

WASHINGTON REPORT

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Noxious Weed? Invasive Plant? Volunteer Crop?

Recently, I have been dealing with a number of increasing issues concerning the classification of weeds that may greatly impact the mission of the National and Regional Weed Science Societies. The mission of the WSSA (www.wssa.net) is to:

- 1) Promote research, education, and extension outreach activities related to weeds;
- 2) Provide science-based information to the public and policy makers;
- 3) Foster awareness of weeds and their impacts on managed and natural ecosystems.

As a weed scientist, I sometimes struggle with the various classifications of weeds such as noxious, exotic, invasive, alien, nonnative, nonindigenous, volunteer crop and my favorite-plant out of place (no acronym necessary). However, I believe there is a very important role for the weed science societies to help standardize science-based classifications for the public and policy makers as we foster the awareness of weeds and their impacts on both managed and natural ecosystems through research, education, and extension outreach activities.

Of all the classifications of weeds above, a “**noxious**” weed is the most straightforward because it’s a legal term (7 U.S.C. 7702(10)) defined in the Plant Protection Act (Public Law 106-224). The term ‘noxious weed’ means any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment. In other words, a **noxious weed** is any plant designated by a Federal, State or county government as injurious to public health, agriculture, recreation, wildlife or property. There is a well defined federal process for both listing and delisting plants as federal noxious weeds that is conducted through USDA APHIS. For more info see:

http://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/index.shtml

The word “**invasive**” is at the forefront of this discussion. What is an invasive weed or invasive plant? There is no mention of “invasive” or “exotic” or “alien” in the Plant Protection Act. Yet, the term invasive weed is increasingly popular in new federal legislation being introduced in the House and Senate (see below). The WSSA will be issuing a new journal during the first quarter of 2008 titled “Invasive Plant Science and Management”. The WSSA is also a major stakeholder in conducting the National Invasive Weeds Awareness Week (NIWAW). Certainly, people seem to “get” the invasive species message because the “message” has been out there much longer thanks to our fellow pest control colleagues working in entomology and plant pathology. Mission statement #2 above is a much easier to convey when I talk to people in Washington DC about “invasive plants” vs. “weeds”.

In the 2002 National Research Council report titled “Predicting Invasions of Nonindigenous Plants and Plant Pests” (<http://www.nap.edu/catalog/10259.html>), a biological **invasion** is defined as a phenomenon in which a nonindigenous species arrives in a new range in which it establishes, proliferates, spreads, and causes broadly-defined detrimental consequences in the environment.

Executive Order 13112, signed by President Clinton in 1999, defines an **invasive species** as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.”

The Invasive Species Advisory Committee (ISAC) to the National Invasive Species Council (NISC) issued an excellent white paper on invasive species definition clarifications last year. This paper can be found at: <http://www.invasivespeciesinfo.gov/docs/council/isacdef.pdf>

The ISAC definitions white paper was intended to provide a non-regulatory policy interpretation of the term **invasive species** by identifying **what is meant**, and just as important, **what is not meant** by the term. Some of the key conclusions of this paper are:

- 1) Invasive species are those that are not native to the ecosystem under consideration and that cause or are likely to cause economic or environmental harm or harm to human, animal, or plant health.
- 2) Plant and animal species under domestication or cultivation and under human control are **not** invasive species.
- 3) Furthermore for policy purposes, to be considered invasive, the negative impacts caused by a non-native species will be **deemed to outweigh** the beneficial effects it provides.

This leads me to my last point, or rather question: Do the National and Regional Weed Science Societies need to adopt a standard definition or criteria for an “invasive plant”?

- 1) Are all weeds invasive plants?
- 2) Are all invasive plants weeds?
- 3) Are all noxious weeds invasive plants?

As I mentioned at the beginning of this article, there can be confusion associated with all the various terms used to describe a weed. What is most troubling is that many people in our discipline would have no trouble stating a definitive “yes or no” answer to the above three questions, yet the general public is exposed to many different definitions and classifications. For example, you can go to the USDA Natural Resource Conservation Service (NRCS) Plants Database (<http://plants.usda.gov/index.html>) and look up “Invasive and Noxious Weeds” (<http://plants.usda.gov/java/noxiousDriver>).

