

Thank you very much for your help! Your participation will help us better understand invasive weed issues in New Mexico.

Please feel free to write any additional comments below.

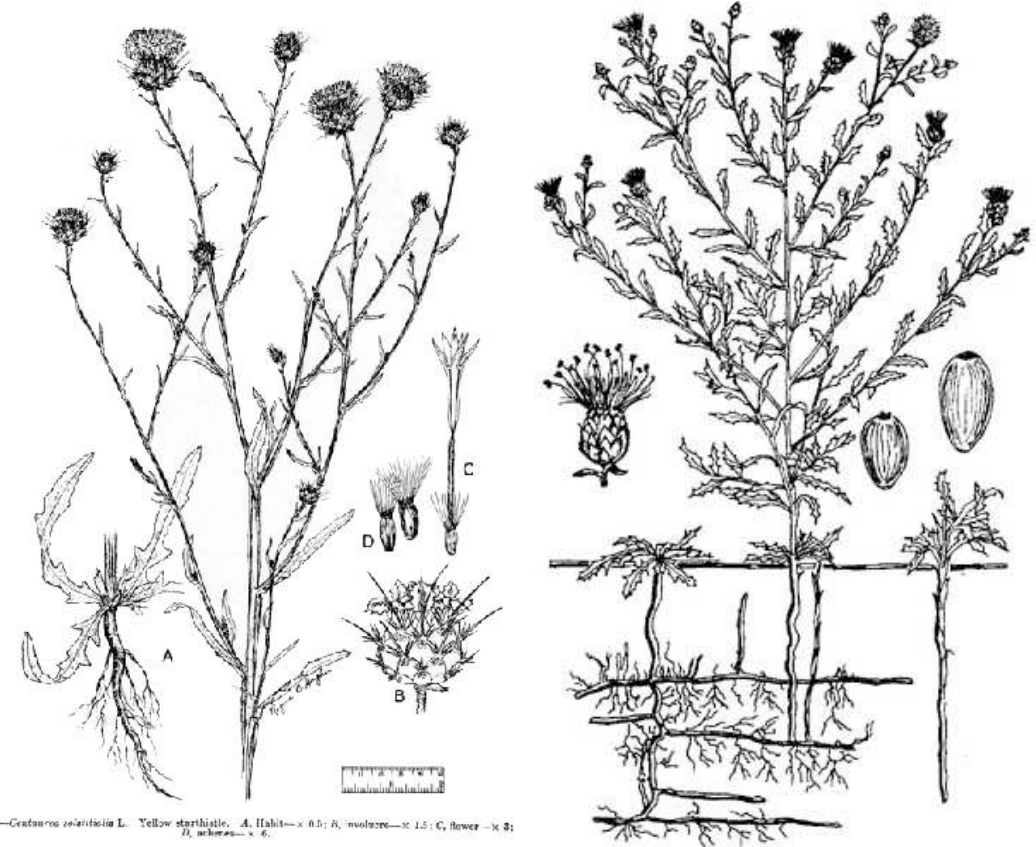


FIGURE 196.—*Centaurea solstitialis* L. Yellow starthistle. A, Habit— $\times 0.5$ ; B, involucre— $\times 1.5$ ; C, flower— $\times 5$ ; D, seed— $\times 6$ .

Yellow Starthistle

Russian Knapweed

What Issues Are Important To New Mexico's Ranchers In Managing Invasive Weeds?

We Need To Hear From You



## Your Experience With Invasive Weeds

*Invasive weeds* are weeds designated as injurious to public health, agriculture, recreation, wildlife, or property. While New Mexico has many native weeds that are problematic for ranchers, such as locoweed and yucca, this survey focuses only on **non-native weeds**.

This survey will focus on two particular invasive weeds, *Yellow Starthistle* and *Russian Knapweed*, which are a concern for New Mexico. Even if you have never heard about these two invasive weeds, it is important that we get your opinion on potential management policies.

