged by melon growers who like this plants ability to stabilize blowing topsoil. The thorny nature of seeds gives this plant the ability to hitchhike on almost anything that comes in contact with it. That Puncturevine would eventually migrate to here was a no brainer and all counties east of the Cascades are now infested with this pest to some degree.

This plant pest is a shallow rooted annular which first germinates around the first part of July and may continue to germinate throughout the summer depending upon moisture. This means that multiple applications may be necessary in order to effectively control this weed depending upon which tactic you choose and the tactic you choose will depend largely upon you. Your ability to identify this pest long before it matures and develops seed is critical in formulating those decisions. If you wait until the plant is in bloom there is a good chance that the seed will already be developing and, at this point, all of your decisions will have been made for you. It is pointless to treat an annular that is already developing seed; the seed will still be there and be ready to germinate in the upcoming years. Your only options are to physically remove the plants, a job reserved for people who really enjoy pain, or wait until the following year when you can correctly time your applications.

If you don`t like using herbicides, a shovel will work just fine. As long as the plant is not forming seed, you can break the tap root and the plant will die. Because Puncturevine is an annular there will be no regrowth. The same holds true if you use herbicides. A product such as 24-D amine is very inexpensive and effective providing the applications are made prior to seed development. About two ounces in a one gallon sprayer will get you close to a two quart per acre rate and that`s about right. For both of

these methods you will have to be vigilant throughout the summer and keep on the lookout for more seedlings. Driveways, gravel road shoulders, vacant lots, waste areas, and pastures are all places which tend to be Puncturevine friendly.

If you don't have the time to babysit this stuff and you don't mind spending a few pesos, use a residual herbicide such as Landmark, Telar, or Sahara. These herbicides can be applied in the fall or very early spring and provide effective control throughout the growing season and are particularly useful for controlling large infestations. Some of these same products have been used on Crook County rights of ways in recent years and the results have been excellent.

My lifelong hatred for this plant pest has been well founded and I doubt that I am alone in my sentiments. Having so much animosity for Puncturevine, I was astonished to learn that this plant was actually useful to some people. I Googled *Tribulus Terrestris*, the genus and species of Puncturevine, and discovered that it was actually being marketed under trade names such as Passion Rx. An extract of this stuff is supposed to *enhance* guys and give them more stamina. It's even supposed to improve something called a libido, of course I don't speak Italian so I really don't know what that means. What I do know is that before you start thinking about grazing on the side of the road to self improvement, you first have to grind up the goatheads, otherwise you may find them a little tough to swallow. I sure did.



THE BOTTOM OF THE BUCKET...LIST

The Stuff That Didn't Make the "A" or "B" Noxious Weed List

There are weeds that simply don't pass muster in terms of qualifying for a priority spot on our or anyone else's noxious weed list, but that doesn't always make us feel better in regards to their presence. If you liked this crud you wouldn't be asking me how to kill it; and here are three of a long list that didn't make the grade.

WHITE HOREHOUND



White horehound (*Marrubium vulgare*) is a perennial and a member of the mint family which was originally brought to North America by the pioneers for use as a garden herb; the long road to a weedy hell is often paved with good intentions. White horehound spreads well because its seeds stick to animal hair, clothing, car tires, and it floats downstream. The plant, obviously, escaped cultivation and, because it tolerates drought and poor soils on rangeland and waste areas, became the nuisance we know it to be today. White horehound is invasive and tends to take over, quickly, areas where other plant species are less-drought tolerant. This trend has taken place over much of North America.

White horehound can be controlled manually if the plant numbers are small, but herbicides should be used if you have a real mess on your hands. The herbicide Weedmaster is a combination of Dicamba and 2,4-D amine and can be purchased locally. It will work just fine at a 4 pint per acre rate. The non-crop herbicide Escort at a one ounce per acre rate will do the same providing you include a good surfactant with the mix such as Phase or Syl-tac.

White horehound has a long history of medicinal uses which are still in practice by lovers of all things natural; It's used as a decongestant, antiseptic, antispasmodic, diuretic, and digestive stimulant or tonic. This all sounds good, but remember, it was the

ancient Egyptians who first utilized white horehound as medicine and today they're just shadow of their former greatness. Next it was used by the Romans who, later, had their empire fall after it stepped on Turkey and slipped on Greece. Thank you just the same, I believe I'll get my medicine from the pharmacy.

STINGING NETTLE



In my book, any kid who has not experienced the joy that a close encounter with stinging nettle can bring didn't get out much. As a youngster I would often swim in the Columbia River clad in little more than a smile and a pair of "tenner-shoes". Any excursion into the riverside flora for any reason would be fraught with peril as the dreaded stinging nettle lurked everywhere, waiting for some unsuspecting sap, such as me, to make the mistake of venturing too close...and zap!

The itching and burning welts that stinging nettle produce led me to, radically, improve my plant identification skills and self-impose a dress code. But are stinging nettle (*Urtica dioica*) really the botanical boogeyman we believe them to be? Despite the pain one experiences when coming in contact with the trichomes on the leaves and stems, stinging nettle does have some positive characteristics. Like the white horehound, stinging nettle does have a long history of medicinal use. It has been used to treat arthritis, benign prostatic hyperplasia, and even as an ingredient in shampoo to treat dandruff.

Stinging nettle is perennial and native to North America and as a rule of thumb we don't target natives for control. Should we make an exception to the rule? A weed, by definition, is any plant that grows where it is not wanted. If stinging nettle grows on your property in an area where your children may be stung or, more importantly, you may be stung, then, by all means, control the pest. This is very easily done with herbicides. 2,4-D amine at a rate of four pints per acre will do nicely as will Roundup at two pints per acre.



Amongst the positive qualities of stinging nettle is the fact that the plant is edible. That's right, you can eat this stuff. Every year in Devon, England the locals have a stinging nettle eating contest. The winner is the bloke who can strip and stuff the most stinging nettle in his pie-hole in an allotted time...and I thought I needed a life.

COMMON TEASEL

Fuller's teasel (*Dipsacus fullonum*) is a tap-rooted biennial that tends to grow on sub irrigated soils or in riparian areas. It also grows aggressively and tends to dominate wet areas by forming dense stands which choke-out the more desirable native vegetation.

The presence of teasel also makes accessing riparian areas a real cat-fight. A day of negotiating your way through teasel gives one the appearance of having been attacked by a pack of rabid gerbils. What is much, much worse is that teasel can make streams extremely difficult to fish. This spiny behemoth is constantly intercepting my casts and fraying my leader, but that`s my hell.

If you feel you`ve suffered enough then it may be time to reclaim some of your wetlands. Like most tap rooted biennials, teasel can be controlled by severing the tap root in the first year, or early in the second year with a shovel or other garden implement. But if you have more than you can handle or, like me, you are allergic to manual labor, then the Fuller`s teasel can be controlled with an herbicide. Many herbicides work well on teasel including the product Weedmaster that we mentioned in the control of white horehound, again at a four pint rate per acre rate. You may be challenged, however, by the presence of water where you wish to apply. If this is the case then you are restricted to using an aquatic form of glyphosate such as Aqua neat which is labeled for aquatic use. It`s not real pricey, but it does have its drawbacks; it is nonselective and kills indiscriminately. To mitigate this effect you may opt to use a weed wiper and “dab” material where it is needed. You may feel free to contact my office for more information on weed wiping.

To say that teasel also has a good side would be a bit of a stretch, but it has provided some usefulness. In the past the teasel seed head or “comb” was used in textile processing by providing a natural comb for cleaning and raising the nap on woolen products. Aside from that there is little to report with the exception of those colorful individuals who collect those same combs to paint and use as Christmas tree ornaments. You`ve met them before, they`re the same ones who make hats by knitting together portions of beer cans and also collect whirly-gigs in the shape of waterfowl.

It`s not okay to use herbicides to kick the snot out of every plant you can`t identify. Know your enemy. Learn to identify the plant species on your property. Know which ones need to go and which ones may have some redeeming qualities. Once you`ve determined which plants are truly your enemies, and why....then go ahead, kick the snot out of `em. You have my blessing.



Section 13: Application

HERBICIDE SELECTION MADE EASY

Variety may be the spice of life, but sometimes I could do with fewer choices. For instance, when you go into a restaurant half crazed from starvation and the waiter hands you a menu that's four pages long. All that you know for sure is that you don't want the roast beef because that's what you had the night before. You study the one hundred and sixty-seven choices on the menu and rather than being informed you become perplexed. Confusion turns to panic as the waiter approaches your table and drops the big question...." and sir, what will we be having tonight?" Your eyes glaze over and you say nothing. "Sir, maybe you just need a few more minutes". You realize that even a few more months wouldn't save you and you cave in to the pressure and reply: "I believe I'll have the roast beef.

Applying and purchasing herbicides can be much the same way. There's a menu of, literally, hundreds of registered herbicides with specific uses to choose from. How is a person with a real life apart from killing weeds supposed know what to select? When confronted with too many choices we tend to select only the products we are most familiar with. In the case of herbicides the "roast beef" is usually 2,4-D or Roundup. A brief history of herbicides might explain how we got this way.

The herbicide 2,4-D was developed by the British during the Second World War and soon became the first herbicide marketed in the world. In 1945, 2,4-D was made available for public testing to see if we would like it. That year, manufacturers sold 631,000 pounds of it. The following year manufacturers sold 5,315,000 pounds of it. We liked it. 2,4-D killed the dandelions in our yard and annular broadleaves in our grain crops and it did so without damaging our grasses. Unfortunately, 2,4-D would not control everything. We needed a bigger menu.

In 1974 another product was marketed for the first time. The chemical was glyphosate and the trade name was Roundup. Roundup would soon become the Hula Hoop of the domestic and agricultural weed world...the herbicide for "everyman". The beauty of Roundup was that it could or damage whatever it came in contact with. The problem with Roundup was that it could damage whatever it came in contact with. The non-selectivity of Roundup meant that you not only kill what you want dead, but also what you want kept alive. We needed a bigger menu.

