

# Landowners' Perspectives on Weed Control Across Montana

October 2017

Alice Lubeck and Alexander L. Metcalf, University of Montana Human Dimensions Lab, W.A. Franke College of Forestry and Conservation



**HUMAN  
DIMENSIONS LAB**  
UNIVERSITY OF MONTANA

Invasive plants, often called “weeds,” are a problem for landowners across MT. To better understand landowner perspectives on invasive plants and what factors are associated with weed control, we conducted a statewide survey of Montana’s small to medium landowners (those owning .5 acres up to 6,000 acres) in early 2017. Since landowners, and weeds, are different across the state, we stratified our sample within three sub-state regions (see map below). We found agreement across the state that weeds are a problem, and that landowner actions are dependent on a combination of individual and collective elements.

Across the state, we identified five types of landowners who approach weed control from distinct perspectives, including those who were “doing it all” and others who “can’t do much” (see

pg. 6 for more detail). Not surprisingly, we found that time and money were significant constraints for many landowners across the state. Even for landowners with these traditional constraints, social pressures and connections with neighbors were both associated with more frequent weed control behavior. Interestingly, the more satisfied landowners were with weed control efforts in their area, the less likely they were to have controlled weeds themselves. Combined, these findings demonstrate the importance of cross-boundary considerations for efforts seeking to inspire weed control efforts, even on private land. Summary results are presented on the following pages with region-specific graphs provided when landowners’ responses differed significantly among the three regions.



Western, Central and Eastern regions of Montana

Survey conducted by the Human Dimensions Lab in the W.A. Franke College of Forestry & Conservation. Survey funded by Missoula County Weed District, Montana DNRC, Defenders of Wildlife, Noxious Weed Education Campaign, Gallatin Valley Land Trust, Montana Department of Agriculture, Montana Fish Wildlife and Parks, Montana State Extension and W.A. Franke College of Forestry and Conservation

## How Montana Landowners Felt About Weeds

Montana landowners generally perceived a high amount of risk from weeds on their property. Most landowners fell into two camps: those who perceived high risk and those who perceived very high risk from weeds. The majority of landowners were concerned that weeds decreased their enjoyment of their property, and that weeds limited their ability to use their property in the ways they wanted.

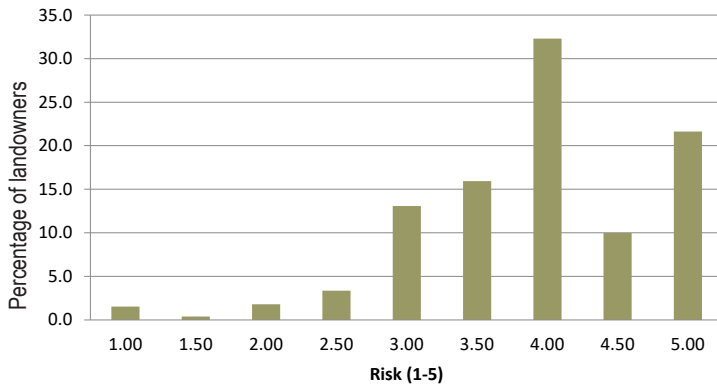
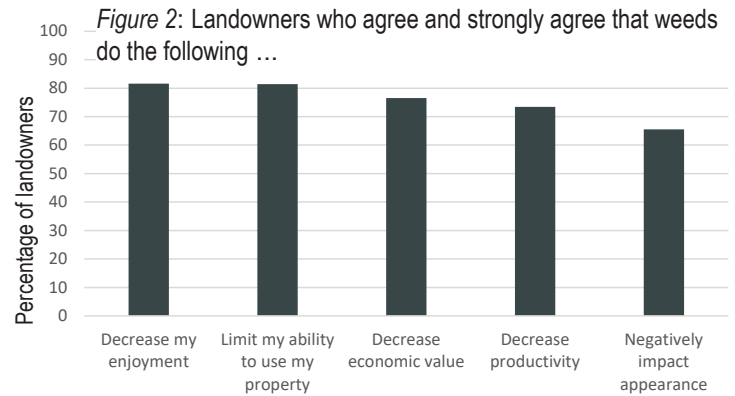