1. Check the statement with which you **most agree**. *Check one.*

- |   |   |
|---|---|
| 1 | Invasive weeds are a threat in New Mexico     |
| 2 | Invasive weeds are not a threat in New Mexico |

2. In your opinion, what is the **main** way that invasive weeds spread in your area? *Check one.*

- |   |   |
|---|---|
| 1 | By cattle/sheep movement                              |
| 2 | By natural means (wind, water, birds, wildlife, etc.) |
| 3 | By seed and hay                                       |
| 4 | By recreational use                                   |
| 5 | By oil and gas activity                               |
| 6 | By mowing along highways                              |
| 7 | Other _____   |

42. How many cattle did your ranching operation have in 2006? *Check one.*

- |   |       |   |             |
|---|-------|---|-------------|
| 1 | 1-9   | 5 | 100-199     |
| 2 | 10-19 | 6 | 200-499     |
| 3 | 20-49 | 7 | 500 or more |
| 4 | 50-99 |   |             |

43. In 2006, what was your net (revenue minus costs) pre-tax income from ranching? *Check one.*

- |   |                     |    |                        |
|---|---------------------|----|------------------------|
| 1 | Less than \$0       | 6  | \$30,001 – \$50,000    |
| 2 | \$1 – \$5,000       | 7  | \$50,001 – \$75,000    |
| 3 | \$5,001 – \$10,000  | 8  | \$75,001 – \$100,000   |
| 4 | \$10,001 – \$20,000 | 9  | \$100,001 – \$200,000  |
| 5 | \$20,001 – \$30,000 | 10 | Greater than \$250,000 |

A second phase of this study will begin in several months. Because participation involves a longer time commitment (1-2 hours) and involves face-to-face interactions, we will compensate volunteers. The meeting place would be in your local area.

44. Are you potentially interested in participating in a second phase of this study? *Check one.*

- |   |     |
|---|-----|
| 1 | Yes |
| 2 | No  |

37. What is your gender? *Check one.*

- 1 Male
- 2 Female

38. What is your age? \_\_\_\_\_

39. Which of the following best describes your political affiliation? *Check one.*

- 1 Democrat
- 2 Republican
- 3 Independent
- 4 Other \_\_\_\_\_

40. With which racial/ethnic group(s) do you most closely identify? *Please select one or more.*

- |  |  |
|--|--|
| <input type="checkbox"/> 1 American Indian/Alaska Native | <input type="checkbox"/> 4 Hawaiian/Pacific Islander |
| <input type="checkbox"/> 2 Asian                         | <input type="checkbox"/> 5 Hispanic/Latino           |
| <input type="checkbox"/> 3 Black/African American        | <input type="checkbox"/> 6 White                     |

41. How many years of school have you completed? *Check one.*

- 1 Less than 9th grade
- 2 Less than 12th grade
- 3 High school diploma or GED
- 4 Some college or technical school
- 5 Bachelor's degree
- 6 Master's degree
- 7 Professional degree or Doctorate (Ph.D., J.D., etc)

3. Do you think invasive weeds spread more through the actions of people inside or outside your community? *Check one.*

- 1 Inside my community
- 2 Outside my community
- 3 About the same

4. Where do you receive your information about invasive weeds? *Check all that apply.*

- 1 I haven't received any information
- 2 Neighbors, friends, or family
- 3 County extension agent or publications
- 4 Soil and Water Conservation District
- 5 Articles or ads in magazines
- 6 Agricultural organizations
- 7 Other \_\_\_\_\_

5. In your community, is there an active program to organize landowners and treat invasive weeds "across fencelines"? *Check one.*

- 1 Yes
- 2 No
- 3 Unsure

6. How effective do you think such a program is/would be? *Circle one.*

|           |           |         |             |             |
|-----------|-----------|---------|-------------|-------------|
| Very      | Somewhat  | Neutral | Somewhat    | Very        |
| Effective | Effective | Neutral | Ineffective | Ineffective |
| 1         | 2         | 3       | 4           | 5           |

7. Do you and your neighbors cooperate, either through a formal organization or informally, to address common concerns other than invasive weeds? *Check **all** that apply.*

- 1 No, never
- 2 Not currently but have in the past or may in the future
- 3 Yes, we are on an acequia or shared irrigation system
- 4 Yes, we share some ranch equipment
- 5 Yes, we cooperate in fire prevention and fire fighting
- 6 Yes, we manage predators cooperatively
- 7 Other cooperative efforts: \_\_\_\_\_

### Russian Knapweed and Yellow Starthistle

Please refer to the enclosed brochure. It provides information about Yellow Starthistle and Russian Knapweed and shows pictures of each.

