

**PROGRESS REPORT:**  
**Continuation of Deer Impact Research at the Bald Head Woods  
Coastal Reserve during 2009**

Dr. John Taggart, Department of Environmental Studies, University of North Carolina at  
Wilmington, 601 S. College Road, Wilmington, NC 28403

---

1. **Site Visit Dates:** July 8 and 16; August 7, 13, and 28.
2. **Field Assistance:** Dustin Allen, a UNCW graduate student in Marine Biology, has been hired as an assistant. He helped Dr. Steven Brewer set up the original exclosures and control plots.
3. **Condition of Plots:** All 20 exclosures and associated control plots were found to be in good condition. Among the exclosures, only minor cutting/removal of branches and localized reattachment of fencing were required to maintain effective deer exclusion. All plots have been mapped (see attached) and coordinates entered into a GPS system.
4. **Equipment Needs:** There appears to be a good supply of post holders, posts, and fencing for the time being. Additional zip-ties were purchased to secure fencing to the posts. However, fallen trees/branches from a hurricane or tropical storm this fall could necessitate additional purchases.
5. **Oak Seedlings:** An inventory of all plots, both controls and exclosures, revealed no oak seedlings, saplings, or sprouts present. While mature specimens of both live oak (*Quercus virginiana*) and sand laurel oak (*Q. hemisphaerica*) occurred within and adjacent to nearly every plot, the lack of reproduction was apparent. Dominant woody understory species consisted of yaupon (*Ilex vomitoria*), red bay (*Persea borbonia*), and laurel cherry (*Prunus laurifolia*). However, other locations on both Middle and Bald Head islands contained examples of both sexual and asexual oak reproduction, typically where the canopy was quite open and/or had experienced recent disturbance (e.g., cutting or clearing). After viewing live oak seedlings raised at the island garden center in comparison to those observed in the field, it was clear that determination of live oak vs. sand laurel oak at that stage of development was difficult to impossible.

Initial visual inspections of acorn production on trees within the study area were not encouraging, but sources will be sought throughout the island area. A review of literature on live oak propagation was completed by Ms. Hope Sutton as a UNCW graduate student project. The NC Botanical Garden may be able to offer assistance (see below).

Clearly, oak recruitment remains a key issue. Lack of seedlings/saplings within the plots plus observations of seedlings elsewhere in the island area suggest that oaks

may establish in the wake of major canopy openings (e.g., consequence of a strong hurricane). Thus deer impacts when seedlings are present could be a significant factor relative to the future of the forest. Development of appropriate procedures and experimentation to address these issues will be the next phase of work.

**6. Pertinent Contacts:**

- a.) a multi-year research permit for the project has been obtained from the North Carolina Coastal Reserve and National Estuarine Research Reserve Program; Ms. Hope Sutton, Southern Sites Manager, serves as their representative for this site;
- b.) the NC botanical garden has expressed interest in collaborating on seedling propagation, and
- c.) e-mail contact has been established with Dr. Steven Brewer who remains quite interested in the study.