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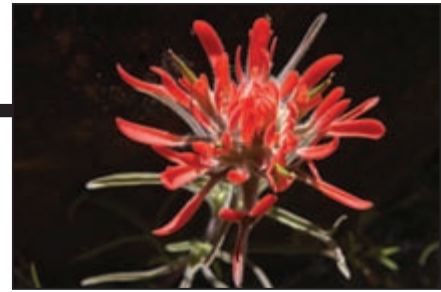
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How to Care for Native Landscapes



Chapter 5

One of the main motives for using native plant landscaping in place of traditional landscaping is the idea that the native landscape will require fewer resources and less maintenance but will still look as beautiful as a traditional landscape. Beauty is in the eye of the beholder, but we certainly believe that a well-designed and well-maintained native landscape is far more beautiful than a vast expanse of lawn punctuated only by a row of junipers and a concrete-rimmed bed of petunias. And it is easy to demonstrate that a native landscape will thrive with much lower resource inputs—less water, less fertilizer, fewer pesticides. But the question of maintenance requires closer examination.

Native landscapes do require less maintenance than traditional landscapes, but more importantly, the maintenance they require is strategic maintenance. Native landscape maintenance is not like the weekly grind of watering, spraying, fertilizing, and then mowing to remove the excess herbage generated by all that watering and spraying and fertilizing. It is not even like the regular and frequent attention that you need to give to a well-watered, well-fertilized vegetable garden. Native landscape maintenance is strongly seasonal and often quite flexible, much more flexible than traditional landscape maintenance. Sometimes weeks will go by with little to do in your landscape but enjoy it. But when the time comes to water, or to weed, or to prune and deadhead, native landscapes, like all landscapes, benefit from some concerted attention. Low maintenance is not “no maintenance,” just as xeriscape is not “zero-scape”—as it is often misstated in real estate ads in drier parts of the country. Basically, the maintenance tasks are watering, weeding, managing plant appearance, maintaining the hard-scape and the irrigation system, and managing the mulch. This list is much like

the list for any ornamental garden, but in a native landscape, the magnitude of these tasks is usually much reduced and focused over shorter time frames than in traditional landscaping.

Hardscape and Watering System Maintenance

Maintaining hardscapes in a native landscape is essentially the same as maintaining hardscapes in any landscape. Depending on the materials used, regular staining or painting may be necessary, sand between the bricks or stones of a path may need to be replenished, and fences, walls, or other structures may need to be repaired. Each spring, you will need to inspect your hardscape and determine what maintenance and repair activities are necessary. Maintaining a drip irrigation system also requires regular attention. At the end of the season, you need to remove the end caps from the drip lines and let them drain, in order to minimize the chance of freezing damage. Before operating the system in spring, you will need to re-install the end caps, flush each line, inspect all the connectors and emitters for leaks, and repair any problems you encounter, just as you did when first installing the system. Usually any problems encountered are minimal, as drip irrigation systems can operate for many years with little or no replacement of parts.

Long-term Watering

Once your plants are established, it is time to begin the long-term watering regime. For water zones that are the same as the zone at your site or drier, this basically means little or no watering at all unless the year is exceptionally dry. For zones that require supplemental irrigation, the water will hopefully be added in a relatively painless manner, through an established drip irrigation system. Watering with drip irrigation is very easy once the system is in place.

In water zones without a permanent irrigation system, it requires some judgment to know when supplemental water is necessary. People in the Intermountain West are generally very aware of the status of the “water year” in their area, which starts on October 1 each year. The nightly TV weather report will often include a statement something like, “The mountain snow pack for the water year is only at 60 percent of normal.” This is cause for worry, because it is the melting snow pack that fills the reservoirs that in turn provide the culinary and landscape water for most residents of the area. What “60 percent of normal” means

is that the amount of water that has fallen as snow or rain from October 1 up to that date is 60 percent of the average amount that falls by that date. Totals that are far below average during the spring months in the mountains usually correspond to exceptionally dry conditions in the foothills and valleys as well. This can be a cue that your unirrigated landscape will need some supplemental water. Checking the precipitation amounts for the water year for a nearby weather station at a comparable elevation can tell you how far below average local precipitation has been. If the winter and spring have been dry, with precipitation less than 80 percent of average, it is a good idea to apply two or three inches of water at the beginning of the summer, say in late May. This watering can be carried out at night with a portable sprinkler over a two or three day period, or each plant can be hand watered two or three times with the equivalent of an inch of water over the area of its root system. This will substitute for the recharging of deep soil water that usually occurs with adequate winter precipitation, and will usually be enough to get your plants through the summer in good shape. If really grim heat and drought conditions persist, you can water once in midsummer, again applying at least two inches.

