



SALT TOLERANT PLANTS

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SALT TOLERANT PLANTS FOR NORTH FLORIDA

Gardening around the ocean is both a challenge and a delight. Making a beautiful view even more gorgeous with plantings of trees, shrubs, fruits and flowers is almost too good to be true. Plants near the ocean need to tolerate high winds, salt spray, alkaline soils and sandy, infertile soils.

PROBLEMS IN COASTAL LANDSCAPING

Establishing a landscape in a coastal area is difficult. Soils generally are high in excess soluble salts, alkaline in pH and sandy with low nutrient content and poor water holding capacity. Excess soluble salts result from numerous causes - inundation with salt water, salt water intrusion into the aquifer, irrigation with saline water or poor fertilizing and watering practices. Plants are injured in several ways. Plants may wilt even when adequately watered. There may be leaf tip burn, necrosis or a reduction in growth. Symptoms generally occur on the whole plant, as opposed to windward damage from salt spray. Soluble salts may also disrupt root functions, reducing water uptake. Injury from salt spray is characterized by scorched, dry, burned-like foliage. Injury is generally most severe on the ocean-facing side of the plant. Injury from salt spray is best avoided by planting salt tolerant plants.

PLANTING AND MAINTENANCE FOR COASTAL AREAS

Good planting and cultural practices go a long way in ameliorating harsh conditions at the shoreline. We highly recommend the following.

- At the time of planting, organic matter should always be added to the soil. This will improve nutrient and water holding capacity.
- Have the soil tested for pH by the local Agricultural Extension Agent. If it is alkaline (pH above 6-6.5), add gypsum or other limestone material to improve the cation exchange of the soil and reduce sodium uptake,
- Avoid fertilizers with high salt levels of chlorine, sodium and sulfate. Slow release, organic fertilizers are best.
- Water thoroughly, never lightly. This will tend to leach salts deeper into the soil. We strongly recommend micro-sprinkler irrigation.
- Provide good drainage. This will help prevent salt buildup in the root zone.

SALT TOLERANCE OF SELECTED PLANT SPECIES

Salt tolerance of different plants is usually grouped into three classes.

SALT TOLERANT plants are resistant to extreme conditions and can be used in exposed environments where salt spray is evident.

MODERATELY SALT TOLERANT plants always need protection from salt spray but will tolerate some inundations by storm surges. They are best used behind fences or buildings.

SLIGHTLY SALT TOLERANT plants always need protection from salt spray and should be protected by fences and buildings.

These listings are taken from published sources and our own experience. Many native plants are highly salt tolerant. These should be preserved whenever possible and worked into the landscape design. Barriers of highly salt-tolerant species can be used in front of more sensitive species will frequently reduce injury. A good plan and knowledge of which plants will grow in which areas will give you great results by the shore!

The following tables are grouped by type of plant: trees, palms, shrubs, vines, ground covers and flowers. Flowers are not divided by salt tolerance because almost all species are moderately or slightly salt tolerant and should be placed behind salt tolerant plantings, fences or buildings. Evergreen plants are labeled (E) while Deciduous plants are labeled (D).