Around the same time that Roundup was making its big splash more herbicides came on the market that were better suited for controlling tough to kill noxious vegetation that 2,4-D and Roundup would not control. Chemicals such as picloram and dicamba gave us the trade names Tordon 22-K and Banvel. These are the sledge hammer type of products that help to expand the spectrum of species that we can effectively control. Unfortunately, broad spectrum doesn't mean entire spectrum and sledge hammer products often require sledge hammer application rates. We needed a bigger menu.

In the 1980's came the introduction of sulfonyl ureas. These products work well at extremely low rates. Rates of a few ounces to as little as one half of an ounce will control weeds that the other products struggle with. The SU's, as they are known, have trade names such as Oust, Telar, and Escort and have become a necessary portion of a menu which is multiplying at an extraordinary rate. It is as if the answers are spawning

more questions. New and different residual herbicides, aquatic herbicides, ornamental herbicides, specialty herbicides and...well, you get the picture.

By now, we have a menu of registered herbicides that reads something like a phone book for a small town. We have hundreds of choices, but how do we really know what herbicides we need without reading the label pamphlet for each one? You don't. So what I will attempt to do is consolidate the menu into something a little more digestible.

- 1) Easy to kill broadleaves: whether it be garden or crop, 24-D works as well as it ever did and it's very inexpensive.
- 2) Grasses: Roundup or any other glyphosate product still fits the bill.
- 3) Tough to kill broadleaves: Milestone VM herbicide. There are many herbicides that fit this category, but Milestone is friendlier around water, is a low volume herbicide, and is very broad spectrum.
- 4) Tough to kill mustards: Cimarron and Telar are SU's that will control whitetop and perennial pepperweed which are common here.

Now we have a menu that looks more like the one the stewardess gives you in the friendly skies. Using an herbicide from the above four categories you can control 80% of the unwanted vegetation in Crook County. If what you have falls into that 20% category, call me or one of the friendly folks at your local ag chemical dealership.

As a footnote to this article I would like to remind all of you to always read the label and to handle and apply herbicides responsibly. There is a faction of people in this country who don't much like herbicides and think even less of the people who apply them. To them, we are little more than poison-spreading, foliage-loathing monsters in ball caps who indiscriminately slaughter weeds with all of the indifference of a coyote in a mink farm. This perception, of course is totally false. Many of us do not wear ball caps.

IT'S TIME TO RETHINK WEED CONTROL STRATEGIES

Why Fall Can be the Most Effective Season for Controlling Certain Plant-Pests

Fall is here and you have a lot more important business to tend to than sitting on your collective keesters, guzzling beverages, and watching football. My god! What am I saying? Okay, let me start over. Fall is here and the second most important business you should tend to is implementing a fall program for noxious weed control. Conventional wisdom has always been that you nuke in the spring, tidy up in the summer, and then take the rest of the year off. Not so fast my friend! Just because it's late in the fourth quarter, the flowering stage is completed, and the plants are slipping into senescence doesn't mean that there aren't still opportunities to achieve excellent control. In fact, a fall control program can be the most effective application for several species of noxious vegetation.

It's a difficult thing to get used to; attempting to kill weeds when it looks like nature already beat you to the punch. Even more difficult to get used to is the onlookers who think you've completely lost your marbles. I assure you there's a method to this madness or my name isn't Sam Hill.

Russian knapweed is one of those pesky perennials that we have traditionally treated in the spring. The success of those spring applications was, at best, modest. Control ran anywhere from sixty to eighty percent and the prospect of long term control required a long term commitment. Then, about ten years ago, either an advanced weed guru or some chronologically challenged dolt decided to have a go at fall application. Eureka! The results were phenomenal. What were lackluster control numbers now run anywhere from ninety to one hundred percent and, because Russian knapweed does not reproduce well from seed, the treated sites require very little follow up.

So how does a weed that looks as if it's on its last leg become more receptive to an herbicide than one that is succulent? It doesn't, but by altering the seasonality of your application you also alter the type of application itself. What was a foliar application in the spring becomes a residual application in the fall. By treating Russian knapweed in the fall you are actually placing herbicide on the soil in direct proximity of the pest. In time, precipitation will relocate the herbicide into a shallow band in the topsoil. In the early spring when the root system becomes active the new shoots will come in contact with herbicide and whammo! Kaput! Elvis has left the building!

Try this method on your Russian knapweed. You won't be disappointed. Products such as Tordon-22K, Transline, and Milestone will do the job nicely.

Canada thistle is another local favorite that is highly susceptible to fall treatment. A commonly held misconception is that Canada thistle must be treated by early summer to prevent it from spreading by seed which blows like snowflakes wherever the breeze will take it. Unlike any other true thistle, Canada reproduces asexually which means the plant produces either male or female seed, not both. It takes two to tango, so don't sweat the seed thing. Because propagation of the species is generally provided by the root system it only makes sense that we focus our attention on attacking this portion of the plant. This is where fall application provides a definite advantage.

Spring and summer applications do a superb job of killing the plants foliage which provides the applicator with the warmth and fuzz associated with a good kill. But this condition will dissipate when the pest returns in the spring. In late summer and fall carbohydrates from the foliage of the Canada thistle descend to the roots in order to protect them in winter. Treating what green foliage remains on the plant in the fall will allow the herbicide along with the carbohydrate to translocate throughout the root system and thoroughly destroy the plant. Your friends will be amazed by your ability to vanquish your foe. From that moment on you will no longer walk....you will strut.

Fall provides an excellent opportunity to treat the seedlings of a number of perennial and biennial weeds and there`s nothing complicated about it. It pays to know that certain plant pests germinate in the fall as well as the spring. Spotted and diffuse knapweed are two of the pests that will “flush” this time of year and the seedlings or rosettes are very easy to control at this time. If you applied in the spring then, simply return to the scene of the crime, search, and destroy.

The same tactics can also work well for Scotch thistle. If you`re the type who doesn`t like to use herbicides then this is golden opportunity to break out the garden implements and do a number on the seedlings which should be anywhere from the size of your thumb to the palm of your hand. Combining a spring and fall application on Scotch thistle will hasten the demise of your infestations considerably. If you are making an attempt to control your Scotch thistle then I commend you. You know who you are. If you are not making an attempt to control your Scotch thistle then everyone knows who you are!

So, if you`re serious about combating noxious vegetation give some thought to fall control. Where certain weeds are concerned, if you miss the fall you miss the boat.

As important as I feel fall application is I am not implying that you should skip watching football to indulge in this activity. Lets see now, there`s college football on Thursday, Friday, Saturday and pros on Sunday and Monday so that leaves Tuesday and Wednesday. That should give you plenty of time. And while watching football is a justifiable expenditure of time, I hope that you`re not the type that bets on football game boards. There`s nothing more infantile than some peoples obsession with a Neanderthal form of gambling that involves numbers completely unknown to the participants prior to the contest. What also irks me is that I haven`t won a game board in eleven years.

ROUND TWO

Taking Advantage of Fall Application Can Yield Some Fantastic Results

You've heard the expression "everyone deserves a second chance" and we Americans tend to hand them out like Halloween candy. But sometimes a person or situation is not worthy of a second chance. Case in point: we re-elected "Tricky Dick", we re-elected "Slick Willy", and, what's worse, we re-ran episodes of "That Girl" on afternoon television. In time I may come to forgive Richard and Bill, but Marlo Thomas can forget it!

So, who does deserve a second chance? In my humble opinion, no one is more deserving of second chance than us, "We the people", your average Joes and Josepines. And what could be better for all of us than a second chance to control the noxious weeds that we didn't get to in the spring? Okay, it's not exactly an eleventh-hour reprieve from the governor, but it is better than a second chance at yesterdays casserole. Actually, Ma Nature is pretty obliging when it comes to doling out second chances with noxious weeds.

What we typically see happening in our garden is seeds germinating in the spring and plants dying back in the fall. In contrast, many species of noxious weeds germinate in the spring, mature the following spring, drop seed in the late summer, die back in the fall, and then germinate again in that same season, producing seedlings or rosette and also producing a second opportunity for control. Whether you did or didn't treat your weeds in the spring it's worth taking a second look. Plants that frequently germinate in the fall as well as the spring include: spotted knapweed, diffuse knapweed, houndstongue, and biennial thistles.

No one likes the idea of committing to long-term projects so if you're the type who likes to get things done quickly and efficiently then combining a fall treatment with your spring or early summer program will yield some fantastic results. It's much easier to eliminate seedlings than second year plants, so utilizing the "double whammy" approach will make the following spring application a comparative cake-walk. After one or two fall applications you can return to single season applications

Some new chemistry has made fall applications a snap. A product from Dow agro-sciences called Milestone not only controls actively growing spotted knapweed, but can control up to 95% of plants in late maturity utilizing a 5-7 ounce per acre rate of application. Because diffuse knapweed generally behaves as an annual, you can only expect to kill the new growth with fall treatments.

For you folks that are actively attempting to control your scotch thistle, (I wish there were more of you), fall usually produces a second flush of seedlings. This is an ideal opportunity to get a leg up on this prickly behemoth. Milestone at 5-7 ounces, Escort at 1 ounce, or Telar at 1 ounce should do the trick nicely. Two years of combined spring and fall applications should reduce even the largest infestations of scotch thistle to little more than an Easter-egg hunt.

There are some, perennial, noxious pests are actually more susceptible to fall applications than applications which are commonly conducted in spring or summer.

Sometimes, in order to effectively control some perennial weeds, you need to think outside the box and I've always been quite good at this, not because I'm a forward thinker, or anything like that, but mainly because I have such a difficult time of locating the box in the first place. The optimum timing for controlling these pests is when they appear to be finished for the season. For Canada thistle, the applications should take place in September or October before the first hard frost. At this time, the plant is transferring carbohydrates from the foliage to the root system to sustain it through the winter. Treating the foliage, at that time, moves the herbicide with the carbs and kills the plant in its entirety.

