



Weed Watch

Welcome to the CWMA Newsletter

This newsletter focuses on a critical component for all weed managers, establishing competition. The newsletter committee hopes that this information is useful to you.

REMINDER: Membership Renewal Notice

Colorado Weed Management Association 2011 Membership Renewals are due before the end of December. The 2011 Annual Membership Application form will be posted on the website soon. Members will have the option of downloading a membership renewal form from the website and faxing or mailing it in with payment, or renewing online. Membership dues will remain the same in 2011. If you do not have internet access and would like an application form sent to you please call the CWMA office at 303-825-0825, send a fax to 303-322-9682, or use a computer at a local library or coffeehouse to send an email to info@cwma.org. Online renewals with payment by credit card will be available soon simply by going to the CWMA website at www.cwma.org. The online renewal option is anticipated to be operational by the end of October.



Inside This Issue

Features

| | |
|---|---|
| Welcome to the CWMA Newsletter | 1 |
| Using Cover Crops in Transition to Non-Irrigated Grassland..... | 1 |
| Revegetation Using Native Grass and Forb Species | 4 |
| Introducing the New State Weed Coordinator | 5 |
| Annual, Perennial and Winter Rye... What's the Difference? . | 6 |
| Plan Now to Attend CWMA Annual Conference | 8 |

In Every Issue

| | |
|---------------------------|---|
| President's Message..... | 2 |
| Board of Directors | 2 |
| Committee Chairs | 3 |
| State Updates | 3 |
| Noxious Weed Profile..... | 6 |
| Upcoming Events..... | 8 |

Please send ideas, comments and short articles for inclusion in the next issue of *Weed Watch* to Tina Booton, tbooton@co.weld.co.us 303-291-7362

Using Cover Crops in Transition to Non-Irrigated Grassland

By Troy Bauder, Neil Hansen, Erik Wardle

Temporary or permanent loss of irrigation water from farms in the semi-arid climate of Colorado can result in severe economic and ecological problems. Abruptly halting intensively managed irrigated crop production may result in several negative consequences: residual soil nutrients threaten water quality, weed infestations cause aesthetic and nuisance complaints from neighbors, wind and water erosion can be significant, and compaction and salinity can initially limit non-irrigated crop and restoration planting choices.



Fall 2009 cool season grass plot with sorghum sudangrass cover crop on either side.

The soil conditions that exist after decades of farming are not conducive to permanent grass establishment and are often impeded by soil salinity, compaction, low organic matter, and poor infiltration (Sutherland et al, 1988). Weeds tend to exploit the higher levels of plant-available nutrients—particularly nitrogen—in these soils, giving them a competitive advantage over desirable perennial vegetation. For example, evaluations documented adequate cover on only 35% of re-vegetation trials in southeast Colorado (Sutherland and Knapp, 1990). Using cover crops may bridge the transition from irrigated to dryland crop production or grassland, or

6 Noxious Weed Profile Teasel



continued on page 7

President's Message

By: Jonathan Rife, Douglas County

I am starting my 20th year as a member of this organization. Things have changed since I started. At that time the spring training school was mostly for county and other government entities. CSU had a professor, Burt Bohmont, who organized the main training school in the state. When he retired, the school was discontinued and CWMA has since attempted to fill that slot. The CWMA Spring Training School is primarily aimed at getting Continuing Education Units for our pesticide applicator license recertification.

While we wouldn't mind doing other projects, we are an organization of volunteers. Our lobbyist and executive director are the only paid members. The rest of us have to primarily serve our employers and CWMA gets what time they allow us, or we use our own time to promote the work of the organization. We should each thank Kevin Gallagher, Spring Training School Committee Chair, for volunteering his time to organize and orchestrate that event.

CWMA has successfully lobbied for the SB98 this year, which will directly benefit only counties, but has the potential to assist the commercial applicators as well.

