



COOPERATIVE EXTENSION

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Nevada's War on Weeds Steps to Success Step 3 - Map Important Weeds for A Living Inventory

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Why Map Invasive Weeds?

Mapping may be the single most useful tool in your invasive weed management toolbox. You must know "what is out there" and "where it is" if you expect to manage invasive weeds successfully. With a map, you and your group get the big picture as well as many of the details. Many logical relationships become readily apparent, including sources for the infestation, rate, cause and direction of spread, and the key players, landowners or managers who must become involved.

A map shows the extent and severity of the infestation. Without a map, the extent of the problem is not known and therefore you can not plan properly to successfully eradicate, contain, or control an invasive weed species. It is much more difficult to get cooperation and funding from local, state, and federal government sources without specific knowledge of the location and extent of the weed problem. This is especially important in Nevada because of the high percentage of federally owned lands within the state. Even if you could get all the decision-makers to every weed patch within your area, it would not show the extent of the problem as effectively and certainly not as efficiently as a map.

A good inventory and mapping system:

- Brings awareness both visually and quantitatively.
- Clearly defines the problems and builds enthusiasm among participants.
- Provides baseline data so you can evaluate weed management options.
- Aids in the prevention and exclusion action planning
- Allows monitoring of the program's effectiveness
- Provides a historical invasive weed infestation record so you and fund providers can easily assess the success of your weed control program.

What Kind of Map?

The map must clearly define your weed management area. It needs to be of sufficiently large scale that you can identify the size and precise location of an infestation.

Weed data can be collected on almost any background map. Show weeds on background maps such as:

Aerial photographs or orthophotoquads

Drawings or a series of drawings

Topographical maps such as the USGS quadrangles

County road, section, or township maps.

Property platt maps

Computer drawings or a computer generated geographic information system (GIS)

Good weed maps break land into units with the geography, vegetation, and aquatic characteristics of each unit clearly shown. Details vary tremendously between maps, so one map may not contain all the information you require. You may need several types of maps of the same area before your planning is completed. List all the factors that affect land use and rank the land according to values placed on those pieces of land. Make sure you can make copies so you can keep the original and use the copies for writing on during the planning process.

Common Features of Good Invasive Weed Maps

Certain features should be common to all invasive weed management maps. The maps should show, or you should be able to mark on them, the following site characteristics:

- Invasive weed infestations
- Topographic features such as streams, lakes, hills and watershed boundaries
- Soils or ecological sites showing the potential for vegetation etc.
- Existing vegetation (trees, brush, seedings, fire scars, etc.)
- Infrastructure such as buildings, roads, fences etc.
- Power lines, railroads, and other easements or rights-of-way
- Irrigation canals and ditch systems
- Political boundaries
- Property designations such as federal or state lands, wildlife preserves, etc.
- Ownership of the private property

The focus of every weed map is invasive weed infestations. When marking weeds on a map, you need to record estimates for three types of information:

- Invasive species identification
- Areas or spot locations of infested land
- Density of the infestation

Most of us are comfortable with paper maps and are familiar with the use of plastic overlays of selected data layers. Mapping capacity increases through the use of computer-based GIS wherein new data layers can be created by adjusting existing ones. This adds the ability to ask questions relevant to invasive weed management, allowing better strategic planning. Questions that may improve weed management planning include the following:

What are we doing that spreads invasive weed seed and reproductive parts?

How are weeds transported in gravel, construction materials, or contaminated hay?

Where will invasive weeds likely spread by recreational vehicles? What other types of vehicle uses might be spreading weed seeds and where is this likely to occur?

Where will weeds be transported by water? From what sources?

How did the seeds of a particular weed likely get distributed? What role do humans play?

Where will a weed that thrives on specific soil types spread to if not eradicated or contained?

Where are we likely to find a weed that requires a ground water table within 20 feet?

In which location can particular herbicides that are restricted from use near water or on sandy soil not be used?

Where can we likely get financial support from a particular source with a special interest?

Which treatment works the best for containing the spread of a particular weed population?

Which area is the highest priority for a limited spray program?

Where is the best spot for a particular biological control agent?

For many of these questions, the mere act of putting the map up on the wall or out on the table and recording distribution of important invasive weeds will lead the group to the answer, especially among people who know the country. However, for large groups or groups that contain people new to the area, additional data layers add to the understanding needed for developing and prioritizing objectives. That is why consistent annual re-mapping is essential. Maps also build awareness and enthusiasm for planned weed management.

For weed maps to show comparisons of various treatment efforts, they must display the treatments (See Step 7-Monitor Results to Work Smarter Next Year, Fact Sheet 99-81). The single greatest use of weed maps is in the comparison of weed infestations through the years. This motivates action by demonstrating the invasive nature of important weeds. Unfortunately, maps showing the population growth of many weeds will become like a diary of a terminal disease. Only maps that show mostly success will continue to generate hope.

References:

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