

Groundcovers for Water Conserving Landscapes

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Landscape groundcovers are a diverse group of trailing or spreading plants that naturally form a continuous soil covering. They can range in height from about six inches to nearly three feet tall, and may be woody, herbaceous, or succulent. Groundcovers are often looked upon as turfgrass substitutes in irrigated landscapes of the southwestern United States based on the presumption they require less water and other inputs to maintain high aesthetic quality. There is limited research-based information quantifying water requirements and climatic adaptability of the many plants that are potential landscape groundcovers. Unlike turfgrass, much of the information describing groundcover irrigation needs is anecdotal and non-quantitative. Thus, it can be impossible to accurately compare water needs of many groundcovers to those of turfgrass.

In a previous study, we looked at six groundcovers representing a range of growth habits and potential adaptations to drought to compare their minimum water needs. We found they varied widely and unpredictably in their minimum water needs and drought responses. We concluded that many groundcover species (in our study *Vinca major*, *Baccharis pilularis*, *Drosanthemum hispidum*, and *Hedera helix*) are able to maintain acceptable landscape performance when presented with significant drought and have minimum water needs around 30-40% of ETo, which is similar to that of warm-season turfgrass. Other species (exemplified in our study by *Potentilla tabernaemontanii* and *Gazania* hybrid) are not able to withstand any drought and have minimum water needs similar to cool-season turfgrasses. Thus, the idea is not true that groundcovers in general require less water than turfgrass to remain aesthetically appealing in the landscape.

This new study of 18 groundcover plant materials is designed to evaluate their adaptation to the inland valley climate and their performance at a reduced level of irrigation. After these plants become established, we plan to challenge them with decreasing levels of irrigation beginning with 60% of real-time ETo. The plants represent a mix of native, so-called California Firefriendly, and non-native as well as woody and herbaceous plant materials.

Plant Species:

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|--------------------------|--------------------------|-----------------------|
| 1. Arctostaphylos hybrid | 8. Trachelospermum | 14. Lantana |
| 2. Cotoneaster dammeri | jaminoides | montevidensis |
| 3. Rosemarinus | 9. Thymus praecox | 15. Hypericum repens |
| officinalis | arcticus | 16. Cistus crispus |
| 4. Juniper procumbans | 10. Baileya multiradiata | 17. Corethrogyne |
| nana | 11. Salvia 'Gracias' | filaginifolia |
| 5. Achillea tomentosa | 12. Ajuga reptans | 18. Grindelia stricta |
| 6. Lonicera japonica | 13. Dahlea greggii | venulos |
| 7. Aptenia cordifolia | | |

Study Design:

- ◆ 18 species
- ◆ 1 irrigation treatment; 3 replications of each species
- ◆ 54 sub-plots 10 ft. × 10 ft. each
- ◆ Sprinkler irrigation
- ◆ Plants transplanted from #1 containers or from flats as rooted cuttings
- ◆ No soil amendments