We also have changed Executive Directors for the 3rd time in about 4 years, which has caused sometimes chaotic service as the new Executive Director learns our system and we mesh with him. Nowadays, unfortunately, having a person answer email, snail mail, or phone immediately upon receipt is pie in the sky. We hope to get your communication answered within a 48 hour period, or sooner, but sometimes life gets in the way.

Our recent membership survey indicated that 4 to 5 of the 48 persons who responded think we have fallen down on the job. While that is only 10% of those taking the survey, we realize that we have room for improvement and we are striving for that goal.

Our Executive Director is working to develop a new shipping and order taking system through a company called Key Fulfillment and Logistics Solutions. Their warehouse is dust free

and leak proof, and they "pick and pack" publications for multiple companies with great precision. Soon we will have credit card ordering, instantaneous receipts via email, and shipping within 24 hours. Those requiring a purchase order, invoicing, or checks will notice improved service as well.

Looking forward, I advised both Kevin Gallagher, STS Committee Chair, and George Beck, President-elect, that concurrent sessions are hard to manage and I for one would not use them again. Our biggest complaints about last year's Annual Conference involved the concurrent sessions.

Having been in the noxious weed business for almost 30 years, I can say that this is the best association that I have been a member of. I hope to see most of you at our Annual Conference in Pueblo this December. Hopefully we will get some moisture soon as Douglas County still has weeds to spray. It won't be easy, but I am confident that we will get through this, and further our fight against invasive weeds! We don't always like change, but we can make the best of it and who knows, the herbicide version of the Barnes X bullet (for the uninitiated, environmentally "safe" bullets—ed.) may be around the corner.

CDOW Invasive Species Program Update

By: Elizabeth Brown, State Invasive Species Coordinator

Let it snow! As the boating season nears an end, I find myself for the first time in my life praying for snow, ice and winter to come. With 112 boat inspection stations statewide and approximately 180 waters being sampled for Aquatic Nuisance Species (ANS), and me being the only full-time employee for this program, I am honestly tuckered out and looking forward to winter hibernation.

To date we have not detected any new mussel populations in Colorado, which is wonderful news! There are still two months of sampling left and we are hoping no new sites will be discovered. However, there have been 14 boats intercepted this year

Board of Directors

Executive Committee

- President*
Jonathan Rife 303-660-7476
- President Elect*
George Beck 970-491-7568
- Past President*
Elizabeth Brown 303-291-7362
- Secretary/ Treasurer*
Sheila Grother 970-327-0399
- Executive Director*
Greg Williams 303-825-0825

Board Members

- Denny Bohon 303-275-5625
- Kevin Gallagher 719-429-1750
- Ron Mabry 970-626-9775 x 23
- Judy Noel 970-304-6496 x 3794
- J.R. Phillips 719-276-7317
- Jude Sirota 970-255-7120
- Kenny Smith 970-903-2835
- Ex-officio*
Crystal Andrews 303-239-5767

EDRR Update

By: Crystal Andrews, CDA EDRR Specialist

coming into Colorado from out of state with zebra/quagga mussels attached. The majority were from Arizona and the Great Lakes. Fortunately, due to the boat inspection program those mussels never made it into Colorado waters.

Through our partnership with the Colorado Department of Agriculture and our sampling crews' efforts, we have discovered a few new watermilfoil sites and are awaiting DNA analysis. Just last week we confirmed a new water hyacinth site in Centennial thanks to a report from our wonderful EDRR Specialist, Crystal Andrews. CDA and CDOW are co-publishing a Pocket Guide to ANS that will be available this winter. It's absolutely amazing what we can accomplish through partnerships!

The big news for 2010 is about an old friend—Ms. New Zealand Mudsnail (NZMS). We found a new site early this summer in Jackson County at South Delaney Buttes, a popular angling reservoir. In late September the City of Boulder discovered two new sites of NZMS on Dry Creek downstream of Baseline Reservoir. I commend Eric Fairlee and the City of Boulder IPM staff for their monitoring and rapid response to these new discoveries.