8. Which of the following invasive weeds, if either, have you **heard** of previously? *Check **all** that apply.*

- 1 Yellow Starthistle
- 2 Russian Knapweed
- 3 I haven't heard of either of these invasive weeds

9. Which of the following invasive weeds, if either, have you **seen**? *Check **all** that apply.*

- 1 Yellow Starthistle
- 2 Russian Knapweed
- 3 I haven't seen either of these invasive weeds

30. In which county or counties do you ranch?

\_\_\_\_\_

31. What is the total number of acres or sections on which you ranch?

\_\_\_\_\_ acres OR \_\_\_\_\_ sections

32. For how many years or generations have you and your family ranched in New Mexico?

\_\_\_\_\_ years OR \_\_\_\_\_ generations

33. Approximately what percent of your Animal Units per Month (AUMs) comes from irrigated pastures? \_\_\_\_\_

34. Approximately what percent of ranch labor is supplied by you or your family? \_\_\_\_\_

35. Which of the following best describes why you ranch? *Check one.*

- 1 Profit
- 2 Lifestyle
- 3 Profit and lifestyle
- 4 Investment/tax shelter

36. Approximately what percent of your annual income comes from each of the following sources? *Percentages should add to 100%.*

- Livestock production \_\_\_\_\_
- Crop production \_\_\_\_\_
- Off-ranch employment and investment \_\_\_\_\_
- Non-agricultural activities associated with your land \_\_\_\_\_
- Other \_\_\_\_\_

New Mexico's 1998 Noxious Weed Management Act says that government officials cannot enter private land without the landowner's invitation.

Many like this because it maintains respect for private land and encourages landowners who find a new invasive weed to report it without fear of enforcement. However, some feel that private lands are negatively impacted by weeds spread onto their lands from neighbors who do not manage their weeds.

A number of states such as Colorado, California, and Wyoming have mandatory weed programs, where landowners are required to manage certain 'high-threat' weeds.

29. How likely would you be to support a change in New Mexico legislation to allow for mandatory management of the most harmful invasive weeds? *Circle one.*

|                |                    |         |                      |                  |
|----------------|--------------------|---------|----------------------|------------------|
| Very<br>Likely | Somewhat<br>Likely | Neutral | Somewhat<br>Unlikely | Very<br>Unlikely |
| 1              | 2                  | 3       | 4                    | 5                |

### You And Your Ranch

In order to understand how well the survey results represent those of New Mexican ranchers, we need to know how similar survey respondents are to other New Mexico ranchers. By answering the following questions you will help us do this.

Remember that all information collected in this survey is completely confidential and will not be reported other than in aggregate statistics.

10. Which of the following best describes the degree of infestation of **Yellow Starthistle**? *Circle the appropriate number for each.*

|               |      |       |        |       |        |
|---------------|------|-------|--------|-------|--------|
|               | None | Light | Medium | Heavy | Unsure |
| On your ranch | 1    | 2     | 3      | 4     | 5      |
| In your area  | 1    | 2     | 3      | 4     | 5      |

11. Which of the following best describes the degree of infestation of **Russian Knapweed**? *Circle the appropriate number for each.*

|               |      |       |        |       |        |
|---------------|------|-------|--------|-------|--------|
|               | None | Light | Medium | Heavy | Unsure |
| On your ranch | 1    | 2     | 3      | 4     | 5      |
| In your area  | 1    | 2     | 3      | 4     | 5      |

### Invasive Weeds Management

12. For which of the following degrees of infestation would you be most likely to practice weed management? *Check one.*

- 1 Light
- 2 Medium
- 3 Heavy

13. What methods, if any, have you used to control invasive weeds on your property? *Check all that apply.*

- 1 Haven't done anything → **Skip to Question 18**
- 2 Sprayed with herbicides
- 3 Physical removal (pulling by hand, tractors, etc)
- 4 Cultural controls (e.g., introduction of a competitive species)
- 5 Biological control such as using goats to eat the weeds
- 6 Other \_\_\_\_\_

14. How frequently have you applied any of the above weed management techniques? *Check one.*

- 1 Only once
- 2 A couple of times
- 3 Every year, I have done it about once a year
- 4 Every year, I have done it a couple of times

15. Which of the following best describes how you react to discovering an invasive weed infestation? *Check one.*

- 1 I respond using a weed management plan that I have previously developed
- 2 I don't have a specific weed management plan and respond as needed