Russian knapweed is a tough-to-kill perennial that easily succumbs to fall applications. Here's more "think outside the box" stuff: Instead of spring or summer foliar applications, apply herbicides such as Milestone, Transline, or Tordon 22-K in a residual fashion to, what appears to be, dead foliage. Precipitation will place the herbicide in the soil and destroy the plant when the new shoots become active in the early spring. Use the same tactics to control noxious, annual, grasses. Spraying a winter-annual like Medusahead rye in the fall with Landmark or Plateau will yield far-better results than spring applications.

So, taking advantage of second opportunities and thinking outside the box definitely has its advantages and, ultimately, has changed the way that we manage noxious weeds. Albert Einstein was a master at thinking outside the box. It worked well for him and it has worked well for me as also. Actually I'm a lot like Albert Einstein....only, he knew how to add and subtract and do stuff like that.

HOW TO USE SOIL APPLIED HERBICIDES CORRECTLY

“We’re Going Brown”

I don't care what Cousin Willard told you, there's no such thing as a soil sterilent. To sterilize, according to the Oxford Dictionary, is to deprive of the power of reproduction. Unfortunately, there is no product available to you that, when used legally, will permanently rid the soil of vegetation. Cousin Willard might have told you: “yessiree, I sprayed a whole tub of that sterilent stuff around the barn five years ago and there aint nothin` ever grown back” Undoubtedly the glow from cousin Willard's application is still clearly visible from the planet Mars and, quite mysteriously, he has grown a sixth toe on his left foot. Sadly, even Cousin Willard's “take no prisoners-obey no laws” application will, eventually, give way to new vegetation.

Soil applied, or residual, herbicides can be very effective tools for combating unwanted vegetation on roadsides, driveways, ditch banks, along fencerows, and around the house and out buildings. Foliar applications with herbicides such as Roundup, 24-D, and similar products, must be repeated over the course of the growing season to actively growing plants. Every time the ground gets wet more seed can germinate giving you a new flush of vegetation to deal with. Even if your applications are successful you're still left with a fire hazard from the dead vegetation. Where maintenance vegetation management is concerned, foliar applications are a time consuming, untidy, impractical, economically flawed, and redundant pain in the rear end. There's a better way.

Using residual herbicides in the late winter or very early spring can control most species of unwanted vegetation with just one application. Here's how it works: the herbicide is applied to the soil surface. Moisture from precipitation then places the material one to two inches below the soil surface (.25 to .50 inches of rainfall prior to green up will do) where it is *adsorbed* by soil particles. When the weed seeds germinate in the spring their roots will tap into the layer of herbicide active soil and the immature seedlings will then, unceremoniously, kick the bucket. What could possibly go wrong?

Residual herbicides work splendidly, providing that conditions are favorable for the activation of the product in the soil. Precipitation amounts and timing, soil types, and plant species are all factors which can make or break the success of your application. If your herbicide application is followed up by a major precipitation event the material can move in whichever direction the water is traveling. This can really get you in Dutch by killing something off-target like your lawn or crop or worst of all, someone else's lawn or crop. The same holds true for applications on frozen soil. Material that can't move into the soil will move on top of it. This is the stuff lawsuits are made of. If you receive zero precipitation in the early spring months you may receive zero results and a foliar herbicide knockdown may be required prior to herbicide activation.

Soil types, textures, and conditions may also be major players affecting the performance of your application. Clay soils high in organic matter will adsorb the herbicide more readily than sandy or coarse grained soils and may require higher application rates. Wet soils high in organic matter also promote microbial activity. Residual herbicides are *fast food* for microbes and can affect the long term performance of the herbicide. Saturated soils also promote a process called hydrolysis which is a condition where the herbicide breaks down or rots in the soil and is rendered ineffective.

As if you now don't have enough to worry about, there's this thing called a drip zone. The drip zone is that area directly below the extent of the longest branch of a tree. Treating this zone with some residual herbicides can result in an undesirable effect, or to put it in scientific terms: the tree will croak.

So, does all of this sound like a little too risky of a venture? Over the past thirty years I've sprayed enough residual herbicide to treat an eight foot pattern that would encircle the earth. In all that time we've had a few small hitches in our giddy up, but never has an application completely failed. Our soils are generally treatable, our moisture is ample and fairly predictable, and we've never had herbicide move off target due to a weather related event. As far as killing desirable vegetation goes, there are oodles of different residual herbicides out there for almost every situation. Some residuals such as Dimension can be used directly in shrub gardens. Pendulum is another product which is well suited to domestic use around ornamentals. For fence rows and around out buildings where trees are not a concern, Krovar1DF is my product of choice.

One last piece of advice: every pesticide sold in the United States comes with this little packet called a label, READ IT! The label will tell you exactly how to or not to apply the product.

The anti-herbicide folks in the Valley have a name for the visual effect of residual herbicides; they call it Brown-Out. If the results of residual applications weren't effective they would have no name for them at all. On this side of the hump, Brown-Out is beautiful.

Truth be known, the only thing I truly dislike about residual herbicides is the fact that they work so slowly. I don't actually get to *see* the weeds suffering. There's no thrill kill, no blood lust, just long term control. Effective, but does it fill my soul? I wonder if Cousin Willard has the same issues.



Gray Photo

HERBICIDE LABELS 101

“Label is the Law”

Let's suppose you want to bake a cake and that is something you have never attempted before. There are two ways of going about this. One way is to thoroughly read the directions and proceed in a methodical manner and produce a product that somewhat resembles the cake that you had in mind. The other way is to forgo the directions and proceed by dead reckoning. You've watched either your spouse or mom bake a cake in the past and there really isn't that much to it. I mean, how hard can it be? You just dump a cup or two or three of cake mix in a bowl with a cup or two or three of water or milk or something wet, add anywhere from one to six eggs, whip it good, dump the whole thing in a metal batter-holder thingy and then bake it in the oven for an hour or two or three at around one to five hundred degrees and presto! The first method results in a cake; the second method results in something about the size and consistency of the Rock of Gibraltar. It's impressive, but not what you had in mind. Applying herbicides can be a little like that too. There's a set of directions, what is referred to as the label, that's included with every herbicide container. If you read and follow directions it's pretty much a shoo-in that your application will be a success. Should you choose to ignore the directions you may very well end up with the Rock of Gibraltar or something worse. It's boring stuff, but it's infinitely better reading than the litigation from a law suit with your name on it. So let's examine the contents of a label and find out what the Environmental Protection Agency and folks who make this stuff think is important information.

Every product label begins where you would expect it to, with the trade name and for the sake of demonstration we'll use Roundup Original because it's a product everyone has heard of. Roundup, like Colonel Sanders, has an original recipe. There is also Roundup Pro, Roundup Pro Concentrate, Roundup Power Max, Roundup Quick-Pro, Roundup Ultra, and Roundup RTU. All of these products differ from one another in some capacity, but have the same active ingredient - Glyphosate. Below the trade name of a product you will find the active ingredients and what are called inert ingredients and what the percentages of each are. The active ingredient is the part that does the killing and the inert ingredients are the product's mystery meat; we may not know exactly what they are, but the more of them the less potent the product is. It pays to know the chemical name of an active ingredient. Glyphosate at 41% is the active ingredient of both Roundup and Kill-Zall and one is far less expensive than the other.

Next we have the precautionary statements which pertain to safety in regards to handling or applying the product. An inspection of those statements tells us that Roundup Original causes substantial, but temporary eye injury and could be harmful if swallowed or inhaled. It also states what kind of personal protective gear to wear to mitigate those effects and who to call if things go awry. For the record, flip-flops cut-offs and a tank-top do not constitute adequate protective wear. Had I not seen this happen on numerous occasions I would not feel compelled to tell you this.

The General Information section is designed to save you from yourself. Here, the manufacturer (who, in this case, is Monsanto) demonstrates a flair for the obvious; assuming that to someone, somewhere, spraying next to sensitive crops on windy or rainy days or near domestic animals is obviously something you shouldn't do. Some products such as 2,4-D esters sprayed near sensitive crops such as grapes or tomatoes have

resulted in some calamities of biblical proportions in spite of the fact that the label distinctly tells you not to do that. A couple of years ago in Central Oregon, around two hundred lodgepole pines were killed when an applicator applied a product with high solubility to a porous soil. The General Information section of that product's label specifically said not to do that and "label is the law." Litigation is pending.

Mixing Instructions and Weeds Controlled comprise the balance of the product label, and that balance can be substantial. These two sections are the meat and spuds of the label and it's here that you will learn how to properly mix the herbicide with only the carrier (usually water), with the addition of adjuvants and additives, in combination with other herbicides, or the whole kit and caboodle. It all depends on what you are trying to achieve and what the label allows you to do. What and how you mix is contingent upon what you are trying to kill and the Weeds Controlled section will include all susceptible plants and what rates of that particular product you will need control them. This may include "tank mixes" with other products. Improper tank mixing can be disastrous. A Glyphosate product such as Roundup Original tank mixed with a Dicamba product such as Banvel will turn your tank mix the color of snow and give it the consistency of dog-doo.

Personally, what really gives me heartburn are the trade names of the herbicides. There are hundreds of them and sometimes two or more names for identical products such as Telar and Glean. What's a Telar? If I had my way about it trade names would reflect that products use and the people who use them. For the guy that is too lazy to read the label we should have a product called "Hoo-scow". Or the one who thinks that if a little is good a lot is way better we could have "Scorched Earth" or "Moonscape" or possibly "Copious," with mixing instructions that say "use just as much of this product as you feel is necessary." Lastly, it's the length of labels that annoys me the most. The label for Roundup Original is twenty-two pages long; Tolstoy would be proud. It's not like you can have a nice sit-down in your favorite "reading chair" and digest all the information available. Sooner or later someone else always needs to use the bathroom.

HERBICIDE APPLICATION NEAR TREES

Of Herbicides, Trees, and Harvey Updyke

In his classic poem “Trees” Joyce Kilmer wrote: “poems are made by fools like me, but only god can make a tree”. Truer words were never spoken. I can’t make a tree, but I most definitely do know how to kill one. This knowledge certainly has its advantages. Sometimes killing them is exactly what you are trying to do; other times it is not. In this article we will focus primarily upon the latter.

