

Naval Live Oaks Area
Tree Plantation Project
Prospectus
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Recommended Thomas Muir Jr.
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Introduction

The purpose of this report is interpretive; to increase understanding and gain appreciation, thereby resulting in greater support for the Naval Live Oaks Tree Plantation Project.

A need was apparent during early planning of interpretation operations for the Naval Live Oaks Area to aid visitor understanding of the Naval Live Oak reservation concept. Visitor Center exhibits and trail waysides interpret the harvesting and use of live oak for shipbuilding, but these interpretive media tell little about the experimental tree farm on Santa Rosa peninsula begun in 1828. NPS interpretive planning specialists encouraged the theme be explored through another interpretive medium. The logical way to interpret tree farming is through demonstration.

The Resource

In March 1987, Central Florida Lands and Timber, Inc. of Perry, Florida donated 1000 live oak seedlings to Gulf Islands National Seashore. They were planted with the assistance of staff and community volunteers. The location, the north side of Highway 98, had been intended for development, but abandoned. The fenced and paved area, cleared for construction, was open to manipulation. At this site the Park holds salvage and scrap material awaiting disposal. The Ranger Division occupies a permanent storage shed as a cache for fire fighting equipment. The fence on the west end of the facility had been damaged by the collapse of the repeater tower in the fall of 1985.

The live oak seedlings were planted on two of three earthen medians within the facility. These medians were cleared by hand and the trees quickly planted due to bad weather. The trees, grown from acorns beginning fall 1985, had recently been removed from their beds for transplanting. During the first months of the project the trees were well watered. In August 1987, they were measured and tagged to monitor their growth. Eight hundred sixty trees were actually planted with an 80% success rate in the first months. Since these trees are recent additions to the Naval Live Oaks Area, they can be harvested and transplanted at later dates to serve resource management and interpretive objectives.

The Plan

The primary goal of the tree farm project is to insure the survival of some select trees until the year 2053. Since adequate space will be needed between the trees to ensure proper growth to a height ideal for harvesting for shipbuilding, the site will ultimately only contain 50 healthy trees. The surplus trees can be used after careful consideration, to landscape and revegetate other areas of the park.

Volunteers who work on the farm will learn about the history of Naval Live Oaks reservations, conservation, forestry, and historic preservation, while having the satisfaction of contributing to this long-term project. Careful thought should be given to developing future interpretive programs in this area within the boundaries of available staffing and facility scheduling needs. Projected future improvements for the project to improve its exhibit qualities and success include:

- Grounds maintenance to improve aesthetics.
- Irrigation of the medians for better plant growth.
- Greenhouse construction to demonstrate experiments with germinating live oak acorns, and to produce other potentially useful native plants.
- Addition of benches to the site to serve as a volunteer rest and comfort area, and to serve as the hub for the possible development of a future environmental studies area.

The Theme: Live Oaks for the Future

Near the end of his administration, in 1828, John Quincy Adams authorized the establishment of a federal tree farm on the Naval Live Oaks Reservation on Santa Rosa peninsula, Florida. Superintendent Henry Marie Brackenridge began operations early in 1829. In recognition of dwindling timber resources in the southeastern United States the tree farm was to insure a future supply of live oak. The tree was an essential ingredient to the construction of wooden ships for the U.S. Navy. Although the project is an early conservation effort, the intent is utilitarian.

Early political factionalism kept the project from developing after its start. However, the tree farm at Live Oaks was maintained to a small degree until the Civil War. It is not now known whether trees were harvested from Santa Rosa peninsula and used for shipbuilding. With one exception, in 1926, it was reported trees from the area stored in salt ponds at the Navy Yard since before the Civil War were sent to Boston to help restore the Constitution, a frigate built with live oak in the 1790s.

During research on the history of the Naval Live Oak tree farm it was discovered the Constitution still has need of live oak timbers. Part of the current Navy commander's responsibilities is to find live oaks for use in the National Monument's restoration. A cyclical maintenance program has been scheduled to begin with major work starting in the year 2013, and again in 2053.

Connecting the present need to conserve timber for the future restoration of national monument, with the Naval Live Oaks Area, is an important opportunity to interpret the original intent of a tree farm in 1828.