16. Which of the following are the **two most important** considerations for you in deciding whether to manage invasive weeds? *Check two.*

- 1 Cost
- 2 Time constraints
- 3 Knowledge about how to best manage the weeds
- 4 Effectiveness of management methods
- 5 Governmental barriers
- 6 Other \_\_\_\_\_

17. Which of the following, if any, do you view as more serious problems than invasive weeds? *Check **all** that apply.*

- |   |   |
|---|---|
| <input type="checkbox"/> 1 Predators                                  | <input type="checkbox"/> 5 Water issues |
| <input type="checkbox"/> 2 Fire risk                                  | <input type="checkbox"/> 6 Energy costs |
| <input type="checkbox"/> 3 Elk/deer populations                       | <input type="checkbox"/> 7 Trade issues |
| <input type="checkbox"/> 4 Public opposition to public lands ranching | <input type="checkbox"/> 8 Other _____  |

26. Which type of cost-share program would you be most interested in to help manage invasive weeds? *Check one.*

- 1 A monetary award to help with costs
- 2 A person hired by the county to come treat the infestation, even if I had to pick up part of the expense
- 3 Information/assistance on the best method to treat my ranch
- 4 Access to equipment that I could use without the cost of buying/renting
- 5 Other \_\_\_\_\_

27. Approximately what percent of your ranch land is leased from state or federal agencies? (If 0% → **Skip to Question 29**)

\_\_\_\_\_

28. If 100 acres of an invasive weeds was discovered on your public land permit, what do you think would be the biggest obstacle to treating it before it spread? *Check one.*

- 1 Public opposition to the use of herbicides on public lands
- 2 Availability of effective treatment methods
- 3 Available staff/man hours to treat
- 4 Governmental paperwork (e.g., NEPA)
- 5 Other \_\_\_\_\_

25. To what extent do you agree or disagree that you should be required to do each of the following on your land **without any public compensation**? *Circle the appropriate number for each.*

|   | Strongly Agree | Somewhat Agree | Neutral | Somewhat Disagree | Strongly Disagree |
|---|----------------|----------------|---------|-------------------|-------------------|
| Control invasive weeds                            | 1              | 2              | 3       | 4                 | 5                 |
| Protect quality and supply of water used on land  | 1              | 2              | 3       | 4                 | 5                 |
| Protect water quality and supply for downstream   | 1              | 2              | 3       | 4                 | 5                 |
| Protect wetland and riparian areas                | 1              | 2              | 3       | 4                 | 5                 |
| Provide hunting access                            | 1              | 2              | 3       | 4                 | 5                 |
| Protect threatened and endangered species habitat | 1              | 2              | 3       | 4                 | 5                 |

18. For each of the following scenarios, how if at all would you change your invasive weeds management efforts? *Circle the appropriate number for each.*

|  | Increase Efforts | No Change | Decrease Efforts | Doesn't Apply |
|--|------------------|-----------|------------------|---------------|
| Neighbors significantly increase weed control efforts                                    | 1                | 2         | 3                | 4             |
| Neighbors significantly decrease weed control efforts                                    | 1                | 2         | 3                | 4             |
| Adjacent land changes from public to private ownership                                   | 1                | 2         | 3                | 4             |
| Adjacent land changes from private to public ownership                                   | 1                | 2         | 3                | 4             |
| Learn that spread from truck and machinery tires is more serious than previously thought | 1                | 2         | 3                | 4             |
| Traffic on adjacent roads increases significantly  | 1                | 2         | 3                | 4             |

19. How important are each of the following when deciding whether to manage an invasive weed? *Circle the appropriate number for each.*

|   | Very Important | Somewhat Important | A Little Important | Not At All Important |
|---|----------------|--------------------|--------------------|----------------------|
| Type of invasive weed                           | 1              | 2                  | 3                  | 4                    |
| Reduction in carrying capacity                  | 1              | 2                  | 3                  | 4                    |
| Probability infestation spreads to area ranches | 1              | 2                  | 3                  | 4                    |
| Percent of area ranches managing this weed      | 1              | 2                  | 3                  | 4                    |
| Degree of infestation in local area             | 1              | 2                  | 3                  | 4                    |
| Total weed management cost                      | 1              | 2                  | 3                  | 4                    |

