



Columbia Gorge CWMA Best Management Practices

ENGLISH HOLLY

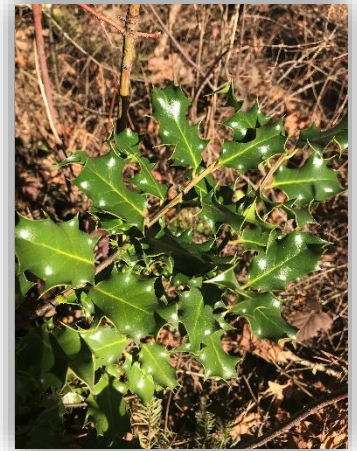
Ilex aquifolium

Holly Family

INTRODUCTION

Identification Tips

- English holly is a large, dense, slow-growing evergreen tree or shrub.
- It can reach 15 to 50 feet tall and up to 15 wide, growing as either a single tree or a multi-stemmed thicket.
- Holly bark is smooth and can be grey to black in color.
- The leaves are thick, glossy, dark green and wavy, 1-3 inches long, with sharp spines along the wavy or undulating edges of the leaf. These tough leaves may be smooth and spineless on older branches.
- The flowers of this plant are small, whitish, and have a sweet scent. They bloom in late spring and early summer from May to June.
- From August to October, holly produces red, yellow or orange berries.



Impacts

- Although this is not a state-listed noxious weed, holly is naturalizing and spreading throughout our area.
- Coniferous forests are particularly susceptible to invasion by holly, which thrives in shaded forests.
- Dense thickets of holly suppress the germination and growth of native trees and shrubs.
- The berries contain ilicin, a bitter alkaloid, which make them both unpalatable and poisonous to people and pets.
- Holly develops a deep root system which can prevent surrounding plants from obtaining sufficient moisture, and also makes established plants difficult to remove.



Habitat & Distribution

- English holly will grow both in shade or sun in well-drained soil and can be found along roadsides, within shaded forests, and many other habitats.
- It was brought to the United States as a landscape plant and is grown commercially for decorations and floral arrangements.



Reproduction & Spread

- English holly has both male and female plants that are bee pollinated. In the fall, the female plants produce berries.
- They reproduce mainly by seeds that are contained within the berries. While these berries are unpalatable early in the season, by late fall the berries have softened and are appealing to birds and rodents, which disperse the seeds to new areas through their droppings.
- Holly can also spread vegetatively through suckering and layering. These plants will re-sprout readily if the main stem is damaged.

CONTROL INFORMATION

Integrated Pest Management

- The recommended approach for weed control is Integrated Pest Management (IPM). IPM involves selecting from a broad range of control methods to strengthen the impact of management practices given the ecology of the pest and the specific site conditions where it occurs. The goal of IPM is to maximize effective control and to minimize negative environmental, economic, and recreational impacts.
- Use a multifaceted and adaptive approach. Select control methods reflecting the available time, funding, and labor of the participants, the land use goals, and the values of the community and landowners. Management may require dedication for a number of years and should allow flexibility in methods.

Planning Considerations

- Survey area for weeds, set priorities, and select the best control method(s) for the site.
- Control practices should be selected to minimize soil disturbance. Minimizing disturbance prevents further infestations of weeds.
- Begin work on the perimeter of the infested area first and move inward toward the core of the infestation.
- Monitor the site and continue to treat plants that germinate from the seed bank.

- Revegetate the treatment areas to improve ecosystem function and prevent new infestations.

Early Detection and Prevention

- English holly is easily identifiable throughout the year.
- Control new infestations as early as possible.
- Minimize soil disturbance from vehicles, machinery, and over-grazing to reduce seed germination.
- Monitor for new plants and re-treat as necessary. Ensure any existing plants do not produce and release seed.
- Prevent the additional spread of English holly by thoroughly cleaning tools, boots, and vehicles after working in or traveling through an infested area.

Manual, Mechanical, & Cultural Control

- Small holly plants can be dug or pulled up when soil is moist. Be aware that mature trees have deep and extensive roots; digging large holly trees or thickets is labor-intensive and results in considerable soil disturbance if all the roots are removed. Weed wrenches can be used on larger shrubs to pry up the entire plant.
- Cutting holly trees at the base usually results in re-sprouting, but with monitoring and follow up the holly can be suppressed.

Herbicide Control

- Only apply herbicides at proper rates and for the site conditions or land usage specified on the label. **Follow all label directions** and wear recommended personal protective equipment (PPE).
- When dealing with large trees or thick stems, chop or cut the holly as close to the ground as possible and apply an herbicide directly into the cut portion. Frilling (making deep cuts at 45 degree angles into the tree's bark using an axe or sharp chisel) and pouring herbicide into the cuts immediately afterward is also effective.
- Monitor treated areas for missed, newly germinated plants and for re-sprouting. Selective herbicides are preferred over non-selective herbicides when applying in a grassy area.
- Foliar herbicide treatment (spraying herbicides directly on the leaves) is not recommended due to holly's thick, waxy leaves which prevent the chemicals from being absorbed.
- **Minimize impacts to bees and other pollinators by controlling weeds before they flower. If possible, make herbicide applications in the morning or evening when bees are least active. Avoid spraying pollinators directly.**

Specific Herbicide Information

Herbicides are described here by the active ingredient. Many commercial formulations are available containing specific active ingredients. **References to product names are for example only.** Directions for use may vary between brands.

Control English holly effectively with cut-stump or frilling applications of herbicides including:

- Triclopyr (i.e. Vastlan, Ortho Max Poison Ivy, and Tough Brush Killer)
- Glyphosate (Round-Up)
- Continuously monitor for new plants, especially following any disturbance to the soil such as tilling or construction. Birds can spread English holly, so vigilance is required to prevent new infestations.

Contractors/Licensed Applicators

- Use imazapyr (Polaris) with a stem injection gun for effective control of English holly.

This BMP does not constitute a formal recommendation. **When using herbicides, always consult the label.** Please refer to the Pacific Northwest Weed Management Handbook or contact your local weed authority.

Additional Resources

<http://columbiagorgecwma.org/weed-listing/best-management-practices/englishholly/>

http://www.earthcorps.org/ftp/ECScience/Projects/Holly_Research/Holly_Treatment_Study_Report_2013.pdf

<http://hortsense.cahnrs.wsu.edu/Home/HortsenseHome.aspx>

<http://www.kingcounty.gov/environment/animalsAndPlants/noxiousweeds/weed-identification/english-holly.aspx>

<http://www.nwcb.wa.gov>

https://www.nwcb.wa.gov/images/weeds/English-Holly-Fact-Sheet_King.pdf

<https://weedwise.conservationdistrict.org/2017/december-weed-month-english-holly.html>