

WERA-077 MANAGING INVASIVE WEEDS IN WHEAT

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The Western Extension Research Activity -077 (WERA), Managing Invasive Weeds in Wheat is an activity of the Western Association of Agricultural Experiment Station Directors (WAAESD). WERA-077 was initiated in 2004 as a progression of activities of the Western Coordinating Committee 077 (WCC-077) Biology and Control of Winter Annual Grass Weeds in Wheat. It was from the WCC-077 that the National Jointed Goatgrass Research Program (NJGRP) originated. The hope is that the WERA-077 will continue the success of the NJGRP. The intent is to use the funding and review process developed under WCC-077 for the NJGRP to begin a second research program focused on Italian ryegrass (Figure 1), feral rye (Figure 2), and other weedy species.

The WERA-077 has recognized that in order to develop best management practices for the control of feral rye, ryegrass, and other invasive weeds in wheat, a thorough understanding of weed biology, ecology, and genetics is required. Sharing research information and coordinating research and extension efforts among weed scientists in the western United States will accelerate understanding of invasive weeds and their control and facilitate the rapid transmission of new knowledge to growers. Currently, management information regarding ryegrass and feral rye is limited. The overall goal of this coordinating committee is to ensure that producers have the most accurate, non-biased information possible for economical and sustainable management of feral rye, ryegrass, and other invasive weeds in wheat.

