Western Society of Weed Science Newsletter

12110 N Pecos Street, Ste. 220, Westminster, CO 80234
(303) 327-8016
info@wsweedscience.org

SUMMER 2020

IN THIS ISSUE:

Sidebar highlights:

- Contact Us
- Officers & Executive Committees
- Publications
- Calendar of Events

President's Report - by Corey Ransom

I hope that you are all safe and well. For me, Maui seems a distant memory, but not one I will ever forget. The Hawaii meeting was extremely successful financially for the WSWS, generating significantly more revenue for the society than is typical. This is a relief as the financial outcomes of our annual meeting are always a point of stress for those who select the venue as well as those in charge of the meeting content. We held the summer board meeting this past week to discuss the activities of the society and the plans for our 2021 meeting. Four individuals were able to travel to Boise for the meeting and the rest of the board members and some committee chairs joined the meeting over Zoom. It was disappointing not to interact in person, but the virtual meeting was highly productive and it was nice to interact with the leadership of the society even on the computer. The society has great volunteers and I continue to be amazed at the things that are accomplished by various officers and committees.

As you would expect, a large part of our board meeting was spent discussing the challenges facing WSWS due to COVID-19 and the possibilities and options for our annual meeting. Sandra McDonald, President Elect and Program Chair, will address the board's decisions. I want each member to know of the thoughtful and meaningful discussions by the board in representing each member of the society in these challenging times. No decisions were made in haste or without weighing all current information. I especially want to thank Sandra as well as Eric Gustafson for extra time spent reviewing and negotiating options for the venue and putting together potential meeting format possibilities.

I am excited to announce that the board unanimously approved the formation of an ad-hoc committee to address Diversity and Inclusion within WSWS. This committee will be chaired by Elizabeth Mosqueda who talked on this subject in the General Session of our meeting in Denver two years ago. The committee will work to develop a statement on diversity and inclusion for presentation to the Society for acceptance at the annual meeting. This will likely become a standing committee in the future, interacting with other committees to foster diversity and inclusion within WSWS.

I hope that all of you have been able to make the best of things during this time. I have appreciated additional time to spend with my family as well as to develop

CONTINUED ON PAGE 2

WSWS Annual Meeting March 1-4, 2021

President's Report – CONTINUED FROM PAGE 1

some new hobbies. My appreciation has increased for the incredible people who work for me as they have carried my research program forward effectively under restrictive conditions. Let's all hope for the best in the development of solutions to the pandemic in the coming months so that we can achieve some sense of normalcy in our jobs and in our interactions with each other. I feel that the connections we have with each other within our society are as important now as ever as we face this time together.

2021 Annual Meeting

Sandra McDonald WSWS President-Elect/Program Chair

The WSWS Board of Directors unanimously voted to hold the WSWS/WAPMS joint meeting March 1-4, 2021 as a virtual meeting. It is our plan to use a robust conference platform so that we provide the best possible experience for our members, presenters, exhibitors, and sponsors. The Program Committee wants to build on the foundation of our in-person format to create a program that will be engaging, unique and valuable to all virtual attendees.

We wanted to bring some certainty in these uncertain COVID times. Decision points included the travel bans and health and safety concerns for all attendees. We felt that making the decision now and not dragging it out would give our members time to plan for the best possible virtual meeting. It was not an easy decision, but we hope that it will lead to even greater participation.

The WAPMS Executive Committee voted to join us in the virtual format. We are excited to be able to maintain the Joint Meeting and will include the WAPMS Program Committee in every step of our planning.

We also voted to hold our 2023 Meeting in Boise at the Boise Centre/Grove Hotel venue. I traveled to Boise so I could visit the venues and they are great! We have extended an invitation to WAPMS to join us in Boise 2023 for an in-person joint meeting.

We approved three symposiums:

1. "Updates from Weed Biocontrol- An Unsung Component of Integrated Weed Management on Land and in Water" – I think this symposium will be of specific interest for both WSWS and WAPMS.
2. "Annual Invasive Grass Management" – Another topic that will be of special interest to our land manager members and very relevant to the western United States. As I write this, I can feel the smoke in the air from the fires in Western Colorado.
3. Are Herbicide-Resistant Crops the Solution to Herbicide-Resistant Weeds?" – This symposium will focus on herbicide resistant weed management in

CONTINUED ON PAGE 3

Contact Us

Newsletter Editor
Carl Libbey
225 S. 10th ST
Mount Vernon, WA 98274
(360) 336-5286
wswsnewsletterediter@gmail.com

WSWS Officers and Executive Committees

President
Corey Ransom
Utah State University
4820 Old Main Hill
Logan, UT 84322
corey.ransom@usu.edu
Awards, Site Selection

President-Elect
Sandra McDonald
Mountain West Pest
2960 Southmoor Dr
Fort Collins, CO 80525
sandra@mountainwestpest.com
Program, Poster, Publications, Student Paper Judging, Local Arrangements

Immediate Past President
Pat Clay
Valent
7498 N. Remington Ave
Fresno, CA 93711
pat.clay@valent.com
Fellows & Honorary Members, Sustaining Members, Nominations

Secretary
John Madsen
USDA ARS
Robins Hall 274, MS-4
1 Shield Ave
Davis, CA 95616
jmadsen@ucdavis.edu
Necrology

WSSA Representative
Marty Schraer
Syngenta Crop Protection
152 E Cassidy Drive
Meridian, ID 83646
marty.schraer@syngenta.com
Legislative

CAST Representative
Gregory Dahl
Winfield United
3336 Casey Street
River Falls, WI 54022
gkdahl@landolakes.com

Member-At-Large
Public Sector
Julie Kraft
Sublette County Weed and
Pest District
PO BOX 729
Pinedale, WY 82941
Jakraft80@gmail.com
Finance

Member-At-Large
Private Sector
John Coyle
Ark Valley Weed Management
and Consulting LLC
515 Greenwood Ave
Canon City, CO 81212
avweeds@gmail.com
Herbicide Resistant Plants

Research Section Chair
Mithila Jugulam
Kansas State University
Dept. of Agronomy
2004 Throckmorton
Manhattan, KS 66506
mithila@ksu.edu

Research Section Chair-Elect
Judit Barroso
Oregon State University
48037 Tubbs Ranch Road
Adams, OR 97810
judit.barroso@oregonstate.edu

Education Section Chair
Todd Neel
USDA Forest Service
26 Fort Missoula Road
Missoula, MT 59806
toddaneel@fs.fed.us
Education
Public Relations

Education Section Chair-Elect
Carl Coburn
Bayer Crop Science
9751 SE State Farm Road
Maxwell, NE 69151
carl.coburn@bayer.com

2021 Annual Meeting – CONTINUED FROM PAGE 2

agronomic crops, but underlying concepts are applicable to any agricultural system.

