

# Invasive Plants on Small Acreage Properties in Arizona

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Figure 1. A single plant of yellow starthistle (*Centaurea solstitialis*) can produce up to 150,000 seeds under favorable conditions.

If you live on several acres in rural Arizona, you no doubt have some native vegetation. The local climate and your use of the land may dictate how much vegetation you have. And, when it finally rains in Arizona, you may have a burst of new plant life. Some plants may be treasured and others put in the weed category. People tend to define weeds as plants that are growing where they are not wanted. Invasive weeds, however, are of concern for many reasons.

**Invasive plants** are plants that have been accidentally or intentionally introduced to an area outside their original range and become problematic in their new environment by interfering with native or desirable species. The Executive Summary of the National Invasive Species Management Plan defines invasive species as “a species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.”

Invasive plants generally reproduce at high rates, easily dispersing a large amount of seed through wind or water (Figure 1). They are highly competitive for resources such as soil nutrients and water. Some invasive plants can even exude compounds that inhibit growth of other plants. Invasive plants are generalists, meaning that they do not have special requirements for growth and can flourish in diverse habitats. In addition, many invasive plants spread more easily than in their native environment due to the absence of natural enemies (such as insects and disease), which do not occur in their new environment.



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Figure 2. Russian knapweed has taken over this area and out-competes native vegetation.

The term “noxious weed” is not the same as “invasive plant”. An important distinction is that **noxious weed** is a regulatory term and is any plant designated by a federal, state or county government to be injurious to public health, agriculture, recreation, wildlife, or property. Noxious weeds are regulated with respect to their transport, sale, and eradication efforts. Not all invasive plants that occur in Arizona are noxious weeds. That does not mean, however, that unlisted invasive plants are any less of a nuisance than listed ones.

In Arizona, invasive and noxious plants have a huge impact on native vegetation and ecosystem health. Because invasive plants are competitive against native plants, once an invasive plant becomes established, they can completely replace the existing native vegetation (Figure 2). In so doing, they:

- reduce the amount of forage available to grazing livestock,
- eliminate wildlife habitat,
- decrease soil stability and increase soil erosion,
- affect water quality and water quantity,
- increase fire hazards, and
- detract from scenic, recreational and wilderness values.

As a landowner, you can help in the fight to control invasive plants. First, learn how to identify invasive species that occur in Arizona. Many species were brought in as ornamentals and most people would not recognize them as invasive species (Figure 3). Second, be mindful of the ways that invasive plants spread and avoid those behaviors and



Figure 3. Onionweed (*Asphodelus fistulosus*) was introduced as an ornamental and is now a federally listed noxious weed due to its invasive properties. Note the flower is like our native onions, but the plants have fibrous roots instead of bulbs, and they don't smell like onions.

activities. For example, some weed species can grow from underground buds on the root stalk. Plowing or tilling these plants will chop the root stalk into many pieces, multiplying the number of plants that will emerge the next growing season.

## Prevention

The most important action in invasive plant control is prevention. Good land management will help keep desirable vegetation healthy and weeds under control. Buy only weed-free hay, plant only certified seed, wash your vehicle after being in weed-infested areas, and monitor your property. Weeds spread fast, so regularly look for new weed patches on your property. Act immediately to treat them by using one or more of the weed control practices below. Team up with neighbors to improve effectiveness. Remember, weed control by itself is not enough. It is also necessary to modify the practices that caused weeds to become established in the first place. For example, mowing weeds after seed has matured can spread seed to new areas if the mower is not cleaned prior to moving to an un-infested location.

## Control Methods

**Mechanical control** includes activities such as mowing, hoeing, and hand pulling. Mow weeds before they go to seed. Repeated mowing in the same year may be necessary. Pull small weed patches and weeds near streams by hand.

**Livestock grazing** can be used to control some invasive plants (Figure 4). Graze weeds before they go to seed using sheep, goats, or cattle. Because livestock and wildlife can easily carry and spread weed seed on their coats or in their feces, avoid moving livestock from a weedy area to a weed-free area. Some weed species, if eaten, are poisonous. Be sure you properly identify weed species and check for poisonous properties before letting animals graze.

**Herbicides** can also be used to combat invasive plants. Selective herbicides can be effective against specific targeted weeds when applied in the proper amounts and at the proper time of year. **Read the label instructions carefully and follow directions.** Use herbicides away from water or desirable vegetation to prevent pollution of streams and groundwater. Only licensed applicators can apply restricted use herbicides. Call a local farm supply store to find out about hiring custom



Figure 4. Goat grazing, in combination with other control methods, can be effective in reducing some invasive weed infestations.

chemical applicators to spray your weeds if restricted herbicides are to be used. Be sure herbicides do not come in contact with desirable trees and shrubs. **Properly** dispose of leftover chemicals.

Biological control is the use of natural enemies, such as insects, fungi or pathogens, to control weeds. Natural enemies can weaken or eventually kill a weed plant. Many successful biological control agents cause stress in weeds by attacking seed heads, stems, roots and other plant parts. Permits to release biological control agents must be obtained from the USDA Animal and Plant Health Inspection Service.

Some combination of these control methods may be used, depending on the situation.

For help, contact the Arizona Department of Agriculture weed specialist or your local county Cooperative Extension office to obtain a list of noxious and invasive weeds in your area and recommendations on how best to control them.

## For More Information

*Noxious Weeds: A Disaster Looking for a Place to Happen in Arizona*, University of Arizona Cooperative Extension [ag.arizona.edu/pubs/natresources/az9610.pdf](http://ag.arizona.edu/pubs/natresources/az9610.pdf)

*Help Protect Arizona from Nonnative Invasive Plants*, University of Arizona Cooperative Extension <http://ag.arizona.edu/backyards/articles/spring07/page5-6.pdf>

*Prohibited, Regulated and Restricted Noxious Weeds (Arizona)*, Arizona Department of Agriculture <http://www.azda.gov/PSD/quarantine5.htm>

*Federal Noxious Weeds*, USDA Animal and Plant Health Inspection Service (APHIS) [http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/weeds/index.shtml](http://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/index.shtml)

*Executive Order 13112, Presidential Documents, Invasive Species* <http://ceq.hss.doe.gov/nepa/regs/eos/eo13112.html>

*Invasive Species Definition Clarification and Guidance White Paper*, National Invasive Species Council <http://www.invasivespeciesinfo.gov/docs/council/isacdef.pdf>