Abstracts for Idaho Noxious Weed Conference
January 10-11, 2024

Wednesday, January 10, 2024

8:00 – 8:30 AM **Opening Remarks**
Director Chanel Tewalt
Idaho State Department of Agriculture

8:30 – 9:30 AM **Noxious Weed Species in a Changing Climate**

Matthew Germino (Supervisory Research Ecologist, US Geological Survey)

Exotic annual grasses such as cheatgrass and the fires they promote, and success of management tools such as herbicides and seeding are highly sensitive to weather and thus climate variation. I will review the latest information on the status of exotic annual grasses, and insights on their spread, focusing on what can and cannot be known well from available maps derived from remote sensing. Next, I will review the primary herbicides and evidence for their longevity once applied, and how their application and target and non-target effects are affected by weather and climate. Non-target effects will include release of desirable residual perennials or biological crusts or undesirable and more noxious invaders such as exotic forbs. Seedings are often a needed tool to accompany herbicides and increasing climate-resilient perennials can lead to more durable treatments, but combining herbicides and seedings can be non-trivial. Published and preliminary evidence for effectiveness for different herbicides and seeding techniques will be presented for both burned and unburned contexts. Given the uncertainties in climate, weather, and how to best treat sites to reduce invaders and bolster desirable perennials, management interventions are more likely to achieve success if they can 1) address root causes of invasions and 2) use of the treat-monitor-learn-retreat cycle that is that hallmark of adaptive management.

9:30 – 10:30 AM **Noxious Weed Law**

Jeremey Varley (Section Manager, Noxious Weeds, ID State Department of Agriculture)

The Idaho Noxious Weed Law and rule does on occasion see updates that are initiated either by petition or through regular scheduled review. At this time there have been some updates to species listed under rule and some other minor changes. We will go over the new species, their biology and identifying characteristics.

Pesticide Use and Application Rules

Ryan Ward (Administrator, Idaho State Department of Agriculture)

In 2023, the Idaho Administrative Procedure Act 02.03.03, which governs the use and application of pesticides and chemigation, underwent a revision to align with new regulations set forth by the US Environmental Protection Agency. Throughout this revision process, the rule was made available for public comment, as part of Idaho's Negotiated Rulemaking procedure, allowing members of the affected public to propose modifications to the rule. The proposed amendments encompass various aspects, such as enhancements to licensing categories, professional recordkeeping obligations, recertification credit criteria, and more.

10:30 – 11:00 PM ***Break – Visit our Vendors***

11:00 – 12:00 PM Idaho Biological Control Update - new agents and new releases
Dr. Mark Schwarzlander (Professor of Entomology, University of Idaho)

This presentation will provide attendees with information about advances in biological weed control research and timelines for expected USDA release decisions for new weed biocontrol agents. We will discuss specific release techniques and monitoring protocols for new biological control agents that have been approved for release in the United States for common crupina, yellow starthistle and houndstongue. We will discuss differing integrated weed management practices for these weeds and provide information on identification and differentiation of these weeds in the field, especially for common crupina which is a much less well known federal listed noxious weed. We will discuss standardized SIMP analyses used to measure the impact of biological control and its results for weeds in the State of Idaho. Attendees will learn about the approval process for weed biocontrol agents in the USA and pending and recently approved petitions for biological control agents in 2023. In addition, attendees will learn which new biocontrol agents will become in 2024 and where first releases will take place. For other biocontrol programs we will discuss current host-specificity testing efforts, and legal frameworks that allow to release some but not other biocontrol agents. We will discuss some of our chemical ecological research that helps us to obtain regulatory approval for field release for agents that otherwise may be rejected. Finally, we will discuss and ask attendees for input of new weed biocontrol outreach initiatives.

