

RANGE WAR ON WEEDS:

USDA Project Focuses New Effort On Serious Foe

B. Marie Jarreau-Danner



Photo courtesy of USDA-ARS Burns, OR. - **Land and resource managers and ranchers gather at the Circle Bar Ranch in Mitchell, Oregon to learn on-site about EBIPM and how to combat invasive annual grasses.**

Picture courtesy of USDA-ARS Burns, OR – **Healthy rangelands similar to the area below are increasingly surrendering to the invasion of invasive plants such as cheatgrass and medusahead.**



This article is the first in a series of articles to educate the public on the issue of destructive invasive grasses (cheatgrass and medusahead) that continue to negatively alter the ecological landscape of the Inter-Mountain West's Great Basin and the effort of the EOARC to launch an innovative project to combat that invasion.

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By B. Marie Jarreau-Danner

Of all the serious issues faced by the US as a nation - one enemy has been most difficult to overcome due to its ability to bounce back again and again with a huge arsenal of weaponry and mastery of the landscape. Until recently, efforts to overcome this threat to wildlands, recreation-lands and range-lands across the western US - and that can negatively impact the economy - have fallen short of the end goal. However, a battle being waged in the Great Basin of the Intermountain West continues to evolve as land stewards develop more science-based strategies for long term success against aggressive non-native grasses.

Moisture-Laden Meadow Flowers Displaced by Fire Fuels

Many raging wildlands fires have been fueled and spurred on by the presence of these annual grasses. Once beautiful landscapes are reduced to monocultures of dead brown waste vegetation and millions of dollars have been spent in the effort to suppress resulting wildfires and to restore the health of the landscape.

The Great Basin intermountain plateau contains valuable natural resources vital to the success of life in the West. This series of basins and watersheds covers most of Nevada, more than half of

Utah and parts of California, Idaho, Oregon and Wyoming. Land managers have been engaged for many years in serious warfare against the continued advancement of invasive, destructive vegetation.

While smaller scale integrated pest management (IPM) efforts have, in the past, addressed the issue of invasive annual grasses, the battlefield is now being expanded to watershed and regional levels.

In an effort to initiate a sustained program of success, range managers are proposing a five-part approach to control-



Areas where healthy rangeland has surrendered to medusahead (above) or cheatgrass (below) can have a tremendous impact on the economy, from the increased danger of wildfires to the loss of wildlife habitat, usable rangeland and recreation areas.



ling cheatgrass and medusahead - among the most serious of the invaders.

Five Watersheds in Five States to Participate

The Area-wide Demonstration of Ecologically-based Invasive Plant Management of Annual Grass Ecosystem (EBIPM) is funded by USDA-



Agricultural Research Service (based out of the Eastern Oregon Agricultural Research Center, Burns). The project will address each of five watersheds in a site-specific effort using information already gained from years of study, new data being collected on each site and through work with other land managers and users. Participants will be able to identify and address fundamental causes of the widespread encroachment of perennial weeds and design strategies to combat the invasion with suc-

cessful outcomes.

In essence, the Area-wide Project is a unique effort that will take science to an application scale throughout the Great Basin area and may be the single most critical method to successfully manage the invasion of these annual grass species.

Considered an ecosystem of national impor-

tance, the fragile landscape of the Great Basin has long been under siege by the accidental introduction of aggressive, non-native, annual grasses. Cheatgrass and medusahead are among the



The Great Basin area of the west (outlined above in white) includes most of Nevada, almost half of Utah and much of Idaho, Oregon and California.

most critical of these grasses that have already had major negative impact on food production as well as on the ecology and recreational experiences throughout the Great Basin ecosystem.

Cheatgrass and Medusahead Possess Aggressive Tactics

Cheatgrass is an annual grass that came to the U.S. from Eurasia during the last half of the 1800s. It quickly gained a foothold in rangelands



An aerial view of the Eastern Oregon Agricultural Research Center in Burns, where scientists have worked for more than 100 years to improve rangeland conditions throughout the west.

where, for various reasons, native vegetation had begun to decline. Cheatgrass has continued to travel across and populate wide areas of the Intermountain West. A winter annual grass, its seeds can germinate in the fall when temperatures are low. It continues its root growth throughout the cold winter months. By the time other perennial grasses are just beginning to emerge in the spring, cheatgrass has a head start and wins in the competition for precious water and nutrients.

It also completes its life cycle much earlier than the native perennials. Cheatgrass seeds are distributed and the plants become tinder

dry vegetation by the middle of June while native grasses still contain about 65 percent of their moisture.

As the cheatgrass dominates the landscape, perfect conditions are created for wildlands fires. Those wildlands fires that ravage the landscape in midsummer can be devastating to the indigenous forbs and grasses that most likely had not yet begun to develop their seeds. With the massive seed production of cheatgrass, only a few plants are needed to overwhelm the native sagebrush and perennial

communities. In the fall cheatgrass seeds are ready and able to begin the cycle again, each year in larger and larger numbers.