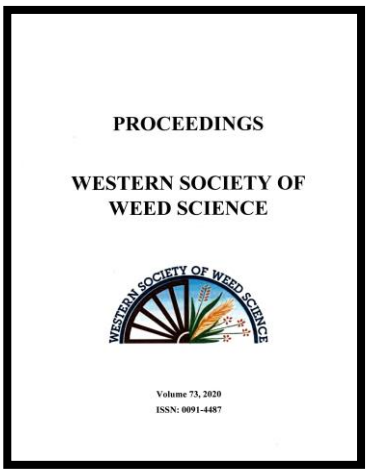
All three symposiums will not only be of interest to our current WSWS members but will also be of interest to weed managers in both crop and non-crop settings. The 2021 virtual format will allow them to participate fully without the typical travel and financial constraints.

The WSWS Board was firmly committed to maintaining the meeting components that make WSWS so special. We will still have the Student Contest (oral presentations and posters), Student Night Out, the Opening Reception, awards presentations, general business as well as networking opportunities.

This format is new for WSWS, but we are only one among many other societies and associations going viral. I have already participated in multiple virtual conferences and have had mostly positive experiences that I hope to build upon. I have also seen a few flops; sometimes it is good to learn what not to do. Many of you have probably already had the same experience. The difference between the good and bad was the amount of planning. The Program Committee and I are committed to planning, but this is going to take a "field crew." If you are willing to volunteer or simply share your observations of what has worked during other virtual conferences that you have attended – we are listening!

Please feel free to contact me (**sandra@mountainwestpest.com**), Mithila Jugulam (**mithila@ksu.edu**), Research Section Chair, or Todd Neel (**todd.a.neel@usda.gov**), Education & Regulatory Section Chair, or any of our Board members, if you need any clarification or have ideas to share.

2020 Proceedings



The Proceedings from the 2020 Maui, Hawaii 73rd annual Joint Meeting of the Western Society of Weed Science and the Weed Science Society of America have been posted to the WSWS website. You can view or download the Proceedings by following this link:

WSWS 2020 Proceedings

Student Liaison Report

Mirella Ortiz

Hello WSWS Students,

Jodie and I, your student liaisons, attended the summer board meeting at the start of August. Unfortunately, we didn't get to physically see each other, but the online meeting was as great as in-person. That board meeting is an excellent networking opportunity for the student liaisons, as well as a great opportunity to get a handle on how the society runs. I would like to remind everyone that students are strongly encouraged to be involved in the society. Examples of how to participate include volunteering to be on one of the various committees of the WSWS or to nominate yourself for the Student Liaison Chair-Elect position. This coming meeting will offer many additional opportunities for student involvement. More information about student opportunities will be emailed to you as the annual meeting approaches but if you have questions or would like to get involved right away in the society don't hesitate to contact me or Jodie for more information.

With the upcoming virtual meeting in mind, I would like to hear about the student's concerns and suggestions on how to make this a great experience for students as we always have. A survey will be sent out by late August to hear you – and you can always e-mail me at any time. During the summer board meeting we discussed student awards, student competition, and student night out and we were all on board of keeping them all and doing it the best way possible – again, suggestions are more than welcome. With that in mind, it is time for students to start preparing applications for the WSWS Elena Sanchez Outstanding Student Scholarship Program. With the meeting being held virtually, the details of this great travel award are not yet completely finalized, but three outstanding students will be recognized during the meeting – we all know how important these awards are for students.
As our annual meeting nears, please keep an eye out for emails, on the twitter (**@WSWSstudents**) and Facebook (**WSWS Facebook Page**) pages for reminders and information and upcoming deadlines.

Mirella Ortiz, Student Chair
mirella@colostate.edu

Jodie Crose, Student Chair (elect)
jcrose@uwyo.edu

Publications

WSWS ONLINE EDUCATION
http://passel.unl.edu/pages/index2col.php?category=weedscience#

WSSA Journals Website Online
www.wssa.net/publications/

CALENDAR OF EVENTS

Canadian Weed Science Society Annual Meeting
Nov. 23-26, 2020
www.weedscience.ca

North Central Weed Science Society Annual Meeting
Nov. 30 – Dec. 2, 2020
www.ncwss.org

Northeastern Weed Science Society Annual Meeting
Jan. 4 – 7, 2021
www.newss.org

Southern Weed Science Society Annual Meeting
Jan. 24 - 28, 2021
www.swss.ws

Weed Science Society of America Annual Meeting
Feb. 15 - 18, 2021
www.wssa.net

Western Society of Weed Science Annual Meeting
Mar. 1 - 4, 2021
www.wsweedscience.org

Rita Beard Foundation Scholarship

The Western Society of Weed Science's Rita Beard Endowment Foundation Scholarship supports students and early career invasive species managers with educational opportunities by providing registration and travel funds to a professional meeting including the 2021 Western Society of Weed Science, 2021 Western Aquatic Plant Management Society, 2021 North American Invasive Species Management Association, or the 2021 Society of Range Science meeting. Go to: **Rita Beard Endowment Foundation Scholarship** for information and details on qualifications and how to apply. The deadline for applications is October 15, 2020. Applicants will be informed by November 1, 2020. If you have questions, contact either Kirk Howatt, WSWSRBF President (**kirk.howatt@ndsu.edu**) or Julie Kraft, WSWSRBF Secretary (**jakraft80@gmail.com**).