Figure 1: Percentage of landowners at each perceived level of risk (1=lowest risk; 5=highest risk)



**NOXIOUS WEEDS ARE A CONSTANT BATTLE ESPECIALLY WHEN NEIGHBORING PROPERTIES DO NOT TRY TO CONTROL IT. IT IS A HUGE TIME COMMITMENT AND FINANCIAL BURDEN TO CONTROL WEEDS.**

Quote from Montana landowner

## What They Do About Weeds

**70%** OF LANDOWNERS SAID THEY ALWAYS CHECKED THEIR PROPERTY FOR WEEDS

✓ Central region landowners had the highest rate of checking for weeds

Other weed control behaviors were slightly less popular:

**68%** OF LANDOWNERS WASHED THEIR PERSONAL GEAR AFTER BEING IN WEEDS

**63%** OF LANDOWNERS WASHED THEIR VEHICLE AFTER BEING IN WEEDS

**51%** OF LANDOWNERS BOUGHT WEED-FREE ALTERNATIVE MATERIALS

## Landowners' Personal Actions Against Weeds

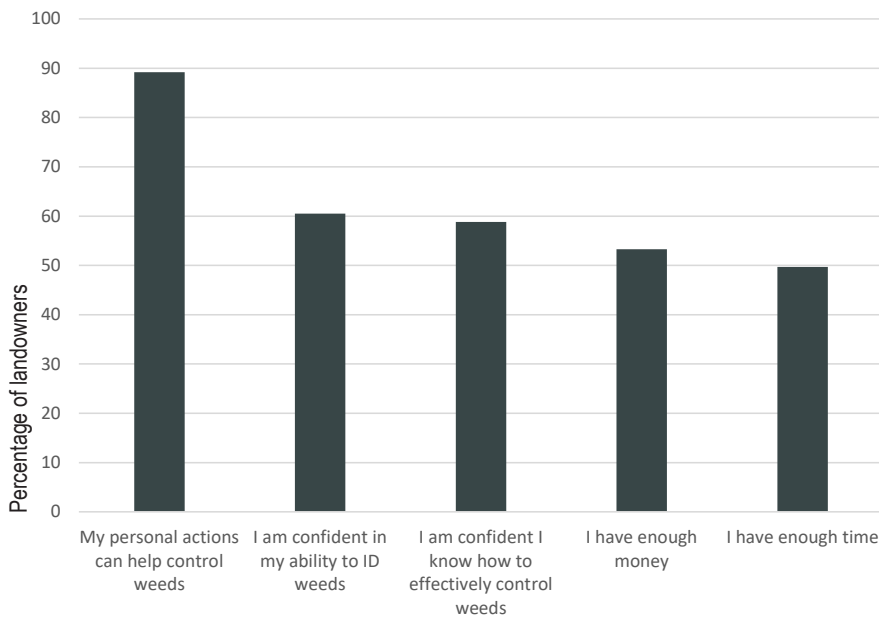


Figure 3: Percentage of landowners who agreed or strongly agreed

**Almost 90%** of landowners believed their personal actions could help control weeds

**About 50%** of landowners reported having the tools they needed to control weeds on their property

**53%** of respondents agreed they had enough money

**50%** of respondents agreed they had enough time to control for weeds

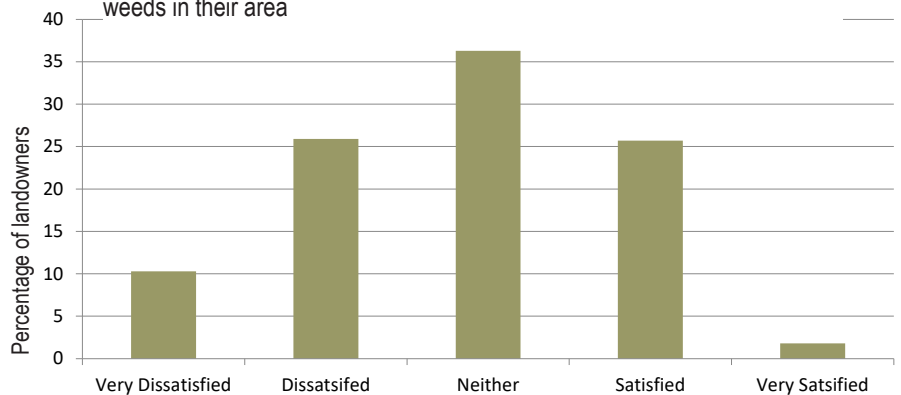
More landowners in the Central and East reported having enough time

