

Common reed (*Phragmites australis*)



Common reed AKA phragmites is a tall (up to 15 ft.) perennial grass with feathery flower spikes that turn golden-brown in the late summer/fall. This Eurasian native is found near any water source, and in ditches or disturbed areas. It alters hydrology, soil nutrition, and disrupts native plant growth. It impairs movement and visibility for training, contributes to flooding by restricting water flow, and can be a fire hazard in dry conditions. It is treated with mechanical and chemical controls.

Look-A-Likes: Cattails can superficially resemble phragmites but cattails have familiar brown sausage shaped flower clusters whereas phragmites has dense feathery purple-tan flowers and grows much taller.

Prickles, Spines & Thorns: Prickles project from skin tissues like rose or raspberry; spines from leaf and stipule tissue like cacti, barberry or water chestnut; and thorns from stem tissue like autumn olive or locust.

NOT HERE YET: Hydrilla (*Hydrilla verticillata*)



Hydrilla is a large (6 ft. long) aquatic plant with blade-like leaf whorls. This Asian native grows in thick beds near the water surface. Its high photosynthesis rate means that it drastically alters the dissolved CO2 levels between day and night, altering water PH which can be fatal for various fish species. Its dense mats restrict movement and training and recreational activities. It can be controlled via chemical means, and biocontrols like grass carp. This is not at West Point but is in the region.

Look-A-Likes: Elodea, naiads, & hornwort resemble hydrilla but lack root tubers. Elodea has smooth 3-leaf (not serrated 4-8 leaf) whorls, naiads opposite (not whorled) leaves and hornwort forked (not flat) leaves.

FAQ - AN INVASIVE PLANT PRIMER

Q: What are invasive species? A: Invasive species are non-native species that harm environments and human activities. West Point has many invasive plant species.

Q: How do invasives spread? A: Invasives spread to new areas or within an area by wildlife, wind, and water but often by human activities like construction, agriculture, recreation.

Q: How do invasives establish? A: Invasive thrive in new areas due to high seed production, no predators/ competitors, fast growth, dense structures, and chemical use (allelopathy).

Q: How do invasives harm ecosystems? A: Invasive plants can alter and impair ecosystem composition, structure and function, reducing biodiversity and harming the other plants and animals that live in those invaded ecosystems.

Q: How do invasives harm people? A: Invasives harm utilities and infrastructure, human health (toxicity, puncture, tripping etc.) and training and recreation by limiting access.

FAQ - INVASIVE MANAGEMENT

Q: What can be done? A: Prevention, or keeping invasives from being spread to and in areas, is the best form of management. But if present, treatment may be possible via:

Mechanical means: Mechanical removal means the physical removal of plants. Methods include cutting, mowing, girdling, pulling, burning, matting, and drowning cut stems.

Chemical means: Herbicides or pesticides can be used to kill targeted plants. Chemicals are researched and deployed by professionals to target invasives in limited scope.

Biological means: The use of living organisms, usually from the invasive home range, to fight invasive plant growth. Host specificity is critical. Never release any animal or plants.

At West Point, allow Natural Resources or Roads & Grounds or pest management to handle invasive treatment in non-residential areas, both on and off Main Post.

FAQ - WHAT CAN I DO?

Q: What can readers do? A: While certain means of invasive species control is best left to land managers, prevention and response is a community effort. You can learn, teach and act.

- 1. Learn** — Using this brochure and other resources, learn more about these and other invasive species, how to identify these plants, and how these plants are spread.
- 2. Teach** — Share this and other information with others to help them identify and learn about these plants and what can be done to prevent their spread.
- 3. Act** — Stop the Spread. Check clean clothing, pets, equipment and vehicles if in or near invasive stands. Stay on established roads, trails and avoid infested areas.

INVASIVE AQUATIC & WETLAND

PLANTS OF THE WEST POINT

MILITARY RESERVATION




U.S. ARMY GARRISON - WEST POINT
DPW - NATURAL RESOURCES SECTION

FORESTRY, FISH & WILDLIFE & PEST MANAGEMENT

West Point Natural Resources Section (NRS)
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INVASIVE AQUATIC & WETLAND PLANTS

Invasive species are non-native species that harm the environment and interfere with human activities. West Point has many invasive plants that can harm both our ecosystem and the military mission. Proper management of these plants is imperative and identification is a critical first step toward preventing new introductions and further spread of species already here. It is our goal, in putting out this brochure - one in a four-brochure series on invasive plants - to help its readers, better understand common invasive species. This brochure contains a description of some of the invasive aquatic and wetland plants at West Point including pictures and a brief species summary including physical description, habitats, ecological and mission impacts, safety concerns, best management options and look-a-like species. We hope this brochure is useful but it is by no means comprehensive guide. For more information, see the NYSDEC website at <https://dec.ny.gov>.