12:00 – 1:30 PM Lunch Break

1:40 – 2:40 PM Professional Development: "The Bottom Line Is Not Your Finish Line"
Brad Dalton (CEO and Founder, Positive Warrior Network)

2:40 – 3:10 PM Break -- Visit our Vendors

3:10 – 4:10 PM Rehabilitation/Restoration
Dr. Kevin Jensen (Retired Research Geneticist, Utah State University)

The rate of large-scale conversion of western US rangelands from a diverse, healthy, perennial plant-dominated ecosystem to invasive annual grasses, particularly cheatgrass is increasing. Developing native grasses with an increased ability to establish and persist will hopefully decrease areas returning to cheatgrass dominance in our disturbed rangelands. Recent plant breeding efforts together with the use of glyphosate-based herbicides, dimethylamine salt of 2,4-dichlorophenoxyacetic acid, and indaziflam have centered on increasing native grass stands and persistence. To evaluate the performance of recently released native grass cultivars compared to older plant materials and Siberian and crested wheatgrasses (controls), experiments were conducted at four semiarid rangeland locations in Idaho (1), Wyoming (1), and Utah (2) addressing seedling establishment and plant persistence of 10 perennial cool-season grass species. Across all environments, native grass seedling establishment of bottlebrush squirreltail [29 ± 0.08 (standard error) seedling/m^2], bluebunch (28 ± 0.05), slender (30 ± 0.05), and Snake River wheatgrasses (28 ± 0.08) were similar to 'Vavilov II' Siberian wheatgrass (36 ± 3.20). However, by Y5 (year five), western wheatgrass, Snake River, and thickspike wheatgrasses were the only native grasses to have plant densities similar to Vavilov II (37 ± 0.29) and 'Hycrest II' (36 ± 0.29) crested wheatgrass. The ability of western and thickspike wheatgrasses to spread via rhizomes likely explains the increase in plant density by Y5 and confers a competitive advantage in the presence of cheatgrass. Our data suggests

that on rangelands that experience 292 to 415 mm of annual precipitation that newly developed native grasses were able to establish but still often lack the ability to persist on these study sites. Increased seedling establishment observed in the native grasses provides land managers with additional tools; however, there is still a need to look at increasing plant persistence of our native grasses. Herbicide differences will be discussed. To summarize this presentation, Dr. Kevin Jensen will discuss the proper identification of invasive annual grasses, particularly cheatgrass. Cheatgrass, or downy brome, is a very serious invasive annual grass that has changed western landscapes by devaluing land and forage value and increasing fire cycles. Management options of cheatgrass through native grass breeding and development to outcompete cheatgrass will be provided. Additionally, the use and differences of glyphosate-based herbicides, dimethylamine salt of 2,4-D, and indaziflam, as a chemical means to improve environmental health of western rangelands will be discussed.

4:20 – 5:20 PM **What Applicators Need to Know About Pesticide Use and the ESA and a Review of Glyphosate Toxicology**

Ronda Hirnyck, Extension Professor & University of Idaho Pesticide Coordinator

This presentation will discuss the new strategy that EPA will utilize to manage federal pesticide registration for the protection of endangered species from outdoor pesticide applications. We will also spend some time reviewing the importance of reading and comprehending pesticide labels. The label will be especially critical with some of the endangered species strategies. Additionally, there will be a review of glyphosate toxicology and the risk benefit ratio that is utilized by EPA when registering pesticides for use in the U.S.

Thursday, January 11, 2024

Concurrent classes will take place with the following tracks:
Track 1: Technology Emphasis
Track 2: Application Strategies, Methods & Safety
Track 3: Integrated Pest Management or Bio Control Emphasis

Track 1: Technology Emphasis

8:00 – 9:00 AM ***Two ½ hour presentations*:**

How Adjuvants Help In Noxious Weed Control (1/2 Hour)

Don Frantz (Branded Products Territory Rep, Wilbur-Ellis)

This discussion will cover general understanding of what an adjuvant is, and why we use them. Defining the different categories of Adjuvants i.e. Surfactants, Oils, DRT's, and more. Discussing adjuvant types that we can use to address the timely and important topic of improving our water quality when we spray, and mixes that have issues with varying levels of hard water and/or high pH water. Best practices in proper adjuvant selection, the relationship between adjuvants and active ingredients, and much more.