About a year ago I wrote a piece in this newspaper regarding a misapplication of an herbicide in close proximity to lodgepole pines in a subdivision south of La Pine. The applicator did not carelessly spray the trees, nor was it an issue of wind-related drift. In fact the applicator had selected the correct herbicide for treating the target, which was spotted knapweed. What the applicator didn’t do was to consult the label and consider the composition of the soils he was applying to; which in this case, was pumice. The label for the active ingredient Picloram states: “... users should especially avoid application of Picloram where soils have a very rapid to rapid permeability through the profile.” The label also states that Picloram does readily leach, which should have suggested to the applicator that the application in pumice soils had risks. The result was that despite killing the target weed, the application destroyed as many as 300 lodgepole pines, and traceable amounts of Picloram ended up in the well water of a sub-division. Fines were levied and litigation is still pending.

The undesirable exposure of trees to an herbicide can be broken down into two categories: foliar and root-absorbed. Foliar exposure is what you would probably imagine it to be; spray drift, the misidentification of a target, or applying an herbicide near a desirable species. For examples we’ll use two of the most common herbicides that are used domestically: Round up and 2, 4-D. Herbicide damage is a relative thing; how much you drift or misplace is often directly proportional to the extent of the damage incurred. Round up is a non-selective herbicide commonly used to kill grasses and broadleaf plants near woody vegetation. Because the active ingredient in Round up (glyphosate) has no soil activity, that is a reasonably safe practice. If the bark or exposed root system is treated, however, then damage can occur. Very light drift, a byproduct of spraying on windy or marginal days, can cause spotting where herbicide droplets have made contact with the leaf, but the damage is seldom permanent. Although 2, 4-D is only slightly soil-active; at high concentrations it can do considerable damage if applied directly over the root system. 2, 4-D can be quite volatile so application on hot, breezy days can result in injury or even death of adjacent vegetation including trees. What the label is really telling you here is to be aware of the potential adverse effects of your product, choose a calm day with a temperature less than 80 degrees, and don’t be a slob.

When the stuff really hits the fan is when homeowners and the like dabble in the fine art of applying pre-emergent herbicides sometimes known as soil sterilants. Here’s where it gets a little tricky. While foliar herbicide damage can be somewhat subtle; root-absorbed damage from pre-emergent herbicides is about as subtle as a meat axe. What you are looking for as a domestic type gardener is a pre-emergent product that is registered for use around ornamental vegetation. Examples of such products are: Preen, Surflan, Pendulum, Casoron, and Princep. They are safe and effective at label rates. In the past I have recommended a number of pre-emergent herbicides, but none of them

were meant to be used in close proximity of ornamentals. Products such as: Krovar 1DF, Sahara, Mojave, Spike 80DF, Oust XP, and Diuron are bare-ground, A-bomb type herbicides which do a marvelous job of tidying up around out-buildings, fence lines, vacant lots, and road sides, but were never meant to be used around trees. None of these products should be used within 30 feet of what is called the “drip line” of a tree; the drip line being the furthest extent of any branch on the tree. The labels for these products will say something like:” do not apply where the roots of desirable plants are within the treatment zone” and they are not kidding. You have been warned. It is not just possible that your tree will be harmed; it`s dang likely! Trees which suffer light damage from foliar herbicides usually recover, but those in serious decline from pre-emergent herbicides have generally “bought the farm”.

There are those rare circumstances where the manufacturer is to blame rather than the applicator. In 2012 DuPont released a new product called Imprelis for the control of selected broadleaf weeds in turf grass. Unfortunately for DuPont and the thousands of Imprelis users the active ingredient, aminocyclopyrachlor, also kicked the snot out of Norwegian spruce and white pine. Over 7000 claims were filed from Imprelis users in the Upper-Midwest and the Northeast. One golf course lost over 200 of their 300 trees. As of last summer DuPont had paid out over 850 million dollars in law suit settlements and the total is expected to exceed one billion dollars. My guess is that whoever it was that put their “John Henry” on that project will not be receiving a Christmas bonus.

And finally, there`s Harvey Updyke Jr. age 64, the disgruntled University of Alabama football fan who called an Alabama sports talk show and bragged that he had poisoned Auburns famed trees at Toomer`s Corner after Auburn beat Alabama in the 2010 Iron Bowl. Thousands of students would gather at Toomer`s Corner on the Auburn Campus and drape toilet paper over the ancient oak trees in a celebration they called “rolling” after an Auburn victory. Ol` Harv claimed to have poisoned the majestic oaks with Spike 80DF herbicide in an attempt to ire the Auburn faithful. Updike later recanted and said that he`d made up the whole thing, but as the trees began to exhibit the symptoms of poisoning it became clear that Harvey Updyke had done what he initially had confessed to. Sadly, despite the best efforts of arborists, the last of the dying trees at Toomer`s corner were felled three months ago. The Alabama courts did not take a shine to Mr. Updyke and sentenced him to six months in prison and ordered him to pay restitution to the tune on nearly \$800,000.00. Lastly, Harvey had to publically apologize to the University of Auburn. Nick Saben, head football coach of the University of Alabama, said that “Mr. Updyke does not represent the typical Alabama fan”. It`s a good thing too. If he did there wouldn`t be a tree left standing in the Southeast Conference. Something tells me that Joyce Kilmer and Harvey Updyke Jr. don`t have a lot in common, but that would be a guess on my part.

ROADSIDE RESIDUAL HERBICIDES 101

What a Difference a Year Can Make

“Anything that can go wrong probably will.” That expression was coined many years ago by a foreword thinker named Murphy and that man has truly earned my respect. Ol` Murph is the only soothsayer with the ability to consistently predict my future and this year`s residual herbicide program was proof positive that Murphy is at the top of his game. Difficulties were such that for the first time in over two decades the road shoulder residual herbicide program didn`t take place. Stuff happens.

Now I will explain exactly what it was that you didn`t get. How a residual herbicide works goes something like this: you apply an herbicide, which is formulated for effectiveness and staying power, in the fall or winter. Precipitation then activates that material and places it one to a few inches below the soil surface where it attaches to soil colloids. In the spring, when weeds germinate, the root system taps into that band of soil where the herbicide has been activated and whammo! What I`ve just given you is a simplistic version of what is actually taking place, but for our purposes it will suffice. Roadside residuals are just that...residuals, and that pertains to the way they work in the soil. They are not sterilents! Sterile means never being unable to produce seeds or fruit. The residual herbicides are only effective in the soil for about five to six months, so in order to have an effective program the process needs to be repeated every year. If you want something sterilized you`ll need a physician.

Although the process seems basic enough it is not fool-proof; there`s a multiplicity of factors that can dictate success or failure. Some soil types bond with the herbicide better than others and some herbicides or even combinations of herbicides will not control the variety of species that inhabit your rights-of-ways. Some species will become resistant to the herbicides you are using. If you don`t get enough rainfall the herbicide won`t activate in the soil. If you receive too much rainfall the exposure to moisture may cause hydrolysis and the material may rot in the soil and be rendered ineffective. If soils are warm, moist, and somewhat organic, then the herbicide can be devoured by microbial activity. Get the picture?

When the performance of herbicides is compromised it translates to a reduction in the rate of kill. Residual herbicides work poorly on perennials, marginally well on biennials, and very well on annuals. Over 95% of roadside weeds are annuals of which you should have around a 98-100% kill rate with a successful residual application. If the product performance is compromised then even a 1% reduction in kill rate can have major, negative impacts. It`s not uncommon to have tens of thousands of koccia seedlings in a single roadside acre in late spring and a single koccia plant may grow to four feet at the base and over six feet tall. A 1-2% reduction in kill rate can look trashy and a 10% reduction may look like you missed the boat entirely. These factors coupled with the fact that residual herbicides are very expensive can lead to a little nail-biting from the time of application to the end of the summer. But, all in all, the application is not a crap-shoot. Some application results have been better than others, but in 21 years we`ve never had a flop.

So now you know what residual herbicides are and what they do and what didn`t happen this year. When spring arrived and the roadside plants started doing their thing is

when the stuff hit the fan. To the folks of Crook County who understood our predicament and to the Road Department that funds the program I greatly appreciate your patience. To those that didn't, I fully understand your ire and, judging from the number of complaints I've received, there were plenty of you. I began the residual program in Crook County in 1990 and this is the first year since that I've failed to implement this program. Those who can remember the condition of roadsides prior to 1990 get it. If you don't then what you're seeing today is something new to you, hence the complaints. I've responded to those complaints as best I can by treating 150 miles of roadside with foliar herbicides and, which have slowed or halted the plant growth but, predictably, the roadsides still look like "stuff".

I will leave you with the promise that next year we will have an improved program in place and the rights-of-ways will undergo an amazing metamorphosis and all will be right with the world. At my age you can promise anything. Should Murphy intervene, there's always the chance that I will expire before the lynch-mob arrives.



Alexanian Photo

WEED-FREE FENCEROWS AND OTHER LOFTY GOALS

Timing of application and product selection can mean everything

We'll begin with a little yarn about two guys with a similar agenda: both want to become wealthy beyond their wildest dreams by investing in a Mega-Ball ticket. Guy number 1 knows that the drawing closes at 1:00 pm and acts accordingly; he leaves at on his lunch break, calmly crosses four lanes of mid-day traffic in the cross-walk, enters the mini-mart, buys his ticket and wins 6.3 billion dollars with which he uses to buy his wife the new roto-tiller that she has always wanted. Guy number 2 figures that it's only noon so he has plenty of time to eat first. Unfortunately for him, he becomes so over engrossed in his fried-egg and sardine sandwich that he loses track of the time. At 12:55, realizing his tardiness, he makes a bee-line for the mini-mart and, foolishly, attempts to dart across the post-lunch traffic....and he might have made it too had he not been collected on the bug-screen of a west-bound Kenworth which was also racing for the mini-mart. Now, guy number 2 is in the unenviable position of having to ask his newest good buddy, guy number 1 to loan enough money to pay his hospital bills....which come to, precisely, 6.3 billion dollars.