The majority of landowners were also confident in their ability to identify weeds, and their knowledge of how to effectively control for weeds

## How Landowners Viewed Community Weed Control Actions

**LANDOWNERS DISSATISFIED WITH WEED CONTROL IN THEIR AREA WERE SIGNIFICANTLY MORE LIKELY TO HAVE CONTROLLED WEEDS ON THEIR OWN PROPERTIES.**

Figure 4: How satisfied landowners were with current efforts to control weeds in their area

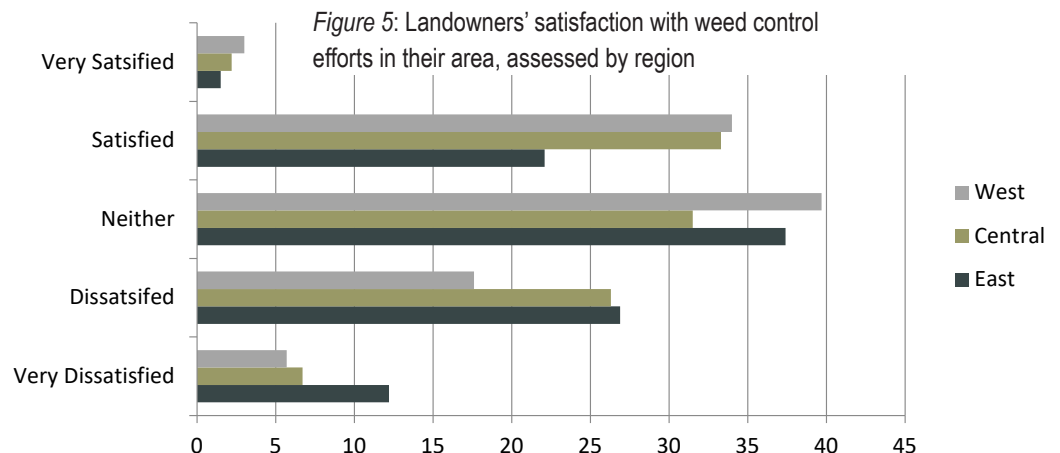


Regional differences were evident:

**More respondents from the West and Central regions were satisfied with weed control in their area**

**More respondents from the East were dissatisfied or very dissatisfied with weed control in their area**

Figure 5: Landowners' satisfaction with weed control efforts in their area, assessed by region



## Cross-Boundary Perspectives

Landowners believed their personal actions could make a difference against weeds. Most landowners also agreed that, together with their neighbors, they could effectively control weeds in their area. Respondents also believed if their neighbors controlled for weeds it would reduce weeds on their property.

However, **only 31% of respondents believed that controlling weeds on their property would motivate their neighbors to take action.**

Landowners believed their neighbors' actions help reduce weeds on their own properties. In the Western region in particular, landowners believed their weed control actions were noticed by neighbors and motivated them to make similar efforts.

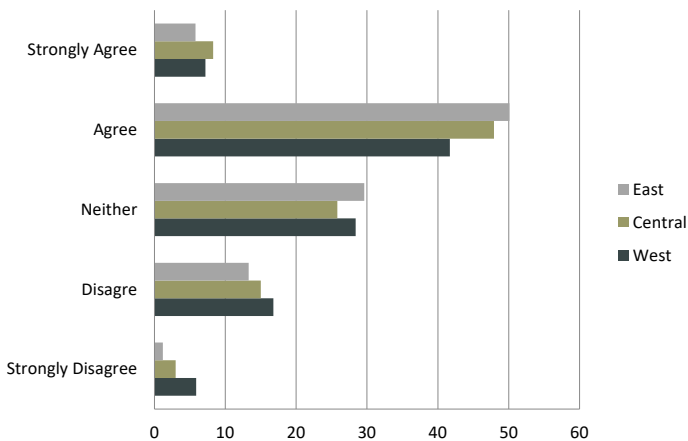


Figure 7: Landowners' level of agreement that their neighbors would notice when they take action to reduce the spread of weeds, assessed by region

