Coping with Drought in the Landscape

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The following guidelines are given as suggestions for management practices during drought. Some of the recommendations should be followed as normal irrigation practices; they are included here for those individuals not already using proper water management practices, and as reminders for those who are. Further information on proper water management practices can be found in ENH-9, Watering Your Florida Lawn; ENH-57, Improving Drought Tolerance in Your Florida Lawn; and ENH-72, Landscape Design for Water Conservation.

Water Management Practices During Drought

General Practices

Irrigation Priorities Irrigate newly installed plants and highly visible, intensively managed areas first. Drought-sensitive and wilting plants should have the highest priority. Drought-tolerant plants, such as many established trees and shrubs and Bahiagrass, may not need irrigation in the beginning stages of drought. Infrequent rains during a drought often provide enough water to keep these plants alive.
**Time of Day** Water early in the morning. Less water is lost to evaporation and wind drift in the morning because of cooler temperatures and less wind.

**Irrigation Frequency**

- *Newly installed plants* - Newly installed plants require frequent irrigation to become established. Recently planted shrubs and trees can survive on 2 or 3 weekly applications.

- *Established trees and shrubs* - Established plants typically do not require frequent irrigation. For established plants, apply enough irrigation to wet the soil at least 6 to 12 inches deep rather than light amounts that wet only the surface. Deep watering provides water to a larger portion of the root system. Deep, infrequent irrigation could also improve drought resistance by promoting deeper, more extensive root systems in some cases. Depth of watering should be six to twelve inches for turf and bedding plants, and twelve inches for perennials, shrubs, and trees. A depth of 12 inches is achieved with one inch of irrigation on a sandy soil. This depth may be shallower for clay soils or deeper for regions without soil such as portions of south Florida, including the Florida Keys.

**Maintenance** Examine the irrigation system and repair leaks promptly.

**Weed Control** Keep weeds under control; weeds steal water from plants.

**Fertilization** Don't fertilize or, if you do, do so with a low nitrogen fertilizer. Fertilization stimulates growth and can increase water needs.

**Pesticide Application** Avoid unnecessary applications of pesticides that require "watering in."

**Management Practices for Turf**

**Irrigation** Irrigate newly installed turfgrass 2-3 times a day for the first 7-10 days, then once a day for 7 days, then every other day for another 7 days. After 30 days, water as needed. Established turf needs irrigation only after about 30% of your lawn starts to wilt. Signs of wilting include footprints that remain in the grass long after being made, a bluish-grey appearance to the lawn, and a large proportion of leaf blades that are folded in half length-wise.

**Cutting Height** Raise the cutting height of turf. Although taller grass uses slightly more water than shorter grass, a higher cutting height promotes deeper rooting and maintains turf quality longer.

**Mowing Frequency** Mow frequently enough that no more than 1/3 of the turfgrass leaf blade is removed at any one time. Under drought conditions, growth will be reduced, so frequency may be reduced.

**Mower Blade** Use a sharp blade when mowing. A sharp mower blade produces a cleaner cut that heals more quickly and loses less water than a cut made by a dull blade.

**Management Practices for Bedding Plants, Shrubs and Trees**

**Mulch** Add mulch to beds to reduce evaporation from soil and to moderate soil temperature, reducing stress on roots. Final depth of your mulch should be 3 to 4 inches after settling.

**Irrigation Methods** If possible don't use overhead sprinklers for shrub and flower beds; alternatives include hand watering, soaker hoses or flood irrigation, and use of low volume irrigation heads (shrubblers and emitters). Greater water loss can occur with overhead irrigation because of evaporation and wind drift.

**Irrigation Frequency**

- *Newly installed shrubs* – Recent (2007) research shows that shrubs planted from 3-gallon containers in central and south place State Florida can be established by applying one gallon of water every other day. This regime provides for good root growth and some top growth during establishment. For north-central place State Florida, shrubs can be established by applying one gallon every 4 days. Following these irrigation frequencies and volume, shrubs can be established in the landscape in 5 to 6 months. Once established, shrubs do not need to be watered unless they show signs of stress such as yellow or dropping leaves.
Coping with Drought in the Landscape

• **Newly installed trees** - Recently planted trees, up to 3 inches trunk diameter, can survive on 2 to 3 gallons irrigation per inch of trunk diameter applied to the root ball 2 to 3 times weekly. However, they grow best with more frequent irrigation until established. Establishment takes 3 to 4 months per inch trunk diameter.

• **Established trees and shrubs** - Extended drought can cause decline on even drought-tolerant established large trees. Irrigate established trees and shrubs only after they show signs of stress. This includes wilting leaves, a change in leaf color, yellowing leaves, or dropping leaves. Many trees and shrubs can survive drought without irrigation, providing they are well-established and were irrigated prior to the drought.

**Shade** Move container plants to shaded areas so that their water needs will be reduced.

**Drastic Measures for Water Conservation During Drought**

The following recommendations should be followed when drought is so severe and water use is so restricted that landscape plant survival is in question.

• Only irrigate bedding plant species and some turfgrass when they start to wilt. Irrigate established shrubs and trees when they show signs of water stress such as yellowing leaves or leaf drop.

• Apply water through drippers to the soil under the canopy of valuable trees every two weeks. This is especially important for large trees with damaged root systems.

• Apply chemical wetting agents to soil so that it will absorb water uniformly and prevent dry spots.

• For Bahiagrass lawns, stop irrigating and allow the grass to go dormant. Bahiagrass will turn brown, but it recovers well when irrigation resumes.

• Prune shrubs by reducing their size or thinning the canopy to reduce leaf area.

• Remove weak plants.

• Thin dense beds of plants to reduce competition among plants.

• Avoid planting shrubs and trees during dry conditions and high temperatures, which lead to higher evapotranspiration rates (typically, March through May).

**References**