The point is that timing can be critical. Okay, the timing of your residual herbicide applications may not have such dire consequences, but it can determine your success or failure. We have a tendency to wait until weed problems become evident before implementing a remedy. This approach may work fine with foliar herbicides, but bare-ground control requires a little more discipline. Here's how the whole thing works: residual materials are applied and then become activated by precipitation. The activated material becomes placed in a shallow horizon beneath the soil surface where it fixes to soil colloids and becomes reasonably stable. Then, when seeds germinate, the newly formed root system taps into the available, activated material and the seedling, unceremoniously, croaks. But in order to make this whole thing work effectively, bare-ground herbicides need to be applied within a specific window of opportunity in order to maximize success. If the herbicides are applied early, in the fall to early winter, the material will begin to decay from either excessive precipitation or simply from exposure. If you apply late, mid-April on, you run the risk of not receiving enough precipitation (.5-.75") to fully activate the product. To play it safe, I heartily recommend that you apply in February, March, and early April at the latest. Some of you might be thinking: "sometimes we get lots of rain in late April and May and even June" and sometimes you do. There are other times that you do not. Pulling off a successful application in late April is a crap shoot. In May, good luck; in June, let me know when you see Elvis. Pulling off late residual applications is strictly a guy number 2 thing. What I'm giving you is what I consider to be the safest timing so as to ensure your success and there's always a very slim chance that that it won't work well at all regardless of timing. It's a little like playing Russian roulette, but your odds are way better than 5:1. Regardless of the small risks, the advantages of bare-ground control over repetitive foliar applications are significant. They are tidier, more effective, and only require a single application. If your applications are timely, or especially if they're not, it might pay to include about one quart of 41% active ingredient glyphosate with your formulation. Pre-emergent herbicides work poorly on emerged plants and a little "knock-down" is cheap insurance.

Second only to timing in importance is product selection. There are a number of good residual herbicides out there with a variety of active ingredients and were going to

discuss two of them; Mojave 70EG and Krovar IDF. Mojave a.k.a. Sahara are both so named, I suppose, to imply that for your spray efforts will be rewarded with a weed-free landscape, but with no camels. These products are made by different manufacturers, but are chemically identical, so purchase whichever is cheapest. The active ingredients in Mojave are imazapyr and diuron and the combination will control a broad spectrum of undesirable species for about \$112.00 per acre. The formulation is a dispersible granule that mixes well with water. Mojave like Sahara comes in five pound bags and a five pound bag will treat one half acre.

We know what Mojave and Sahara refer to, but what's a Krovar? I always thought that a Krovar was an Icelandic pastry, but I could be wrong. Like me, Krovar IDF has been around awhile; I first used it in the early eighty's. One should not, however, assume that it's a product that is past its prime. In my opinion, Krovar is still the Hulk Hogan of residual herbicides and is still widely used and is extremely effective. That effectiveness is attributed to Krovar's main active ingredient, bromicil. Bromicil is notorious for providing bare-ground results and for kicking the snot out of tough to control weeds. If some herbicides are likened to a surgical tool, then Krovar is a meat-axe. In Krovar IDF the letters DF stand for dry flowable which is a very small granular material that mixes very well with water and much like Mojave or Sahara, requires some agitation. Krovar IDF is available in six pound bags that will set you back around \$108.00 to treat 3/4 of an acre. A great kill never comes cheap.

Residual herbicides are the most effective way to rid you property of unwanted vegetation along fence rows, roadsides, on and parking lots, corrals, vacant lots, and around main structures and out-buildings. But applying residual herbicides do have some inherent risks, If they kick the peewaddles out of undesirable species take a wild guess at what they'll do to the desirable ones? Both products have the ability to kill trees if you apply within 30 feet of the trunk. If they will kill trees than then other plants, desirable or undesirable, should present little challenge. Each package comes with a little booklet thingie glued to it. It's called a label....read it! The labels are written by reasonably intelligent people who have a strong desire to keep you and them out of jail. In a nutshell, what they are trying to convey is: "I NEVER TOLD YOU THAT YOU COULD APPLY NEAR DESIRABLE VEGETATION, OVER WELL-HEADS, ON STREETS AND DRIVEWAYS, IN LAWNS, ON PAVEMENT, ON SEVERE SLOPES, ON FROZEN SOIL, OR NEAR WATER!"

Be careful when applying these herbicides. If you disregard the preceding message, or for that matter, any part of the label, you could face some unpleasant, unintended, consequences. The beautiful thing to the consumer is that residual herbicides are non-restricted which means that anyone can purchase them.... and for the life of me, I've never been able to understand why.

APPLICATION GONE WRONG

If All Else Fails...Read the Instructions

Some of you may have seen a piece that Z21 News in Bend did some months ago pertaining to an erroneous herbicide application that resulted in the demise of some lodgepole pines. The “scene of the crime” took place on a small sub-division south of La Pine. Apparently, what was to be a mid-summer effort to control roadside noxious vegetation resulted in more than what the applicator had bargained for. What once were dozens of perfectly healthy lodge pole pines on the roadside ended up looking like something akin to pretzel sticks. Many of us would consider the frying of so many of lodgepoles, accidental or otherwise, to be a matter of little concern unless, of course, they happen to be *our* lodge poles! It’s then that this weed of the woods undergoes a spectacular metamorphosis and becomes a majestic, invaluable paragon of nature.....and those paragons don’t come cheap!

In this particular incident It, in all probability, was not a case of the applicator not reading the label prior to application, I have little doubt that he did, but he did not heed the warnings that the label provided. The label in reference is for the restricted-use herbicide OutPost 22-K. It has an effective, widely used active ingredient for controlling deep-rooted perennial weeds. One of the characteristics of OutPost 22-K is it’s prolonged activity in the soil which can be either good or bad, depending on what you’re trying to accomplish. That activity is great for dealing with germinating weed populations, but at high application rates, can also wreak havoc on the surrounding vegetation. The label informs you of this. In this case, surface water moved the product from the from the soil surface to the root zone of the conifers and that led to the grand opening of the pretzel factory. It is always the responsibility of the applicator to be cognizant of the characteristics of the site you are treating and to understand the environmental conditions that can affect the activity of the herbicide once applied. This may include soil types, weather patterns, and proximity to desirable vegetation.

So what could the applicator have done to prevent the botanical apocalypse that took place? Actually, it’s not that easy to kill trees with a herbicide that was designed to smaller weeds. If it was I’d have a splendid time accidentally killing junipers. What took place was a perfect storm consisting of the wrong place at the wrong time with the wrong product. If the label for OutPost 22-K had been followed to the letter, this perfect storm would have never taken place. The Environmental Hazards section of the label states “Use of this chemical in areas where soils are permeable, particularly where water tables are shallow, may result in groundwater contamination”. The pumice soils south of La Pine are “very permeable” and there is “an underlying shallow water table” as evidenced by the facts that trace amounts of OutPost showed up in well water. Also, early applications in the spring or early summer would allow for the use of lighter application rates which would have lessened the risk to surrounding vegetation. And, finally, utilizing other products which are reasonably as effective as OutPost 22-K, but are friendlier around conifers and water would have been the ticket. These remedies would have probably averted a situation which is, in all likelihood, going to cost the perpetrators a lot of beer money.

So how does this fiasco rate on the blunder meter? In terms of the results it rates right up there with the sinking of the Titanic. In terms of the misapplication itself it was

probably not as irresponsible as one might think. Remember the perfect storm thing we talked about earlier? These folks may have repeated this same type of application time and time again without running into the iceberg. The product that was used is one that is commonly used to control the target they were spraying. Unfortunately it was at the wrong place at the wrong time, and possibly at the wrong rate.

So how does this lesson apply to you the home or ranch applicator if you`re not using restricted-use herbicides? I mean, if all you`re doing is squirting a little Round-up can you still get yourself in hot water? You betcha! But the blueprint for avoiding trouble is simple, all you need to do is to understand these three basic principles: 1) All herbicides have the potential to damage something other than what you intended to damage and this result can cost you money and make you look like a complete idiot, 2) All herbicides come with label instructions. Reading the labels and obeying them will prevent principle 1) from ever occurring, save you money, and keep you from looking like a complete idiot. 3) Reading the labels and obeying them will protect you and others from physical harm. No one will have to say “I hope he gets better soon, even if he is a complete idiot”.

The whoops that took place south of La Pine is not the first of its kind. I wish it were. Over the years there have been numerous instances involving the accidental destruction of off-target desirable vegetation, some of which have been extremely expensive, damaging, and had far-reaching consequences. But what serves as a black eye for the responsible party should also serve as a wake-up call for the rest of us. For us not to learn from the mistakes of others would render us little more than, (you guessed it), complete idiots.

Herbicide labels can be, at times, very difficult to interpret. If you have trouble comprehending any portion of a herbicide label please call the local office of the Oregon Department of Agriculture Pesticides Division @ 541-617-6097 or 541-617-6073

Section 14: Programmatic Stuff

CROOK COUNTY'S NOXIOUS WEED LIST

How We Got This Way

Oh, how we humans love to over organize things. Making simple things complicated is our bread and butter...that`s how we roll. A type of this, a category of that, and a slot for most anything, that`s us. You don`t believe me? Take, for example, the Private, 1st class, (who wishes he was four-F), sitting in a B rated restaurant eating grade A prime and hitting on a waitress who, he believes, is an eight out of ten. Get my drift? Only we humans could make something as simple as a soldier flirting with a waitress in a diner as complex as Rubik`s Cube. Unfortunately, our passion for organization has also made its way to the categorization of noxious weeds.

In September of 1939 Crook County, like many other Counties east of the Cascades, established itself as a Weed Control District and by doing so was made eligible for State and Federal moolah for weed control efforts. A County weed inspector was hired, funding was put in place, and, just like that, Crook County had its first weed program. At that time the County also established the first weed list that was comprehensive of all of the weeds which threatened County interests. Every weed of relevance was listed...all five of them. Five? Are you kidding me! Now that`s simplicity. You could name a weed for every finger on one hand and every time you picked your nose the list would just get smaller. That`s not just simplicity, that`s progress!