SALT TOLERANCE IN SELECTED LANDSCAPE PLANTS

GROUP	SALT TOLERANT	MODERATELY SALT-TOLERANT	SLIGHTLY SALT-TOLERANT
Trees	<p>Acacia (<i>A. cyanophylla</i>, <i>longifolia</i> & <i>spectabilis</i>) (D)</p> <p>American Holly (<i>Ilex opaca</i>) (E)</p> <p>Australian Tea Tree (<i>Leptospermum laevigatum</i>)</p> <p>Japanese Black Pine (<i>Pinus thunbergiana</i>) (E)</p> <p>Jerusalem thorn (<i>Parkinsonia aculeata</i>) (D)</p> <p>Live oak (<i>Quercus virginiana</i>) (E)</p> <p>Myrtle Oak (<i>Quercus myrtifolia</i>) (E)</p> <p>Red Cedar (<i>Juniperus virginiana</i>) (E)</p> <p>Sand Pine (<i>Pinus clausa</i>) (E)</p> <p>Slash Pine (<i>Pinus elliotii</i>) (E)</p> <p>Southern Magnolia (<i>Magnolia grandiflora</i>) (E)</p> <p>Southern Red Cedar (<i>Juniperus silicola</i>) (E)</p> <p>Sweet Bay Laurel (<i>Magnolia virginiana</i>) (E)</p>	<p>Arbequina Olive (<i>Olea europea</i>) (E)</p> <p>Arborvitae (<i>Platyclusus orientalis</i>) (E)</p> <p>Banana (<i>Musa paradisiaca</i>) (D)</p> <p>Black Locust (<i>Robinia pseudoacacia</i>) (D)</p> <p>Blue Point Juniper (<i>Juniperus chinensis</i>) (E)</p> <p>Calamondin Tangerine (E)</p> <p>Chaste-tree (<i>Vitex agnus-castus</i>) (D)</p> <p>Chickasaw Plum (<i>Prunus angustifolia</i>) (D)</p> <p>Chinotto Orange (E)</p> <p>Elm (<i>Ulmus spp.</i>) (D)</p> <p>Dahoon (<i>Ilex cassine</i>) (E)</p> <p>East Palatka Holly (<i>Ilex x attenuate</i>)(E)</p> <p>Florida Bay (<i>Persea borbonia</i>) (E)</p> <p>Goldenrain Tree (<i>Koelreuteria elegans</i>) (D)</p> <p>Italian Cypress (<i>Cupressus sempervirens</i>)(E)</p> <p>Loquat (<i>Eriobotrya japonica</i>) (E)</p> <p>Magnolia (<i>Magnolia grandiflora</i>) (E)</p> <p>Mulberry (<i>Morus alba</i>) (D)</p> <p>Podocarpus (<i>Podocarpus nagi</i>) (E)</p> <p>Rottnest Island Pine (<i>Callitris pressii</i>) (E)</p> <p>Russian Olive (<i>Elaeagnus angustifolia</i>)</p> <p>Sweet acacia (<i>Acacia farnesiana</i>)</p> <p>Sycamore (<i>Plantanus occidentalis</i>) (D)</p> <p>Water Oak (<i>Quercus nigra</i>) (E)</p> <p>Weeping Willow (<i>Salix spp.</i>) (D)</p>	<p>Bunya Bunya (<i>Araucaria bniidwillii</i>)</p> <p>Camphor tree (<i>Cinnamomum camphora</i>) (E)</p> <p>Cherry Laurel (<i>Prunus caroliniana</i>) (D)</p> <p>Chinaberry (<i>Melia azedarach</i>) (D)</p> <p>Bald Cypress (<i>Taxodium distichum</i>) (D)</p> <p>Glossy privet (<i>Ligustrum lucidum</i>)(E)</p> <p>Kumquat (<i>Fortunella margarita</i>) (E)</p> <p>Persimmon (<i>Diospyros spp.</i>) (D)</p> <p>Poplar (<i>Populus alba</i>) (D)</p> <p>Sweet gum (<i>Liquidambar styraciflua</i>) (D)</p>

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Palms	Cabbage Palm (<i>Sabal palmetto</i>) (E) Canary Island Palm (<i>Phoenix canariensis</i>) (E) Chinese Fan Palm (<i>Livistona chinensis</i>) (E) European Fan (<i>Chamaerops humilis</i>) (E) Needle Palm (<i>Rhapidophyllum hystrix</i>) (E) Sago Palm (<i>Cycas spp.</i>) (E) Saw Palmetto (<i>Serenoa repens</i>) (E) Silver Date Palm (<i>Phoenix sylvestris</i>) Pindo or Jelly Palm (<i>Butia capitata</i>) (E) Washington Palm (<i>Washingtonia robusta</i>) (E) Windmill palm (<i>Trachycarpus fortunei</i>) (E)	Lady Palm (<i>Rhapis excelsa</i>) (E) Pygmy Date Palm (<i>Phoenix roebellini</i>) (E)	
Shrubs	Blue Pacific Juniper (<i>Juniperus conferta</i>) (E) Bottlebrush (<i>Callistemon spp.</i>) (E) Burford, Dwarf Burford Holly (<i>Ilex cornuta</i>) (E) Carissa Holly (<i>Ilex cornuta</i>) (E) Chaste Tree (<i>Vitex agnus-castus</i>) (D) Dwarf Yaupon (<i>Ilex vomitoria</i> varieties) (E) Helleri Holly (<i>Ilex crenata</i>) (E) Needlepoint Holly (<i>Ilex cornuta</i>) (E) Oleander (<i>Nerium oleander</i>) (E) Parson's Juniper (<i>Juniperus squamata</i>) (E) Pittosporum varieties (<i>Pittosporum tobira</i>) (E) Sea Myrtle (<i>Baccharis halimifolia</i>) Shore Juniper (<i>Juniperus conferta</i>) (E) Silver Thorn (<i>Eleaagnus spp.</i>) (E) Sky Pencil Ilex (<i>Ilex crenata</i>) (E) Wax Myrtle (<i>Myrica cerifera</i>) (E) Yaupon (<i>Ilex vomitoria</i>) (E)	Bamboo (<i>Bambusa spp.</i>) (E) Beautyberry (<i>Callicarpa americana</i>) (D) Boxwood (<i>Buxus spp.</i>) (E) Chinese Box Orange (<i>Severinia buxifolia</i>) Crape Myrtle (<i>Lagerstroemia indica</i>) (D) Fatsia (<i>Fatsia japonica</i>) (E) Figs (<i>Ficus carica</i>) (D) Firethorn (<i>Pyracantha spp.</i>) (D) Gallberry (<i>Ilex glabra</i>) (E) Gardenia (<i>Gardenia augusta</i>) (E) Grape Mahonia (<i>Mahonia spp.</i>) (E) Hydrangea (<i>Hydrangea macrophylla</i>) (D) Indian Hawthornes (<i>Raphiolepis indica</i>) (E) Japanese Euonymus (<i>Euonymus japonica</i>) Jasmine (<i>Jasminum floridum</i>) (E) Junipers (<i>Juniperus chinensis</i> varieties) (E) Ligustrum (<i>Ligustrum spp.</i>) (E) Myrtle (<i>Myrtis communis</i>) (E) Nana Juniper (<i>Juniperus procumbens</i>) (E) Nandina (<i>Nandina domestica</i>) (E) Ocala Anise (<i>Illicium parviflorum</i>) (E)	Angel Trumpets (<i>Brugmansia spp.</i>) (D) Aralia (<i>Polycias spp.</i>) (D) Azalea (<i>Rhododendron indicum</i>) (E) Bamboo (<i>Bambusa glaucescens</i>) (E) Butterfly Bush (<i>Buddleia officinalis</i>) (D) Camellias (<i>Camellia japonica</i> & <i>C.</i> <i>sasanqua</i>) (E) Eurya (<i>Eurya japonica</i>) Fragrant Olive (<i>Osmanthus fragrans</i>) (E) Golden Dewdrop (<i>Duranta repens</i>) (D) Japanese Privet (<i>Ligustrum japonicum</i>) (E) Leyland Cypress varieties (<i>Cupressocyparis leylandi</i>) (E) Poinsettia (<i>Euphorbia pulcherrima</i>) (D) Rice Paper Plant (<i>Tetrapanax papyriferus</i>) Tea Olive (<i>Osmanthus fragrans</i>) (E) Wintergreen and Other Barberry (<i>Berberis spp.</i>) (E)

