

Integrated Pest Management (IPM) Guide for Common Weeds

Northwest Weed Management Partnership

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Disclaimer: This document is a basic guide and assumes no liability toward product efficacy, loss of non-targeted plants, or personal safety issues. Always follow label instructions, wear proper safety gear, and avoid herbicide drift. If in doubt as to control practices, consult a licensed treatment contractor. Please refer to the PNW Weed Management Handbook <http://uspest.org/pnw/weeds/> for specific herbicide recommendations.

Species	Mechanical	Chemical	IPM	Notes/Tips
Armenian Blackberry	<ul style="list-style-type: none"> - Mow at least twice a year: June and September. - For small patches, grub roots in the winter through early summer when soil is moist enough to allow you to dig. Be sure to remove root collar. - Re-seed area with native grasses, trees, and shrubs. - Be persistent! New vines are always showing up. - Shading is the best long-term non-chemical approach to blackberry control 	<ul style="list-style-type: none"> - Treat with Crossbow or Garlon 3A in the late summer or fall, usually in September/October. Glyphosate at 2% is also effective in early October before first frosts. Frost events cause plant dormancy and negate any effect from glyphosate. - In mixed stands of blackberries and snowberries (common in riparian areas) you can spray over the top of both in the fall using Garlon 3A without any ill effect on snowberries. 	<ul style="list-style-type: none"> - Mow in June and allow for regrowth, then spray in fall. - Treat with Garlon 3A or Crossbow in September. 	<ul style="list-style-type: none"> - A rust that stunts blackberry growth was accidentally introduced to the United States. The rust is spreading, but its impact appears to be dependent on local climate (i.e., dry weather is not conducive to the rust).
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Scotch Broom	<ul style="list-style-type: none"> - Mowing is sometimes done to knock down large Scotch broom patches, but should be avoided when seed pods are ripe. Also, keep in mind there is a good chance that seeds already on the ground will be spread by mowing. - Mowing typically results in dense, multi-stemmed regrowth; great for spraying, not so great for "lop and leave." - Cutting large plants (stem greater than 1/2 inch) is most effective in the driest times of the year. - Pull smaller plants (less than 1/2 inch) by hand or with a weed wrench. 	<ul style="list-style-type: none"> - If possible, spray Scotch broom in spring when it is growing vigorously. - Water stress in late summer can cause reduced herbicide effectiveness. - Garlon 3A or 4, glyphosate, and Crossbow are all effective. Be careful of surrounding vegetation! - Garlon 3A and Milestone mixed are very effective and don't require complete coverage of plant for total control. Care must be taken around trees and shrubs due to Milestone's soil activity. - Treat new seedlings every year. 	<ul style="list-style-type: none"> - Mow in early spring. - Treat regrowth in fall or the following spring with Garlon or Crossbow. - You can also use glyphosate (Round Up) for early fall treatments, but be careful of surrounding vegetation! - Cut stumps often don't need herbicide treatment if they are an inch in diameter or bigger. Late summer cutting is best. 	<ul style="list-style-type: none"> - Be sure to clean all equipment used at the site. - Don't mow Scotch broom when seed pods are ripe. - Pulling large plants with a weed wrench creates ideal growing conditions for seed bank – consider cutting instead. A battery powered reciprocating saw is a great tool for cutting large stems. - Seed removal area heavily with grass to shade out Scotch broom seedlings. - Calibrate sprayer well and watch your rates.

