Salt Tolerant Plants

In the arid southwest, salinity is of primary concern when it comes to plant selection. Salinity or the relative level of various salts within a soil varies greatly from one region to the next, and certainly the levels may change drastically from one neighborhood to another.

The soil type, drainage and most importantly, rainfall or the lack thereof, can affect the level of salinity. Areas with little annual precipitation generally have higher levels of salt in the soil than those with more precipitation. Irrigation water also may play a role in salinity. As the quality of water declines due to extended drought, each irrigation cycle brings more salt into the equation. In fact, it is estimated that each acre-foot of irrigation water may contain as much as one ton of salt or more.

Soil testing laboratories can perform tests that will indicate the relative salinity of the soil. Salinity is measured by determining the electrical conductivity of the soil, as the higher the conductivity, the greater the level of salt. Request information from your local cooperative extension agent on salinity and where you can secure soil and/or irrigation water analyses.

Many plants have become adapted to saline soil conditions through evolution. Plants native to arid regions typically can tolerate higher levels of salts than those indigenous to regions of higher rainfall. In general, it would be safe to say that plants adapted to drought are relatively tolerant of saline soils.

Plants that are not adaptive to salinity tend to have variable responses. Typical symptoms include a loss of vigor, stunted growth, overly thickened foliage, foliar leaf burn often referred to as scorch, defoliation, limb die-back and in severe cases, death of the plant.

Also, salinity levels may be managed by proper irrigation methods. Soils may be leached of salts by applying clean or relatively low salt irrigation water provided drainage is adequate. As a rule of thumb, the application of six inches of water will reduce the salinity of one foot of soil by 50%. Twelve inches of water will reduce salinity by approximately 80%, and the application of twenty-four inches of water will remove approximately 90% of the soluble salts. Long, slow applications of water tend to provide better leaching of salts that brief cycles.

Unfortunately very little research has been conducted to determine the best-suited ornamental plants for saline conditions, as primary research has been focused on agricultural and forage crops. As a result, most of the lists developed for salinity tolerance are anecdotal. Please consider the lists presented in this publication as a general guide, developed by evaluating lists prepared by numerous governmental research agencies and laboratories. Information

regarding other plants that are salt tolerant would be greatly appreciated. Please send comments and suggestions to MSWN.

SALT-TOLERANT PLANTS FOR THE DESERT SOUTHWEST

PRIVATE

TREES--High Salt Tolerance

Callistemon sp.---Bottlebrush
Eucalyptus torquata---Coral Gum
Eucalyptus sargentii---Salt River Gum
Olea europaea---Olive
Prosopis juliflora---Native Mesquite
Yucca brevifolia --- Joshua Tree

TREES-Moderate to High Salt Tolerance

Acacia salicina---Cooba
Acacia saligna---Willow Acacia
Acacia smallii---Sweet Acacia
Acacia stenophylla---Shoestring Acacia
Brahea armata---Mexican Blue [Palm
Celtis reticulata---Canyon Hackberry
Eucalyptus microtheca---Coolibah
Leucaena sp.
Phoenix canariensis---Canary Island Date Palm
Phoenix dactylifera---Date Palm
Pinus eldarica --- Afghan Pine
Pinus halapensis---Aleppo Pine
Pinus pinea --- Italian Stone Pine
Pistachia chinensis---Chinese Pistachio
Platanus sp.---Sycamore
Prosopis alba---Argentine Mesquite
Prosopis chilensis---Chilean Mesquite
Prosopis glandulosa Maverick™-- Texas Honey Mesquite
Prosopis torreyana --- Honey Mesquite
Prosopis velutina --- Arizona Native Mesquite
Quercus virginiana---Live Oak
Quercus suber --- Cork Oak
Vitex agnus-castus---Monk's Pepper Tree
Washingtonia sp.---Fan Palms
Zizyphus jujuba --- Jujube