The CDOW ANS angler education program, created in 2004 after the first finding of NZMS in Boulder Creek, is being revamped due to the discovery of these new mudsnail sites. New signage and brochures are being posted and angler outreach events are being planned. Our website has been updated to include new cleaning recommendations for anglers. (<http://wildlife.state.co.us/WildlifeSpecies/Profiles/InvasiveSpecies/NewZealandMudsnail.htm>).

It has been another outstanding year for the Aquatic Nuisance Species Program. We have built many solid partnerships with private and public entities that are thriving and growing every year. It is obvious that the public education effort is working because the cooperation and positive attitude of boaters and anglers really help make this all possible!

This year has been an active one for reported and confirmed early detection species, highlighting the importance of having an EDRR program in place. County weed supervisors were alerted to these findings as they were reported and are re-capped here.

Rush skeletonweed, *Chondrilla juncea*, (List A) was confirmed in Boulder County in August. A small area of rush skeletonweed east of highway 36 in North Boulder was reported by Steve Sauer, Boulder County Weed Manager. The area was 100 feet by 100 feet and contained a small number of plants. The skeletonweed was found on county property and Steve was very quick to respond to and treat the new infestation. A large area of surrounding land was surveyed and no other plants were found. Steve and his crew will continue to monitor and treat new plants as they are found. This is the first known population of rush skeletonweed in the state.

Dyer's woad, *Isatis tinctoria*, (List A) was confirmed in El Paso County in June near the Monument area. An area of approximately 5 acres was reported by Tina Travis and Michelle Oldham from the El Paso County Environmental Division. They were quick to notify land owners and eradicate all plants in the vicinity. Surrounding landowners were notified of the potential threat to their lands and urged to report infestations. Dyer's woad is very limited in Colorado, with only two other active sites located in Dolores and Boulder Counties, both of which are under intense eradication treatments. Dyer's woad has successfully been eradicated from Jackson County.

Purple loosestrife (*Lythrum salicaria*) and orange hawkweed (*Hieracium aurantiacum*) (List As) were also confirmed in El Paso County in late summer. Woolly distaff thistle (*Carthamnus lanatus*) was reported and confirmed in Rio Blanco County. Woolly dis-

continued on page 4



WANTED
CWMA Newsletter Chair
is needed immediately to
start planning the 2011
newsletter season.
Contact Greg Williams at
303.825.0825 to volunteer.

Committee Chairs

Annual Conference
George Beck
george.beck@colostate.edu

Professional Applicators
Christine Alexander
& Duane Lindmier
calexdlind@comcast.net

Education/Outreach
Crystal Andrews
crystal.andrews@ag.state.co.us

Executive and Finance
Johnathan Rife
jrife@douglas.co.us

Legislative
Fred Raish
yapest@plains.net

J.R. Phillips
jr.phillips@fremontco.com

Membership
Alicia Doran
adoran@jeffco.us

Native Plants
Crystal Yates-White & John Vickery
crystal.yates@co.pitkin.co.us

Newsletter
Tina Booton
tbooton@co.weld.co.us

Nominations and Awards
Russell Johnson
rjohnson@co.arapahoe.co.us
Ornamental Weeds
Judy Noel
jnoel@co.weld.co.us

Pulling for Colorado
Denny Bohon
dbohon@fs.fed.us

Scholarship
Jude Sirota
judith.sirota@mesacounty.us

Training School
Kevin Gallagher
kkgallagher@q.com

taff thistle is very similar to yellow starthistle in that it is a spiny, yellow thistle that grows as a winter annual; it is of concern in Colorado due to its similar invasive properties. Holly Postmus, Rio Blanco Weed Manager, has investigated other reported sites near Meeker but has not detected additional plants.

Thank you to everyone that reported a species this season! It has been an eventful and exciting year for EDRR and progress is being made thanks to everyone's keen eyes and diligent reporting.