Weed Science Blogs in the West

A blog is an online journal or informational website displaying information in the reverse chronological order (firstsiteguide.com/what-is-blog, accessed 8/10/20). It is a platform where a writer, or a group of writers, share their views on an individual subject. While there are numerous blogs on weed, a.k.a pot, grass, marijuana, etc., there are few blogs on weed science.

The title of longest running blog in the western region belongs to **The University of California Weed Science blog**. The blog is a group effort of the campus- and county-based members of the UC Weed Workgroup. In recent years, about 100 posts per year have been made by 20-30 contributors; this shared effort both broadens the weed topics covered and also lightens the load of individual posters as they try to make at least one post per week. Ten years after its launch, the UC Weed Science blog is a useful component of their outreach programs. It sometimes functions as a primary outlet for weed information, sometimes as a place for repurposing and adding online shelf-life to materials produced for other extension venues, and sometimes as a way to link together their programmatically and geographically diverse weed science efforts in California.

Andrew Kniss, University of Wyoming, has been managing his own weed science blog, **Plant out of Place**, since the summer of 2017. Although the frequency of his postings vary, the posts are always very engaging and often provocative. The blog is primarily a place for Andrew to post musings about issues related to weeds and their management. In this way, it is a continuation of his previous blog (Weed

CONTINUED ON PAGE 6

Weed Science Blogs in the West - CONTINUED FROM PAGE 5

Control Freaks). Andrew contends that many things that people "know" about agriculture and weed management (like a weed being simply a plant out of place) are usually partially wrong, or at the very least dependent on a very narrow set of conditions. Details and nuance matter. Most of what he writes about is an attempt to dig into those necessary details and nuance to better understand issues surrounding weed management and the science of weeds and agriculture.

Weeders of the West is a new weed science blog involving a group of weed scientists and county extension faculty from Washington State University, Oregon State University, and the University of Idaho. The blog was started in the spring of 2020. Herbicide resistance has been a major theme of many of the posts, but other weed-related topics have also been discussed. New posts are made about every two weeks and the author of the new post is responsible for responding to comments to their post until the next new post is uploaded to the website, at which time the ability to comment is turned off. This reduces the time commitment any one writer needs to make to the blog. Time, it seems, is everyone's most limiting factor when it comes to managing a blog, and a group approach is one way to manage the time commitment. Readers can subscribe to a listserv (mailchimp.com) to receive an email notification when a new post or comment is uploaded.

Blogs are often more discoverable in web browser searches than static webpages or pdf newsletters. This can garner increased media attention for your work and expand your outreach. Blogs are also an effective tool for cross-linking with other resources, for example, you could write a post about a recent extension publication, tweet about the blog post, then link to the first blog post when you write another article later on the topic, etc. This cross traffic can increase search engine rank for your content.

Blogs are another way for weed scientists to share their science and their thoughts about science with the nonscientific public. They can be fun to write because they are less formal than other formats, and if done well, can garner insightful comments that allow everybody to grow in their understanding of issues. Why not consider starting your own weed science blog today?

Drew Lyon, Washington State University

Brad Hanson, University of California-Davis

Andrew Kniss, University of Wyoming

Russian knapweed biological control shows promise in Colorado

Dan Bean and Sonya Daly, Colorado Department of Agriculture, and Carol Randall, US Forest Service

Russian knapweed *(Rhaponticum repens*), a long-lived perennial with an extensive root system, is one of Colorado's worst weeds, often forming dense, destructive monocultures. Scientists at CABI (Centre for Agriculture and Biosciences International), in Delamont, Switzerland, discovered and tested two insects that feed only on Russian knapweed (are host specific) and damage knapweed in its native range in Eurasia. One agent is a fly, *Jaapiella ivannikovi*, known as the Russian knapweed gall midge, which forms galls at the growing shoot tips of the plant (Figure 1). The other agent is a wasp, known as the Russian knapweed gall wasp, *Aulacidea acroptilonica,* and this insect forms galls on the growing stems of the plant (Figure 1). Weed biocontrol specialists in Wyoming and Montana obtained the insects from CABI and began implementation of Russian knapweed biocontrol in 2009. The Colorado Department of Agriculture (CDA) received insects through the USDA APHIS PPQ in 2010 and initiated a statewide Russian knapweed control program. Continued cooperation and sharing of biocontrol agents between states has allowed Colorado and other western states to establish Russian knapweed biocontrol agents in large knapweed patches.

