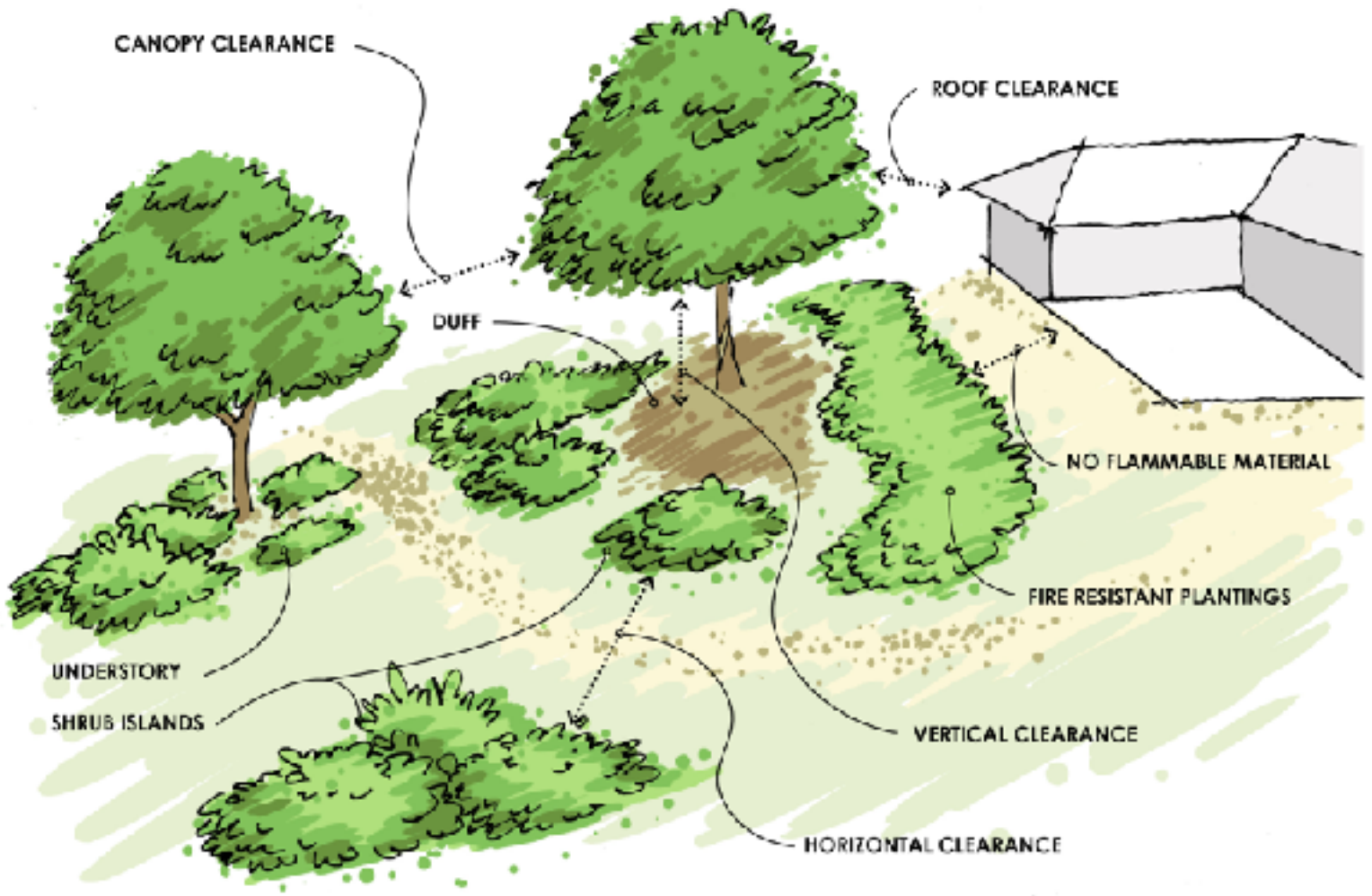


Understory Habitat and Defensible Space



As we all become increasingly aware of the threat of fire in the wildland-urban interface, how can we be good neighbors both to our “urban” neighbors, and also to the plant communities and wildlife that make Portola Valley a special place to live? The Conservation Committee has compiled the following guidelines to help residents determine what, when, and how we can minimize disruption or destruction of local plant communities and wildlife habitat as we clear vegetation for fire safety.