Quarterquad Mapping

The Colorado Noxious Weed Advisory Committee selected the following List B species' management plans for addition to the Noxious Weed Rules in 2011:

- Common teasel (*Dipsacus follosum*)
- Cutleaf teasel (*Dipsacus laciniatus*)
- Dame's rocket (*Hesperus matronalis*)
- Jointed goatgrass (*Aegilops cylindrical*)
- Moth mullein (*Verbascum blattaria*)

For those that are new to or curious about the process, maps for each of these species are sent to all county weed managers in the state and data is requested pertaining to the distribution of these species in their county. Data is compiled and management plans developed with the input of county weed managers. The goal of the management plans is to stop the continued spread of these species through suppression, containment, and eradication efforts. County weed managers are urged to consult with other land managers in their county to develop the best, most feasible plans to reach their goal.

Quarterquad maps will be sent later this fall to all county weed coordinators, so please start thinking about the distribution of these species and how to best stop their spread in your county or on your own land.

Revegetation Using Native Grass and Forb Species

Crystal Yates-White, co-Chair, CWMA Native Plants Committee

So you want to revegetate—what seed should you use? As a weed manager, you are probably looking for something that will establish quickly—for soil stability—and compete well against noxious weeds. Often in our business this has meant seeding with a mix of introduced non-native grasses such as smooth brome or crested wheat. Yet often an area reseeded in this way still gets invaded by weeds! The reason is that these grass species alone are not able to fill all the available niches. A weed that can use resources in different ways has an advantage over these grasses and is, therefore, able to invade. At the same time, a stand of pure introduced grasses often lacks the aesthetic, forage, and pollination value that a more diverse plant community offers and may resist the establishment of beneficial plant species.

How can we balance the need for soil stabilization and rapid establishment with the ecological needs of the greater plant and animal community? For many land managers, answering that question might be so overwhelming that it stops you in your tracks, but it doesn't have to. Here are some guidelines for choosing and seeding appropriate species:

- 1) **It is important to seed with a variety of plants that use the available resources differently**—some deep-rooted, some shallow-rooted, some that germinate early, some late. By filling as many niches as possible with appropriate native plants, you can prevent a noxious weed invasion.
- 2) **When seeding with both forbs and grasses, keep them separate.** If seeding by hand, this means seeding in a patchwork pattern. If drill seeding, put the broadleaf and grass seeds in separate boxes. When grass and forb seeds are planted together in a single mix, the grass will often out-compete forbs.
- 3) **Fertilizer applications will tend to favor vigorous grass growth.** This may be a problem if you are trying to get broadleaf species established in addition to grasses. Try to cut back on fertilizer application. Remember, our

Colorado Weed Calendar 2011

With the summer weed season rapidly coming to a close, this is the ideal time to take a few minutes to review the 2011 Calendar and target the people you would like to distribute it to as a new educational tool. The late summer and early fall months are an ideal time to engage others in detecting and reporting new invasive species. The calendar showcases many Early Detection/Rapid Response (EDRR) species and the Colorado landscapes that are at risk of invasion. Most of the weeds featured in the calendar are Colorado List A species, some of which were recently been detected in Colorado.

You will also find a handful of EDRR Alert list species that pose an equal threat, such as Japanese knotweed and gar-



lic mustard. These species are just beginning to be detected and mapped throughout the state. All of them are considered detrimental to the land for one reason or another, and everyone is encouraged to become familiar with and report them immediately when found.

When viewing the landscapes featured in the calendar that are typically invaded by weeds, you will develop a better sense of where to find these invaders as well as appreciate the lands that are currently free of the imposing threats. Your detection and reporting efforts help protect these habitats and other Colorado lands one weed at a time. The calendar is one tool you can use to train yourself and others in identifying new invasive species.

Orders are still being taken. Go to: www.cwma.org to place your order today!

native plants evolved to survive in nitrogen deficient soils and don't usually require a lot of additional fertilizer.