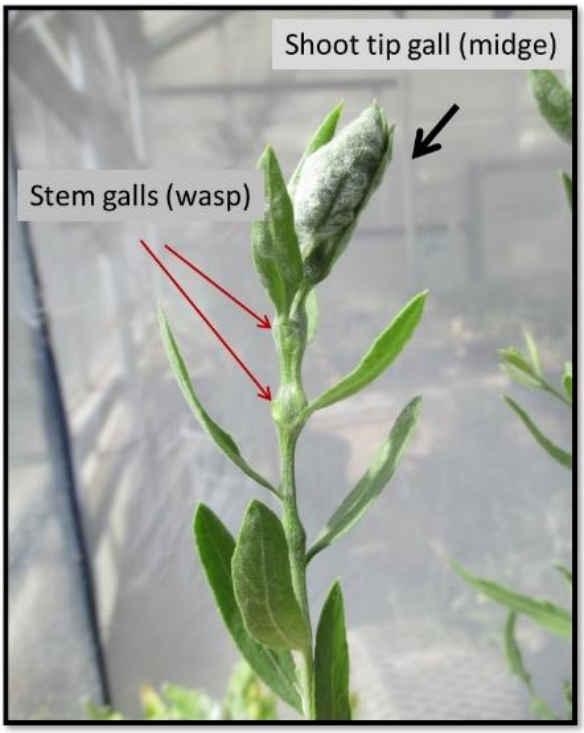


Figure 1: Russian knapweed stem with a midge gall and two wasp galls

Both of the biocontrol agents cause the host plant to produce galls, which encase and protect the feeding and developing larval stages. Production of galls diverts nutrients from the developing plants and may cause the plants to become deformed and stunted. Beyond this similarity, the gall wasp and gall midge differ in the way they attack the plant and in their biology and life histories. These differences have allowed us to hit Russian knapweed plants in widely variable ecological settings and to increase the overall damage inflicted on a plant. The midge undergoes multiple generations in a season, potentially resulting in rapid population growth, but requires growing shoot tips, which may not be available during the summer, especially during dry years when plants may senesce early in the season. The wasp undergoes only a single generation in the spring then spends the entire summer, fall and winter in diapause (dormancy) waiting until the following spring to emerge as a reproductive adult. The larval wasp can easily make it through a dry summer while encased within the hardened stem gall. This makes the wasp better for dry sites and the gall midge better for wetter sites, such as riparian or irrigated sites.

Since both the midge and wasp are active as reproductive adults during the spring, they may form galls on the same plants (Figure 1) utilizing different parts of the plant. In areas where both wasp and midge can survive and achieve viable populations, the impact on Russian knapweed plants will likely be enhanced by having both agents established.

The CDA has been releasing Russian knapweed agents and monitoring release sites since 2011. In 2018 one of the early release locations along the Gunnison River, near the town of Delta, CO, showed a large increase in the number of wasp galls. By 2019 there were hundreds of thousands of galls at the site and in 2020 the Russian knapweed plants were heavily galled by the wasps (Figure 2) and lightly galled by the midges. Russian knapweed plants appeared stunted and other vegetation, including desirable forbs and grasses, is growing back at the site, apparently outcompeting the heavily galled knapweed plants (Figure 3). At a densely infested Russian knapweed site on Colorado's Dolores River wasps were recently established and gall numbers have increased dramatically, so that plants have become heavily galled (Figure 4).

Figure 2: A Russian knapweed plant from the Gateway, Colorado site on the Dolores River. The photo was taken in July, 2020, showing heavy galling by the wasp *A. acroptilonica*.

Our monitoring protocol includes a census of galls within a $16m^2$ area surrounding the release site. In 2019 we counted 450 galls within the census area, while in 2020 the number increased to 27,343 galls within the census area, and some individual plants had more than 100 galls. The Dolores River site is following the same trajectory that we noted at the Gunnison River site, which means that we can expect severe stunting of Russian knapweed in 2021.

The CDA has worked with cooperators from a number of states, most notably Montana, to get biocontrol agents out to Russian knapweed infestations throughout Colorado; and CDA has refined gall wasp mass rearing protocols (figure 5) so that in 2020 CDA Palisade personnel reared over 200,000 parasitoid-free adult gall wasps which were packaged into 1000 gall wasp releases provided to land managers in Colorado, Nevada, Washington, Idaho, Utah, and Wyoming. We are now able to assist other states in establishing the Russian knapweed gall wasp. If you are interested, please contact Sonya Daly at the CDA or Carol Randall at the USFS. The early signs of successful in Colorado show the potential for biological control to help bring Russian knapweed under control.

For more information please contact Dan Bean, Colorado Department of Agriculture, (970) 464-7916**, dan.bean@state.co.us**; Sonya Daly (970) 464-7916, **sonya.daly@state.co.us**; or Carol Randall, US Forest Service, (208) 783-2107, **carol.randall@usda.gov**

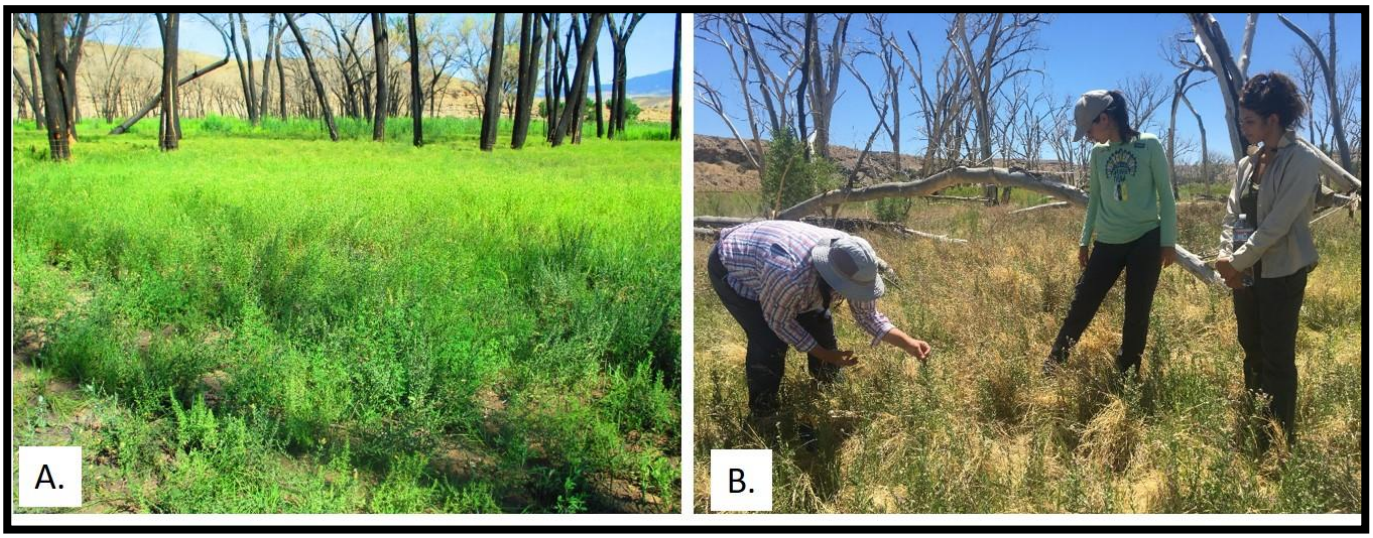


Figure 3: Riparian area along the Gunnison River in 2015, Russian knapweed is the dominant plant (panel A). The same area in 2020 after establishment of both the gall wasp and gall midge (panel B). Galls are abundant and Russian knapweed is stunted.

