

BASIC PLANT CARE FOR HEALTHY ESTABLISHMENT

New plantings need extra care to adapt to a new location and to develop new roots and foliage so that they can be self-sustaining and out-compete weeds. Good care following planting (considered the plant establishment phase) will reduce plant loss and future weed infestation. The two most critical requirements for care during this period are watering and weed management.

It takes 2-3 years after planting for trees and mixed planting beds to become well-established (self-sufficient). Several factors affect the duration. Smaller sized trees and shrubs establish more quickly. Regular watering helps plants establish more quickly. A higher density of plants in mixed beds will reduce weed pressures more quickly, allowing a planting bed to be self-sustaining sooner.

Watering

- The amount and frequency of watering will depend on size of plants when installed, soil conditions, and the weather. A week of significant rain will substitute for watering, whereas drought conditions may increase the amount of water needed.
- A 5 gallon contractor bucket is a quick and easy way to measure water (or the time required per gallon).
- Watering beyond the area of the root ball encourages roots to spread outward and increase future access to nutrients and moisture.
- If watering bags are used, they should be placed on a minimum of 2 stakes adjacent to the trees, not on the tree trunk. Bags placed on the tree trunks for an extended time can damage the bark and surface roots and cause rot. Create a simple system to monitor the bags to ensure that they are kept filled during the growing season and removed during the winter months or when they are no longer needed.

Recommended Schedule (May 15 - September 15)		
Gallons/Week/Per Plant	Duration of Routine Watering for Establishment (Minimum)	Watering After Plants are Well-Established (Minimum)
Trees: 15-25	3 years	During drought*
Shrubs: 10-15	1-2 years (depending on species & size)	During drought*
Perennials: 3-5	1 year	As necessary (i.e, drought)

* Drought is defined herein as any 2-5 week period without at least 1 inch of water

Weed Management

- Weed removal or cutting should be prior to weed species going to seed. See [Weed Management](#) for recommendations regarding types of weeds. At a minimum the following schedule is recommended:
 - ♦ Late spring (May-June) to remove cool season weeds
 - ♦ Mid-summer (August) to remove warm season weeds
- Dense, healthy desirable plants are the best prevention against weed competition. Encourage healthy growth. Infill if planting is too sparse. This may cost will be more initially, but will be cheaper long-term.
- Mulch to reduce weed growth during establishment. For woody plants, apply wood chips or bark mulch at a depth no greater than 3 inches. Apply 1 inch of bark mulch or, preferably, straw mulch for perennials. Pull mulch back from the base of all plants. See [Mulching](#) for additional recommendations.
- Weed fabric is not recommended as silt and soil accumulate on top of the fabric providing a growing medium for weeds. Exposed fabric is also unsightly.
- See [Perennial Care](#) for management specific to perennials.

BASIC LONG-TERM PLANT CARE FOR MANAGED LANDSCAPES

All landscape plantings require some level of care over time, particularly those in urban environments. With a good design and proper plant selection, once plants are well-established, long-term plant and planting bed care should be minimal. However, as a living system, the landscape will change over time. Weeds may encroach and plants will grow, change, and die. Therefore, care requirements will change. Below are basic expectations and recommendations for long-term general plant and planting bed care once plants are established (typically 2-3 years after planting).

Watering

- Plan to water plants during **drought** (2-5 week period without at least an inch of water) .
- Ideally plants should be watered during **dry periods** (any 10-day period without rain).
- See [Watering Schedule](#) under Establishment for quantity of water required per plant.
- Mixed planting beds will typically need less water than isolated trees or shrubs.
- Street trees may need more water due to heat from pavement and less moisture in tree pit soils.

Weed Management

- **Single Trees:** Aged pine bark mulch or wood chips applied annually will help prevent weed growth around trees and protect trees from mower damage to the trunk. Planting low-maintenance groundcovers around trees (i.e., Pennsylvania sedge or low shrubs) eliminates the need for annual mulching, protects the trunk from mowers, and creates a healthier and more attractive landscape.
- **Mixed Planting Beds:** When properly designed (dense, layered planting) mulching for weed control should not be necessary after 2-3 years except for new plants or for gaps while slower growing plants mature. If plant spacing is too far apart, weeds will be problematic in the gaps. In-fill with additional plants to reduce the need for and cost of annual mulching. See [Mulching](#) for additional information.
- Learning to distinguish aggressive weeds (i.e., mugwort, Japanese knotweed) from less problematic and early successional species (annuals) will help prioritize the need.
- See [Perennial Care](#) for weed management specific to perennials.

Fertilizing

- With proper plant selection (using plants adapted to site and soil conditions) and a good design, plants should not require synthetic fertilizers. If additional nutrients are needed, apply a 1/2-1 inch of compost (compost blanket) around the plants.
- Leaving naturally occurring organic matter (twigs, leaf litter, dead wood) will provide nutrients for free. As material is broken down by fungi and micro-organisms over time, nutrients are released. Organic matter also provides good habitat for beneficial insects.

Plant Replacement for Mixed Planting Beds

- Naturalized, mixed planting beds should tolerate some plant loss without creating weed problems or significant visual impact. Substantial loss should be replanted with appropriate species to prevent weeds from invading. If designs are dependent on specific plants or a formal pattern or are highly visible, dead plants should be replaced as soon as possible during the appropriate season.

Tree Pruning

- Tree limbs should be properly pruned if broken or damaged to prevent rot from entering the wood.

Landscape Repairs

- Urban landscapes are susceptible to damage from errant vehicles, utility work, or other activities. Dead plants should be immediately replaced and bare soils mulched to prevent the encroachment of weed species. Neglecting to repair the damage can jeopardize the entire planting area.

