# BIOL 301 – PLANT TAXONOMY

# ECOLOGICAL FACTORS AFFECTING THE DISTRIBUTION OF PLANT COMMUNITIES IN THE SOUTH CAROLINA LOWCOUNTRY

ECOLOGICAL FACTORS

* ecology = interactions between organisms and their environment

KEY POINTS

* different species are adapted to different conditions, and all species have tolerance limits
* differences in environmental conditions result in different plant communities

1. Soil Type

* soil develops through interaction of parent material, topography, climate and organisms, over time
* texture (sandy, silty, clayey)
* other physical and chemical characteristics (structure, water holding capacity, nutrient content, pH, salinity)
* organic material content

1. Landscape Position (topography) = affects species distributions directly, as well as influencing development of soil

* drainage patterns influence soil moisture
* exposure to sunlight (T, evapotranspiration, soil moisture)
* exposure to tide
* exposure to wind
* erosion and leaching

1. Disturbance History

* fire
* major storms (hurricanes)
* human disturbance (logging, agriculture, roads)

1. Interactions

* soil type and landscape position affect hydrology and soil temperature, both of which affect accumulation of organic material, soil moisture, etc.
* landscape position affects hydrology which affects burning patterns
* soil type affects leaching which affects soil nutrient content and pH
* etc, etc….