- 4) **Noxious weeds are successful pioneer species—and so are many of our native plants!** Pioneer species grow well in disturbed areas, are able to tap available resources and propagate quickly. They have a broad ecological amplitude, which means they grow well in a variety of habitats. Some, like the native pigweeds, may not look very attractive, but they play an important role in rebuilding the native plant community through nutrient cycling, soil stabilization, and by attracting pollinators.

The CWMA Native Plants Committee has put together a list of native pioneer species for revegetation. The list is available on our website at www.aspenpitkin.com/nativeplant.

Below are a few options for native, early pioneer species that work well for revegetation projects. Don't rely just on these four species! There are a variety of wonderful options out there that provide excellent benefits for soil stabilization, pollinators, wildlife, and weed prevention, and many are commercially available. Start experimenting with native seed and observe what natives grow wild in your area. Including native pioneer species—especially broadleaves—can greatly increase the value of your revegetation project to the entire local plant and animal community.

Common Name: Western Wheatgrass

Latin Name: *Pascopyrum smithii*

Plant Family: Grass

Elevation Range: 3,500 to 9,000 feet

Eco-Zones in Colorado: Eastern Plains, Eastern Foothills, Montane, Riparian, Western Slope

Water Range: occasionally to always moist

Sun Needs: full sun

Commercially Available? yes

Ecological Attributes: cool-season, perennial, sod-forming grass; provides good erosion control; very drought tolerant and moderately tolerant of alkaline soils; browsed by wildlife and livestock



Common Name: Purple Three-Awn

Latin Name: *Aristida purpurea*

Plant Family: Grass

Elevation Range: 3,800-9,000

Eco-Zones in Colorado: Eastern Plains, Eastern Foothills, Montane, Western Slope, Piñon Juniper

Water Range: usually dry to always moist
(seedlings may not tolerate wet soils)

Sun Needs: full sun to partial shade

Commercially Available? yes

Ecological Attributes: warm-season perennial bunchgrass with short-term (1-3 year) drought tolerance; grazed by white-tailed jackrabbit; nesting material and habitat for some small animals; attracts butterflies; it's not typically preferred by grazing animals, due to its spike-like awns



Common Name: Stiff Greenthread

Latin Name: *Thelesperma filifolium*

Plant Family: Sunflower

Elevation Range: 3,500 to 8,000 feet

Eco-Zones in Colorado:

Eastern Plains, Eastern Foothills, Piñon-Juniper, Montane, Western Slope

Water Range: dry to moderately moist

Sun Needs: full sun

Commercially Available? yes

Ecological Attributes: good nectar plant for butterflies; deer resistant; tolerates alkaline soils



Common Name: Scarlet Gilia

Latin Name: *Ipomopsis aggregata*

Plant Family: Phlox

Elevation Range: 5,500 to 10,400 feet

Eco-Zones in Colorado:

Eastern Foothills, Piñon-Juniper, Montane, Subalpine, Western Slope

Water Range: dry to occasionally moist

Sun Needs: sun to partial shade

Commercially Available? yes

Ecological Attributes: biennial or short-lived perennial forb that reseeds readily; tubular red flowers attract hummingbirds; pollinated by hummingbirds, bumblebees, and native bees; flowers and foliage utilized by small mammals and grazers; seed spread by birds



Introducing the New State Weed Coordinator

Steve Ryder of Montrose, Colorado will be the next state weed coordinator for Colorado. Much of Steve's recent professional career has been spent in the land trust community working with public and private landowners to conserve land for agricultural and wildlife values on both the Front Range and West Slope. In addition to his professional experience, Steve earned his PhD in Environmental Policy from CSU in 1997.

His training and work experiences have allowed him to build a variety of skills that are important to function effectively as the state weed coordinator. While he is less technically proficient in the noxious weed management area, he is eager to learn first-hand from Colorado's weed management professionals and I have every confidence that he'll be a quick study.

Mr. Ryder will be starting with the Colorado Department of Agriculture on November 8, 2010.

Annual, Perennial, and Winter Rye... What's the Difference?

By Glenn Ledall, Sales Representative, Pawnee Buttes Seed, Inc.