Carrying the Work Forward *(1/2 Hour)*

Dave Collins (Area Sales Manager, Envu)

Invasive winter annual grasses such as cheatgrass, medusahead, Ventenata, and bulbous bluegrass negatively impact western rangeland at a landscape scale. One major concern of land managers, ecologists, and wildlife biologists in the western US is the ever-increasing threat of invasive winter annual grasses, the possible permanent displacement of in-tact native perennial ecosystems, and an increase in fine-fuels associated with wildfire. New digital tools such as **RangeView** for project planning and post-treatment monitoring, coupled with **Rejuvra herbicide (Indaziflam)** for long-term invasive annual grass control, can be used to increase restoration success.
Long term risks include:

1. Greatly decreased livestock forage amount and quality
2. Increased risk of wildfire frequency due to the abundance of fine fuels
3. Decreased ecosystem diversity and productivity
4. Decreased and displaced wildlife habitat

On our roadside, industrial areas, and around our utilities noxious weeds such as Kochia, Leafy Spurge, and numerous thistles quickly spread at a high cost to our native environment, financially in labor and materials, and accident potential.

Long term risks include:

1. Line-of-sight risks for traveling public and road crews
2. Decreased pollinator and wildlife habitat
3. Decreased native perennial grasses and forbs
4. Increased wildfire risk

This presentation will look at new technology represented within **RangeView** to measure, monitor, and build a compressive plan for sustainable range land restoration. We will look at the chemical characteristics of Indaziflam, a group 29 herbicide, as well as the **Rejuvra** label. This will include chemical application guidelines and expectations as to how, when, and where it works. Lastly, we'll discuss herbicide safety and the effects on our environment.

9:05 – 10:05 AM ***Two ½ hour presentations*:**

Controlling Resistant Kochia with Pre and Post Emergence Herbicides (1/2 hour)

Jon Storr (Territory Manager, Northwest - Nufarm)

There have been several variants of kochia identified that are resistant to multiple herbicides. This causes many challenges for vegetation managers. In this presentation we will discuss the data collected for the past several years and look at both pre emerge and post emerge product tank mixes or blended products to control these resistant kochia variants. The data will show that control is possible of not only 2,4-D and dicamba resistant kochia but also glyphosate and fluroxypyr.

Improving Sustainability While Increasing the Bottom Line (1/2 hour)

Nick Hoffman (Western Business Development, Nutrien)

As application techniques, public relations and product selection continues to evolve, leaders need to be efficient and good stewards of the environment in order to meet both short- and long-term goals. Being able to choose from many different types of application methods, tank mixes and equipment can be confusing. We will discuss how to put this all together to create an effective and environmentally sustainable vegetation management plan while keeping the budget in mind.

10:05 – 10:35 AM BREAK

10:35 – 11:35 AM ***Two ½ hour presentations*:**

New Products for Bare Ground Control and Dual Use for Grass Growth Suppression and Selective Weed Control (1/2 hour)

George Beck (Technical Service Representative, Alligare, LLC)

Alligare has two new liquid, premix IVM products. Ballast is flumioxazin plus imazapyr and Mainline is flumioxazin plus imazapic - each mixture is very broad weed spectrum. Ballast and Mainline have two mechanisms of action where flumioxazin is a PPO inhibitor and imazapyr and imazapic are ALS inhibitors. Ballast should be targeted on areas devoid of desirable trees and shrubs due to the activity of imazapyr on woody species. Mainline, however, may be used near most desirable trees and shrubs without causing injury. Ballast demonstration plots established on oil and gas facilities in October 2022 near Fort Collins CO, displayed 100% bare ground 11 months after treatment applications thus, showing its long-lasting capacity. Panoramic can be used for selective weed control and also is useful at rates to selectively suppress grass growth on roadsides and similar areas, thereby decreasing the need for mowing, and control many annual weeds simultaneously.

Understanding Label Rates, Timing of Application, PPE and the Environmental Fate of Herbicides such as HighNoon, Piper EZ and Vastlan (1/2 hour)

Trent Brusseau (Corteva)

Focus will be to get a better understanding for handlers and applicators on how to understand use sites, what rate to use for specific site, weeds, environment. While also getting to understand what products have the correct properties for the environment and user.