From 1940 to 1970 little is known in regards to noxious weed efforts in Crook County...just bits and pieces on file at the Extension office and the noxious weed list vanished altogether. We shouldn`t feel too bad about the list thing...the State of Oregon didn`t have one either. In fact, the Oregon Department of Agriculture didn`t establish a comprehensive noxious weed list until the late 1980`s and the list didn`t become an Oregon Administrative Rule until 1999. The O.D.A. was, however, the first agency to establish a noxious weed list based upon a priority system wherein weeds were classified according to economic importance and plant populations. This classification system has served as a boilerplate document for most of the Counties in Oregon.

In 1989 our O.S.U. Extension agent, with some assistance from the Oregon Department of Agriculture, completed the first noxious weed list for Crook County since the Fab Five list of 1939. It was the first list that included separate categories in order of priority. The finished document actually contained two lists: An "A" list depicting weeds of the highest priority and "B" listed weeds of lesser importance. A "C" list was added to the comprehensive weed list in 2001.

The structure of the noxious weed list is, by design, supposed to simplify things...and I was supposed to be thin and tall. This is where we humans took something which seems like it should be simple and made it seem complicated. Anyway, here`s how the thing works: an "A" designated weed is one of economic importance in small enough populations to make eradication or control possible; or is not known to occur, but its presence in neighboring counties makes future occurrence seem imminent. A "B" designated weed is one of economic importance which exists in large enough populations as to make eradication or control unlikely, but containment possible. A "C" designated weed is one of limited economic importance and widespread distribution.

So, let's try to explain things this way: suppose you were given the assignment of having to paint an outhouse and a barn and you were given only a small paint brush and one bucket of paint to complete the task. You may not have enough resource to paint the whole barn, but the outhouse would be a shoo-in; controlling the entire "C" list would be like painting the Chrysler Building. Would it complicate things further if I suggested that an "A" weed could become a "B" weed and a "B" weed a "C" weed, but a "B" weed seldom becomes an "A" weed and a "C" weed never? I thought so.

What is important here is that you understand which weeds are deemed the highest priority by the county and that "A" designated weeds are the ones subject to the County weed ordinance.

CLASS "A" NOXIOUS WEEDS (those receiving highest priority)

YELLOW STAR THISTLE	JOINTED GOATGRASS	PERENNIAL PEPPERWEED
SCOTCH THISTLE	AFRICAN RUE	MEDITERRANEAN SAGE
WILD CARROT	TANSEY RAGWORT	RUSH SKELETON WEED
SQUARROSE KNAPWEED	MUSK THISTLE	PURPLE LOOSESTRIFE
DALMATION TOADFLAX	LEAFY SPURGE (all areas except mill creek and within 50 feet of the high water mark on the Crooked River)	
EURASIAN WATERMILFOIL		

CLASS "B" NOXIOUS WEEDS

CANADA THISTLE	COMMON GROUNDSEL	POISON HEMLOCK
RUSSIAN KNAPWEED	DIFFUSE KNAPWEED	ST. JOHNSWORT
SPOTTED KNAPWEED	PUNCTURE VINE	SPINY SOWTHISTLE
MYRTLE SPURGE	YELLOW FLAG IRIS	HOUNDS TONGUE
WHITE TOP	SCOTCH BROOM	MEDUSAHEAD RYE

CLASS "C" NOXIOUS WEEDS

TEASEL	RUSSIAN THISTLE	WATERHEMLOCK
BUE BUTTERCUP	BULL THISTLE	YELLOW SWEETCLOVER
FIELD BINDWEED	KOCIA	

NEW PROGRAMS FOR THE CONTROL SCOTCH THISTLE IN POWELL BUTTES

The way the legend goes is that the Vikings were going to attack the sleeping Scots under the cloak of darkness, and in order to move more stealthily, removed their footwear. Unfortunately for them, in the darkness one of the Viking guys stepped on a thistle and cried out in pain. Supposedly, the shrieking Norseman awoke the Scots which foiled the attack and, of course, the Scots won the day and the nation was secured. Are you really buying this? Are we to believe that the Vikings, the bikers of the open sea, have been reduced to a gaggle of shrieking sissies? Due to my historical insight, what truly happened that night can now be revealed for the first time. The gig was up when the Vikings, not known for their personal hygiene, removed their footwear. The horrendous stench awoke the slumbering Scots and, not to mention, offended farm animals for miles in every direction. The alerted Scots then went on to victory. And now you know the truth. You can thank me later.

Whether it be myth or fact, the Scottish adopted the Scotch thistle as the country's symbol. Scotch thistle is native to Western Europe and belongs there where it does not grow in profusion and is a symbol of national pride. Where Scotch thistle does not belong is here. Here, unfortunately for us, it does grow in profusion and could very well be symbolic of areas in Crook County. I will spare you many of the usual details concerning Scotch thistle largely because an excellent article was recently written in the Central Oregonian by Ron Halvorson on the same subject. What I will do is focus more on the status of the current management program in Powell Buttes and the ensuing enforcement yet to come.

As some of you may or may not know, a program for the control of Scotch thistle has been implemented by Crook County Weed Control and the Crooked River Weed Management Area in Powell Buttes. This program is a proactive approach designed to provide landowners with plant and herbicide application information. Even the chemical and back pack sprayers have been provided free of charge to those who are willing to participate. Scotch thistle is an "A" listed noxious weed in Crook County and as such is subject to County ordinance as are the people who wish to ignore it. This program has given the landowners a very convenient opportunity to comply with the ordinance and to improve the quality of their land, and reduce the threat to other landowners in the process.

There may be some that feel that this is little more than an attempt by micro-government to restrict your freedoms on your own property. It is not. Noxious weeds have a distinct lack of respect for property boundaries and what may be your problem today will be someone else's tomorrow. It would do me little good to talk about responsibility and good stewardship practices; those of you are good stewards know it. Those of you who aren't probably just need some reminding. If you're in the latter category the protocol for non-compliance works this way: you will receive a registered letter which identifies you, the property owner, as having property infested with a class "A" noxious weed. The weed in question will be listed along with a time frame for its control. That time frame will be anywhere from 3 to 21 days at the end of which the property will be re-inspected. If the property owner is found to be non-compliant the whole matter will be turned over to the County compliance officer; you can guess the rest. If you are notified and there is some compelling reason you cannot be compliant, then I would urge you to get in touch with Crook County Weed Control... pronto. Yes,

fines can be substantial and the answer to your second question is no...I have no clue where the proceeds go. I only know that they`re not going to Crook County Weed Control.

Some of you may feel that Powell Buttes is receiving special assistance; others of you may feel like Powell Buttes is getting picked on. In either case you`d be correct. It`s not that Scotch thistle is exclusive to Powell Buttes...far from it, but Powell Buttes has long been the epicenter of the Scotch thistle populous in the County and we felt that was the ideal starting place. We don`t have the financial ability to assist all of Crook County this year, but plans are in the works to expand the assistance program and enforcement to the other hot-beds of Scotch thistle infestation within the County.

This is the first program of its kind in our County`s history and there`s going to be a few growing pains along the way. Some violators will fall between the cracks and blunders will be made both by myself and by the property owners in their control efforts, but be assured that no one who is making a valid attempt at controlling their Scotch thistle populations will be considered a violator. What we`re providing the property owners is an opportunity and fair treatment. You don`t have to accept our assistance and you don`t have to do things our way, but you do have to control "A" listed weeds on your property. Laws are funny that way.

This whole affair did not materialize out of the blue; it was driven by a quarter century of complaints about a weed that is relatively easy to control. I`m not suggesting that Scotch thistle is a botanical wimp, but it`s not worthy of the respect attributed to it by the Scots. The Scottish motto associated with that thistle reads "Nemo me impune lacessit;" "No-one harms me without punishment." Sounds to me like pretty tall talk for a lop-sided defeat of some scruffy Vikings with smelly feet.



Alexanian Photo

GRANTS A GO-GO

Got Weeds? There May Be Financial Help on the Horizon

For about fifteen years now the Crooked River Weed Management Area folks have been shelling out cost/share funding for the control of noxious weeds on private lands and this year will be no exception. The Title II cost/share program works like this: If you have a noxious weed infestation on your property that fits the model then you may qualify for economic assistance. Economic assistance means that we supply the herbicide and you, the landowner, pony-up for the spray job or perform the work yourself. Applications will be accepted or denied based upon the species you wish to treat and the size of the infestation. The model works something like this: “A” rated weeds such as Dalmatian toadflax, jointed goat grass, and wild carrot are a first priority. “B” rated weeds hounds tongue, spotted and diffuse knapweed, and yellow flag iris are second priority. Finally, large scale “B” rated weeds Russian knapweed, leafy spurge, whitetop and medusahead rye would be of the lowest priority. But here’s where it gets a little tricky. Size matters. Isolated, satellite type infestations will be a higher priority than the large infestations of the aforementioned species. Funding for the large scale infestations has been made available in the past, but this year it may be a little tougher to come by.

If you’re tired of paying taxes on a useless weed patch, maybe this program is for you. To pick up an application just go to the Crooked River Weed Management Area office located at the OSU Extension building on Lynn Boulevard or call Priscilla Johnson at: 541-447-9971. Landowner applications must be submitted by May 1st, no exceptions, and all applications will be reviewed by the CRWMA Board by May 15th. It’s understood that some properties will require a site visit and the CRWMA will conduct before and after photo monitoring, GPS points and mapping requirements. The CRWMA will also select and purchase the appropriate herbicide for your application.

If you have populations of “A” listed weeds yellowstar thistle, Mediterranean sage, perennial pepperweed, African rue, or musk thistle you may qualify for the Central Oregon Top Weed Phase II grant funded by the Oregon State Weed Board. This grant is comprehensive of all costs associated with the control of these weeds on private properties in Crook County. The State Weed Board has determined that these weeds are of such economic significance in Central Oregon as to be worthy of full funding. The Top Weed program is currently slated to treat about 500 acres of “A” rated noxious vegetation in Central Oregon. If you believe that you have any of these five weeds on your property, but weed I.D. is not your strong suit then feel free to contact the folks at the CRWMA or yours truly at 541-447-7958 and we’ll inspect your property and set you on the path to righteousness.