To determine how much and how often to irrigate in the water zones in your landscape that require regular irrigation, you calculate the total number of inches you need to add, then divide this number by two, because you want to add about two inches each time you water. This is to be sure that the water penetrates deeply into the soil. The total number of inches divided by two equals the number of times you will need to water during the course of the growing season. For example, if you are in the semi-desert with eleven inches of annual precipitation and you have a mountain planting in a high water zone, you need to add fourteen inches of water to top the water up to the twenty-five inches that mountain zone plants expect. If you add two inches each time you water, you would need to water seven times over the course of the growing season, starting when the soil starts to dry out in early summer. It is usually not necessary to begin supplemental irrigation until around the first of June in the semi-desert zone, and by mid-September, the weather has cooled off and autumn storms have often arrived. Seven irrigations spread across this fourteen-week period means that you would water approximately once every two weeks. For a foothill planting in this same semi-desert zone, you need to add about nine inches, which would be about five 2-inch irrigations. This means you would water about once every three weeks in your medium water zone. Rounding up the amounts so that your watering schedule is on the basis of weeks makes it easier to keep track of when you need to water.

If the winter and spring have been exceptionally dry, the best way to help out the plants in your higher water zones is to add extra water at the beginning of the

Watering Guidelines for Established Plantings in Different Landscape Watering Zones

Watering guidelines are based on average annual precipitation in inches at the site.

Site Precipitation Zone	Average Annual Precipitation (inches)	Inches of Water to Add in an Average or Better Water Year for Plantings in Each Landscape Water Zone			
		Minimal	Low	Medium	High
Desert	6	4	10	14	20
Desert	7	4	8	14	18
Desert	8	2	8	12	18
Desert	9	2	6	12	16
Desert	10	--	6	10	16
Semi-desert	11	--	4	10	14
Semi-desert	12	--	4	8	14
Semi-desert	13	--	2	8	12
Semi-desert	14	--	2	6	12
Semi-desert	15	--	--	6	10
Foothill	16	--	--	4	10
Foothill	17	--	--	4	8
Foothill	18	--	--	2	8
Foothill	19	--	--	2	6
Foothill	20	--	--	--	6
Mountain	21	--	--	--	4
Mountain	22	--	--	--	4
Mountain	23	--	--	--	2
Mountain	24	--	--	--	2
Mountain	25	--	--	--	--

1. The sum of natural precipitation and added water for each landscape water zone equals the high average value for that zone (10 inches for desert, 15 inches for semi-desert, 20 inches for foothill, and 25 inches for mountain).
2. Two inches are recommended at each irrigation, so the total irrigation amounts are adjusted upward to represent multiples of two.
3. To calculate the number of times to water, divide the total number of inches by two.
4. If precipitation at the site exceeds the water requirement for plantings in a particular landscape water zone, the irrigation value is left blank.

season, just as you did for the plants in your unirrigated zones, to help recharge the deep soil water. You could start watering a couple of weeks earlier, and add two or three inches of extra water before beginning the regular irrigation season. If the summer is brutally hot and dry, you could add an extra irrigation or two some time during the hottest part.

It is also perfectly acceptable to let the plants tell you when they need extra water. This will not be as obvious as the wilting of a tomato plant, but with experience you will learn to recognize the signs. Resist the urge to add water in amounts greatly in excess of those recommended, however. Remember, there is such a thing as too much water. For example, penstemon plants that are dying of vascular wilt diseases aggravated by overwatering look a lot like penstemon plants that are wilting from lack of water. And be aware that yellowing leaves usually mean that your watering is excessive, not that the plants need more water.

If the autumn weather is much drier than usual, you may need to add an extra irrigation at the end of the growing season. Plants usually overwinter better and are less susceptible to frost damage if they go into the winter in a well-watered condition.

Staying Ahead of the Weeds

If you took care of serious weed problems before planting, installed an irrigation system that does not water the interspaces between the plants, applied a thick layer of mulch over most planting areas, and used path materials that keep weeds out, your weeding time should be kept to a minimum. Ongoing weeding is like locking your car door. It doesn't take much work, but you have to be vigilant and remember to do it. Otherwise, undesirables may enter and get the upper hand when your back is turned.