As you scroll down the “Invasive and Noxious Weeds” page and start searching for different weeds, you also find that crops like corn, soybeans, cotton, rice, wheat, and alfalfa are listed

with the description “This plant can be **weedy** or **invasive** according to the authoritative sources noted below.” Can a **volunteer crop** be **weedy**? Can a **volunteer crop** be **invasive**?

Whether or not a species is considered an invasive species depends largely on human values. Do the National and Regional Weed Science Societies need to make a distinction between an “invasive plant” and a “weed”? That is for you to decide.

House Action on the 2007 Farm Bill

During the week of May 21-25, the House Agriculture Subcommittee on Conservation, Credit, Energy & Research passed legislation on to the full House Agriculture Committee regarding its jurisdiction in the 2007 Farm Bill. This was the first action in either the House or Senate. In February at the WSSA annual meeting, the WSSA was very fortunate to have Dr. Gale Buchanan, USDA Under Secretary for Research, Education, and Economics present the Administrations proposal for the 2007 Farm Bill.

The House Agriculture Committee 2007 Farm Bill draft language can be found at: <http://agriculture.house.gov/inside/2007FarmBill.html> This site provides a breakdown by each subcommittee of the different Farm Bill Titles as they become available.

The Research Title is a potpourri of the various proposals (The Administration, CREATE-21 and NIFA) that have been introduced up to this point. The bad news is that there is no mention of doubling agricultural research funding. This was a primary goal of the CREATE-21 and NIFA proposals. However, the good news is that the House version of the Farm Bill proposal adopted the Administration’s proposal that includes \$50 million per year for the agricultural bioenergy and biobased products research initiative and \$100 million per year for the specialty crops research initiative. Unlike the Administration’s or the CREATE-21 proposal, there would be no merger of the Research Education and Economics Agencies (CSREES, ARS, ERS or FS R&D) in the House Farm Bill proposal.

The National Agricultural Research, Extension, Education, and Economics (NAREEE) Advisory Board would be retained as the principal vehicle for stakeholder input, while also adding the Agricultural Research Institute concept being championed in the CREATE-21 proposal. In the House Farm Bill proposal, the Agricultural Research Institute will coordinate the programs and activities of the research agencies through the following six institutes:

- 1) Renewable energy, resources, and environment
- 2) Food safety, nutrition, and health
- 3) Plant health and production
- 4) Animal health and production
- 5) Agriculture systems and technology
- 6) Agriculture economics and rural communities

Each research institute will have a Director appointed by the Under Secretary, and will formulate programs, develop strategic planning and priorities for department-wide research,

education, extension and related activities. The Under Secretary, along with the Directors and in consultation with the NAREEE Advisory Board, will direct research, education, extension, and related programs for relevant departmental agencies, and ensure that strategies and funds are coordinated throughout.

Finally, the a National Institute of Food and Agriculture (NIFA) would be established, but only under CSREES, to administer **all** competitive grants including the National Research Initiative (NRI), which is re-authorized at \$500 million per year.

In the **Conservation Title** released by the House Agriculture Committee a couple of brief **invasive species** highlights include:

- a provision that would allow a producer to conduct prescribed grazing for the control of **invasive species** on Conservation Reserve Program (CRP) lands.
- Amending the Environmental Quality Incentives Program (EQIP) to include the promotion of forest management and energy conservation. Forest management practices are defined as activities that may be needed to improve water quality, increase in-stream flows, restore forest biodiversity, or control **invasive species**.

