Burning Issues

Part 2 - Francis Marion National Forest and Urban Sprawl

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Many believe that the Francis Marion National Forest (FMNF), one of the few remaining large tracts of Longleaf Pine forest, is increasingly at risk. Local citizen groups and government officials are concerned that continued growth of Mt. Pleasant, Awendaw and other towns will bring development ever closer to the National Forest (see Fig. 1). These developments would bring a higher density of homes and automobile trips into parts of the forest which are remote and wild. In order to make their developments work, developers would need sewer, water and changes in the zoning ordinances. Although in the past local politicians have informal agreements to prevent the development of infrastructure (water and sewer lines) into the Francis Marion forest, many are concerned that these informal pacts do not go far enough to insure the long-term protection of the forest. Recent efforts by the mayor of Awendaw to extend sewer service to developments near the forest, speaks to the difficulty of maintaining this unofficial pact over the long term (see Charleston Post and Courier article – 2/16/2011). There have also been discussions of building or improving roads in and around the forest, including discussions by Mt. Pleasant widen and improve forest roads and to build a bypass around the town and one potential route would be through the heart of the Francis Marion NF. More and improved roads make suburban development on private tracts of land around the forest more developmentally feasible and economically attractive.

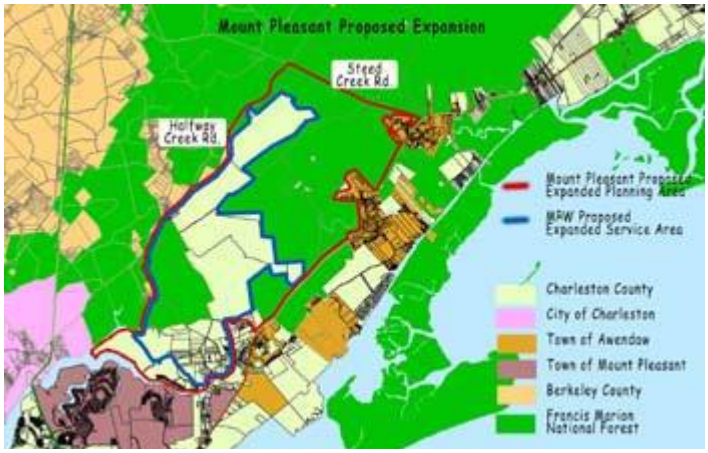

Figure 1. Proposed expansion of water and sewer service northwest of Mt. Pleasant. Source: Coastal Conservation League.

In fact, recent proposals by the federal government as late as 2008 to sell tracts of FMNF (along with other national forest land in the US) for private ownership and possible development arguably threaten this increasingly disappearing ecosystem (see Figure 2 below).

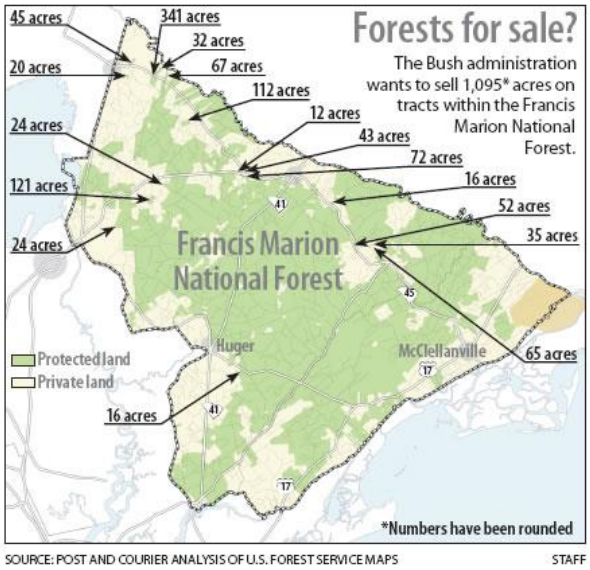

Figure 2. Bush administration's past proposal to sell tracks of FMNF.

Environmental groups and forest managers argue that as development encroaches ever closer to the forest it becomes increasingly more difficult and costly to manage the Longleaf pine ecosystem. Others argue that development and economic growth are inevitable and good for society and that it is not the government's job to tell people where they can and can't live.

Questions to consider:

1. Besides the direct effects of habitat destruction by human development, why would local/federal policies that encourage development in and around FMNF threaten this unique Longleaf pine ecosystem?
2. There are many that are concerned that fragmentation of Longleaf pine ecosystem results in increased chances of extinction of species endemic to this ecosystem. What evolutionary principles speak to this concern?
3. Why is the long term survival of the Longleaf pine ecosystem uniquely affected by the ever increasing human presence (i.e. roads, subdivisions etc…) near the forest?
4. Why is it not really appropriate to use such terms as "bad, unhealthy, recovering, devastating etc…" when referring to natural forests?
5. Longleaf pine not only has adaptations that allow them to survive frequent forest fires, fire is actually essential for maintaining the structure of the Longleaf pine ecosystem. What are some of the adaptations of Longleaf Pine that **promote** forest fires? Why is fire necessary to maintain this ecosystem? What would be the result of suppressing forest fires?
6. What are some of the structural and growth adaptations that Longleaf pine has to survive frequent low-intensity forest fires?
7. How does the concept of ecological succession speak to what will happen to Longleaf pine ecosystems if periodic fires are not allowed to burn? Why would this succession occur?
8. How does longleaf pine act as a keystone species?
9. If FMNF and other longleaf forest were to undergo succession to another "type" of forest…who cares? (Or…why is it important to protect the diversity of species that comprise native Longleaf pine ecosystems)? For this question you should broadly consider & **inter-relate** the following concepts
    a. ecosystem services of Longleaf pine ecosystems
    b. ecosystem productivity & nutrient cycling
    c. biodiversity and food web interconnections (between both plants and animals that reside in the forest) and the effects interconnections on ecosystem stability and resilience.
    d. aesthetics