Last year’s Powell Butte Scotch thistle program was a concerted effort to control Scotch thistle in an area that sorely needed attention and was the biggest cooperative effort of its kind in county history. In all, 840 blanket informational letters were distributed, 93 landowners were contacted by phone or in person and of those 93 landowners 46 signed agreements thus receiving herbicide from the CRWMA and performing the application themselves. The balance of the landowners contacted either preferred to use their own herbicide or were able to treat their small weed populations manually. As cost/share programs go, this one was a slam-dunk. Apparently the Oregon State Weed Board agreed and elected to fund an expanded version of last year’s program.

One of complaints was that the program was too regional and was not comprehensive of the county`s needs. Building upon last year`s success we will include Grimes Flat, Lone Pine, areas along Highway 26, Barnes Butte and wherever else we have the economic latitude to fund.

The whole Scotch thistle cost/share thing works something like this: a blanket mailing describing the target species, the program, and legal responsibilities of landowners will be distributed. On the heels of that mailing, a representative of the CRWMA and I will conduct a survey of Crook County properties to inventory the pest and its location. If your land is infested you will be contacted and offered alternatives which consist of signing an agreement to receive herbicide from the CWMA, utilizing a product of your own choice which we will not provide, or controlling the pest manually. What you cannot choose is to allow the Scotch thistle to go to seed. Scotch thistle is an “A” rated weed in Crook County and as such is subject to County Ordinance #226. If you need to cut or destroy your noxious vegetation you will be asked to do so. If you do not comply you will receive registered mail giving you a time frame for compliance. If you still do not comply the matter is turned over to the County Compliance Officer and citations will be issued.

Try not to look at this as being strong-armed; the County will give you every opportunity to comply and work with you if you`re in a bind physically. As property owners you have an obligation to your neighbors to be good stewards and not infest their land with your weeds. The removal of Scotch thistle will improve your own pasture, your range, and rid yourself of one the most imposing, pain inflicting nuisances in Central Oregon. You will be amazed at how easily a plant of this size succumbs to an herbicide. It does wonders for your ego; at least it does for mine.



THE CITY OF PRINEVILLE WEED ORDINANCE

What You Need to Know to be Compliant and What May Happen if You're Not

Like many of you I have always believed that too much regulation is a bad thing, but too little can be even worse; and being told what you can or can't do on your own property tends to rub people the wrong way. There are a lot of folks, the responsible and the not so responsible, who take offense to an authority figure dictating how you must manage your own property. But all similarities between the responsible and the irresponsible end there. Specifically, what I'm talking about here is City of Prineville Ordinance 93.40: Noxious Vegetation. The meat and spuds of this ordinance is designed to reduce or eliminate the spread of noxious vegetation, improve aesthetics, improve safety, and reduce the risk of fire to residences. Common violations include: grasses over 10 inches tall, unmaintained frontages between the between the curb and sidewalk and behind the fence along alley's or roadways, vegetation blocking right-of-ways (sidewalks/roadways), vegetation that creates a hazard by visually obstructing public roadways or regulatory signs, piled debris, dead or decaying trees, and allowing noxious vegetation to go to seed. This may sound like a real mouthful to some of you; like the City of Prineville placing an undue burden on its citizens. Nonsense, all the ordinance say's to me is "don't be a slob".

Like any ordinance, this one carries a penalty if the City feels the need to impose one. In this case the penalty for being a slob can be as high as \$500.00. This may sound somewhat Draconian to some of you, but there are varying degrees of being a slob and the police are well aware of that. I have little doubt that a conspicuous attempt at compliance will alleviate any monetary penalty. The suggestion that this is just another way for the city to extract revenue from its citizens simply doesn't fly; the revenues from this ordinance, much like the county's noxious weed ordinance never see their way back to the agencies responsible for them in the first place. In all likelihood you will be warned in regards to a particular violation and only fined if you refuse to comply. If, in fact, you do manage to get fined despite the warnings and the obvious mess you have perpetrated this will put you in an elite category of those who are not only slobs, but rabble-rousers as well.

This ordinance was not designed to change the person you are, just to make you responsible for the things you do. I'm all about preserving your right to do as you wish on you own property providing what you do does not negatively impact others. Largely, it's what you don't do that will get you in Dutch with your neighbors and the fuzz. By "don't do" I'm referring to allowing your property to become overgrown with weedy vegetation to the point of becoming an eyesore. Some properties have fallen so far into neglect as to transcend "eyesore" and have become fire hazards. Every year I field a number of complaints by citizens, often the elderly, who are genuinely afraid of living in close proximity to a property that could easily go up in flames. Many of their fears are well founded.

Many of the weeds deemed noxious by the City of Prineville are also of major concern. By "noxious" this includes some of the weeds listed in Crook County's ordinance and more of the domestic species that plague many properties within the city limits. Numero uno on the noxious list would be dandelion which is due, largely, to its

ability to invade adjacent properties. This characteristic makes dandelion analogous to county listed weeds; if the capacity for spread was not a factor then the priority for its demise would not exist. In other words: “no harm, no foul.” But they do spread and have become a nuisance on both private and public properties here in town. Digging out dandelions can be a real drag, or so my wife tells me, but spraying them out is very easily accomplished and a number of products work well. Any 2, 4-D amine products such as Weedar 64 or Platoon is probably the cheapest product to use and also the most readily available. A couple of ounces in a one gallon hand sprayer will control dandelion, kocia, and many other annual broadleaf species. If you have issues with clover and buttonweed then Speed Zone will fit the bill quite nicely. If you are in need of a back pack sprayer, one can be checked out free of charge at OSU Extension. The idea here is to make it easy on you. Treat broadleaf weeds in the seedling stage and, specifically, dandelions in pre-bloom.

Whether you view this ordinance as an infringement of your rights or some sorely needed regulation everyone should be in agreement with the results. It’s pretty tough to argue against tidier, safer, and more valuable property in the community. All one has to do is apply some sound methodology and a little elbow grease. Either that or test the waters of neglect; what you may discover is the high price of being a slob.

For more information contact: James Young, Community Service Officer
Email: jyoung@prinevillepd.org of phone: (541) 447-4168
To learn more about Prineville City Code and Ordinances please visit:
<http://www.codepublishing.com/OR/Prineville/>



Alexanian Photo

“...AND WE'RE HERE TO HELP YOU”

The Role of the Federal government in Controlling noxious weeds In Crook County

It seems like everyone, me included, has a bone to pick with the Forest Service. That's how we roll. Sometimes our complaints are legitimate and sometimes we gripe simply because it amuses us. Whether it's timber sales, ATV trails, snow park permits, road closures, or the seemingly endless amount of paperwork and analysis that precedes even the smallest decisions. Have you heard this one: “So, how many federal employees does it take to screw in a light bulb? It takes 23, one to actually screw in the bulb and 22 to write the environmental impact statement”. Okay, so you have heard that one. I truly wish it were funny. If in fact it ever was, I assure you that we're not laughing now.

On the first day of 1970 the National Environmental Policy Act (NEPA) was signed into law. It was supposed to be a short and comprehensive policy for protecting the environment. What it has become is a major obstacle to the implementation of projects which may, in some way, effect the environment. NEPA has become the federal substitute for common sense. What this means to us is that, before one can apply herbicides on federal lands, a document must be prepared...a document roughly the size of a metropolitan phone book. Requiring monolithic documentation prior to the implementation of any project, represents to a great extent, what we collectively detest about the federal government. Tolstoy, however, would be pleased.

And so it was that the greatest obstacle to controlling noxious vegetation on federal lands would be the paperwork and it was at this juncture that the Ochoco National Forest did something, in my opinion, extremely nonfederal. Rather than writing off the task as being too expensive and time consuming, the Ochoco elected to comply with NEPA and produce a document. Blaming the Ochoco NF for complying with NEPA would be like taking pot-shots at the messenger. The Forest Service did not create NEPA. The creation of NEPA was, largely, the responsibility of our politicians...and who empowered our politicians? Oops!

So, what the Ochoco National Forest did was exactly what was required of them if they were to ever utilize herbicides on the forest. After two years of site analysis, biological evaluations, scoping documents, and the other hoops and circles that comprise the process, a finding of “no significant impact” was rendered and by 1995 the Ochoco National finally had the blessing it needed, to actually “screw in the light bulb”.

But now the original document of 1995 has become outdated. That document only covered sites on the forest that were known to be infested at that time, and a new environmental impact statement has been developed that will be far more comprehensive of the needs of today. Unfortunately, the completion of the new document requires a biological opinion by the U.S. Department of Fish and Wildlife and the National Marine Fisheries Service. The BO was requested of those agencies in May of 2009 and the Forest Service is still waiting...and waiting...and...

No matter how I spin this thing it still smells “federal”, but I must admit, I have a soft spot for the folks that endured the clerical tedium that produced the original document which has been so beneficial to Crook County. What does not smell “federal” is the fact that the 1995 document has been put to such good use, and over the past fifteen

years the Forest Service has made good use herbicides, and other means, to aggressively control a number of noxious weed species which helps protect both forest and surrounding private lands.

The whole NEPA thing is not exclusive to the Forest Service...it's a universal hell, and all federal agencies with weed programs in Crook County have to comply. In 1993 the Bureau of Land Management was required to rewrite their Environmental Impact Statement which included, amongst other things, the application of herbicides. Upon completion of the document it was promptly appealed by environmental groups. That's another endearing NEPA characteristic: any person or group can contest any portion of the document. In this case, a stay of implementation was granted and with that came a cessation of herbicide applications, until a year later when the stay was lifted and a decision was made on the appeal. Losing a year of application also meant losing a great deal of what had been previously accomplished, but in spite of this "hitch in its giddyup" the BLM has recovered and put together a consistently stout weed program in Central Oregon.