The Visitors

Planning for the project has been ad hoc to this point. Work has been accomplished by the Interpretation Division staff as time has allowed. Many contributions have already been made by the community and special youth groups. Visitors to the project have been and will continue to be by special invitation of the staff. The advantage of the location of a youth group camp area nearby provides the opportunity to use the area to interpret to special groups.

ACTION PLAN

- A. PROJECT TITLE - Naval Live Oaks Nursery.
- B. ASSIGNMENT - Personnel in charge of nursery.
- C. PROJECT LOCATION - Naval Live Oaks Nursery, north highway 98.
- D. SCHEDULE - Year round activities should take place.
 - 1. Winter - January and February, transplanting, root pruning.
 - 2. Spring - Sowing of seeds and watering.
 - 3. Fall - Seed collection, when acorns begin to sprout.
 - 4. Summer - Upkeep of nursery and transplanting sites.
- E. OVERVIEW - The Naval Live Oak Nursery project was initiated in February of 1987. The two primary goals of the nursery are for interpretive activities. First, to relate the history of the Naval Live Oaks Area to early conservation and military defense efforts in the United States. Second, to provide mature Live Oaks (*Quercus Virginiana*) and other native plant species for revegetation projects and the restoration of the USS CONSTITUTION in 2053. Other goals include an increase in community involvement through the Take Pride in America Program and other local volunteer groups.
 - 1. Previous Work - In February 1987 approximately 800 Live Oak seedlings were planted in the Gulf Islands nursery, located on highway 98. To this date, the nursery has been weeded and generally kept up by several volunteer groups and NPS personal. Several numbering systems have been tried, to monitor growth, but none have survived to be useful due to deterioration of the flagging.
 - 2. Environmental Considerations - Because Live Oaks are resistant to disease and can withstand heavy salt spray they are perfect for revegetation projects where stabilization is needed. Careful consideration should be taken when planting, because the Live Oak will need ample room for maturity.
- F. OBJECTIVES
 - 1. Project designed to accomplish?
 - a. Establish the Live Oak nursery as a year round operation.
 - b. Increase park and community involvement through interpretive programs and volunteer work.

- c. Provide a continuing source of Live Oaks and other native plant species for restoration and revegetation.

2. To be gained from the nursery?

- a. An excellent interpretive display concerning Live Oaks, shipbuilding and their impact on our history.
- b. A continuing supply of mature Live Oaks for various restoration projects, principally the USS CONSTITUTION.

3. How the objectives are addressed:

- a. Collection , preparation and propagation of Live Oak acorns and other native plants at the nursery.
- b. Planting and transplanting of seedlings.
- c. Maintenance and monitoring of nursery and transplanted sites.
- d. Individual and volunteer group efforts.
- e. Creation of interpretive functions at and about the nursery.

G. METHODS

1. Acorn collection through nursery beds, for Live Oaks.

- a. Live Oak acorn collection should be done in the Fall (Sept. & Oct.) when the acorns have fallen and begun to take root.
- b. Acorns should be discarded if eaten by weevils, or other insects or rodents.
- c. Several hundred acorns should be collected to ensure a continuing supply of seedlings.
- d. The best areas for acorn collection are under mature Live Oaks.
- e. The acorns should be rinsed and blotted dry, but no preconditioning is needed.
- f. They can then be placed in ventilated bags with moist peat moss, and kept refrigerated at approximately 40 degrees until the following spring for a natural dormancy period.

- g. In Spring (March & April) the acorns may be placed in potting flats containing one part peat moss and one part sand, two inches apart and 1/2 inch deep.
- h. Watering should be approximately one inch per week, either natural or man made.
- i. Routine weeding of the beds should be done to prevent competition.

2. Transplanting of the seedlings.

- a. The general consensus for transplanting Live Oaks is the younger the better.
- b. Spacing is also an important concept in Live Oaks, they should be given 50-75 feet of room on all sides for maturity and to lessen competition from other species.
- c. In the plants second winter, 1 1/2 years old, they can be root pruned for transplanting the following year.
 - (1) Root pruning - take shovel and cut a circle around the base of the plant, approximately ten inches from the trunk and six inches deep.
- d. A month or so before transplanting the plants should be marked on the south side of the trunk at ground level. This can be done with cardboard, with a small hole in it, and spray paint a dot on the trunk. Care should be taken not to spray the rest of the plant.
- e. When actually digging the plant up, a burlap or other type bag should be used to carry the plant with as much clinging soil as possible.
- f. Transportation should be done in a way that will not wind burn the plants.
- g. The oaks can then be planted at the same level and facing the same direction, using the sprayed on mark (third winter, 2 & 1/2 years old). This should lessen the shock of the transplanting procedure.