24. Which of the following two infestations, if either, do you think you would manage, given the following outcomes and costs?

|   | Russian Knapweed Infestation | Yellow Starthistle Infestation |
|---|------------------------------|--------------------------------|
| Reduction in carrying capacity if not managed                   | 15%                          | 30%                            |
| Probability infestation spreads to area ranches, if not managed | Low                          | High                           |
| Percent of area ranches managing this weed                      | 10%                          | 50%                            |
| Degree of infestation in local area                             | Light                        | Heavy                          |
| Total weed management cost                                      | \$1000                       | \$100                          |

I would be more likely to: *Check one.*

- 1 Manage the Yellow Starthistle infestation
- 2 Manage the Russian Knapweed infestation
- 3 Not manage either infestation
- 4 Manage both infestations

23. Which of the following two infestations, if either, do you think you would manage, given the following outcomes and costs?

|   | <b>Russian Knapweed Infestation</b> | <b>Yellow Starthistle Infestation</b> |
|---|-------------------------------------|---------------------------------------|
| Reduction in carrying capacity if not managed                   | 30%                                 | 15%                                   |
| Probability infestation spreads to area ranches, if not managed | Low                                 | High                                  |
| Percent of area ranches managing this weed                      | 50%                                 | 90%                                   |
| Degree of infestation in local area                             | Heavy                               | Medium                                |
| Total weed management cost                                      | \$2000                              | \$500                                 |

I would be more likely to: *Check one.*

- 1 Manage the Yellow Starthistle infestation
- 2 Manage the Russian Knapweed infestation
- 3 Not manage either infestation
- 4 Manage both infestations

### Which Infestation Would You Be More Likely To Manage?

The following questions ask you to imagine a hypothetical situation facing your ranch. Suppose you find two weed infestations on your ranch: Russian Knapweed and Yellow Starthistle.

In the four following questions you will be asked which of these two infestations, if either, you would choose to manage.

We will provide you with information about treatment costs, impact on carrying capacity, the probability of spread, and current levels of each weed.

Assume your ranch is the same size as it is today, that current cattle prices remain stable, and that there are no other major changes.

Depending on the location of the infestation, the spread rate may be relatively high or low. For instance, an infestation near your shipping pens might have a much higher rate of spread than an infestation in a remote part of your ranch. As a result, the impact on carrying capacity can vary.

The presented cost is the total control cost for your ranch.

Costs of control can vary depending on the age of the infestation, the density, and the terrain in which its located. The cost that is given will allow you to achieve significant control of the infestation barring any reintroduction of the weed.

There are no right answers. Please consider each hypothetical situation and answer which, if either, of the species you would control.

20. Which of the following two infestations, if either, do you think you would manage, given the following outcomes and costs?

|   | <b>Russian Knapweed Infestation</b> | <b>Yellow Starthistle Infestation</b> |
|---|-------------------------------------|---------------------------------------|
| Reduction in carrying capacity if not managed                   | 45%                                 | 15%                                   |
| Probability infestation spreads to area ranches, if not managed | High                                | Low                                   |
| Percent of area ranches managing this weed                      | 50%                                 | 50%                                   |
| Degree of infestation in local area                             | Medium                              | Light                                 |
| Total weed management cost                                      | \$2500                              | \$2000                                |

I would be more likely to: *Check one.*

- 1 Manage the Yellow Starthistle infestation
- 2 Manage the Russian Knapweed infestation
- 3 Not manage either infestation
- 4 Manage both infestations

21. Please tell us how you made your decision on question 20.

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22. Which of the following two infestations, if either, do you think you would manage, given the following outcomes and costs?

|   | <b>Russian Knapweed Infestation</b> | <b>Yellow Starthistle Infestation</b> |
|---|-------------------------------------|---------------------------------------|
| Reduction in carrying capacity if not managed                   | 45%                                 | 15%                                   |
| Probability infestation spreads to area ranches, if not managed | Medium                              | High                                  |
| Percent of area ranches managing this weed                      | 90%                                 | 10%                                   |
| Degree of infestation in local area                             | Light                               | Medium                                |
| Total weed management cost                                      | \$500                               | \$1000                                |

I would be more likely to: *Check one.*

- 1 Manage the Yellow Starthistle infestation
- 2 Manage the Russian Knapweed infestation
- 3 Not manage either infestation
- 4 Manage both infestations