Most of the weeds you see in your planting will be from seeds blown in from the yards of your less zealous neighbors. You may not be able to do much about weed seeds blowing in from adjacent properties, but you can prevent most weed seed emergence by mulching heavily and targeting the application of water. Still, some weeds will always appear, especially near the plants, where the mulch is often thinner and the water supply steadier. The first and best option is always manual cultivation—otherwise known as pulling weeds. If all your other weed deterrents are in place, this should not be too hard. The motto is to weed early and often, and never to let any weeds go to seed in your planting. To allow the weeds to go to seed multiplies your problems exponentially for the next year. View weeding as a chance to visit your plants and spend

some quality time with them. You will be surprised at how pleasant this can be, as long as the weed problem is never allowed to escalate to the point where it discourages hand weeding as a control method. If the worst happens—for example, while the twelve-year-old neighbor is tending your yard while you are off on a summer cruise—you may have to resort to more draconian methods. These methods may also be necessary if established perennial weeds appear in your planting.

Herbicides are the last resort for weed control, but they may sometimes be the most practical solution. Post-emergent herbicides are sprayed onto plants that are already growing. We recommend them for use as a spot spray to control weed infestations that have appeared in spite of preventative measures. For urban landscapes, there are few post-emergent herbicides that are available and cost-effective. The most universal post-emergent herbicide is glyphosate, the product we recommended for removing lawn. It is nonselective, and works well on many annual and perennial weeds because it is a systemic chemical that moves from the leaves to the roots and kills the whole plant.

Another common and readily available post-emergent herbicide is 2,4-D. In contrast to glyphosate, it is selective, controlling only broadleaf (non-grass) weeds. For this reason, it is best suited to broadleaf weed control in lawns. As mentioned earlier, a mixture of equal parts glyphosate and 2,4-D is one of the few combinations that may actually take out field bindweed. If you have a new or persistent bindweed infestation in your planting, this is one approach that has a chance of working. There are some novel herbicides coming down the pike that may be more effective for field bindweed control, but these are not yet available to homeowners.

Spot spraying with post-emergent herbicides is quite straightforward. Follow the label instructions to the letter, including the instructions for disposing of any leftover herbicide and empty herbicide containers. One problem with spraying herbicides in established native plantings is that native plants in general are very sensitive to these chemicals, and it is easy to damage or kill your plants in the name of helping them escape from weeds. Always pick a calm day and don't try to spray weeds taller than two feet, because the chance of drift is greatly increased when the herbicide is applied farther above the ground. Another option for applying herbicides to individual weeds is to manually spread the herbicide directly onto the leaves. Wearing a disposable rubber glove, dip your hand into a container of herbicide and rub the herbicide onto the leaf surfaces. This method works even better if the herbicide is mixed with a little dish detergent, which helps it stick onto the leaves. This eliminates drift and can work when the weed is in close proximity to a native you are trying to rescue. Another option is a wick applicator, available at hardware stores.

Pre-emergent herbicides are designed to prevent the emergence of germinated seeds. These are often fairly expensive herbicides, and most are effective on only a limited range of weed species. One commonly available pre-emergent herbicide is oryzalin. We recommend using pre-emergent herbicides only as a temporary measure to control potentially severe weed infestations resulting from the dispersal of large numbers of weed seeds into the soil. This can happen if a dense stand of weeds disperses its seed crop before the plants can be removed. We strongly advise against constant use of pre-emergent herbicides. Many weeds can evolve resistance to specific pre-emergent herbicides over time. Like antibiotics, these chemicals should be used as sparingly as possible, so that they maintain their usefulness over the long term.

Applying pre-emergent herbicides requires somewhat more attention to detail than spot spraying with post-emergent herbicides, because continuous coverage of the soil surface is necessary for the chemical to be fully effective. To achieve even coverage, it is best to use a backpack sprayer with a flat fan spray, though smaller hand-held sprayers can also be used. Pay special attention to bare soil areas where weed germination and emergence are most likely. In theory, the herbicide does not damage established plants when used according to instructions. But it is probably best to avoid dousing the leaves of your natives if you can, as few herbicides have been tested on any plants other than crops and traditional ornamentals. Most pre-emergent herbicides need to be watered into the soil with at least an inch of water in order to be activated. In an unirrigated or drip-irrigated native landscape, this would require the use of portable sprinklers or a herbicide application just before a rain. Most remain active in the soil for three or four months.