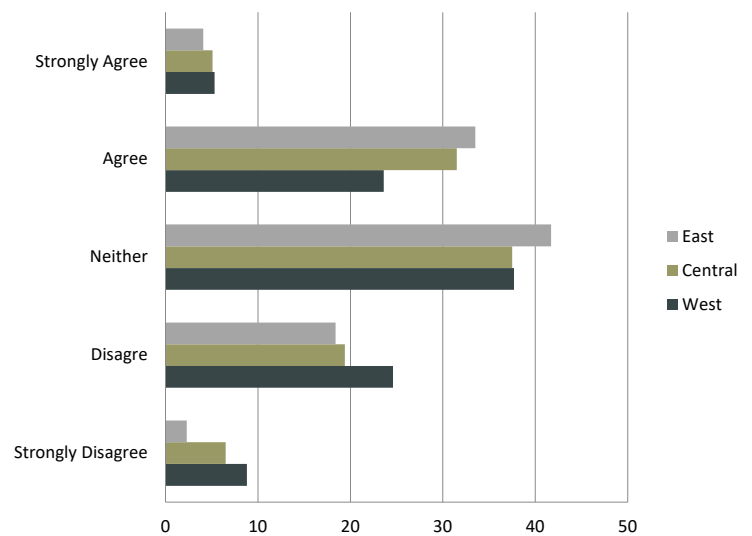
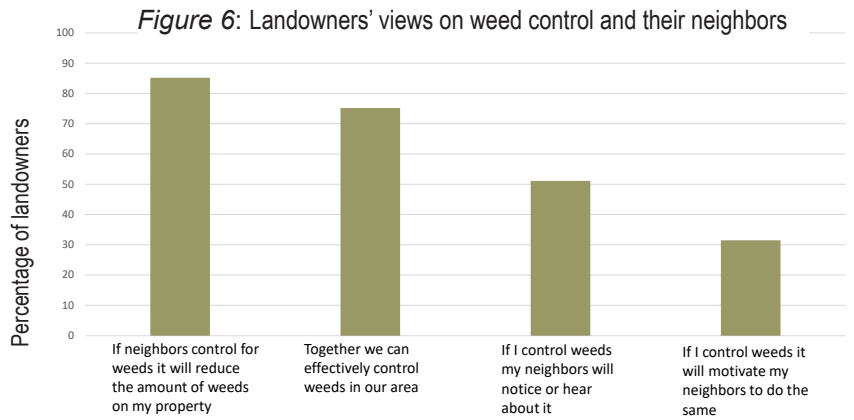


Figure 8: Landowners' level of agreement that taking action to reduce the spread of weeds would motivate their neighbors to also take action, assessed by region

While 70% of landowners reported checking their property for weeds, only 40% of landowners thought their neighbors were taking action.

This suggests that even though most landowners reported taking actions to control weeds, many of those efforts went unnoticed by neighbors.

However, some landowners recognized the cross-boundary nature of weeds; these landowners believed they were in it together with their neighbors, and were more willing to take a variety of weed control actions.