Working in the seed business I often hear the statement, "Just throw some rye in it." I'm not sure the customer knows which one to include, but it suggests taking a closer look at representative species.

Annual ryegrass, *Lolium perenne* ssp. *Multiflorum*, is a cool season bunchgrass introduced from Europe. It can be used for pasture, hay, silage, as a cover crop, for erosion control and even for a temporary lawn. As its name implies it is an annual, but it can have biennial tendencies (especially in northern states), meaning a few plants can survive more than one year. Annual ryegrass has vigorous seedlings that can provide rapid ground cover. Annual ryegrass has been recommended as a cover crop to help stabilize the soil. What is most commonly known about annual ryegrass is that it germinates quickly, has rapid growth, and it is easily established even during cold weather.

Perennial ryegrass, *Lolium perenne* ssp. *perenne*, is also a cool season bunchgrass introduced from Europe and, as its name-sake says, it is a perennial. It too is a rapid germinator and establishes easily. There are both forage and turf varieties of perennial ryegrass that have different intended uses. Forage perennial ryegrass is very productive, very palatable, and a widely used pasture grass that recovers well from heavy grazing. Including perennial ryegrass in a seed mixture can increase the productivity of a pasture mix because more pounds of forage can be produced. Turf varieties of perennial ryegrass have been improved to have more disease and insect resistance, drought tolerance, and performance, especially when used for golf courses, sports fields, parks, and schools. These improved varieties are also used in landscapes for a more traditional lawn.

And what about winter rye? Winter rye, *Secale cereale*, is a cereal grain often confused with annual ryegrass. It can be grown for grain or as a forage crop. Winter rye is a member of the

wheat tribe (Triticeae) and is closely related to wheat and barley. Because it is a grain, the seed can be ground for flour and the plant can be used as animal fodder. Winter rye is planted in the fall to provide a ground cover in the winter to prevent growth of winter hardy weeds, and then tilled into the soil (in the spring) to provide more organic matter for next season's crop. It is also a common nurse crop.

Lastly, wildrye. There are many species of wild rye to consider such as Altai, basin, blue, Canada, mammoth, Russian, and others.

Blue wildrye, *Elymus glaucus*, is a cool season, perennial bunchgrass, native to the central and western U.S. As a pioneer species it is used in many revegetation mixes, providing good soil stabilization due to its high seedling vigor. It commonly grows in the shade and in the mountain brush zone. Its appearance is similar to Canada wildrye.

Canada wildrye, *Elymus canadensis*, is a native, cool season, perennial bunchgrass that is tufted at the base and produces clumps of low basal leaves. It often is used as a rapid cover and soil stabilizer, especially along roadsides and disturbed areas, due to its strong seedling vigor. It has good tolerance to salinity and shade. Other uses include wildlife forage, game bird cover, and field and stream filters. Canada wildrye is typically seeded in a mix with warm season and/or other cool season grasses.

Russian wildrye, *Psathyrostachys junicus*, is one of the lesser known wildryes but certainly a versatile forage grass. It is an introduced, cool season, long-lived, perennial bunchgrass with an abundance of long dense basal leaves. This species is highly palatable to livestock and wildlife, especially deer, elk and antelope. It is very competitive with weeds, once established. As a pasture grass, it recovers rapidly after grazing if soil moisture is available. It is exceptionally cold and drought tolerant, but not tolerant of spring flooding or high water tables. Russian wildrye has good tolerance to salinity. Because of its high digestibility and long season of use, Russian wildrye is unique among semi-arid cool season grasses.

Now that we know more about these species, clearly we can conclude each has its purpose. Whether it's for your garden, lawn or pasture or use in a reclamation mix, knowing more about rye or wildrye and its use will help us determine if it is a benefit or detriment to your situation.

Noxious Weed Profile

Common and Cut Leaf Teasel, *Dipsacus fullonum* and *D. laciniatus*

Status: List B species. Not widely distributed in Colorado.