An organic alternative to chemical pre-emergent herbicides is corn gluten meal. This byproduct of feed corn processing can kill germinated weed seedlings before they emerge, just as a chemical pre-emergent does. It has no toxicity to established plants or other living creatures, and it biodegrades fairly quickly, remaining active in the soil for about four to six weeks after application. It too requires watering in to be effective, but it is applied in a granular formulation that can wait on the ground for the same rain that triggers the weed seeds to germinate. Corn gluten meal can be applied with a fertilizer spreader. It is effective against a wide range of weeds, and the weeds do not evolve resistance to it. Desirable plants are safe once they develop two or three true leaves—the herbicide only affects newly germinated seedlings. One possible drawback to corn gluten meal in native plantings is that it acts as a nitrogen fertilizer. It is sold under several trade names both in garden centers and over the Internet.

Maintaining Mulch

As your first line of defense against weeds, mulch is an important element in your landscape. Unfortunately, mulch does not last forever, so a regular program of mulch replacement or replenishment is a necessary component of long-term maintenance. If you use bark mulch, it will need to be replaced approximately every three years, because over time weeds can root into the decomposing mulch. Rock mulch will not need replacing *per se*, but a danger with rock mulch is the buildup of organic matter that can ultimately form a seed bed for weeds. In effect, the gravel becomes incorporated into the surface of the underlying soil. Raking over the gravel mulch can help to knock the organic material to the bottom of the rock layer, increasing the effectiveness of the mulch. This is fairly labor-intensive but will only occasionally be necessary. If water is plentiful, an alternative tactic is to wash the organic material to the bottom of the gravel layer. Another solution is to add more gravel on top, if there is no problem with raising the level of the ground surface a few more inches. Organic matter generally only accumulates in the gravel in areas where there is a significant source of debris from leaf fall, and these planting areas are more likely to have organic mulches than gravel.

Keeping Natives Looking Their Best

Another appeal of native landscaping, in contrast to traditional landscaping, is the idea that a planting is a permanent feature. Replacing annual bedding plants every spring is a way of life for traditional gardeners, and bedding plants are the lifeblood of the mainstream nursery industry. People who want to get off this treadmill look to perennial plants that can provide value for many years, and most natives are perennials *par excellence*. But native perennials vary in their life expectancy, and the life span of a native plant is often dependent on growing conditions. No plant lives forever, except possibly clonal plants that reproduce by runners or rootstocks, and these are usually not plants that are well behaved in the landscape.

Native plants often do not live as long in human-created landscapes as they do in nature. There are many reasons for this. Sometimes the good life is so good that the plant invests too much into flowering and reproduction each year, and spends itself in a few years. It achieves high seed production this way, but that is not your goal—you want the plant to live a long time. The too-good life can also make the plant less resistant to various stresses. For example, if the fertility is too high, a plant may become oversized and lush, but it also becomes less able to

tolerate drought or cold. And, as we have mentioned before, the too-good life of too much water and organic matter can often make normally tough and disease-resistant plants susceptible to fatal soil-borne diseases.

You can do your best to provide the conditions necessary for a particular plant to live a long and healthy life. But sometimes an unforeseen problem will rear its head. Most native plant gardeners like to experiment, and are not daunted by a little failure. So the bottom line is that some plants in a native planting will need to be replaced, particularly perennials. Most native shrubs and trees are long-lived once they have survived a year or two—problems with these plants usually surface right away. Removing and replacing any plants that succumb is an important maintenance activity. If the plant seems to have met an unnatural end, it is best not to place another plant of the same species, or often even of another species, directly into the same spot. Soil-borne diseases multiply in the disintegrating roots of sick plants, and another plant in that spot may have a high probability of contracting the same disease.

Another maintenance activity is deadheading, or trimming back the flowering stalks of perennials once they have finished flowering and before their seeds are ripe. This is mainly for aesthetic purposes, but it may sometimes cause another round of flowering in a species that normally flowers only once, an added bonus. This kind of trimming can be carried out during the course of the growing season. Another round of stalk trimming and general clean up is usually necessary in late fall or early spring, when the plants initiate new growth.

One good reason to deadhead flowering stalks is to prevent self-seeding. Unlike artificial hybrids and tropical species grown in short-season climates, native plants are generally very good at setting seed. After all, the purpose of a flower is to make it possible for the plant to reproduce itself through seeds. Long after you have solved all the weed problems in your planting, the native species you have planted will be continuing to volunteer from seed. Dealing with volunteers is a lot like weeding, only harder, because you like these plants. The best way to avoid this conflict is to remove seed heads before they are ripe. The alternative, to give up control and just let the good times roll, is discussed in the next section.