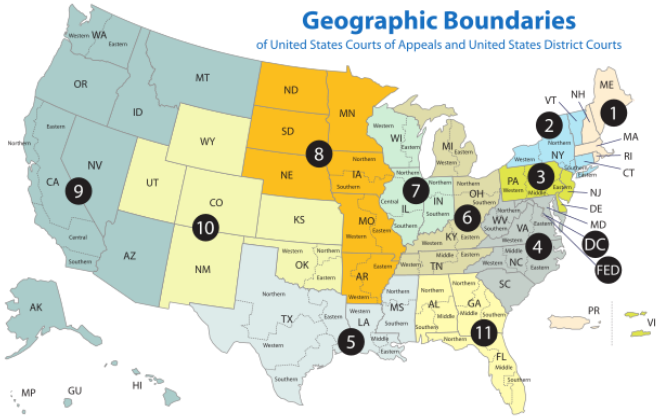
Figure 4: A stem gall on Russian knapweed, made by the wasp *Aulacidea acroptilonica*

Figure 5: An emergence cage filled with Russian knapweed gall wasps (left) and a closeup of the gall wasps climbing on a gall and an emergence hole in the gall where a wasp chewed its way out (see arrow)

WASHINGTON REPORT

August 26, 2020
Lee Van Wychen

Dicamba, Enlist Duo & the Ninth Circuit Court of Appeals



The Ninth Circuit Court of Appeals, headquartered in San Francisco, is the largest of the 13 Federal Circuit Courts with 29 Appellate judges. It has been the forum for two petitions challenging the EPA's registration decisions for XtendiMax, Engenia, and FeXapan in one case and Enlist Duo in another. Petitioners in both cases were the National Family Farm Coalition (NFFC), Center for Food Safety (CFS), Center for Biological Diversity (CBD) and Pesticide Action Network North America (PANNA). The Natural Resources Defense Council (NRDC) was also a petitioner in the Enlist Duo case. EPA was the respondent in both cases and the respondent-intervenor was Monsanto in the dicamba case and Dow Agrosciences in the Enlist Duo case. The petitioners argued that EPA's registration decisions for these herbicides violated certain provisions in both the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Endangered Species Act (ESA).

Dicamba. Case No. 19-70115. The court opinion and summary is available HERE.
On June 3, a three judge panel (i.e. "the panel") unanimously agreed EPA violated various provisions within FIFRA and thus, vacated the registrations of XtendiMax, Engenia, and FeXapan. Because the panel's vacatur was based on its holding under FIFRA, the panel did NOT reach the question whether the registration decision also violated the ESA.

From the court opinion summary:
"The panel held that the EPA substantially understated three risks that it acknowledged.

- *First, the EPA substantially understated the amount of dicamba-tolerant (DT) seed acreage that had been planted in 2018, and, correspondingly, the amount of dicamba herbicide that had been sprayed on post-emergent crops.*
- *Second, the EPA purported to be agnostic as to whether formal complaints of dicamba damage under-reported or over-reported the actual damage, when record evidence clearly showed that dicamba damage was substantially underreported.*
- *Third, the EPA refused to estimate the amount of dicamba damage, characterizing such damage as "potential" and "alleged," when record evidence showed that dicamba had caused substantial and undisputed damage.*

The panel also held that the EPA entirely failed to acknowledge three other risks.

- *First, the EPA failed to acknowledge record evidence showing the high likelihood that restrictions on over-the-top (OTT) dicamba application imposed by the 2018 label would not be followed.*
- *Second, the EPA failed to acknowledge the substantial risk that the registrations would have anticompetitive economic effects in the soybean and cotton industries.*
- *Third, the EPA failed to acknowledge the risk that OTT dicamba use would tear the social fabric of farming communities."*

Following the court's ruling, Bayer, BASF and Corteva filed separate petitions asking for an "en banc" review of the case, but those petitions were denied by the court in August. Members of the weed science societies remain focused on getting EPA the best available data so that they can make a science-based decision this fall.

Enlist Duo. Case No. 17-70810. The court opinion and summary is available HERE.

On July 22, a three judge panel (i.e. "the panel") ruled in favor of EPA by rejecting three of the four arguments from the petitioners that the Enlist Duo registration violated FIFRA. The one provision of FIFRA where the panel agreed with the

petitioners was that EPA failed to assess harm to monarch butterflies when milkweed was controlled in target fields (Note- this is where Enlist Duo was meant to be used, in the target field, and not from the impacts on monarchs from off-target movement. More on this below).

The panel also ruled on the question of whether EPA violated any provisions of the ESA in registering Enlist Duo, unlike the dicamba case. Two of the three judges rejected the petitioner's arguments that EPA violated the ESA. The lone dissenting judge held that EPA violated the ESA by failing to use the best scientific data to assess whether Enlist Duo would adversely affect threatened or endangered species.

The end result of all this is that the registration of Enlist Duo stands and that EPA has to "address the evidence that monarch butterflies may be harmed by the destruction of milkweed on target fields." The panel did note that EPA's error in failing to consider harm to monarch butterflies caused by killing target milkweed was not "serious".