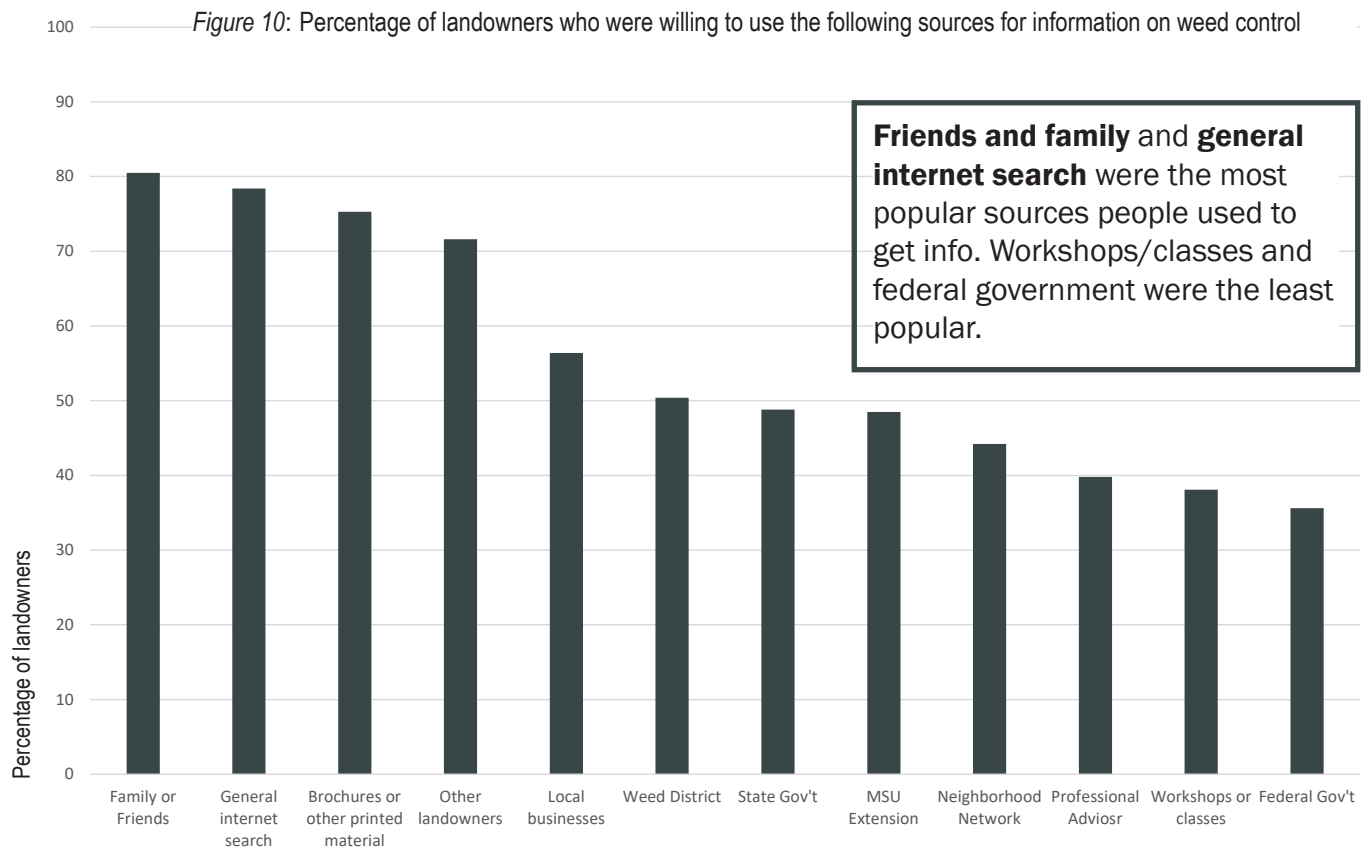
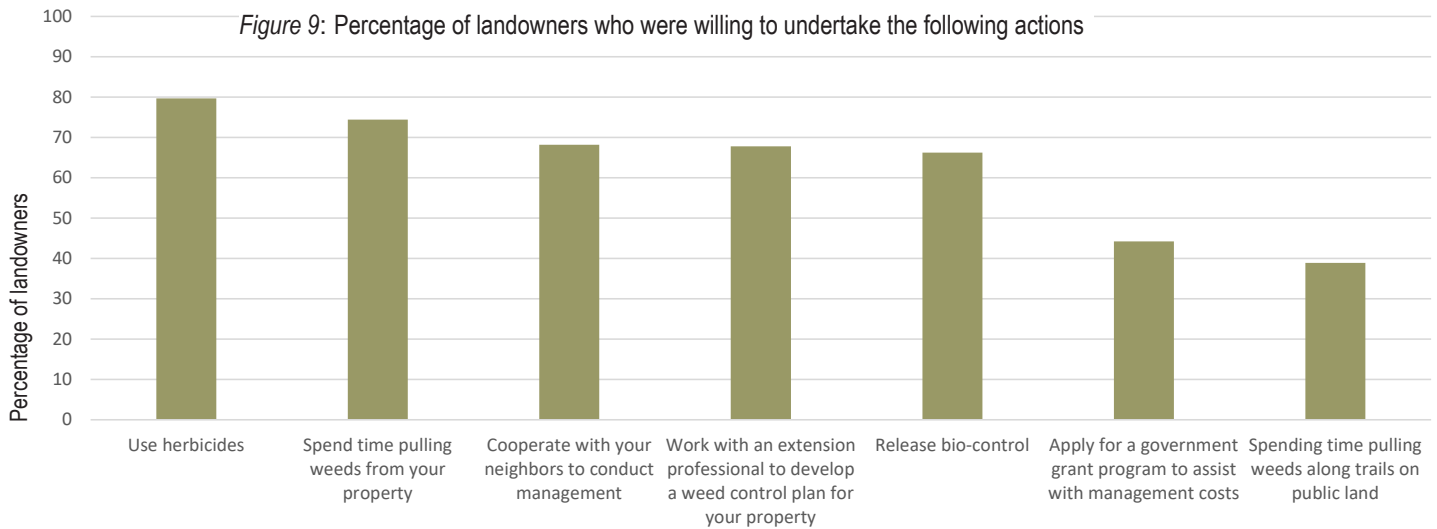
## Working Together to Address Weeds