3. Maintenance and Monitoring

- a. The transplanted trees should be placed so that they are accessible for two years following transplanting.
- b. Watering should equal one inch per week, during the rainy season, from natural or man-made sources for the first year.

- c. Weeding can be done either by hand or by the use of a herbicide until the threat of competition has passed.
- d. A 10-3-6 type fertilizer can be used in June of the first few years, again to deal with competition. The fertilizer should be placed around the base of the plant and watered in.
Note: The fertilizer should never come in contact with the plant.

4. Future Sites

- a. Because Live Oaks require huge amounts of space and water, care and planning should be done before transplanting.
- b. Live Oaks grow well in a variety of soils and can withstand great amounts of salinity. Meaning, there are not many bad sites on Gulf Islands National Seashore property.

H. RECOMMENDATIONS

1. The Live Oak nursery project will have to be given more attention, if expected to become a continuing project.
2. Interpretive activity should be expanded in the nursery and some kind of permanent exhibit should be put in place.
3. Volunteer and community groups should be continually used and recognized.
4. The nursery should be monitored for rodents, disease and other problems that could affect the plants.
5. Landscape fabric, from any local nursery, can be used in the nursery along with wood chips, to keep weeds down.
6. Trees attaining heights of five to six feet may need to be staked if planted in windy areas.
7. The nursery should be set up in a way to show the stages of the Live Oaks and contain approximately six mature trees. The nursery should include acorns in the sprouting stage, one and two year old seedlings and the mature trees.
See diagram.
8. Along with Live Oaks, Sea Oats and other native plant species should be raised in the green house and other facilities in the Naval Live Oak Nursery.

I. REFERENCES

Decline of Live Oak in Urban Florida Environments. By Roger Webb.
FOR-40.

Florida Live Oak. By A.S. Jensen. FOR-4.

Live Oak or Sand Live Oak? By David W. Hall. Vol. 14, No.5. May, 1989.

Live Oak (Quercus Virginiana Mill.). Agricultural Handbook. No. 271. Pg.
584-586.

People References: Norah Martinez-Towers, Larry Bova, Dan
Mullins, Carol Miller.

J. ESTIMATED COSTS

1. Material	Cost
a. wire	-0- NPS
b. wire cutters	-0- NPS
c. garden hose sections	-0- NPS
d. shovels	-0- NPS
e. gloves	-0- NPS
f. 5 gal. buckets/bags	-0- NPS
g. peat moss(1 bag)	-0- NPS
h. spray paint	-0- NPS
i. cardboard	-0- NPS
j. potting flats	-0- NPS
k. Live Oak seedlings (retail)	\$4.00 ea.
l. fertilizer	\$12.00\bag
2. Man Power	
a. volunteer	-0-
b. NPS, GS-5, 200 hr/yr.	\$1,800

K. PHONE LIST

1. Dan Mullins, Santa Rosa Ext.	1-623-3868
2. Carol Miller, Escambia Ext.	477-0953
3. City of Gulf Breeze	932-3544
4. Central Fla. Lands & Timber(donor)	1-584-8523
5. Forestry Service (Ken Oser)	1-623-0913
6. Carl Zimmerman NPS/RM	934-2617
7. Tom Muir (project beginner)	444-8905
8. Tom Serviss, Blackwater For. Cen.	587-5123

9. Volunteers

a. T.P. Martin	939-6026
b. David Gibson	478-1760
c. Charlotte Chattin (Girl Scouts)	932-7980
d. Bill Rudloff	932-6696
e. Buzz Merchlewitz	456-5306
f. Elija Christian	932-6383
g. Andy Fernandez	932-4161
h. Jessica Gibson	944-4424
i. Jim Howard	994-5579

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FENCE

