

Yellow Flag Iris

Description

Yellow flag is a very showy species growing 3-4 feet in height with the most vigorous growth attained in the wettest environments. The leaves are long, flattened and sword-like, typical of most iris. Large plant clumps are formed from the lateral growth of rhizomes sometimes attaining 20 feet in width. It has erect plant stalks with multiple flowers produced on each. Fruit capsules are large, 3-angled and up to 4 inches in length. Disk-like seeds are shed from the capsules throughout the fall and winter. Floating mats of seed can be observed in backwaters and marshes aiding dispersal. Reproduction can occur asexually through rhizome fragmentation or by seed production. Food storage in this species is unique. Fructan is the main storage compound held in the cells as opposed to starch. This allows the plants to metabolize energy under very low oxygen conditions and may provide cells with a natural anti-freeze for the winter.



Impacts

An infestation of yellow flag iris presents a dual impact on both human interests and native environments. This plant displaces native plants including sedges and rushes. This can reduce the carrying-capacity of wetlands for waterfowl and disrupt other ecological relationships. Irrigation canals and flood control ditches can be severely restricted by the physical nature of the plant clumps. Removal can be costly requiring large excavation equipment or herbicides. Control of heavily infested waterways can be cost prohibitive due to the huge volume of plant material needing to be removed. Any rhizome fragments that remain quickly reestablish a population. Invaded marshes in some eastern states are experiencing a significant displacement of native sedges and rushes with monocultures of iris. Many over-wintering waterfowl species are dependent on sedge and rush seeds as a high-energy food source. Replacement of this food source with yellow flag iris would reduce the carrying capacity of these marshes to sustain waterfowl populations. A small volume of yellow flag still exists in the nursery trade. A variegated variety is popular with aquatic gardeners and can be found in several catalogs and web sites. The ease with which this plant can be established using rhizome fragments has led to extensive trading among gardeners and aquatic plant enthusiasts.



Control Options Yellow flag:

Manual

*Hand removal with the use of hand tools is allowable in most critical areas. Check with the local jurisdiction for regulations in other areas.

*When removing manually, care should be taken to protect the skin, as resins in the leaves and rhizomes can cause irritation.

*Manual control is feasible for individual plants or small stands. You can easily pull seedlings in damp or wet soil.

*Dig out mature plants, taking care to remove all the rhizome. The rhizome is tough and may require heavier tools, such as pickaxes, pulaskis or saws. If you do not get all the rhizome, more plants will be produced. Keep watching the location after you have removed the plants, and new leaves will show you where you missed any sections of rhizome. Continue to remove the rhizome, and in this way you can eradicate a small patch.

*Simon (2008) found that for plants emergent in standing water for the entire growing season, cutting all leaves and stems off below the waterline can result in good control. This method is most effective if the plants are cut before flowering.

*Be sure to dispose of any removed pieces of rhizome away from wet sites. Composting is not recommended for these plants in any home compost system, because rhizomes can continue growing even after three months without water (Sutherland 1990).

Chemical

*Herbicides should only be applied at the rates and for the site conditions and/or land usage specified on the label. Follow all label directions.

*Herbicides can only be purchased and applied to aquatic systems in Washington State by a licensed pesticide applicator (contact Washington State Department of Agriculture for more information on pesticide licenses).

*There are federal, state and local restrictions on herbicide use in critical areas and their buffers.

*For control of large infestations, herbicide use may be necessary. Infested areas should not be mowed until after the herbicide has had a chance to work, which may take several weeks, depending on the herbicide used.

*Due to dense growth, re-application a few weeks after initial treatment will probably be needed to get complete coverage (Tyron 2006).

*For several years following treatment, monitor areas for new plants germinating from the seed bank or from rhizome fragments. In some cases several years of treatment may be necessary.

Specific Herbicide Information (these applications should be done by a licensed contractor)

Since yellow-flag iris is a monocot, only non-selective herbicides are effective. However, non-selective herbicides will injure or kill any plant they contact, so special care must be taken when using these chemicals. Both of the herbicides discussed below are non-selective.

Glyphosate (e.g. Rodeo™ or Aquamaster™). This is the most frequently used chemical for controlling yellow-flag iris. Apply to actively growing plants in late spring or early summer. Apply directly to foliage, or apply immediately to freshly cut leaf and stem surfaces. Avoid runoff. (Tu, 2003). Follow the label for recommended rates for yellow-flag iris since higher rates may provide better results. A study in Montana showed good results with 5% Rodeo plus Competitor (Tyron, 2006). Glyphosate at lower rates is not as effective as either imazapyr or imazapyr and glyphosate combined.

Imazapyr (e.g. Habitat□). Simon (2008) found that 1% imazapyr (with 1% non-ionic surfactant) sprayed in the fall resulted in good control. Imazapyr sprayed in the spring, or a combination of imazapyr (1%) and glyphosate (2.5%) sprayed in fall both result in good control, but slightly less effective than imazapyr alone. Note that imazapyr has been shown to have some residual soil activity, so care should be taken to avoid spraying in the root zone of desirable plants, and do not replant the treated area for several months after application.