Family: Dispacaceae, Teasel Family. Native relatives, pincushions (*Scabiosa* and *Knautia*)

Origin: Endemic to Europe. Introduced for "fulling" (brushing) wool fabric in Colonial times and later as a seed contaminant.

Description: Both teasels are tap rooted, growing up to 6 feet tall. The 2 inch long, compact, club-like flower heads have tiny purple (common) or white (cut leaf) flowers that appear from June to September. Flower heads are subtended by large pointed bracts. Both species are gener-



ally prickly or hairy throughout. Stems have rows vertical prickly ribs. Rosette leaves are wrinkled looking, oval to lance shaped with prickles on the underside of the mid-rib. Stem leaves are opposite, lance shaped, wavy edged (common) or irregularly lobed (cut leaf) and clasp the stem, forming a cup that can hold water. Dead plants persist through the winter.

Life Cycle: Both teasels are biennial or monocarpic perennials (flower once in their life cycle, then die) that spreads rapidly in moist sites.

Habitat: Can colonize a variety of habitats, but prefers open sunny locations. Found along roads and railroad rights-of-way, wet areas, sedge meadows and in gardens.

provide an interim solution to weed and soil management while waiting for irrigation water restoration.

We are evaluating several cover crop options on a farm near LaSalle, Colorado. Similar to many other situations in the South Platte Valley, this site lost alluvial well water after court decisions curtailed junior pumping rights following the 2005 growing season. Our goal is to provide cover crop recommendations for farmers who need to temporarily fallow irrigated land, assume dryland production, or establish grasses in formerly irrigated fields. The last irrigated crop on this field was sugar beets, leaving the loamy sand soil unstable with little residue to control erosion. The farmer anticipated growing a corn crop the following spring and applied approximately 20 tons of manure after the beets. But, with irrigation water unavailable, corn was not feasible. The field subsequently grew weeds that were controlled through mowing and herbicides. With only about 12 inches of annual precipitation and low soil water holding capacity, dryland farming is marginal on this and other farms that are losing irrigation water in the area.

The strategy examined at this demonstration site uses cover crops for nutrient mining and weed suppression during the transitional period between irrigation curtailment and perennial grass establishment. Beginning in 2006, we planted cover and forage crops to assess their ability to suppress weeds, produce residue cover, and uptake nutrients. We evaluated barley, winter wheat, triticale, forage sorghum, sorghum sudangrass and hay millet in varying rotations. We used no-till planting to minimize soil disturbance and erosion potential.

Herbicides, primarily glyphosate and 2,4-D, were used to control weeds prior to planting. Herbicides were also used to burn down winter cover crops prior to seed formation to save moisture and provide residue cover for a summer crop. In fall 2008,

we dormant-seeded a cool season grass¹ into sorghum residue on two plots following two years of cover cropping. The following spring, a warm season mix² was planted in adjacent plots after a winter cover crop sequence. In late fall 2009, we dormant-seeded a different cool season grass mix³ into sorghum residue on two plots following three years of cover cropping. Measurements taken at this site to assess the success of this strategy include plant biomass production, ground cover transects, soil nutrient analysis, soil moisture, and total plant nitrogen uptake.

With high temperatures and minimal precipitation during the growing season, 2010 has been a challenging year at the site. Spring plantings of warm season grass and sorghum were both failures due to these climatic conditions. Increased weed pressure has been a serious problem this year, requiring two mowing operations and two applications of broadleaf herbicide.

Results from the project show that cover crops provide a viable source of soil cover and residue to reduce erosion, suppress weeds, and uptake nutrients when restoring previously irrigated land. Weed suppression resulted in proportionate increases in cover crop biomass with decreases in weed seed and biomass production (Figure 1). However, precipitation is necessary for establishment of desirable plants.

This year has shown the vulnerability of new plantings if no water is available to establish stands. The cool season grass has shown greater potential to compete with weeds than the warm season grass after two years of cover crop and two seasons of grass growth. In fact, despite the difficulties this season, the established cool season grass plots from the 2008 planting produced significant forage and were essentially weed free without mowing or chemical control.