11:35 AM – 1:00 PM LUNCH BREAK

1:00 – 2:00 PM ***Two ½ hour presentations*:**

Successful WAG Management: Include Seeding to Recover Habitat and Protect Seedlings from Annual Forb Invasion (1/2 hour)

*George Beck (*Technical Services Representative, Alligare, LLC*)*

Downy brome, medusahead, and ventenata are winter annual grasses that are widespread in the western US and cause considerable impact to private landowners and public land managers. Imazapic (Panoramic), rimsulfuron (Laramie) with or without glyphosate (Glyphosate 4 Plus) are commonly used to control these weedy grass species. The most typical application timing is in fall often into October and November and in some locations, mid- to late-winter applications are viable, but herbicide choice differs. Native grasses and forbs can be sown into imazapic and rimsulfuron and successfully establish when infestations are severe enough that most desirable species have been eliminated by competition. Establishing grass and forb seedlings must be protected from invasion by weeds such as Russian thistle and Kochia.

Controlling Aquatic Plants in Different Systems (1/2 hour)

Travis Fuller (Technical Specialist – SePRO Corporation)

Idaho has a number of different invasive and nuisance aquatic plants throughout the state. These plants can be found in ponds, lakes, rivers, and canals and have varying levels of affects to those systems. This presentation will cover identification and control of different aquatic invasive and nuisance plants found in Idaho. Aquatic approved herbicides will be discussed along with tips on timing and application. The environmental affects of control versus no control will also be covered.

2:05 – 3:05 PM ***Two ½ hour presentations*:**

Keeping Accurate Pesticide Spray Records (1/2 hour)

Dan Salois (Regional Sales Representative, PBI Gordon)

Keeping accurate chemical spray records can be a challenge. You can simplify and automate your recordkeeping by using a GPS spray tracking system. We will cover the benefits of using a GPS spray tracking system and demonstrate how SpraySync can be used to monitor your spraying and simplify your reporting.

Restoring annual invasive grass degraded rangeland *(1/2 hour)*

Harry Quicke (Regional Stewardship and Development, Envu)

The focus will be on the use of Rejuvra herbicide for restoration of western rangelands. The unique characteristics of the herbicide that make it an efficient tool for invasive annual grass control will be discussed. Examples of restoration trials from across the west will be shared in addition to documented outcomes relating to wildfire risk reduction, wildlife and pollinator habitat enhancement, and species diversity.

Track 2: Application Strategies, Methods & Safety

8:00 – 10:05 AM ***Proactive Restoration-Getting Ahead of the Annual Grass Curve***

Diane Schuldt (Plant Ecologist/Program Manager Botany, Invasive Species & Pollinators, Salmon-Challis National Forest)

Katie Baumann (Plant Ecologist/Asst Program Manager, Botany, Invasive Species & Pollinators, Salmon-Challis National Forest)

Trent Brusseau (Corteva)

Dennis Newman (Regional Wildlife/Habitat Manager, Idaho Dept of Fish and Game)

Rosana Rieth (NRCS Conservation Team Lead, Natural Resources Conservation Service)

Jessie Shallow (Partner Biologist, Mule Deer Foundation & Idaho Dept of Fish and Game)

Topics to be covered by the panel include:

- Ecological Considerations of Controlling Cheatgrass & Idaho Noxious Weeds: Katie will cover the ecological considerations for using herbicides to control cheatgrass and noxious weeds. She will discuss why herbicide is the currently the right tool for landscape level treatment of cheatgrass and other invasive annual grasses intermixed with Idaho noxious weeds in east central Idaho.
- Controlling Cheatgrass in a Resilient Landscape using Rejuvra: Rosana and Jessie will cover two case studies on private rangeland using Rejuvra and Milestone to control cheatgrass, Idaho noxious weeds, and other undesirable weedy species. They will discuss why they chose Rejuvra, treatment windows, their development of treatment plans with the landowners, and lessons learned going on two years after treatment.
- Results of 6 Years of Aminopyralid/Imazapic Landscape-level Fall Aerial Applications in East-Central Idaho: Diane and Jared will discuss six years of fall applications of tank-mixed aminopyralid and imazapic via helicopters in central Idaho. Discussion includes equipment used, necessity of drift control and adjuvants in aerial applications, application methods, environmental outcomes, and the absolute importance of communicating application plans with surrounding communities and private landowners.