“Noxious Weed” and “Invasive Plant” Related Legislation in the 110th Congress

There is much political posturing occurring and legislation being introduced that includes various aspects of noxious weed and invasive species provisions related to the 2007 Farm Bill debate. Below is a brief list of some noteworthy legislation:

- S. 1160 - Specialty Crops Competition Act of 2007 introduced by Sen. Debbie Stabenow (MI) on April 19 with 18 co-sponsors.
 - establishes an invasive pest threat identification and mitigation program (including **noxious weeds**) authorized at \$40 million per year
 - carries out an integrated pest management initiative
 - amends the Homeland Security Act of 2002 to restore import and entry agricultural inspection functions to the Department of Agriculture. Establishes the international agricultural inspection program within the Animal and Plant Health Inspection Service (APHIS)
- S. 1242 - A bill to amend the Federal Crop Insurance Act and 2002 Farm Bill to establish a biofuel pilot program to offer crop insurance to producers of experimental biofuel crops. Introduced by Sen. Jon Tester (MT) on April 26.
 - Defines the term and conditions for an “**experimental biofuel crop**” to include a determination by USDA demonstrating that there are sufficient safeguards to prevent the spread of the **crop** as a **noxious weed**

- H.R. 1600 - Equitable Agriculture Today for a Healthy America Act introduced by Rep. Dennis Cardoza (CA) on March 20 and now has 115 co-sponsors.
 - Includes many similar provisions as in S. 1160 above as well as a section titled “**Invasive Pests and Diseases**”.
 - Authorizes \$50 million per year for an “Early Pest Detection and Surveillance Improvement Program”. However, they define “pest” according to the legal definition given “**plant pest**” in the Plant Protection Act (7 U.S.C. 7702(14)) – just a few lines of text below the definition for “**noxious weed**”. For the record, the legal term ‘**plant pest**’ means any living stage of any of the following that can directly or indirectly injure, cause damage to, or cause disease in any plant or plant product: (A) A protozoan; (B) A nonhuman animal; (C) A parasitic plant; (D) A bacterium; (E) A fungus; (F) A virus or viroid; (G) An infectious agent or other pathogen; (H) Any article similar to or allied with any of the articles specified in the preceding subparagraphs.

- H.R. 620 - Rep. Olver (MA), S. 280 – Sen. Lieberman (CT), and S. 317 – Sen. Feinstein (CA) – Three related bills with a goal to reduce greenhouse gas emissions in the U.S. by establishing a market-driven system of greenhouse gas tradeable allowances.
 - Sen. Feinstein’s bill, S. 317, is more specific than the other two bills and would amend the Clean Air Act to establish a program to regulate the emission of greenhouse gases from electric utilities.
 - Most notably, Sen. Feinstein’s bill is the only one to mention **invasive species** and noxious weeds. **Invasive species** in S. 317 is defined as a species (including pathogens, seeds, spores, or any other biological material relating to a species) introduction of which causes or is likely to cause economic or environmental harm or harm to human health.
 - In Sen. Feinstein’s bill, greenhouse gas reductions projects from agricultural, forestry, wetlands, and other land use-related sequestration projects may only receive offset credits if **native plant** materials are given primary consideration and Federal- or State-designated **noxious weeds** or use of a species listed by a regional or **State invasive plant councils** within the applicable region or State are prohibited.

- S. 725 - National **Aquatic Invasive Species** Act of 2007 introduced by Sen. Carl Levin (MI) on March 1. This bill would amend the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 to establish aquatic invasive species reduction and prevention requirements for vessels (including towed vessels and structures) operating in U.S. waters.
 - Definitions (in relation to this bill): “**Invasion**” is defined as an infestation of an aquatic invasive species; “**Invasive Species**” is defined as a nonindigenous species the introduction of which into an ecosystem may cause harm to the economy, environment, human health, recreation, or public welfare; “**nonindigenous species**” is defined as any species in an ecosystem the range of which exceeds the historic range of the species in that ecosystem.
 - Some of the main priorities listed in S. 725 include: Requires the National Invasive Species Council (NISC) to establish a federal rapid response team for each of the ten federal regions; Directs the Aquatic Nuisance Species Task Force (ANSTF) to

establish a priority pathway management program that identifies those pathways that pose the highest risk for the introduction of aquatic invasive species; and requires the National Science Foundation (NSF) to establish a grant program for researchers at institutions of higher education and museums to carry out research in systematics and taxonomy.

