

Practical Applications in Salt & Brackish Marshes

1) Plant species as biological indicators of tide range

- a) Low marsh - MLW is typically channelward from marsh edge, low marsh species are most tolerant of regular tidal flooding
- b) High marsh species are dominant above MHW
- c) Landward limit of tidal wetland - salt bushes in wetland vs. wax myrtle at upland edge vs. upland species, e.g. vines (Honeysuckle, poison ivy, *Smilax*), tree saplings (pine, locust, oak, cherry are the most common)

2) Determining jurisdiction in mowed lawns and marshes

- a) Look closely at mowed plants – are there any wetland species? How do you tell salt grass and Bermuda grass apart?

<i>Distichlis spicata</i>	Bermuda grass <i>Cynodon</i> spp.
No hair on leaf sheath	Leaf sheaths with hairy clump on ligule Collar is continuous, hairy
Two vertical ranks, one plane	Multi-ranked, leaves spiral around stem
Flower stalks are short spikes	Flower stalks radiate like fingers
Flood tolerant	Survives some flooding, prefers well-drained

- b) Look for other low-growing species that may be under the lawnmower blade, e.g. *Limonium*, *Aster tenuifolia*, *Salicornia* spp., *Solidago sempervirens*, re-generation of salt bushes
- c) Look for other biological indicators of a wetland, e.g. wet soil, fiddler crab burrows, crayfish chimneys

3) Landscape restoration – what are the best plants for wetland and buffer enhancement and restoration ?

- a) dominant species indicate habitat type / salinity regime
- b) Some wetland species can also be used in buffer area, e.g. salt bushes, *Spartina patens*
- c) Preferred arrangement for erosion protection, water quality, and habitat value
= low marsh + high marsh + shrub zone + riparian buffer

Practical Applications in Freshwater Marshes

1) **Seasonal patterns** – what plants remain visible above ground in winter ?

a) Do - grasses, shrubs, trees (maybe without leaves incl. bald cypress, river alder)

b) Don't – fleshy leaved species, perennials (*Pontedaria*, *Peltandra*, *Typha*, 3-square)

If you are evaluating an apparent mud flat in the upper tributaries, confirm wetland type using remote sensing information (e.g. National Wetland Inventory, aerial photos)

2) **Landscape position** (both large scale tributary level and small-scale tidal creek level)

a) Salinity gradients are indicated by species diversity and dominance, the presence or absence of woody species

b) Groundwater influence on tidal shorelines - freshwater marsh plants growing in high salinity area or on side of hill (groundwater movement may be primary cause of visible erosion/bank undercutting)

3) ***Spartina cynosuroides* vs. *Phragmites*** Commonly confused species

<i>Spartina cynosuroides</i> - Big Cordgrass	<i>Phragmites australis</i> – Reed Grass
Rough, saw toothed leaves with mid-rib	Smooth leaves, looks like bamboo or corn
Different planes	Long rhizomes above ground
Limited to brackish/fresh tidal marshes	Occurs everywhere - > MHW in higher salinity, > & < MHW in lower salinity, also seepage areas, ditches, disturbed areas
Yellowish-green	Bluish-green