**80%** OF LANDOWNERS WERE WILLING TO USE HERBICIDES



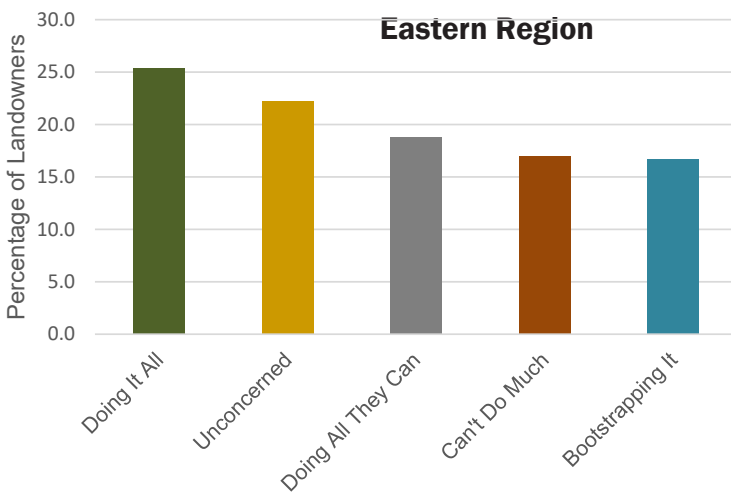
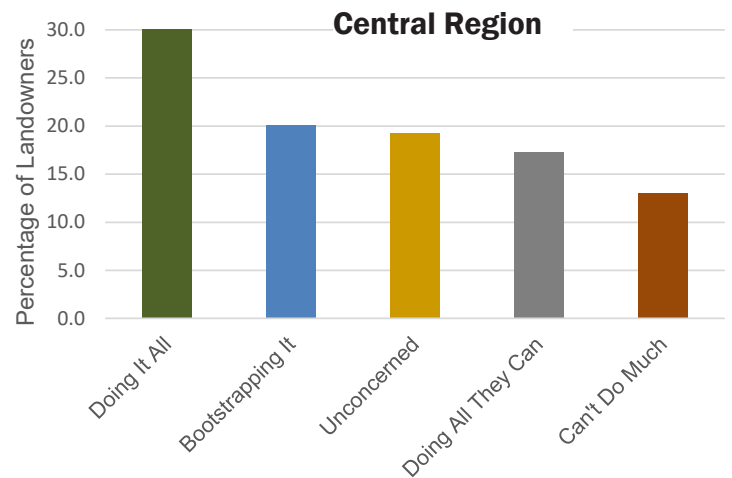
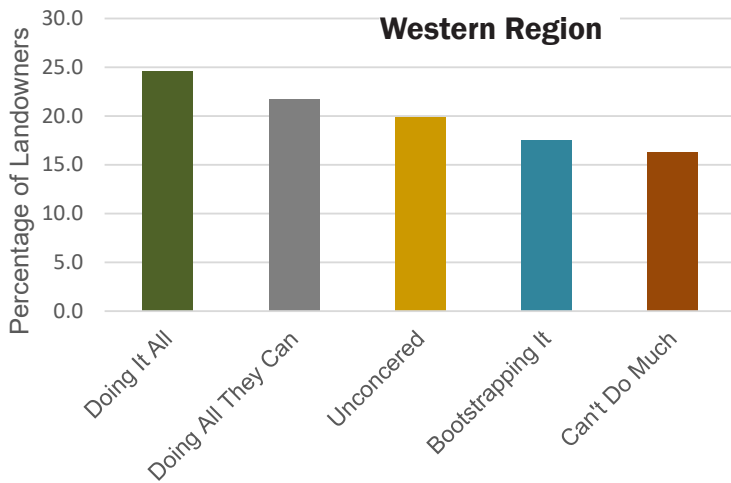
**68%** OF LANDOWNERS WERE WILLING TO WORK WITH AN EXTENSION PROFESSIONAL TO DEVELOP A WEED CONTROL PLAN