- The bill would cost about \$150 million per year if the authorized funding was fully appropriated.

\$425 million for Secure Rural Schools and Community Self-Determination Act

The Secure Rural Schools and Community Self-Determination Act (P.L. 106-393), signed into law in 2000, provides an alternative source of funding for schools and other purposes in counties that were once dependent on timber sales from federal lands. At the time the law was passed, it was estimated to provide assistance to 700 counties in 39 states. The Act also provides funding for (A) road, trail, and infrastructure maintenance or obliteration; (B) soil productivity improvement; (C) improvements in forest ecosystem health; (D) watershed restoration and maintenance; (E) restoration, maintenance and improvement of wildlife and fish habitat; (F) control of **noxious and exotic weeds**; and (G) re-establishment of native species.

The \$425 million provides a one-year extension of the Secure Rural Schools Act and gives Congress time to find a long-term solution for counties with a high percentage of national forests or federal land. The \$425 million appropriation was part of the much larger Emergency War Funding bill (\$120 billion) that was wrangled over during much of May by the House, Senate and President. Also included in that bill (P.L. 110-28) was \$3 billion for agriculture disaster relief and \$465 million for wildfire suppression.

FY2008 Appropriation Bills

On May 23, the House Appropriations Subcommittee for Interior-Environment approved a \$27.6 billion fiscal 2008 spending bill for the Interior Department, EPA and a number of related agencies. This is the first step (of many) for the appropriations bills in which most seem likely that they will end up in another Omnibus Appropriation for FY2008.

The Interior-Environment Subcommittee's bill would increase overall discretionary funding by 4.5 percent over fiscal 2007 and by more than 7 percent over what President Bush has proposed. The appropriators billed the measure as the first step in reversing a long decline in environmental and American Indian health programs.

Chairman Norm Dicks (WA) said the bill would provide much-needed increases in funding for national parks and wildlife refuges as well as new money to address the impact of global warming on public lands.

The bill would provide \$10.2 billion for the Interior Department, \$262 million more than current levels, as well as \$8.1 billion for the EPA, \$361 million above current levels. The USDA Forest Service would receive \$2.6 billion, an increase of \$102 million and the U.S. Geological Survey would get a \$50 million increase over the \$983 million appropriated in FY 2007.

Mike Owen Attends CoFARM/BESC Congressional Visits Day in DC.

On April 18-19, Dr. Micheal Owen from Iowa State represented the WSSA at the Coalition on Funding Agricultural Research Missions (CoFARM) and Biological and Ecological Sciences Coalition (BESC) Congressional Visits Day (CVD) in Washington D.C. Since 2003, CoFARM and BESC have teamed up to organize a Spring event on Capitol Hill that plays a critical role in the annual federal funding process for USDA and NSF research programs. The theme was “Agricultural and Biological Sciences: Today’s Research = Tomorrow’s Benefits”. To view a copy of the talking points or “one pager”, please visit: http://www.esa.org/besc/activities_files/BESCCoFARM%20Leave%20Behind.pdf

During the first day, Kei Koizumi, Budget Analyst at AAAS; Jim Collins, Asst. Director for Biology at NSF; Anna Palmisano, Deputy Administrator for USDA Competitive Programs and others briefed us on the 2008 federal budget for agricultural and biological research funding. The highlight of the day was a reception at the U.S. Capitol honoring the support and contributions of Senator Tom Harkin (IA), Chairman of the Senate Agriculture Committee, and Senator Kit Bond (MO), member of the Senate Agriculture Appropriations Committee. Both Senators have been very supportive of agricultural research in particular and are co-sponsors for S. 971, the National Institute of Food and Agriculture (NIFA) Act of 2007. Over the period of five years (2008-12), S. 971 would authorize the appropriation of \$3.4 billion in new agricultural research grants and multidisciplinary projects under NIFA.



“WSSA Member Mike Owen from Iowa State discusses agricultural research funding with Sen. Tom Harkin (IA), Chairman of the Senate Agriculture Committee, at a Congressional Reception at the U.S. Capitol hosted in part by the Coalition on Funding Agricultural Research Missions (CoFARM)”.