From the court opinion summary in regards to FIFRA violations:

- *First, the panel agreed with petitioners that EPA failed to properly assess harm to monarch butterflies from increased 2,4-D use on milkweed in target fields. The panel held that given the record evidence suggesting monarch butterflies may be adversely affected by 2,4-D on target fields, EPA was required, under FIFRA, to determine whether any effect was "adverse" before determining whether any effect on the environment was, on the whole, "unreasonable." The panel concluded that EPA's failure to do so meant that its decision was lacking in substantial evidence on the issue.*
- *Second, the panel rejected the argument that EPA failed to consider that Enlist Duo would increase the use of glyphosate over time. The panel held that substantial evidence supported EPA's conclusion that neither the initial 2014 registration of Enlist Duo – nor the subsequent approvals for new use – will increase the overall use of glyphosate.*
- *Third, the panel rejected petitioners' contention that EPA failed to properly consider 2,4-D's volatility – i.e., its tendency to evaporate into a gas and drift to non-target plants. The panel held that EPA reasonably relied on studies to support its conclusion that the volatility of 2,4-D choline salt will not cause on unreasonable adverse effects on the environment. Accordingly, substantial evidence supported EPA's findings.*
- *Fourth, the panel rejected NFFS petitioners' contention that EPA should have accounted for the potential synergistic effect of mixing Enlist Duo with a different chemical called glufosinate. The panel held that this concern was speculative.*

The panel next addressed, and rejected, the petitioners' ESA claims. The ESA and its implementing regulations delineate a process – known as Section 7 consultation – for determining the biological impacts of a proposed action. The process starts with a determination whether the proposed action will have "no effect" or if it "may effect" listed species or critical habitat. If an action will have no effect, no consultation with the expert agencies is needed.

- *First, the panel rejected NFFC petitioners' challenge to EPA's "no effect" findings for plants and animals. The panel held that the EPA did what the ESA required it to do: assess risks to determine whether the exposure of protected species and critical habitat to potentially harmful chemicals would have any possible effect. The panel concluded that EPA's ultimate "no effect" findings, and adoption of mitigation measures, were not arbitrary, capricious, or contrary to law.*
- *Second, the panel rejected NFFC petitioners' argument that EPA's rationale for limiting the "action area" to the treated field was not sound. The panel accorded deference to the EPA in the way it chose to define the action area.*
- *Third, the panel rejected NFFC petitioners' argument that EPA violated its duty to insure no "adverse modification" of "critical habitat" by relying on its 2016 risk assessment.*

As to the impact on the monarch butterfly population, EPA did perform a risk assessment that considered Enlist Duo's effects to non-target plants, which includes plants important to monarchs. EPA found no concerns for terrestrial invertebrates (including monarchs) because Enlist Duo would only affect treated fields—not non-target plants—as long as it was used under the conditions prescribed by the label.

But the NRDC argued EPA should have considered how the destruction of milkweed on **target fields** would affect monarch butterflies. EPA acknowledged that it did not assess those risks because it was not required to do so. **Farmers will control milkweed on their crop fields through the use of herbicides or other means such as cultivation, with or without Enlist Duo.**

However, the panel noted "*Despite the intuitive appeal of EPA's argument, we must reject it. EPA did not assert this rationale as a reason for declining to assess the destruction of milkweed on target fields, so neither can we. Moreover, even had EPA asserted such a rationale, it would likely be premised on legal error. That milkweed would likely be targeted in the same ways even absent Enlist Duo's registration suggests that registering Enlist Duo may not be "unreasonable" under FIFRA. But it says nothing about whether an effect would be "adverse." Given the record evidence suggesting monarch butterflies may be adversely affected by 2,4-D on target fields, EPA was required, under FIFRA, to determine whether any effect was "adverse" before determining whether any effect on the environment was, on the whole, "unreasonable." EPA's failure to do so means that its decision was lacking in substantial evidence on this issue."*

Again, the panel noted that EPA's error in failing to consider harm to monarch butterflies caused by killing target milkweed was not "serious." The panel remanded so that EPA can address the evidence concerning harm to monarch butterflies and whether the registration of Enlist Duo will lead to an unreasonable adverse effect on the environment.

Weed Science Provisions in FY2021 House Ag Appropriations Bill

The House passed its FY2021 agriculture appropriations bill in July as part of a four bill "minibus" package. The Senate has not yet started on their FY2021 appropriations bills. The House Ag Appropriations bill includes a number of good weed science provisions in addition to increases in funding for the IR-4 Program and the AFRI competitive grants program. Funding for the IR-4 program has been stuck at $11.9 million for over a decade. We've been working to highlight the great work the program does and its value to the economy, so it was great to see the House Ag Appropriations Committee propose funding of $15 million for FY2021. Funding for the ag experiment stations (Hatch Act), university extension (Smith-Lever) and the Crop Protection & Pest Management (CPPM) program remain the same as FY2020 funding.

Weed Science Research —The House Ag Appropriations Committee "*supports the establishment of a National Program Leader dedicated to Weed Science Research and Management in the USDA National Institute of Food and Agriculture (NIFA)*".

Areawide Integrated Pest Management (AIPM) in NIFA. There are many strengths to effective AIPM projects, such as **TEAM Leafy Spurge** and **TAME Melaleuca**, but funding has only been available through USDA-ARS. We've been trying to get AIPM funding established in NIFA for several years. The House Ag Appropriations Committee "*supports the development and implementation of areawide integrated pest management (AIPM) projects and directs NIFA to establish within CPPM an organizational framework and funding plan to implement AIPM projects that are to be planned in coordination with ARS, APHIS, and other federal agencies and implemented by cross-institutional teams, including farmers, ranchers, and land managers, at the local level*."

Tropical and Subtropical Weed Research.—The House Ag Appropriations Committee "*directs ARS to coordinate with NIFA, the Forest Service, APHIS, and the USDA Climate Hubs to provide to the Committees on Appropriations of both Houses of Congress not later than 180 days after the enactment of this Act a report on research relevant to and efforts to assist Hawaii, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands … in land and forest resource management … and biology and control of invasive insects, plant diseases, and weedy plant species, and the development of integrated pest management strategies to control them*".

ogongrass. Of the 88 terrestrial weeds listed on the **Federal Noxious weed list**, cogongrass is arguably one of the most widespread. The House Ag Appropriations Committee "*continues to provide $3,000,000 for APHIS to partner with state departments of agriculture and forestry commissions in states considered to be the epicenter of infestations, to assist with control and treatment of cogongrass in order to slow the advancing front of this invasive plant-pest species and its impact on forest productivity, wildlife habitat, and private landowners*."