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Pasture Weeds (broad-leaf weeds in grass pasturage) Includes: tansy ragwort, teasel, thistles, dock, St. John's wort, <i>et al</i>)	<ul style="list-style-type: none"> - IMPORTANT: Mow <u>before</u> seed formation. - Except for Canada thistle, hand digging is feasible for small infestations. - Cut and bag all seed heads, and burn or dispose of them to prevent spread of seeds. 	<ul style="list-style-type: none"> - IMPORTANT: Spring application is critical. Apply herbicides BEFORE plants flower. - The following herbicides are effective: 2,4-D, Weedmaster, Garlon 3A, Curtail, Stinger, Milestone - Stinger and Curtail are effective on Canada thistle when plants are short (less than 6") to full height. Glyphosate is only effective when plants are in late bud to flower stage or on fall regrowth. - If you want to save clover, use MCPA. All others will eliminate clovers. 	<ul style="list-style-type: none"> - Introduce goats with other grazers. Goats prefer broad leaved plants. Don't over graze. - If you miss spring spray time, you can mow in early summer and spray in the fall. This approach works well for Canada thistle and tansy. - Keep pasture grass competitive by maintaining high fertility. 	<ul style="list-style-type: none"> - There may be a biocontrol agent already present! - No tansy ragwort biocontrols? Don't panic - the bugs will come! Biocontrol agents cycle with the plant population and will become more abundant and effective as tansy becomes more abundant. - Cut, bag and dispose of tansy ragwort and teasel seed heads.
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English Ivy	<ul style="list-style-type: none"> - Protect trees and prevent seed production by cutting vines around tree trunks. Clear ivy three feet out from the base of the tree. - Using rakes and shovels vines can be pulled and rolled down a slope like a carpet. - Goats and sheep <u>LOVE</u> ivy, and can be used to clear areas prior to pulling of the roots. 	<ul style="list-style-type: none"> -The current hot ticket: 4% Accord Concentrate (glyphosate)] + 2% Garlon 3A (triclopyr amine) + 2% Competitor (modified vegetable oil (MSO) surfactant. - If possible, apply during dry periods in late winter or early spring before native plants leaf out or emerge. - You will not notice effects until weeks, if not months later, so be patient! 	<ul style="list-style-type: none"> - Cut ivy away from trees and apply foliar herbicide treatment to leaves on the ground. - Cut ivy trunks back to ground and paint or spot spray them with Garlon. 	<ul style="list-style-type: none"> - If you do nothing else, keep ivy out of the trees!! - Cut the climbing vines, taking a good chunk out of them so they don't grow back together. This also ensures you don't miss any of the small vines that might be mixed in hidden in the larger ones.
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Parking lot weeds (puncture vine, prostrate knotweed, <i>et al</i>)	<ul style="list-style-type: none"> - Burn 'em out - apply early season flaming. - Hand pull large weeds early in season. - Apply fresh gravel on a regular basis. 	<ul style="list-style-type: none"> - A wide range of herbicide products can be used to initially knock down the vegetation. Tank mix glyphosate with a residual product to get season-long control. -Try using vinegar based weed products on individual plants. 	<ul style="list-style-type: none"> - Pull/hoe when you can; if things get away from you, apply herbicides. - Smothering with fresh gravel over a residual treatment helps sustain longer control. 	<ul style="list-style-type: none"> - Control early and stick to it, as seasonal plants (some plants are summer annuals and some are winter annuals and sprout at different times of the year) and new species are introduced.

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False Brome	<ul style="list-style-type: none"> - Mowing can be used to remove/deplete annual seed production. - Hand pulling small patches is best in April and early May. - Mulching with clean, weed free straw works great to suppress false brome 	<ul style="list-style-type: none"> - Broadcast application of Poast (grass specific), or a glyphosate-based herbicide such as Roundup, is effective in the mid summer through fall. - In field works done at OSU College of Forestry, a very effective treatment was a glyphosate (2%) Surflan (3.3%) mix applied in October. - You can apply also apply herbicides (except Poast) in fall after first rains 	<ul style="list-style-type: none"> - To reduce the amount of herbicide used, mow for several years to eliminate soil seed bank. Then treat with herbicide. - You can also mow in early July, and then treat with Roundup in the fall. 	<ul style="list-style-type: none"> - False brome is spreading fast. Slow the spread by making sure clothing and equipment are free of seeds before you leave an infested site. - Put up informational signs at trailheads to urge hikers to clean clothes, pets, and OHVs.
Species	Mechanical/Manual	Chemical	IPM	Notes/Tips
Garlic Mustard	<ul style="list-style-type: none"> - Mowing is not an effective control because plants will still bolt and seed - Mowing spreads garlic mustard seed like wildfire - do not mow when seed pods are present (May - Sept.) - Hand pulling is easiest during early bolt (2nd year). Difficult during rosette stage (first year) except for small patches - Multiple years are needed to exhaust seed bank - Pull at base to avoid breaking stem - All pulled plants must be bagged and removed 	<ul style="list-style-type: none"> - Use products that contain glyphosate or triclopyr - To avoid damaging native forbs, spray the rosette stage during late winter/early spring - If not sure how to identify rosette stage, you can spray during flowering - Fall application to the rosettes (after some rain events so plants are growing again) may also be effective - Sprays at height of summer will not do much - Use aquatic formulations when spraying near any body of water 	<ul style="list-style-type: none"> - Combination of chemical and hand pulling is very effective - pulling bolted plants and spraying rosettes right after pulling 	<ul style="list-style-type: none"> - Once seed passes from milk into dough stage it will still be viable if sprayed - Consider impact of crews once seed is present! <u>Clean boots and clothing of any seeds!</u>
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Yellow Flag Iris	<ul style="list-style-type: none"> - Not effective on large infestations - Repeated mowing or cutting in early summer before seeds mature may contain/kill by depleting energy after <u>many years</u> of intensive mowing. - Small infestations may be pulled or dug out. All rhizomes must be removed. Incomplete removal may enhance spread of plant. - Cutting and covering with 	<ul style="list-style-type: none"> Habitat (imazapyr) and Rodeo (glyphosate labeled for aquatic usage) at the following ratio: Habitat at 1% and Rodeo at 1.5%, with seed oil added to the mix. 	<ul style="list-style-type: none"> - Very small infestations can be dug; dispose of plants and tubers in landfill or dry and burn. - Contain existing colonies by suppression and prevention of seed spread. 	<ul style="list-style-type: none"> - Do not compost any parts of plant. - If using a herbicide use a surfactant to get maximum product penetration. - Resins in leaves and rhizome can cause skin irritation, wear hand protection when handling. - Applications of aquatic imazapyr products require a