Conservation Committee
Town of Portola Valley
Updated June, 2024)

What does habitat-friendly vegetation management look like in practice?

- ❑ **Reduce, don't remove, vegetation.** Understory vegetation and islands of shrubs can benefit a property in many ways, including reducing fire risk and providing habitat and resources needed by small mammals, birds, and insect pollinators.
 - Remove invasive species first. These plants displace habitat and often increase fire risk. [What and when?](#)
 - Protect low-growing, "low-fuel content" native shrubs and groundcovers (under 3 feet high) from damage during fuel reduction activities. Native understory plants inhibit invasion by non-native, fire-amplifying plants such as annual grasses, thistles, and other weeds that form dry, flashy fuels in summer. [Examples of Native Groundcover](#)
 - Retain "shrub islands," select groupings of taller, desirable shrubs, to provide food and cover for wildlife. Shrub islands a few yards in diameter are large enough to provide effective habitat. [Examples of Native Perennials](#)
 - Create vertical and horizontal space (social distancing!) between shrub islands, understory, and tree canopies by pruning and selective removal. [Town of Portola Valley Plant Lists with CA Native Plants](#)
 - Prune, don't shear: Shearing or hedging encourages build-up of twigs and dead material, which increases flammability. [Spacing Diagram](#)
 - Prune, don't shear: Shearing or hedging encourages build-up of twigs and dead material, which increases flammability. [Non-Native Grasses and Thistles](#)
 - Mow annual grasses and thistles in meadows and clearings, and encourage native bunch grasses and wildflowers to suppress weeds. [Native California Meadow Grasses](#)

- ❑ **Plan for Drought**
 - Phase out thirsty plants: Dead and water-stressed ornamental gardens increase the risk of fire.
 - Cultivate Habitat in your garden: Near to structures, plant native plants that will thrive on light to moderate irrigation and tolerate periods of drought. Once established, many native shrubs and understory plants can remain hydrated during the summer with little supplemental water; many of these plants are naturally fire resistant. [Town of Portola Valley Plant Lists With Low Fire Hazard Plants](#)
 - Irrigate trees that need it. During the last drought, many people lost mature trees after they cut off water to lawns and landscaping.

❑ **Manage Trees for health:** Healthy trees are more resistant to fire and create shade that favors native groundcovers over weeds.

- Prune for health, structure and safety. Poor pruning can harm trees' structure, health, and resistance to fire. Hiring certified arborists can help ensure that crews use best practices when you hire them to prune your trees.
- Do Not Disturb: Protect tree roots from compaction by vehicles and damage from construction. Even planting and irrigation can be harmful to the health of some trees, and especially to mature oaks that are not normally irrigated beyond what the weather provides.
- Duff is habitat too! Encourage healthy soil by leaving leaf litter in place to preserve moisture and support the complex network of soil organisms that cycle nutrients back to the trees. Chipped woody material that is scattered (rather than removed) also suppresses weeds and retains moisture in soil.

[Find an Arborist](#)

[How big is a tree's root zone?](#)

[Planting under Oaks](#)

[More about Mulch and Duff](#)

When is the right time to do this work?

❑ **Trim trees and shrubs between September and January.**

- Plants that are cut outside this window will typically regrow much faster, and the work will have to be done more frequently.
- Nesting season is March to August, and for some birds starts as early as January. Destroying an active nest is against the law. Avoid work that may harm or destroy an active nest.

[Laws Protecting Birds](#)

[Local Birds](#)

❑ **Avoid clearing during hot, dry weather.**

- Red flag days mean stop work! Heat and sparks from equipment can start a wildfire. Ambient humidity should be above 30%.

[San Mateo County Fire Weather](#)

[California Fire Weather Map](#)

That's not just a pile of sticks!

We have lots of San Francisco dusky-footed woodrat nests in town. Nests are usually found at the base of trees or downed logs, and they are used by many "co-habitants," including salamanders, frogs, and lizards. These woodrats are a "California Species of Special Concern" due to their limited range. You can protect your woodrats by not disturbing vegetation within ten feet of the nest.