On April 19, Mike and I began our day with a CoFARM sponsored breakfast in the Secretary’s Dining Room at the USDA Whitten Building. We visited with a number of senior officials in the USDA Research Education and Economics mission area including Deputy Under Secretary Dr. Merle Pierson; Dr. Ed Knipling, ARS Administrator; and Dr. Colien Hefferan, CSREES Administrator.

Following breakfast, we headed to Capitol Hill to begin our six Congressional Visits. There were five of us in the “Iowa-Wisconsin team” representing scientific societies associated with CoFARM and BESC. We met with staff members from Sen. Harkin and Sen. Grassley’s office from Iowa along with Rep. Latham (IA) whose district includes Iowa State University. On the Wisconsin side, we met with staffers from both Sen. Kohl and Sen. Feingold’s offices as well Rep. Tammy Baldwin who represents the University of Wisconsin- Madison area.



“WSSA members Lee Van Wychen and Mike Owen pause for a photo op with Sen. Herb Kohl (WI), Chairman of the Senate Agriculture Appropriations Subcommittee, along with other participants from the CoFARM-BESC Congressional Visits Day. (Front row, l to r) Sarah Evans (ASA-CSSA-SSSA); Sen. Herb Kohl; Sarah Wright (AIBS). (Back row, l to r) Lee Van Wychen (WSSA), Mike Owen (WSSA), Maynard Hogberg (FASS)”.

Overall, the CoFARM/BESC Congressional Visits Day was a big success. Our Iowa-Wisconsin group was able to meet with both the Chairman of the Senate Agriculture Committee and the Chairman of the Senate Agriculture Appropriations Committee and their staff. In addition to agriculture funding issues, Mike and I also discussed the issues surrounding “Biofuels and **Invasive Plant Species**” and left a copy of the WSSA white paper in each office we visited. This paper can be found on the WSSA website.

WSSA President Schroeder Presents ‘Hot’ Seminar at USDA

On May 14, Dr. Jill Schroeder from New Mexico State University was in Washington DC to present a guest seminar titled “Chile Pepper: Hot Topic or Model Crop?” (Note: Chile is spelt ‘Chile’ and not ‘Chili’ when talking about the pepper!). The seminar was at the USDA Waterfront Center, which is home to most of the CSREES staff, and was well attended. The abstract of her presentation read as follows:

“One of the goals of the 2007 USDA Farm Bill proposal for research is to increase funding for specialty crops with the intent of improving production through a number of means. Dr. Schroeder has had the pleasure and frustration of working in a minor, specialty crop in New Mexico – the chile pepper – for a number of years. Her presentation will introduce you to this crop that is important to the culture as well as the economy of New Mexico; the state question is “Red or Green?” New Mexico producers are primarily independent growers and farms are small and located where water is available for irrigation. Economic sustainability is critical to ensure the viability of the industry and to keep chile pepper production in the state and country. Weed management challenges in chile pepper production impact or are impacted by a large number of issues including labor costs and availability, mechanical thinning and harvest, water availability and management, development of transgenic crops, and management of other soilborne pests. Even though chile pepper is an intensively managed, high value crop, New Mexico producers have never used methyl bromide for soilborne pest management due to economic constraints. Are New Mexico growers the canary in the mine illustrating problems that producers in the major specialty crop growing areas are about to face, and if so, does this make Chile Pepper a model crop?”

I think everyone enjoyed Dr. Schroeder’s seminar and learned a lot about “Chile” peppers. The crop-weed-nematode interaction was quite intriguing and stimulated some very good discussion following the seminar. The other part of the talk everyone liked was the fact that Jill brought fresh New Mexico salsa with her on the trip, not just as a prop, but for everyone there to enjoy. The Red Chile salsa was definitely HOT. Many thanks also to CSREES National Program Leader Rick Meyer for his help in organizing and reserving space at CSREES.

