

Background:

Select Florida Ecosystems Surrounding USF

Upland plant communities. — Florida's upland plant communities generally shift from flatwoods (dominated by pine trees) to a dense hardwood (dominated by oak trees) community in the absence of fire. This occurs as competitively dominant semi-deciduous trees shade juvenile pines and scrub understory. However, periodic burning of flatwood habitats allows for the persistence of fire-tolerant uplands through the removal of competitively dominant hardwood species and a disturbance regime that aligns with the life history of the longleaf pine.



Wetland communities. — While Florida's upland communities remain diverse due to fire disturbance events, Florida wetland communities remain diverse due to differences in topography. Florida has two dominant freshwater wetlands: marshes and swamps. Marshes are generally flooded most of the year and are dominated by herbaceous plants like duck potato and pickerelweed, while swamps can either be dominated by cypress or hardwood species such as water tupelo or sweet gum and are often flooded between 5–8 months of the year.



Marsh wetland

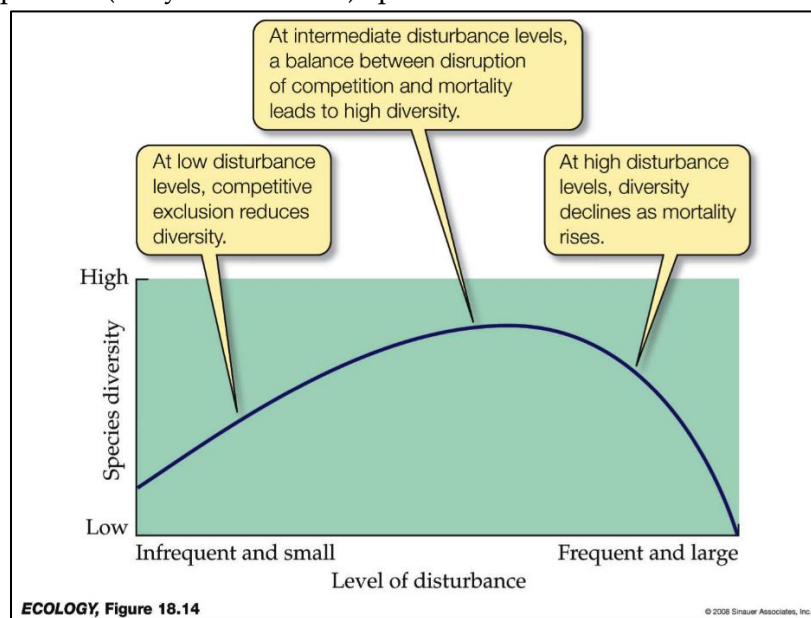


Cypress swamp

Transition zones. — Since Florida has such small differences in elevation, there may only be a few meters between truly upland and wetland communities. In between, there will be a transition zone that may be regularly flooded following rain events but does not retain water. Typical Florida transition species can include both herbaceous plants like cinnamon fern, common day flower, and fetterbush as well as tree species like laurel and water oak and American elm.

Describing Ecological Communities

Above, the ecological communities were described by their dominant plant species (e.g., pines or oaks or cypress). However, if all flatwoods have the same dominant plant species, how could we describe differences between two flatwood communities? Are there no differences? Hopefully by now you know there are always differences! One-way by which ecologists can summarize these differences among the same type of community (upland versus upland) and different types of communities (upland versus wetland) is by measuring the **species diversity** of a local habitat. Species diversity considers two aspects of a community's structure: its **species richness** (e.g., how many different species) and **species evenness** (e.g., the relative abundance of those species). Interestingly, the most diverse communities are generally found in areas with intermediate levels of disturbance (like fire or flooding events) because only species that are adapted to high stress can survive under too much disturbance, while competitively dominant species exclude pioneer (early successional) species when there is too little disturbance.



Intermediate disturbance hypothesis