Due to the dominance of cheatgrass upon the landscape, the intervals at which wildlands fires return to the landscape have increased from historical 60-100 year intervals to less than 5 year intervals. In many areas this has proven disastrous to



The ability cheatgrass has to progress through its life cycle much quicker than the native perennials means it can take advantage of spring moisture and produce seeds before the hot, dry summer months.

some recreation lands, rangelands and even to populated areas when fires are fueled and pushed ever closer to housing areas by overgrown grasses that mature early in the fire season.

Cheatgrass and medusahead are often found growing together. Their growth habit, life cycle and affects upon native perennials and thereby affects upon the landscape are similar. Their cycle enables cheatgrass and medusahead to alter the landscape and expand their invasive range each year.

In the case of medusahead, its high silica content makes it unpalatable to animals except in early stages of its growth. The high level of silica also makes the decomposition of medusahead very slow. This can result in a buildup of stem litter

upon the surface of the landscape, prohibiting the germination of the later sprouting perennial grasses.

Medusahead grows best in soil containing clay because of the sustained availability of moisture late into the year. However it also does well in some areas containing mainly sandy soil. Fibrous medusahead roots develop quickly allowing it to extract moisture from deep below the surface giving it a rather unfair advantage against native vegetation. Most of its seeds germinate in the fall but some remain dormant to sprout in winter or in spring, thus giving it a head-start over later-germinating natives.

The invasive plants complete their life cycle early in the season and become wide ranging stands of dry, dead fire fuels while native annuals are still in their growth phase.

Diverse Native Grasses Support One Another

Perennial vegetation throughout the Great Basin exists as part of the ecosystem and supports the health of that system. Displacement by the non-native grasses depletes that support system and changes the healthy diverse landscape to a monoculture susceptible to massive erosion and fast moving wild-lands fires.



Medusahead usually greens up early in late spring to early summer and its initial appearance may seem lush and healthy but this early growth is one of its tactics that help it out-compete more desirable native plants.

Catastrophic fires can then accelerate the destruction of the ecosystem as well as threaten public and private property, require enormous financial costs aimed at suppression of the fires and take a toll on the lives of people involved.

The battle to take back the land and return it to healthy levels of native vegetation has already cost Great Basin ranchers millions of dollars in lost production and in efforts to control the spread of the invading grasses.



The spread of invasive annual grasses causes a significant increase in frequency and intensity of wildland fires.

In some ways this is an unseen battle. Many people have no idea of the personal impact that could occur if the Great

Basin ecosystem were lost. Deterioration of that system would have wide-reaching negative affects upon range and recreation lands and even on distant communities as a result of the increase and severity of wildlands fires.

Rangeland managers are now implementing an innovative program that will not only seek to weaken the impact of invasive annual grasses but also to manage the soil system or growing environment so it favors growth and expansion of the native perennial plants that continually support more healthy ecosystems.

Invasive Grasses Can Negatively Affect Even Air Quality

The concern over invasive grasses is not limited to the direct affects on the landscape. Rather, the affects are far reaching. When the historic supportive ecology of the landscape is altered

by dominance of the invasive short cycle annuals and wildlands fires are increased in severity and recurrence, even air quality in distant communities can be negatively affected.

Watersheds and water quality can be affected by the loss of perennial vegetation due to increased runoff and/or lack of natural filtration. Wildlife habitat including forage and protective cover are altered by the dominance of invasive grasses. Recreational opportunities can be permanently altered and or lost to the invasion due to the change in the landscape.

Large-scale demonstrations of EBIPM (Ecologically-Based Invasive Plant Management) efforts in five watersheds (Boise, Idaho; Park Valley, Utah; Rock Creek, NV; Jordan Valley, OR and Smoke Creek, CA) in five states over a five-year



The Area-Wide Project, based at the Eastern Oregon Agricultural Research Center in Burns (1), Oregon, includes demonstration areas and projects in Jordan Valley (2), Oregon, Boise (3), Idaho, Smoke Creek (4), California, Park Valley (5) and Logan (6), Utah and Elko (7) and Reno (8), Nevada.

period will be conducted under this project with more than 20 scientists dedicated to the work.

More Information Will Unveil The Strategy and How You Can Help

More information will be available to the public as the project progresses. An introduction to the project, to be offered in the near future, provides more details about just how this battle is being waged, who will do what and where the battle-grounds are located.

Other forthcoming information will include resources for landowners, land users and managers to take part in the struggle. Educational opportunities are being developed and those who have already begun the fight with some positive outcome

in particular areas will be sharing their experiences about those efforts against invasive grasses.

There's a lot riding on the continued success of the project and the return of healthy stands of native vegetation to the landscape. While the battle began long ago, new techniques and attack methods are now among those tools aimed at overcoming the enemy's resources.

Watch for more information on how these efforts being put into place to turn the tide on the costly invasion progress and how those successes affect landowners, land users and other aspects of Great Basin communities as well as the nation as a whole.

B. Marie Jarreau-Danner can be contacted at
PO Box 1206, Hines, OR 97738 or
by email: bmjd@centurytel.net

For more on EBIPM and the Area-Wide Project, please visit EBIPM.org. The website includes more in-depth information on the project and up-to-date progress as well as many of the resources for landowners, land users and managers mentioned in this article.