2020 State Noxious Weed Seed Requirements List Updated

The Seed Regulatory and Testing Division of the USDA Agricultural Marketing Service (AMS), which enforces interstate commerce provisions of the Federal Seed Act, recently updated the state noxious weed seed list. It is available online at **https://www.ams.usda.gov/rules-regulations/fsa** in two formats (PDF & Excel). The document contains information

about state labeling requirements and prohibitions of noxious weed seeds, and shows the scientific names and common names according to the law and regulations of the state in which the seed is considered noxious.

Parag Chitnis is NIFA Acting Director

Dr. Parag Chitnis is serving as Acting Director of USDA-NIFA upon the departure of Dr. Scott Angle in July who became Vice President of Agriculture and Natural Resources at the University of Florida in Gainesville. Dr. Chitnis was named Associate Director for Programs earlier this year and leads implementation of NIFA's approximately $1.7 billion research programs. Prior to joining NIFA, he was a research administrator at the National Science Foundation (NSF) – Division of Molecular and Cellular Biosciences, a professor in the Department of Biochemistry, Biophysics, and Molecular Biology at Iowa State University, and an assistant professor in the Division of Biology at Kansas State University. Chitnis has a B.S. in botany/plant breeding from the Konkan Agricultural University in India, an M.S. in genetics/biochemistry from the Indian Agricultural Research Institute, and Ph.D. in biology from UCLA.

Unsolicited Seed Packets from China

My inbox during the last week of July lit up with many emails and questions about people receiving packets of seeds from China that they had not ordered. The USDA Animal and Plant Health Inspection Service (APHIS) is working with the Department of Homeland Security's Customs and Border Protection, other federal agencies, and State departments of agriculture to investigate and collect as many seed packages as possible to determine whether they present a threat to U.S. agriculture or the environment. APHIS asks anyone who receives an unsolicited package of seeds to go to the **APHIS webpage** to review the question and answer **document** and support their collection efforts.

Authorities have already discovered packets containing seeds for dodder (*Cuscuta L.*) and Chinese waterspinach (*Ipomoea aquatica*), also known as swamp morningglory. **Both are on the Federal Noxious Weed list.** They have also found seeds for Sericea lespedeza, which is listed as a noxious weed in Kansas and Colorado. Other weed seeds identified include *Brassica spp., Datura spp., and Sisymbrium spp.* There were also some amaranth species identified, but apparently not weedy ones.

"Anti-FIFRA" Legislation Introduced in House, Senate

In August, Sen. Tom Udall (NM) and Rep. Joe Neguse (CO) introduced legislation (H.R. 7940 and S. 4406) that would drastically amend the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and jeopardize the continued innovation and availability of pesticide products. These bills impose an unscientific, unbalanced, politically driven process which would unnecessarily remove pest control options.

The legislation would ban organophosphate, neonicotinoid and paraquat pesticides, create a petition process to EPA for individual citizens, and alter the process for emergency exemptions, among other changes. In addition, the bills would enable local communities to enact policies without being vetoed or preempted by state law and would suspend the use of pesticides deemed unsafe by the European Union and Canada, pending EPA review, and would require the EPA administrator to make a finding within 90 days on petitions filed to designate chemicals as "dangerous." The National and Regional Weed Science Societies are **opposed to this legislation** and will be closely tracking these bills.

NEPA Rule Updates Should Improve Weed Management on Federal Lands

The Council on Environmental Quality (CEQ) announced a final rule July 15 to comprehensively update and **modernize National Environmental Policy Act (NEPA) regulations** for the first time in more than 40 years. CEQ is a division of the Executive Office of the President that coordinates federal environmental efforts in the U.S. and works closely with agencies and other White House offices on the development of environmental and energy policies and initiatives.

NEPA regulations control how the federal government processes environmental permits, but the law has often been used to block and delay federal projects and actions. More often than not, NEPA has been a roadblock to invasive species management. A classic example of this is with post-fire cheatgrass management in Wyoming. They have had several fires that burn on federal, state, and private land that is all interconnected. The state and private land owners were able to get in and treat cheatgrass within four months after the fire mitigating the potential invasion of cheatgrass onto adjoining lands. Meanwhile, it took the U.S. Forest Service four years to complete an environmental impact statement (EIS) for cheatgrass treatments, which by that time had allowed cheatgrass to invade an additional 2,000 acres and more than double its vegetation cover from before the fire.

The modernized NEPA regulations will accelerate the environmental review and permitting processes for management of our Federal lands and waters. The rule will establish a two-year limit for completion of environmental impact statements (EISs) and a one-year limit for completion of environmental assessments (EAs), and would also impose page limits.

The modernized NEPA regulations will also expand public involvement and improve coordination with States, Tribes, and Localities by requiring agencies to provide more information to and solicit input from the public earlier in the process to ensure and facilitate informed decision making by Federal agencies. The changes will also reduce duplication by facilitating use of documents already prepared by State, Tribal, and local agencies to be used by Federal agencies to comply with NEPA.

Toolkit Launched to Help Battle Invasive Grasses

The Western Governors' Association (WGA) hosted a **webinar** on July 23 to launch a new *Toolkit for Invasive Annual Grass Management in the West*. While the webinar and toolkit are focused on western weeds, there are some excellent examples of collaboration among a wide range of public and private stakeholders and federal and state agencies to effectively go after large-scale weed infestations, thus providing a blueprint for other land managers around the country.

The **toolkit** is comprised of three elements: 1) A roadmap for invasive grass management in the West, with new best management practices for the identification and protection of relatively intact "core" areas; 2) Case studies highlighting the application of these practices in Idaho and Wyoming; and 3) A new geospatial data layer to help state and local officials manage invasive annual grasses at home, while also offering opportunities to identify new cross-boundary collaborative projects.

Great American Outdoors Act Signed Into Law

The Great American Outdoors Act will establish the National Parks and Public Land Legacy Restoration Fund to support deferred maintenance projects on federal lands. The National Park Service (NPS) accounts for 84 million acres of land at 400 different sites. But as of 2019, there was $11.9 billion in deferred maintenance and repairs needed. The bill will direct up to $6.65 billion to priority repairs and up to $3 billion for other agencies like the Fish and Wildlife Service, Forest Service, and Bureau of Land Management. While there are no direct provisions in the bill for invasive species management, the restoration fund will help alleviate fiscal pressures at the Department of the Interior so that invasive species funding is not redirected to maintenance projects.