[More about woodrats](#)

Choosing your tools

Always **choose the least damaging tool** that will do the job. Avoid heavy machinery, which can cause excessive soil disturbance and erosion, and can encourage rapid growth of invasive and highly flammable species. Instead, consider the following options:

- ❑ **A weed wrench** is an ergonomic tool, available in multiple sizes, that is effective for removing shrubs or tree seedlings completely and permanently
 - Effective in helping create a vegetation-free zone 0-5ft around structures.
 - Easiest to use in spring when the ground is moist and fire risk is low.
 - Disturbs soil less than digging, therefore less likely to encourage weeds.
- ❑ **A mower with blade height at 4"** is good for reducing fire-amplifying grasses and weeds
 - Suitable for level terrain free of hidden rocks that could be struck by mower blades
 - Start mowing when weeds begin to flower, and mow again when flowering stems reappear (this will reduce/eliminate seeding and a crop next year)
 - Bagging mowers are usually more work than they are worth (and bagging is unnecessary if you mow multiple times, starting when weeds flower)
 - Caution: Mowers are frequent sources of ignitions—heed red flag warnings, check for rocks
- ❑ **Weed-whacker (string trimmer)**
 - Suitable for trimming grasses and weeds on slopes, uneven terrain, and rocky areas.
 - Best suited for targeting small areas.
 - Can cut lower than a mower.
- ❑ **Hand tools** such as clippers, loppers, pole clippers are indispensable for pruning.
- ❑ **Chain saws** are efficient for limbing up trees.
 - Available in many sizes and configurations (e.g., on extendable pole).
 - Caution: If used for limbing downed trunks, there is risk of striking rocks.
- ❑ **Herbicide** is best avoided, but is sometimes the only effective tool
 - If you cut back poison oak to the ground, it will resprout in a clump which can be easily and very effectively treated with herbicide.
 - Caution: Always follow the instructions on the label and use care to avoid personal exposure and non-target impacts to the environment.

More Resources:

California Native Plant Society Fire Recovery Guide

<https://www.cnps.org/wp-content/uploads/2019/08/cnps-fire-recovery-guide-2019.pdf>

Grassroots Ecology, Create A Fire Resistant Habitat At Home

<https://www.grassrootsecology.org/fire-resistant-habitat-at-home>

California Native Grasslands Association, Special Issue: Fire in California

https://cnga.org/resources/Documents/Grasslands%20Journal/Grassland%20Issues/2019%20Grasslands%20Journal/CNGA%20Grasslands_V29_No3_2019.pdf

Hyperlinks:

What and when?

<https://www.portolavalley.net/home/showpublisheddocument/10286/636270667241730000>

Plants to look for:

Examples of Native Groundcover

<https://www.portolavalley.net/sustainability/native-plants-and-landscaping/native-ground-covers-lawn-substitutes>

Examples of Native Perennials

<https://www.portolavalley.net/sustainability/native-plants-and-landscaping/native-perennials>

Town of Portola Valley Plant Lists with CA Native Plants

<https://www.portolavalley.net/home/showpublisheddocument/15360/638327268861470000>

Spacing Diagram

<https://www.portolavalley.net/home/showpublisheddocument/15179>

Non-Native Grasses and Thistles

<https://cnga.org/resources/Documents/Resources/Coastal%20Prairie%20Website/At%20a%20glance%20documents/1%20Prairie%20Described/6c%20invasives.pdf>

Native California Meadow Grasses:

https://cnga.org/resources/Documents/Bibliographies%20and%20Articles/Amme-Historical%20Works/Amme%20Meadow%20Grasses_Aug%202020.pdf

Town of Portola Valley Plant Lists With Low Fire Hazard Plants

<https://www.portolavalley.net/home/showpublisheddocument/15360/638327268861470000>

Find an Arborist

<https://www.treesaregood.org/findanarborist>

How big is a tree's root zone?

<https://californiareleaf.org/wp-content/uploads/2015/07/Canopy-Dripline-graphic-Credit-CAL-FIRE.bmp>

Planting Under Oaks

<https://californiaoaks.org/wp-content/uploads/2016/04/CompatiblePlantsUnderAroundOaks.pdf>

More about Mulch and Duff

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=17495>

Laws Protecting Birds

<https://goldengatebirdalliance.org/conservation/make-the-city-safe-for-wildlife/tree-care-and-bird-safety/laws-protecting-birds/>

Local Birds

<https://www.portolavalley.net/home/showpublisheddocument/15177>

San Mateo County Fire Weather

<https://firesafesanmateo.org/17-site-content/68-fire-weather-in-san-mateo-county>

California Fire Weather Map

<https://www.wrh.noaa.gov/fire2/cafw/index.php>

More about woodrats

<https://friendsofedgewood.org/dusky-footed-woodrat>