- Understanding the Timing, Rates, and Environmental Safety Milestone Brings to an Invasive Annual Grass/Noxious Weed Program: Trent will discuss how to utilize Milestone in combination with other herbicides to control invasive annual grasses and noxious weeds at a landscape scale. Trent will discuss timing, rates, and PPE's needed for application. Trent will also cover the environmental safety profile of Milestone.
- Resiliency from the Bottom-up: Resilient Wildlife Populations are Rooted in Resilient Rangelands - Dennis will cover why we are using Aminopyralid and Imazapic to restore degraded rangelands and canyonlands in central Idaho for the benefit of big game species and a myriad of other wildlife. There are long-term impacts of invasive annual grasses and noxious weeds on the habitat of three ungulate species if left uncontrolled. Dennis discusses the threats that invasive annual grasses and noxious weeds have on wildlife populations, the impacts of Milestone/Plateau landscape scale treatments, and a proactive approach to addressing these issues in an environmentally responsible landscape approach. Specifically, this includes the importance of herbicide selection and the timing of application in creating quality wildlife habitat.

10:05 – 10:35 AM BREAK

10:35-11:35 AM Herbicide Application Equipment, Calibration and Tank Mixing

Chase Youngdahl (Bonner County Noxious Weeds, Department Manager)

Application equipment used to apply herbicides; small, medium and large apparatuses, as well as common pumps and nozzles will be discussed. Sprayer calibration will be covered for several different types of application equipment and how calibration ties in to herbicide rates and adhering to the label. The presentation will also touch on application techniques, tank mixing procedures and equipment care/maintenance/storage.

11:35 AM – 1:00 PM LUNCH BREAK

1:00 – 2:00 PM Noxious Weeds and Poisonous Plants

Dr. Bryan Stegelmeier

In Idaho 71 weed species have been designated noxious and mandated by law to be controlled. Nearly half of these are also potent toxic plants. Obvious plants include goatsrue, yellow starthistle, knapweed, black henbane, houndstongue, transy ragwort, vipers bugloss, poison hemlock, puncture vine and white top. These are generally foreign, invasive plants that can expand and dominate pastures, fields and ranges where they displace many more nutritious plants and contaminate forages. The objectives of this presentation are to review the process of identifying poisonous plants and the diseases they induce; review the roles extension and weed control experts contribute to this process; and introduce and discuss the conditions of poisoning, select plant induced diseases, and potential treatments or management strategies to minimize poisoning problems.

2:05 – 3:05 PM Invasive Pigweed Update

Dr. Albert Adjesiwor (Assistant Professor and Extension Weed Management Specialist, U of I CALS)

Palmer amaranth and waterhemp are the two most troublesome pigweeds in crop production systems in the US. They have developed resistance to nearly all herbicides commonly used in Idaho cropping systems. In this presentation, we will discuss the current distribution in Idaho, how to identify these pigweeds and recommended management options to prevent further spread.

Track 3: Integrated Pest Management or Bio Control Emphasis

8:00-10:05 AM Integrated Pest Management Strategies that Incorporate Bio-Control in Utah, Oregon, Washington, and Idaho

Joel Price (Oregon Department of Agriculture Biological Control Entomologist)
Amber Mendenhall (Utah Weed Supervisors Association, State Weed Biological Control Coordinator)
Jennifer Andreas (Integrated Weed Control Program Director, Washington State University)
Carol Randall (US Forest Service Northern and Intermountain Region Pesticide Use Coordinator)
Joseph Milan (Bureau of Land Management National Biological Control Specialist)

Topics to be covered by the panel include:

Pest plant identification

- Gorse
- Knotweed complex
- Flowering rush
- Toadflaxes
- Knapweeds
- Common crupina