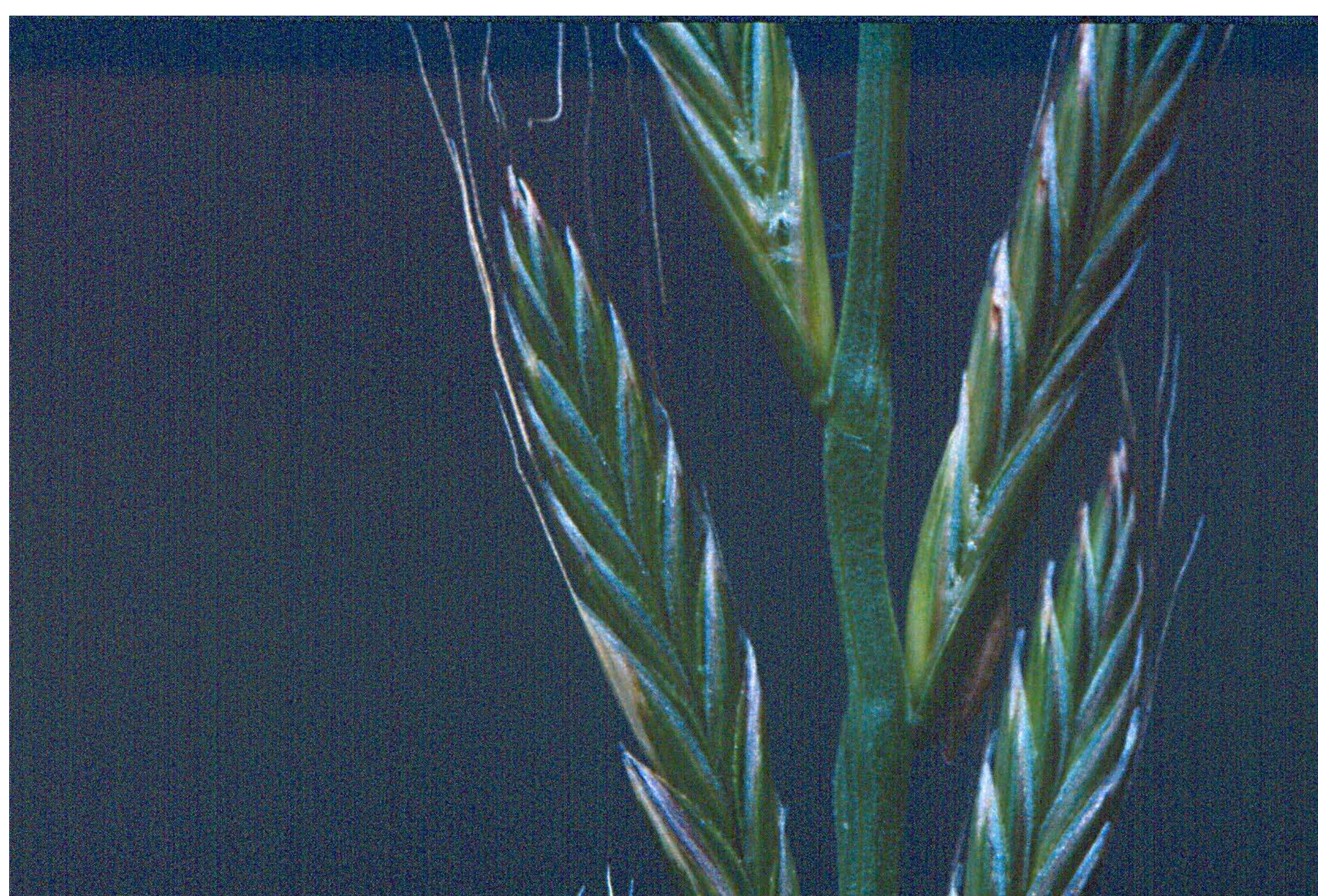


Figure 1. Italian ryegrass has developed resistance to most herbicide groups used for its control.



Figure 2. Cereal (feral) rye reduces crop wheat yield and substantially reduces crop foreign and value



Figure 3. Downy brome is serious weed problem in wheat fields and rangelands of the arid west.

The stated objectives of the WERA-077 are:

1. Coordinate research on the biology, ecology, and genetics of ryegrass, feral rye, and other invasive weeds in wheat.
2. Coordinate the evaluation of new management and wheat breeding technologies for controlling invasive weeds, development of best management practices (BMPs), and assessment of herbicide resistance management strategies in various cropping systems.
3. Develop educational outreach programs based on research findings regarding invasive weeds in wheat, including programs initiated by the NJGRP, targeting producers, crop consultants, extension personnel, or professional scientists.
4. Merge information from research studies into an effective technology transfer program to illustrate how these invasive species can affect net profits and to reduce the economic impact of ryegrass, feral rye and other invasive weed species in wheat.
5. Conduct surveys to monitor the extent and spread of weeds in wheat through surveys or similar methods.



Figure 4. Rattail fescue is a winter annual grass that is an increasing problem in no-tillage systems. (Photo courtesy of Forrest Starr and Kim Starr)

The expected outcomes and impacts of the WERA-077 are:

1. Increase knowledge regarding cultural control practices of invasive weeds in wheat.
2. Expanded scientific knowledge base for invasive weeds in wheat through the publication of peer reviewed journal articles and the development of accessible databases.
3. Growers understanding of the use of herbicide-resistant crop technology in an integrated weed management program.
4. Reduce the economic impact of invasive weeds in wheat through grower adoption of improved control strategies.

In addition to a specific research and extension initiative for feral rye and Italian ryegrass the WERA-077 is hoping produce a center for information on other invasive winter annual grass species. These species include downy brome (Figure 3) and rattail fescue (Figure 4).

The NJGRP website (www.jointedgoatgrass.org) has been expanded to include tabs on other winter annual grass weeds (Figure 5). Over the coming year, these tabs will be filled with information on feral rye, downy brome, and rattail fescue. This will be accomplished with the collaboration of weed scientist from all of the winter wheat producing states of the west as a collaborative WERA-077 project.

As mentioned above, the WERA-077 is an activity of the WAAESD. The WAAESD, one of five such Regional Associations, represents the administrators of the State Agricultural Experiment Stations in the Western Region by providing a forum for the exchange of information and for discussion and debate among members and guests on matters of common concern. It provides through its business meetings a means by which the views of the WAAESD may be determined formally and transmitted to: the National Association of State Universities and Land Grant Colleges (NASULGC), the Experiment Station Committee on Organization and Policy (ESCOP), the Experiment Station Section and the Cooperative State Research Education and Extension Service (CSREES) on matters either of its own origin or on matters referred to it.