Hazards: Some of these invasives and other plants have sharp spines, thorns, and prickles that may injure. In case of severe injury: **Keller Army Community Hospital 900 Washington Rd., West Point NY 10996.**

PHYSICAL HAZARD

NOT A PHYSICAL HAZARD

Eurasian Milfoil (*Myriophyllum spicatum*)



Eurasian water milfoil is a large (around 8 ft. long) submerged plant that grows in underwater mats with finely dissected, feathery leaves. Native to Eurasia it is found in many West Point waters. It creates hypoxic (low oxygen) zones underwater through blocking sunlight, preventing other aquatic plants from photosynthesizing. Its dense mats can impede movement through water, interfering with recreational and training activities. It's controlled mechanically and biologically with grass carp

Look-A-Likes: Northern watermilfoil is similar but has fewer 5-10 leaflet pairs versus EWM's 12-21 pairs. Coontail whorls are stiff, bristly (not soft feathery). Fan-wort has opposite (not whorled), fan shaped leaves.

Triploidy Grass Carp: This sterile strain of grass carp have been used at West Point to control invasive EWM, consuming large amounts of submerged vegetation in golf course ponds & Round Pond among other waters.

Water Chestnut/Calltrop (*Trapa natans*)



Water chestnut is a large (stem up to 15 ft. tall) floating aquatic plant with serrated radial leaves and distinctive **barbed spiny nuts**. This Asian native is found at the surface of slow moving water bodies, including Mine Lake and Cragston Lakes. It blocks sunlight, harming plant growth and disrupting fish habitat. Its sharp nuts pose a safety hazard for both training and recreation. Its dense growth also restricts aquatic movement. It is most effectively controlled through repeated pulling.

Look-A-Likes: Other floating plants like lilies and pondweeds can resemble water chestnut, especially from afar. Lillies have much showier flowers and simpler, smooth non-radial oval/lance leaves and no spiny nuts.

Curly-Leaf Pondweed (*Potamogeton crispus*)



Curly-leaf pondweed is a submerged plant with small (up to 4 in.), wavy leaves and short, spike-like flowers. Native to Eurasia, it can be found in standing or slow-moving bodies of water at West Point. It can start growing earlier in the spring than other aquatic plants, often colonizing lakes before other plants can grow. These areas of dense growth can restrict training and recreational activity conducted on lakes and ponds. It is most effectively removed with mechanical controls.

Look-A-Likes: CLPW can resemble native species at a glance, but its distinctive way, crinkled leaves with fine-toothed edges and stiff stem differs from the flatter, smoother edge leaves of native pondweed species.

Japanese Knotweed (*Fallopia japonica*)



Japanese knotweed is a tall (up to 10 ft.) perennial with large, heart-shaped leaves and white flower clusters. Native to east Asia, it is found in wetlands, streams, and by roadsides. It forms dense thickets that crowd out native plants, blocking sunlight. Its rhizomes (subterranean stems) can extend up to 23 ft. horizontally and 10 ft. deep, damaging infrastructures and foundations, on Main Post and South Post especially. It is controllable via sustained joint mechanical and chemical treatments.

Look-A-Likes: Giant ragweed, pokeweed, and bamboo resemble it. Ragweed has rough, hairy (not smooth, hollow) stem. Pokeweed produces dark purple berries (not papery seeds). Bamboo is woody, doesn't die back.

Purple Loosestrife (*Lythrum salicaria*)



Purple-loosestrife is a mid-sized (up to 6 ft.) perennial with square stems and striking purple flowers. Native to Eurasia, Northern Africa, and East Australia, it thrives in wetland habitats. It produces millions of seeds each year, taking over habitats and outcompeting native plants. It can impede water flow by clogging waterways. Though mechanical and chemical controls are effective, two biological control species of loosestrife beetle (*Galerucella sp.*), are the best method.

Look-A-Likes: Several plants resemble purple loosestrife like fireweed, blue vervain, swamp loosestrife, obedient plant, and blazing star, but none have square stems or the small magenta floral arrangements.

Loosestrife Beetles: Golden and black-margin loosestrife beetles have been released here. While these biocontrols do not eliminate purple loosestrife, they do keep it stunted, heavily reduced from what it once was.