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Shrubs (cont.)		Pineapple Guava (<i>Feijoa sellowiana</i>) (E) Rattlebox (<i>Sesbenia punicea</i>) (D) Rose of Sharon (<i>Hibiscus syriacus</i>) (D) Roses (<i>Rosa</i> spp.) (D) Satsuki Azalea (<i>Rhododendron indicum</i>) (E) Shrimp Plant (<i>Justicia brandegeana</i>) (D) Skinner's Banana Shrub (<i>Michelia skinneriana</i>) (E) Swamp Mallow (<i>Hibiscus coccineus</i>) (D) Texas Sage (<i>Leucophyllum frutescens</i>) (E) Tree Ivy (<i>Fatshedera lizei</i>) (E) Viburnum (<i>Viburnum odoratissimum</i> & <i>V. suspensum</i>) (E) Wax Mallow (<i>Malaviscus arboreus</i>) (D)	
Cactus, Yuccas and Succulents (all Evergreen)	Century plant (<i>Agave americana</i>) Prickly Pear Cactus (<i>Opuntia</i> spp.) Nelson's Blue Beargrass (<i>Nolina nelsonii</i>) Spanish Bayonet (<i>Yucca aloifolia</i>) Adam's Needles (<i>Yucca smalliana</i>) Beargrass (<i>Yucca filamentosa</i>) Bright Edge (<i>Yucca smalliana</i>) Aloe (<i>Aloe</i> spp.) Copper Penny (<i>Sedum</i> spp.)	Hedge cactus (<i>Cereus peruvianus</i>)	
Grasses	Bermuda Grass (<i>Cynodon dactylon</i>)(E) Blue Dune Grass (<i>Leymus Arenarius</i>)(E) Crown Grass (<i>Paspalum Quadrifarium</i>)(E) Pampas Grass (<i>Cortaderia selloana</i>)(E) Muhly (<i>Muhlenbergia capillaries</i>) (E) Sea Oats (<i>Uniola paniculata</i>)(E) St. Augustine Grass (<i>Stenotaphrum secundatum</i>)(E)	Bahia Grass (<i>Paspalum notatum</i>) Evergold Carex (<i>Carex oshimensis</i>) (E) Fakahatchee Grass (<i>Tripsacum dactyloides</i>) (D) Fountain Grass (<i>Pennisetum</i> spp.) (D) Maiden Grass (<i>Miscanthus sinensis</i>) (E) Papyrus (<i>Cyperus alternifolius</i>) (D)	Centipede Grass (<i>Eremochloa ophiuroides</i>) (D)