Woody native plants also require periodic attention. At a minimum, you will need to remove dead wood, both for aesthetic reasons and for the health of the plant. Sometimes you will need to prune back shrubs that have overgrown their spaces, or trees that have developed poking branches right at eye level. You may also want to limb up trees, or remove basal sprouts, to encourage a more tree-like form in a species like mountain ash. In general, though, most native woody plants have naturally pleasing shapes that require little pruning. Shaping a plant through pruning becomes a matter of personal taste rather than necessity. Most

natives are tolerant of pruning because of their long history of interaction with fire or browsing animals like deer. Few would argue that hedging by deer results in an improvement in a plant's appearance. Fortunately, people can do a more judicious job of pruning. Thinning many-stemmed shrubs by taking out stems at the base, much the way a forsythia is pruned, can often open up a shrub and make it more attractive. This is especially true for shrubs from the foothills and mountains, such as golden currant.

Some fast-growing shrubs can benefit from more drastic pruning. Many native shrubs are fire-tolerant and can sprout back from the base after complete destruction of the aboveground portion of the plant. For example, rubber rabbitbrush often grows in very coarse soils in nature, and the too-good life in the garden can make it rank and overgrown over time. Shearing the entire plant at ground level each year in the late fall or early spring results in profuse sprouting and a short, compact growth form that is very pretty. An advantage to shearing in the fall is removal of the seed heads, as this plant is a prolific self-seeder. Other shrubs that can be pruned very heavily or sheared include oakleaf sumac and Apache plume.

Change in the Native Landscape

Earlier in this book, we emphasized the idea that native landscapes are dynamic, changing over time, both with the seasons and over the longer term. When your native landscape is new, you relish the changes as it matures. You anticipate and welcome the first flowering of the perennials, the filling out of the shrubs, the growing of the trees. Each spring you look forward to the orderly seasonal progression of budding, leafing out, and flowering. At a certain point some time in the future, you will look out and realize that your landscape now resembles the picture you had for it in your mind, and you will feel great satisfaction. At this point there is often a desire to preserve this picture-perfect state, to make the landscape static in time. This is virtually impossible. The perennials will attempt to seed themselves all over the property, and then eventually they will succumb to the ravages of time, whether or not their progeny have ruthlessly been weeded out. The shrubs may take on a ragged, overgrown look, and the trees will get bigger than you ever believed they would, even though you carefully planned for their mature size in your original design. They now shade large areas that were supposed to stay sunny forever. How do you cope with these changes? If you know from the beginning that you will need to continue to interact with the landscape and guide its development, you will have an easier time dealing with change. Some people believe that a native landscape inevitably matures, peaks,



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Change in the desert garden section of the Utah Heritage Garden at Wasatch Elementary School in Provo, Utah. The garden was planted in spring 1998 and is still thriving and changing.

and declines, but your role is to provide the means for cycles of rejuvenation. If you do this, your landscape will never decline. Yes, it will change, it will not be the way it was that glorious day when you realized it had achieved picture-perfection. But it will continue to satisfy and to teach, as long as you are willing to devote your attention to the process.

Rejuvenation can mean providing opportunities for your perennials to self-sow a new generation before they die. You can direct this process by saving seed and planting it in the fall in areas cleared of mulch to prepare a seed bed. Rejuvenation can mean hard pruning to encourage directed new growth, or even shearing shrubs to the ground so that they can rise again, renewed. Rejuvenation

certainly means replanting after the loss of existing plants. Take any changes in the microenvironment into account when planning to replant—you may need shade-loving plants where you once had sun-lovers, for example. Rejuvenation also means accepting that certain plants in certain places were a bad idea, and biting the bullet to move or remove them. If some supposedly well-behaved native has turned weedy on your site, just eliminate it. If a plant billed as shade-tolerant looks leggy and dejected in too-dense shade, move it to a sunnier spot and try something else in the shady spot. If penstemons die after a few years in your native soil, give up and plant something less finicky there—and try moving the penstemons to a raised sand bed. In fact, part of the fun of native landscaping is the freedom to keep making changes. Experimenting with new species is always stimulating, and you will never run out of new natives to try. Certainly, embracing change in a native landscape is far better than living with the utter monotony of lawn. If you keep an open mind about change, you will continue to enjoy your native landscape for a lifetime.