Mulch: Purpose and Benefits

Mulch helps with plant establishment by retaining moisture, protecting soil, and by inhibiting the growth of weeds. Mulches should be applied for plant establishment rather than for ornamental purposes.

- ◆ **Trees lawns:** Applying bark mulch or wood chips will protect tree trunks from mower damage as well as reduce weed growth and retain moisture. A cover of bark mulch or wood chips provides more optimal conditions than turf grasses as moisture is retained in the wood whereas lawn grasses take up moisture at the soil surface. A larger area of wood chips or mulch may also encourage greater root expansion.

Wood chips are generally cheaper than bark mulch and provide the additional benefit of slowly feeding a tree's root system as the wood breaks down and nutrients are released for uptake.

- ◆ **Mixed planting beds:** Once there is sufficient shrub and/or perennial groundcover to outcompete weeds, applying annual mulch is no longer necessary. Plant litter and twigs that accumulate over time will provide a natural layer of mulch—as well as provide habitat for insects and beneficial fungi.
- ◆ **Living Mulches:** If the planting is too sparse to provide sufficient groundcover over time, consider infilling with additional low-growing shrubs or perennials to fill the gaps. Drought tolerant, rapid spreaders such as 'Gro-Low' sumac or Pennsylvania sedge are a great way to create an understory groundcover. Junipers are excellent as a long-term evergreen groundcover, but are slow growing. Infilling between junipers with perennials is a good way to reduce weed growth while the junipers grow.

Mulching Recommendations

- 👍 Woody plants: Apply bark mulch or wood chips to a depth of 3 inches.
- 👍 Perennials: Straw or leaf mulch is preferable over bark mulch. If using bark mulch, mulch should be carefully placed and at a depth no deeper than 1 inch. Over-mulching will smother shoots and discourage the growth of perennials.
- 👍 Pull mulch back from the crowns of all plants, particularly perennials.
- 👍 Use natural bark mulches or wood chips for woody plants. Avoid dyed mulch.
- 👍 Replace lost plants rather than convert the planting bed into a mulch bed.
- 👎 **Don't use mulch made from wood palette and recycled wood product.** These can create anaerobic conditions which will kill the root systems of plants, particularly perennials.
- 👎 **Don't use pre-emergence herbicides** with mulch. Pre-emergence herbicides will prevent desirable shrubs and perennials from spreading vegetatively and prevent desirable perennials from spreading by re-seeding. Colonization and re-seeding by desirable plants provides long-term groundcover, eliminating the need for costly annual applications of bark mulch.
- 👎 **Don't over-mulch.** "Mulch volcanos" create excessive moisture and heat leaving the bark susceptible to disease and decay. Over-mulching can also suffocate roots and block rain from reaching the soil.
- 👎 **Don't turn the landscape into a mulchscape.** Mulch should be used to help plants establish and grow, not to replace plants that die. Mulchscaping is costly and does not provide stormwater management, insect habitat, or the natural beauty that living plants provide.

Weed Management

- ◆ **Annuals**, which die at the end of the season, may be pulled (roots are typically shallow) or cut prior to flowering to prevent re-seeding. Annual plants are not so much a concern as is their capacity to spread by re-seeding.
- ◆ **Perennials, vines, and many woody species** may spread vegetatively, by seed, or both. Those that resprout will require removal or killing of the root system to prevent regrowth. Girdling or repeat cutting to deplete the root system over time can be used in lieu of herbicides. Plants that spread by seed should be cut or removed prior to reseeding.
- ◆ **Invasive plants** with deep or extensive root systems, such as Japanese knotweed, may require herbicide to completely eradicate the plant or population. Invasive plants should be addressed as quickly and effectively as possible and while populations are small and still manageable. Those that spread by seed should be cut, treated, or removed prior to going to seed to prevent spread.
- ◆ Herbicide treatment should only be done by a licensed and knowledgeable applicator.

Caring for Perennial Plantings

The following are recommendations for low maintenance perennial plantings where the goal is to allow the plants to completely fill in the area to create a perennial garden, “pocket meadow”, or perennial edge rather than maintaining the plants as isolated clumps in a mulch bed.

- ◆ **Watering:** Once established, properly selected grasses and perennials should not require watering except perhaps during drought. If aesthetics is a priority, watering will help plants look fuller and may result in better blooms.
- ◆ **Weed Management:** Perennial beds need weeding primarily during the first 3 years of establishment. When planted densely and allowed to reseed and expand, weeding should be minimal after the third year (but will still be necessary). Differentiating weeds from desired plants is necessary for management that allows perennials to infill naturally over time.
- ◆ **Mulching:** Mulching perennials is helpful for weed control and moisture retention immediately after planting. After the first growing season plants will spread vegetatively and by re-seeding (if allowed) and mulch should no longer be needed. Straw mulch or a similar light mulch is best for perennials. Bark mulch prevents desirable seeds from germinating and, if applied too deep and too close to the crowns, will rot stems and smother new shoots. Leaving cut foliage on the soil at the end of the season is the best and cheapest method of mulching perennials.
- ◆ **End of Season Cut:** Grasses and perennials may need to be cut back in spring or at the end of the season for neatness or to allow for healthy regrowth. The following is recommended:
 - Cut foliage in the spring rather than fall as the foliage provides habitat and visual interest.
 - Cut high if cutting in fall or very early spring in order to preserve insect nesting habitat.
 - Leave cut stems and foliage on site to serve as mulch and to provide habitat. Allow seed heads to remain on site if re-seeding is desired.
- ◆ **Replacements:** Plants that die or that are eaten by animals should be replaced to avoid bare soil which will be susceptible to weeds. Replant with species that are less likely to be eaten. Planting densely and having a high diversity of plants will reduce the visual and ecological damage to the landscape (and thus the need for replacements) when plants are lost.