The second part of the bill will permanently fund the Land and Water Conservation Fund at $900 million per year. This was definitely the more controversial part of the bill and most of the Congressmen who voted against the bill did so because of this provision. The Senate passed the bill 73 to 25 and the House passed it 310 to 107. President Trump signed it into law on August 4.

None of the funding in the bill would come from taxpayer dollars. Instead, programs would be funded by royalties from energy developments on federal lands and waters. For fiscal years 2021 through 2025, 50 percent of all energy development revenues due to the U.S. would be deposited into the National Parks and Public Land Legacy Fund, up to $1.9 billion each year.

To celebrate the signing of the bill, U.S. Secretary of the Interior David L. Bernhardt announced that **August 4th will be designated "Great American Outdoors Day."** Henceforth, August 4 will be recognized as an NPS holiday, which means that in future years on August 4, you can visit national parks and public lands for FREE.

Lee Van Wychen, Ph.D.
Executive Director of Science Policy
National and Regional Weed Science Societies
Lee.VanWychen@wssa.net
(202) 746-4686

REQUEST FOR WSWS FELLOW AND HONORARY MEMBER NOMINATIONS

Dr. Jesse Richardson, Committee Chair

Now is your chance to nominate deserving colleagues as a WSWS Fellow or Honorary Member!

WSWS FELLOW

WSWS Guidelines for Nominating Fellows:

Fellows of the society are members who have given meritorious service to the Western Society of Weed Science.

The nominator must contact the member to be nominated and request them to prepare a concise [2-3 page] resume.

a. The nominee must be involved in the process. The most pertinent information about the nominee can only be obtained from the nominee.
b. The nominee's resume should be based on the WSWS guidelines approved by the Board of Directors (see below).
c. Information from the resume will be used by the nominator in writing the letter of nomination.
d. The nominator also is responsible for soliciting two letters of support for the nominee. The letters should be sent to the nominator and included in the nomination package sent to the committee.
e. The nomination package should include the nominee's vita, the nominator's letter of nomination, and two support letters.

SERVICE TO WSWS – Please address the following points in the resume:

1. **Officer:** President; Vice-President; Secretary, Research Section Chair; Education & Regulatory Section Chair; Editor; Other.
2. **Committees:** Standing; Special; Ad Hoc.
3. **Presentations and Publications:** WSWS – Papers, Proceedings, Research Progress
4. **Service to other Weed Science Societies**: Weed Science Society of America; State Organizations.
5. **Academic Weed Science Endeavors**: Teacher; Graduate Students; Refereed Publications; Extension Publications, Books; Popular Publications; Academic Weed Science Pursuits; Other.
6. **Industry Weed Science Endeavors**: Sales and Marketing; Research and Development; Regional Manager; Product Manager.
7. **Other Meritorious Weed Science Service**

WSWS HONORARY MEMBER

WSWS Guidelines for Nominating Honorary Members

Honorary members are selected from individuals whose activities have been largely from outside the Western Society of Weed Science, but who have significantly contributed to the field of weed science.

- The nominator must contact the person to be nominated and request them to prepare a vita.
- The nominator will then prepare a letter summarizing the nominee's contribution to the area of weed science with emphasis on how the interests of the WSWS have been served by this non-member.
- Include the vita with the letter of nomination to provide all pertinent information to the Committee.

NOMINATIONS FOR FELLOW AND HONORARY MEMBER PACKAGES ARE DUE BY **DECEMBER 15, 2020**

Send To:

Electronic submission preferred.

Jesse Richardson
(480) 487-4332
jesse.richardson@corteva.com

2020 Membership Renewal Form for the Western Society of Weed Science

To pay by credit card, please go to www.wsweedscience.org and login to your account)

IF YOU DID NOT ATTEND THE ANNUAL MEETING BUT WANT TO REMAIN A MEMBER, FILL IN THE INFORMATION BELOW AND SEND $30.00 FOR DUES TO THE ADDRESS GIVEN.

Last name First name Affiliation

Mailing address City State Zip code

Phone # w/area code e-mail address

Classification: Student ___ University ___ Federal Agency ___ State Agency ___
Private Industry (manufacturing and sales) ___ Private Industry (consulting) ____
Unemployed ____ Retired ____ other (specify) _____

Send to:
WSWS/IMI,
12110 Pecos St., Ste 220,
Westminster, CO 80234

Questions? info@wsweedscience.org or (303) 327-8016

Publications Available from the Western Society of Weed Science

(All prices include shipping and handling; bulk orders may be discounted, see below)

_____ Aquatic and Riparian Weeds of the West…… $45.00

_____ Weeds of California and Other Western States…… $85.00

_____ Weed Control in Natural Areas in the Western United States …… $40.00

_____ Interactive Encyclopedia of North American Weeds DVD……$50.00

Total_____

All publications can be ordered online at **www.wsweedscience.org** (click on **WEED BOOKS**)

To order by mail and pay by check, send this completed form with payment to:

WSWS Business Manager, 12110 Pecos St., Ste 220, Westminster, CO 80234.

Contact the Business Manager (Eric Gustafson) at (303) 327-8016 for bulk order prices.

Shipping Information:
Name: _____
Address: _____ City:_____
State: ___ Zip Code:_____ Telephone:_____
e-mail:_____

WSWS Objectives

- ❖To foster and encourage education and research in weed science.
- ❖To foster cooperation among state, federal and private agencies in matters of weed science.
- ❖To aid and support commercial, private and public agencies in the solution of weed problems.
- ❖To support legislation governing weed control programs and weed research and education programs.
- ❖To support the Weed Science Society of America and foster state and regional organizations and agencies interested in weed control.

Western Society of Weed Science
12110 Pecos St., Ste. 220
Westminster, CO 80234