WSSA Members Organize 2nd Glyphosate Stewardship Forum in St. Louis

On March 20-21, a broad array of stakeholders from University Weed Scientists, Commodity Groups, Industry Representatives, Farmers, and Federal Policy and Regulatory Officials attended the 2nd National Glyphosate Stewardship Forum (NGSF) in St. Louis, Missouri. I would like commend the principal coordinators, Mike Owen from Iowa State and Chris Boerboom from the University of Wisconsin for their time and effort in organizing this event. Other WSSA members who actively participated in this forum include: Christy Sprague- Michigan State; Bill Johnson- Purdue; Stanley Culpepper- Georgia; Alan York and John Wilcut- North Carolina State; Larry Steckel- Tennessee; Andrew Kniss- Wyoming; Harold Coble- USDA; Bill Chism- EPA; Janis McFarland and Chuck Foresman- Syngenta; Jennifer Ralston- Monsanto; Raymond Forney- DuPont; Mike DeFelice- Pioneer Hi-Bred; and Bob Nichols- Cotton Incorporated. I have undoubtedly missed some WSSA members so I send my apologies in advance.

The first NGSF was conducted in St. Louis in November 2004 and was organized as a result of discussions among several university weed scientists about the potential evolution of glyphosate-resistant weeds and the management challenges they may pose for growers. This group of weed scientists included: Mike Owen, Iowa State; Chris Boerboom, Wisconsin; Stanley Culpepper, Georgia; Mark Loux, Ohio State; Tom Mueller, Tennessee; David Shaw,

Mississippi State; Christy Sprague, Michigan State; and John Wilcut, North Carolina State. A summary of presentations and stakeholder comments from the 1st NGSF can be found at: <http://www.weeds.iastate.edu/weednews/2006/NGSF%20final%20report.pdf>

The executive summary and stakeholder discussion comments from the 2nd NGSF are forthcoming. Some personal observations from 2nd NGSF include:

- 1) Any glyphosate stewardship program should be voluntary and not mandated by regulatory action.
- 2) A consistent glyphosate stewardship message needs to be adopted by all stakeholders for managing the potential evolution of glyphosate-resistant weeds.
- 3) Financial incentives should be provided to crop consultants and herbicide retailers for disseminating a consistent herbicide stewardship message to end-users.

On a separate, but related event, Dr. Stephen Powles from Australia presented a talk at the U.S. EPA on April 4 in Washington DC following the American Chemical Society meeting in Chicago. Thanks to Rick Keigwin, Director of BEAD at EPA for helping to organize the seminar. The topic for Dr. Powles talk was evolved glyphosate resistant weeds around the world. Dr. Powles felt that the current status of glyphosate stewardship was “lamentable” and that much more could be done prevent further weed resistance because glyphosate is “1 in a 100 year herbicide discovery”. A particular point he emphasized was not to cut glyphosate application rates.

Herbicide stewardship and resistance management is not a new concept to the WSSA. However, with glyphosate now being applied on over 110 million acres across the U.S., the National and Regional Weed Science Societies need to provide consistent, science-based glyphosate stewardship information to the public and policy makers.

NIWAW 9 Scheduled for February 24-29, 2008 in DC

Planning for the 9th Annual National Invasive Weed Awareness Week (NIWAW 9) is underway in Washington DC. Dr. Nelroy Jackson will be leading the Invasive Weed Awareness Coalition (IWAC) to help plan and coordinate the week long activities. The WSSA has once again received a \$15,000 Pulling Together Initiative grant from the National Fish and Wildlife Federation in April to help organize NIWAW 9. The slogan for NIWAW 9 is “*Weeds won’t wait: Don’t hesitate*”. The six **invasive weeds** that will be featured on this year’s poster are:

Yellow starthistle
Cheatgrass
Beach vitex
Japanese stiltgrass
Russian olive
Giant salvinia

In sticking with the theme of this science policy report, it is interesting to note that only 1 of 6 of the aforementioned NIWAW 9 poster weeds are a federally listed **noxious weed**. Yet all 6 weeds are listed as a **noxious** weed in at least one or more states.

Does everyone in the National and Regional Weed Science Societies consider these 6 weeds to be **invasive**?

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