Measures to avoid or minimize adverse health effects
Discuss risk of applying pesticides with backpack sprayers, UTVs, aircraft

- Personal Protective Equipment required for pesticide application

Potential environmental consequences of the use and misuse of pesticides

- Environmental factors managers must consider when applying pesticides
- Relative risk of pesticide (environmental persistence, plant community impacts) vs. classical weed biological control

The remaining hour of the session will focus on the impact of classical weed biological control programs in Oregon, Washington, Idaho, and Utah. Specifically in hour two each state participating- Utah, Washington, Oregon, and Idaho- will discuss specific weed biocontrol programs which have had a measurable impact on the population of the target weed and challenges each state program has worked to overcome in incorporating weed biocontrol tactics in existing weed management strategies. Each state speaker is planning to discuss how they have incorporated classical weed biocontrol into an integrated weed management strategy which includes additional control tactics such as herbicides, mechanical, and cultural (including re-seeding). The focus of the second hour will be to demonstrate how adding weed biocontrol to an existing integrated weed management strategy can increase overall weed control across a landscape while reducing the risks associated with an herbicide only strategy for weed control.

10:05 – 10:35 AM BREAK

10:35 – 11:35 AM Use of IPM Thresholds for Weed Management

Dr. Timothy Prather (Professor, University of Idaho)

A measure of a weed's presence in an area is useful to design strategies for control and also to determine if management for the weed is moving the plant community in a desired direction. Three broadleaf weeds, yellow starthistle, rush skeletonweed, and meadow hawkweed, provide examples of thresholds. Foliar cover of perennial grasses provide useful threshold values to determine when herbicides like aminopyralid, aminocyclopyrachlor, or clopyralid should be used for yellow starthistle or rush skeletonweed. Above those thresholds, biological control may be sufficient. For meadow hawkweed, its growth stage and time of year determine whether to apply aminopyralid or clopyralid for both control and increased forage production. For annual grasses, we have found both timing and herbicide coverage measures that elicit consistent annual grass control when using herbicides like indaziflam and imazapic. In addition, when thresholds of cheatgrass cover are reached, risk of fire spread may increase suggesting timing for control to avoid potential damage to sagebrush grasslands. As we discover Integrated Pest Management thresholds, our herbicide applications can be more effective and better timed.

11:35 AM – 1:00 PM LUNCH BREAK

1:00-2:00 PM Grazing management for invasive annual grasses

Scott Jensen (Extension Educator-Owyhee County, University of Idaho

Management of invasive annual grasses can be challenging on rangeland. Developing a better understanding of plant ecology and livestock grazing behavior can help land managers create an integrated management plan that includes livestock grazing targeted at reducing invasive annual grasses such as medusuahead, downy brome (cheatgrass), and ventenata. This presentation will review how to identify the previously mentioned invasive annual grasses and share results and current research from studies conducted at UNR's Gund ranch in Nevada and a multi-state collaborative research project in the Three Fingers allotment in BLM's Vale District in Oregon. Livestock grazing targeted at invasive annual grasses can be used as a tool to reduce wildfire risk and be used as a tool to decrease herbicide use to minimize potential

environmental damage. This presentation will also be discussing the timing of application, rates, and use of imazapic and indaziflam.

2:05 – 3:05 PM **Idaho Invasive Species Program Update/Grasshopper and Mormon Cricket Program Update**

Nic Zurfluh (Bureau Chief for Invasive Species, Noxious Weeds and Range Programs, ISDA)

This presentation will review the Idaho Invasive Species Program including prevention efforts in the form of watercraft inspection regulations and laws, monitoring and delineation surveys, treatment operations and how the chemical treatments were applied for the recently conducted quagga mussel eradication effort that includes a review of the chemical used, and its effect on the ecology of the waterbody it was used in. Additionally, it will review the outreach efforts that were conducted during the treatment of the Snake River and how the treatments were reported to the public in a professional manner. The presentation will also review the state Grasshopper and Mormon Cricket control program, preseason scouting, the chemical used, application method used, and its effect on the environment. Additionally, the presentation will cover how the chemical risks and exposures were communicated to landowners in a professional manner.