**ONLY 44%** OF LANDOWNERS WERE WILLING TO APPLY FOR A GOVERNMENT GRANT PROGRAM



## Different Types of Landowners

Across the state, we identified different types of landowners who displayed similar needs and behaviors within their group. Each region had a different proportion of the five types of landowners. Landowner outreach will be most effective when programs and outreach messages are tailored to these specific types of landowner audiences.



**Doing It All:** (*Moderately concerned, actively controlling, low constraints, satisfied with weed control in their area, somewhat connected with others*) These landowners know weeds are a problem, have the resources to control weeds, and engage many weed control activities. They believe their neighbors expect them to control for weeds on their property.

**Doing All They Can:** (*Highly concerned, some actions, highly constrained, dissatisfied with weed control in their area*) These landowners see weeds as a big problem, and they are not satisfied with the weed control in their area. They are doing all they can to control weeds, but do not have enough time or money. While they believe their neighbors expect them to control for weeds, they don't think their neighbors are taking action themselves.

**Not Too Worried:** (*Moderately to highly concerned, taking few actions, satisfied with weed control in their area*) These landowners don't think weeds are a big problem. Despite having resources needed to control weeds, they still don't engage in much weed control. They are generally satisfied with weed control in their area.

**Can't Do Much:** (*Few actions, highly constrained, unsatisfied with weed control in their area, not connected with others*) These landowners know weeds are a problem, but they don't have the knowledge, time or money needed to take action. This group has low resources and low confidence in their ability to control for weeds. They don't believe their neighbors are controlling for weeds, and they don't think their neighbors expect them to control for weeds.

**Bootstrapping It:** (*Highly concerned, actively controlling, moderately constrained, satisfied with weed control in their area, connected with others*) This group thinks weeds are a big problem, and they work to control them even though they have limited time and money. This group was most connected with their neighbors regarding weeds, and believed their neighbors expected them to control for weeds.

### Survey Methods:

We administered a mail and internet survey following a Dillman tailored design method (2014). Our initial sample included 4,424 Montana landowners from across MT. We stratified the state by combing the seven MT Fish, Wildlife and Parks regions into three regions: East, Central, and West. In each region we sampled about 1,500 landowners. We drew our sample from the MT Cadastral database, a spatially explicit statewide database of all landowners. We had a response rate of 30%, and a final sample of 1,326 responses. Please contact Dr. Alexander L. Metcalf with any questions ([alex.metcalf@umontana.edu](mailto:alex.metcalf@umontana.edu)).