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Groundcover, Ferns and Vines	Algerian Ivy (<i>Hedera canariensis</i>) (E)	African Iris (<i>Agapanthus africanus</i>) (E)	
	Asiatic Jasmine (<i>Trachelospermum asiaticum</i>) (E)	Asparagus Fern (<i>Asparagus densiflorus</i>) (E)	
	Confederate or Star Jasmine (<i>Trachelospermum jasminoides</i>) (E)	Bleeding Heart Vine (<i>Clerodendrum thomsoniae</i>) (D)	
	Coontie (<i>Zamia integrifolia</i>) (E)	Carolina Jessamine (<i>Gelsemium sempervirens</i>) (E)	
	Creeping Fig (<i>Ficus pumila</i>) (E)	Cast Iron Plant (<i>Asspidistra elatior</i>) (E)	Coleus (<i>Coleus blumei</i>) (D)
	Creeping Periwinkle (<i>Vinca major</i>) (D)	Coral Vine (<i>Antigonon leptopus</i>) (D)	Hosta Lily (<i>Hosta</i> spp.) (D)
	English Ivy (<i>Hedera helix</i>) (E)	Crinum Lily (<i>Crinum</i> spp.) (D)	Partridge Berry (<i>Mitchella repens</i>)
	Silver Mist Lily Turf (<i>Ophiopogon japonicus</i>) (E)	Holly Fern (<i>Cyrtomium falcatum</i>) (E)	Passionflower (<i>Passiflora</i> spp.) (D)
	Liriope (<i>Liriope spicata</i>) (E)	Japanese Honeysuckle (<i>Lonicera japonica</i>) (D)	Royal Fern (<i>Osmunda regalis</i>) (D)
	Virginia Creeper (<i>Parthenocissus quinquefolia</i>) (D)	Lantana (<i>Lantana</i> spp.) (D)	Wisteria (<i>Wisteria</i> spp.) (D)
	Weeping Lantana (<i>Lantana montevidensis</i>) (D)	Perennial Peanut (<i>Arachis pintoii</i> & <i>Arachis glabrata</i>) (D)	
		Purple Queen/Heart (<i>Setcreasea pallida</i>) (D)	
		Split-leaf Philodendrum (<i>Philodendron selloum</i>) (D)	
		Trumpet Vine (<i>Campsis radicans</i>) (D)	
		Wandering Jew (<i>Zebrina pendula</i>) (D)	

FLOWERS FOR THE SEASHORE

Agapanthus (<i>Agapanthus africanus</i>)	Dianthus (<i>Dianthus spp.</i>)	Pentas (<i>Pentas lanceolata</i>)	Strobe Plant (<i>Strobilantes dyeranus</i>)
African Iris (<i>Dietes spp.</i>)	Firebush (<i>Hamelia patens</i>)	Periwinkle (<i>Vinca spp.</i>)	Summer Cassia (<i>Cassia corymbosa</i>)
Artemesia (<i>Artemesia ludoviciana</i>)	Four o'clocks (<i>Mirabilis jalapa</i>)	Phlox (<i>Phlox divaricata</i>)	Tibochina (<i>Tibochina spp.</i>)
Balloon Flower (<i>Platycodon grandifloris</i>)	Gaillard Daisy (<i>Gaillardia grandiflora</i>)	Plumbago (<i>Plumbago auriculata</i>)	Violet (<i>Viola floridana</i>)
Bee Balm (<i>Monarda didyma</i>)	Goldstrum Rudbeckia (<i>Rudbeckia fulgida</i>)	Purple Heart (<i>Rhoeo spathacea</i> and <i>Setcreasea pallida</i>)	
Blue Daze (<i>Evolvulus glomerata</i>)	Gebera daisy (<i>Gebera jamesonii</i>)	Red Turk's Cap (<i>Malvaviscus arboreus</i>)	
Bush Daisy (<i>Gamolepsis chrysanthemoides</i>)	Jacobina (<i>Justicea carnea</i>)	Russian Sage (<i>Perovskia atriplicifolia</i>)	
Buttercup	Lantana (<i>Lantana spp.</i>)	Sedums (<i>Sedum spp.</i>)	
Cardinal Flower (<i>Lobelia cardinalis</i>)	Mexican Sage (<i>Salvia leucantha</i>)	Shell Ginger (<i>Alpinia zerimbet</i>)	
Coral Bean (<i>Erythrina herbacea</i>)	Mexican Heather (<i>Cuphea hyssopifolia</i>)	Shrimp Plant (<i>Justicea brandegeana</i>)	
Crinum Lily (<i>Crinum asiaticum</i>)	Oyster Plant	Society Garlic	