	landscape fabric or durable tarps moderately successful. - Bag and dispose of mature seed heads and bulbs to reduce spread.			licensed applicator.
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Spurge Laurel	- Hand pull small plants. - Larger plants can be pulled with a weed wrench or similar tool. All of the root should be removed to avoid re-growth from root sprouts. - After pulling, area should be monitored for new seedlings and covered with a deep mulch. - More cost effective to use mechanical methods for large populations. Plants up to three years old can be controlled by cutting the plant close to the ground. Older plants should be cut below the soil line to minimize re-sprouting.	- Cut plants can sprout from suckers, so it is advisable to apply herbicide to stems immediately following cutting. - Triclopyr has been shown to be effective. Please refer to the PNW Weed Management Handbook for specific herbicide recommendations.	- Public education. - Report infestations to county weed board or appropriate authority. - Treat small infestations by pulling. - Cut larger plants close to ground and spray cut stump.	- Note: there are irritating toxins in the sap, fruit and leaves. <u>Wear gloves and other protective clothing when removing or cutting.</u>
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Shining Geranium	- Hand-weed isolated plants or small populations before they are in seed. - Burning with a propane-based flaming unit is effective if done several times each growing season. - Cover with sheet mulch for at least two growing seasons (although this method has not been tested on shiny geranium).	- Plants can be sprayed before flowering (late March through April) with either a broadleaf herbicide (if growing with desirable grasses) or with a non-selective herbicide. - Reportedly, a product labeled Finale seems to work best, according to ODA.	-Public education, plant and seed available at nurseries and on internet.	Please refer to herbicide labels for site specific control information and refer to the PNW Weed Management Handbook for additional information on herbicide use.
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Herb Robert	-Manual control is very effective and is often the best. Plants are relatively easy to grub out, provided the soil is not hard and compacted. Plants do not regenerate from roots or fragments. - Mowing or weed eating prevents plants from	- Spot spraying with glyphosate during active growing season, but preferably before seed. Spray plants until they are wet, but not dripping, and not onto the surrounding soil or other vegetation. - Herb Robert is a low-growing plant that is often	- Public education, plant and seed available at nurseries and on internet.	- Please refer to herbicide labels for site specific control information and refer to the PNW Weed Management Handbook for additional information on herbicide use. - Check nursery

	<p>producing seed. It must be done frequently, as plants will continually produce flowers from early spring until late fall.</p>	<p>growing among desirable vegetation; applications of herbicide should be used only where there are large numbers of plants, or in soil conditions that make manual control difficult.</p>		<p>stock for seedlings, and don't bring plants home from infested wooded areas.</p> <p>- Also, wash down boots and shoes, tools, vehicles and pets after visiting parks, forests or other areas where there are populations of Herb Robert.</p> <p>- Dispose plants that have been weeded in the trash</p>
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Important Notes:

- Always read the entire label before using any herbicide. Wear safety gear and mix herbicides in a safe environment.
- A surfactant and indicator dye will help with control and efficacy. Note regarding surfactants: Just as with herbicides, read label directions! Some surfactants are appropriate for use with certain herbicides but not others. Also, if using a surfactant on or near water, read label directions to see if the surfactant you are using is approved for aquatic environments.
- Glyphosate-based products, such as Roundup and Rodeo are non-selective -- they will kill all green plants!
- Herbicides typically work best when applied on temperate (~ 60 - 72 degrees) non-windy days followed by 12 hours of no rain. If temps are cooler and/or there has been limited rainfall, the effects of herbicide application will take longer to become apparent.
- Plant material disposal: Dry and/or burn pulled or cut plant material. Dry the plant material on a tarp or plastic barrier to prevent soil contact with roots.
- Once weeds are reduced or eradicated it is critical to seed or plant the treated area, preferably with natives. Open ground, or one with sparse vegetation, is very likely to come back as a first-class weed patch!