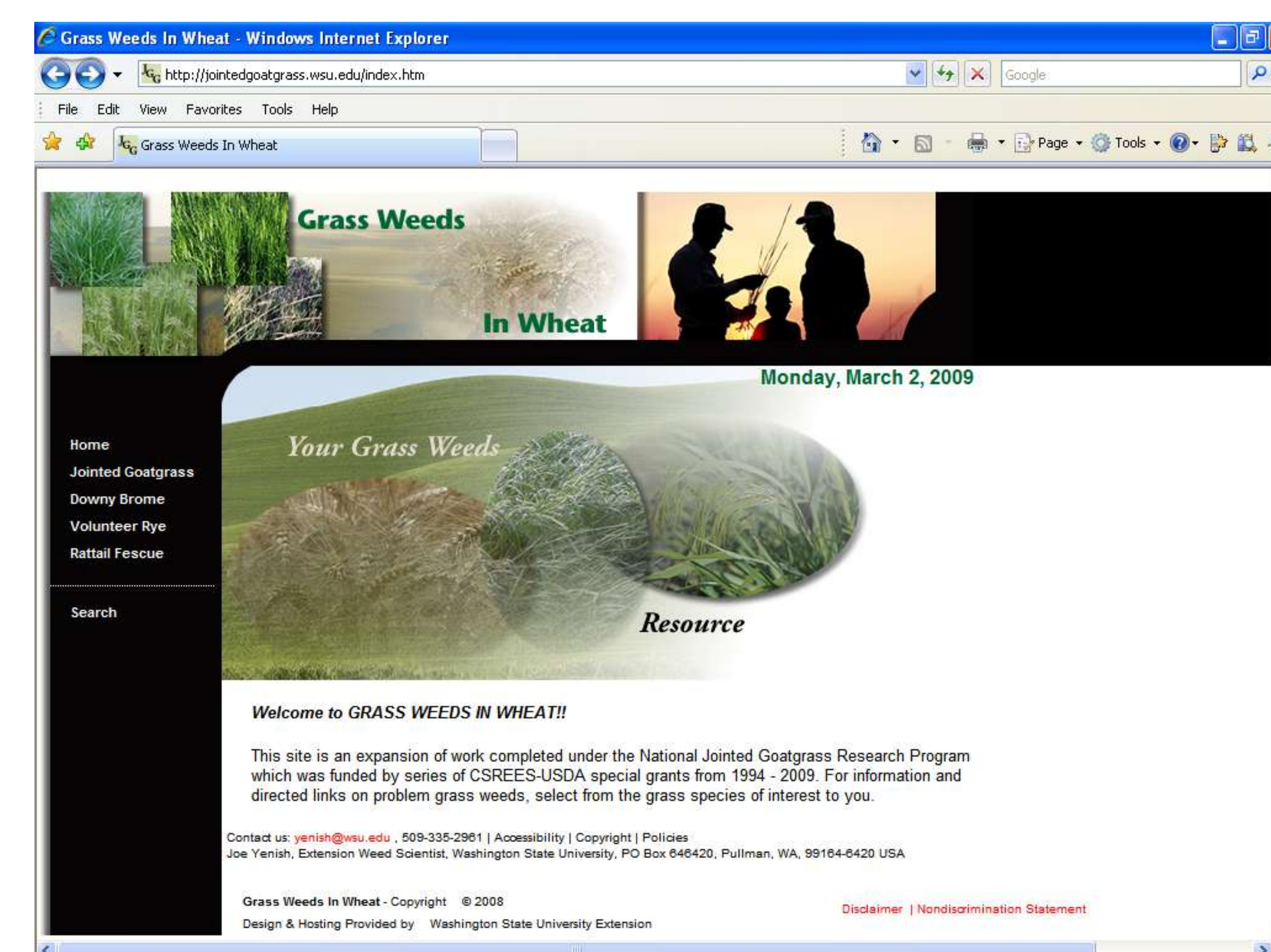


Figure 5. The website is proposed to serve as a central source for information on troublesome weeds