The Bonneville Power Administration and the Bureau of Reclamation are also key players in Crook County. Fortunately neither of those agencies had to suffer the same legal woes as the BLM. The BPA has been combating noxious weeds in Crook County since 1990, and more recently, the BOR out of the Bend Field Office has become a major contributor by taking on large weed projects associated with reservoirs and the distribution of water in Central Oregon.

Federal agencies did not create themselves, the people we elected to office did. And what they have done had to be blessed by someone, again, probably someone we elected. So is it right that we use the federal government, as the whipping boy of our frustration? Probably not, but it's still amusing! And I would not be so quick to criticize the federal government if only they wouldn't make it so incredibly easy to do so. I mean, who else gets a day off every October 12th to revere a hopelessly lost Italian pirate, whose sole purpose for exploration was to plunder and exploit the resources of a people that he, and his cohorts enslaved and gave disease to? Not to mention the fact that the guy ended up 12 thousand miles from where he thought he was in the first place. And for this they get a paid day off? The feds....ya gotta love `em.



Alexanian Photo

Section 15: Bio-Controls

THE BIOLOGICAL CONTROL OF WEEDS IN CROOK COUNTY

So, how do you really feel about bugs? Do you feel that insects are necessary, that all creatures are here for a reason, and that they are integral and often beautiful players in the grand scheme of this planet's ecology? Or are you like me and just like to hear that little popping noise they make when you squish them on the sidewalk with your cowboy boots? It's been my experience that beetles and June bugs are easy prey and generally make the best poppers. Flying insects provide better sport, but with that comes more risk and aggravation. A Mosquito may bite you, but as long as you get to smear him from your ankle to your kneecap it seems well worth it.

For most of my life I have viewed the insect world with this kind of contempt and malice, but over the past several years events have taken place that have changed my perspective where bugs are concerned.

In the nineteen seventies a weed called Tansy Ragwort was often responsible for cattle mortality on a grand scale in Western Oregon and California. Ingesting this plant caused irreversible liver damage in cattle and annual losses totaled in the millions of dollars. Due to the vast range of Tansy infestations herbicide programs were deemed impractical so, the Oregon Department of Agriculture designed and implemented a cost-effective biological control program. This program consisted of the release of two species insects which control Tansy in its native region of Western Europe. The Cinnabar moth and the Tansy flea beetle were utilized in this effort. One insect gorged on the terminal buds and the other feasted on the roots in this two pronged attack which resulted in a vast reduction of Tansy Ragwort west of the Cascades. Today, cattle losses due to Tansy are rare and the pest seldom grows in profusion.

The invasive plants that we have to deal with in Oregon are seldom native to North America. With the expansion of world commerce, over the past few centuries, came an influx of exotic plants which, when introduced outside of their native range, became troublesome due to a lack of predation from other organisms. Biological control programs are an effort to establish those organisms and let them regain control of non-native species just like they did back home.

Does all of this sound simple? What happens if bugs if the bugs you're utilizing control more than their intended target? Whoops! It's happened before, but agencies like the U.S. Department of Agriculture and the U.S. Department of Fish and Wildlife take great pains to insure that bio-controls are host-specific prior to their release. Unfortunately, this process can take years and then there's no guarantee that the bio-control will be happy once he, she, or it is released. A number of factors including soil type and climate can affect the success of any biological control program.

In truth, bio-controls have a poor track record. For every success story there's, at least, ten complete flops. As far as my own bio-control programs go; I've seen more flops than the grill at a Burger King, but when you have no other option you'll take your chances. Bio-controls were never intended to be a panacea for eradicating weeds, but rather a big picture thing that keeps weed numbers down to level of moderation which, according to your doctor, is A-O.K. A level of moderation is what made the Tansy Ragwort program so successful.

In spite of a number of failed attempts to control weeds biologically we have achieved some measure of success. Over the past ten years or so the B.L.M. and the Ochoco National Forest have been major players in the distribution of bio-controls to combat Canada thistle. Gall flies and, more recently, stem borers have been released at many locations in Crook County and have established well. In the Round Butte area, where both bio-controls were established some years ago, the Canada thistle has all but disappeared.

About seven years ago the Oregon Department of Agriculture, B.L.M., and Crook County Weed Control, in a concerted effort to control Dalmatian Toadflax, released one hundred stem weevils (*Mecinus janthinus*) in the Allen creek area. The critters were left, unchaperoned, to multiply and, hopefully, inflict some damage on the host plants. As of last summer the weevils had clobbered the Dalmatian Toadflax and the insect numbers were large enough to allow for the site to be used as a nursery for the collection of more weevils to be released elsewhere.

Other successes of varying degrees involving Diffuse knapweed, Poison hemlock, and other noxious weeds have been a part of this biological work in progress. Eric Coombs, the Oregon Department of Agriculture entomologist, and other O.D.A. staff members keep us posted as to what bio-controls have potential and what is available for release. The need for bio-control programs has become stronger nationwide and Oregon is often at the forefront in terms of the number of active programs that have been implemented and the research that is taking place.

So, the battle continues, but in all honesty, I find long term bio-control programs to be a little on the dull side. All this nibbling and gnawing is fine, but it's far from entertaining. I want a bio-control that attacks at dawn and has everything chewed to shreds before lunch. That's right. A six-hundred pound bio-control with teeth the size of pruning shears that devours weeds, seeds, stems, roots and all and then poops in a bucket! Now that's entertainment!



Larinus minutus – ODA Photo



“*Urophora cardui*” – ODA Photo

INDEX

“...AND WE’RE HERE TO HELP YOU”	
The Role of the Federal Government in Controlling Noxious Weed in Crook County	121
ABOUT SPOTTED KNAPWEED IN CENTRAL OREGON	53
AFRICAN RUE	
Now That's What I Call A Weed!	11
APPLICATION GONE WRONG	
If All Else Fails... Read the Instructions	110
CANADA THISTLE	
Think Outside the Box to Control Canada Thistle	38
CHEATGRASS	
The Fuzz That Won the West	48
COMMON MULLEIN	84
COMMON PURSLANE	
Tis the Unweeded Garden That Goes to Seed Things Rank and Gross Possess it Merely - Hamlet	76
COMMON TEASEL	91
CONTROLLING BUTTONWEED	
Because You Hate This Stuff	74
CONTROLLING POISON HEMLOCK	31
CROOK COUNTY’S NOXIOUS WEED LIST	
How We Got This Way	113
DALMATIAN TOADFLAX	
A Million and One Dalmatians	7
DIFFUSE KNAPWEED	
Better Living with Diffuse Knapweed ...59	
EURASIAN WATERMILFOIL	
Coming Soon FROm an Aquarium Near You	81
FROM RUSSIA WITH LOVE	55
GIANT HOG WEED	
Mighty Hogweed is Avenged	26
GIANT REED GRASS	
In Place of Coal as a Bio-Fuel	28
GRANTS A GO-GO	
Got Weeds? There May Be Financial Help on the Horizon	117
HAROLD TALLEY AND THE CONTROL OF WHITETOP	43
HERBICIDE APPLICATION NEAR TREES	
Of Herbicides Trees and Harvey Updyke	104
HERBICIDE LABELS 101	
Labels is the Law	102
HERBICIDE SELECTION MADE EASY	94
HOUNDSTONGUE	
The Dog That Bit You	15
HOW TO USE SOIL APPLIED HERBICIDES CORRECTLY	
We're Going Brown	100
IT’S TIME TO RETHINK WEED CONTROL STRATEGIES	
What Fall Can be The Most Effective Season for Controlling Certain Plant Pests	96
KUDZU	
The Weed That Ate The South	24
LEAFY SPURGE IN CROOK COUNTY	
Controlling Leafy Spruge While You Still Have the Opportunity	62
MEDUSAHEAD RYE	
Not Just Another Pretty Face	50
Myrtle Spurge	
All That Glitters in Not Gold	64
NEW PROGRAMS FOR THE CONTROL SCOTCH THISTLE IN POWELL BUTTES	115
ORANGE HAWKWEED	
So What's New in the Neighborhood?.. 9	
PERENNIAL PEPPERWEED	
This Pest is Coming and It's Coming with All the Subtlety of a Freight Train	41
ROADSIDE RESIDUAL HERBICIDES 101	
What a Difference a Year Can Make .	106
ROUND TWO	
Taking Advantage of Fall Application Can Yeild Some Fantastic Results	98
SCOTCH THISTLE	
A New Approach to an Old Problem ...	36
STINGING NETTLE	91
THE ANNUAL MUSTARDS	
The Attack of the Angry Mustards ...	71
THE BEAVER-STATE TRIFECTA	17
THE BIOLOGICAL CONTROL OF WEEDS IN CROOK COUNTY	124
THE BOTTOM OF THE BUCKET....LIST	
The Stuff That Didn't Make the "A" or "B" Noxious Weed List	90
THE CITY OF PRINEVILLE WEED ORDINANCE	

What You Need to Know to be Compliant and What May happen if You're Not	119
THE CONTROL OF BUR BUTTERCUP Make Plans to Control This Pest in March or Live with it for The Rest of The Year	86
THE CONTROL OF KOCHIA The Tale of Two Pity's Part Two	69
THE CONTROL OF RUSSIAN THISTLE A Tale of Two Pity's Part One.....	67
THE CONTROL OF SAINT JOHNSWORT	13
THE FINE ART OF GETTING SUCKER-PUNCHED	19
THE PAINFUL TRUTH ABOUT PUNCTUREVINE	88

WEED-FREE FENCEROWS AND OTHER LOFTY GOALS Timing of Application and Product Selection Can Make Everything	108
WESTERN WATERHEMLOCK With Friends Like These.....	33
WHITE HOREHOUND	90
WHITETOP CITY To Everything There is a Season and If You've Got Whitetop Yours Has Arrived	45
WILD CARROT It Pays to Know Your Enemy.....	21
YELLOW FLOATING-HEART Okay It's Here Now What?	79
YELLOW STARHISTLE We Would be Foolish Not to Feel Threatened by it's Presence	57

Where Kevin goes