This research has generated considerable interest from local landowners. However, many questions remain regarding the proper conversion of dewatered irrigated land, particularly where water is unavailable for establishment of new vegetation. Additional research on weed control, soil ecological health, localized grass species selection, and appropriate planting techniques are needed to provide better recommendations for landowners facing temporary or permanent loss of irrigation water.

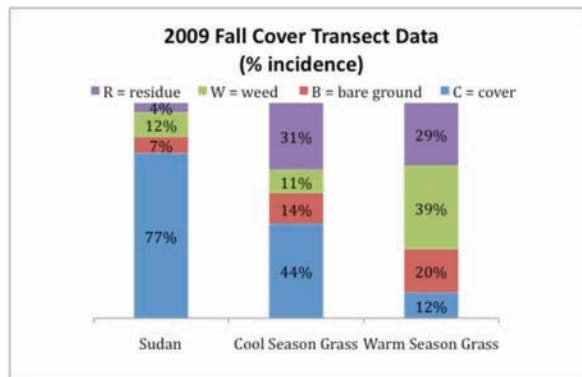


Figure 1. Fall 2009 ground cover type as affected by cover crop and grass type.

Threats: Competitive. Can invade high quality habitats including natural areas. Cut leaf teasel is more aggressive than common teasel.

Control: Physically remove small rosettes before taproot enlarges. Cut and dispose of flowering heads. Several herbicides are effective on rosettes. Mowing is ineffective because stems will sprout from root crown.

Photos by Steve Dewey, Utah State University, Bugwood.org

- 1 pubescent wheat grass.
 - 2 10% little blue stem, 5% indian rice grass, 10% sideoats grama, 10% sand lovegrass, 20% prairie sandreed, 20% switchgrass, and 5% sand bluestem.
 - 3 10% green needlegrass, 15% slender wheatgrass, 15% western wheatgrass, 20% pubescent wheatgrass, 20% intermediate wheatgrass, 20% russian wildrye.
- Sutherland, P.L., K.L. Conrad, D.A. Miller, J.A. Knapp and W.G. Hassell. 1988. Re-vegetation of previously irrigated cropland: I. Development of a research and demonstration program. *Rangelands* 12(1): 12-16.
- Sutherland, P.L. and J.A. Knapp. 1990. The impacts of limited water: A Colorado case study. *Journal of Soil and Water Conservation* July-August 1988: 294-298.



First Class Mail
US Postage Paid
Permit No 3744
Denver, CO

CWMA

1566 Saint Paul Street
Denver, CO 80206


Plan Now To Attend

CWMA 2010 Annual Conference December 7-8, 2010

Pueblo Convention Center,
Pueblo, CO

www.puebloconventioncenter.com
Lodging provided by the
Marriott Pueblo Hotel, Pueblo, CO
www.Pueblomarriott.com

Get together with colleagues, old friends, and new acquaintances at the 2010 CWMA Annual Conference and Trade Show. The 1-½ day conference will include a presentation from Keynote Speaker, Mike King, Colorado Department of Natural Resources, discussing Invasive Species Progress. Additional topics include updates on the Colorado Department of Agriculture Plant Assessments, the CWMA 2010 Lobbying Effort, NPDES Update, Adjuvant Choices for Weeds and Herbicides, Winning the Yellow Toadflax Battle, and more!



*CWMA Annual
Conference*

The conference will continue the tradition of providing time to visit with exhibitors so attendees can gain firsthand information about products and services specific to our industry.

NEW FOR 2010 - On-line conference registration and the opportunity to download a conference brochure. **Visit www.cwma.org today for detailed information!**

Other Upcoming Events

ISA Rocky Mountain Chapter Pesticide Applicators' Workshop

18-19 November 2010
Douglas County Fairgrounds

2010 RMRTA Conference & Trade Show

7-9 December 2010
2010 Crowne Plaza DIA, Denver, CO