TREES--Moderate Salt Tolerance

Acacia pendula
Azadirachta indica---Neem Tree
Celtis occidentalis --- Hackberry
Parkinsonia floridum --- Blue Palo Verde
Parkinsonia microphyllum --- Foothill Palo Verde
Parkinsonia praecox --- Palo Brea
Parkinsonia hybrid 'Desert Museum'
Cercis occidentalis --- Western Redbud
Cercocarpus montanus---Mountain Mahogany
Chilopsis linearis---Desert Willow
Cupressus arizonica---Arizona Cypress
Cupressus sempervirens --- Italian Cypress
Dalbergia sissoo---Rosewood
Eucalyptus campaspe---Silver Top Gimlet
Eucalyptus erythrocorys---Red Cap Gum
Eucalyptus spathulata---Narrow Leaf Gimlet
Eucalyptus woodwardii---Lemon-flowered Gum
Lysiloma thornberi---Desert Fern
Pittosporum phillyraeoides---Weeping Pittosporum
Populus sp.---Cottonwood
Punica granatum---Pomegranate
Salix sp.---Willow
Sophora secundiflora---Texas Mountain Laurel

SHRUBS--High Salt Tolerance

Atriplex sp.---Saltbush
Baccharis sarothroides (male) ---Desert Broom (male form lacks the messy seed fluff)
Ceratoides lanata --- Winterfat
Chrysothamnus nauseosus---Rabbit Bush
Cortaderia sellowiana pumila--- Dwarf Pampas Grass (sterile)
Ephedera sp. --- Mormon Tea
Lycium fremontii---Wolfberry
Nerium sp.---Oleander
Sporobolus airoides --- Alkali Sacaton
Sporobolus wrightii --- Big Sacaton

SHRUBS--Moderate to High Salt Tolerance

Acacia greggii---Catclaw Acacia
Agave sp.

Aloe sp.
Artemisia frigida --- Fringed Sage
Artemisia tridentata --- Big Sagebrush
Asclepias subulata---Desert Milkweed
Caesalpinia gilliesii---Mexican Bird of Paradise
Caesalpinia pulcherrima---Red Bird of Paradise
Celtis pallida---Desert Hackberry
Chamaerops humilis---Mediterranean Fan Palm
Dasylirion sp.
Fallugia paradoxa---Apache Plume
Hesperaloe parviflora---Red Yucca
Larrea tridentata---Creosote
Leucophyllum sp.---Texas Ranger
Maytenus phyllanthoides --- Mangle Dulce
Muhlenbergia lindheimeri 'Autumn Glow'™
Muhlenbergia rigens---Deer Grass
Nerium oleander - Oleander
Nolina microcarpa---Bear Grass
Opuntia sp.
Rhus trilobata---Skunk Bush
Simmondsia chinensis---Jojoba
Yucca elata --- Soaptree Yucca
Yucca glauca --- Small Soapweed

SHRUBS--Moderate Salt Tolerance

Anisacanthus sp.
Senna sp.
Cordia parvifolia---Little Leaf Cordia
Dodonaea viscosa---Hopbush
Lantana camara
Rhus glabra --- Scarlet or Smooth Sumac
Rosa woodsii --- Wood's Rose
Russelia equisetiformis --- Coral Fountain
Salix exigua –-- Coyote Willow
Salvia sp.

GROUND COVERS--High Salt Tolerance

Atriplex semibaccata---Australian Saltbush
Drosanthemum speciosum---Ice Plant
Portulaca sp.
Portulacaria afra --- Elephant Food
Rosmarinus officinalis---Rosemary
Sessuvium verrucosum---Sea Purslane

GROUND COVERS--Moderate to High Salt Tolerance

Acacia redolens Desert Carpet ™ --- Ongerup
Ambrosia deltoidea---Triangleleaf Bursage
Ambrosia dumosa---White Bursage
Encelia farinosa---Brittlebush
Oenothera sp.
Penstemon sp.
Psilostrophe tagentina --- Paper Flower

GROUND COVERS--Moderate Salt Tolerance

Gazania rigens
Lantana montevidensis
Wedelia trilobata

VINES--Moderate to High Salt Tolerance

Antigonon leptopus---Queen's Wreath
Bougainvillea sp.
Campsis radicans---Trumpet Creeper
Macfadyena unguis-cati---Cat Claw Vine
Tecomaria capensis---Cape Honeysuckle

VINES--Moderate to High Salt Tolerance

Antigonon leptopus---Queen's Wreath
Bougainvillea sp.
Campsis radicans---Trumpet Creeper
Macfadyena unguis-cati---Cat Claw Vine
Tecomaria capensis---Cape Honeysuckle

For a printer friendly pdf version