by WES RYALS  WORMSLOE: RE-ENVISIONING A CULTURAL LANDSCAPE
Front Cover:

View from Isle of Hope marsh looking toward Long Island

(photo by author)
WORMSLOE: RE-ENVISIONING A CULTURAL LANDSCAPE

by

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A Senior Design Project
Presented to the College of Environment and Design
University of Georgia

in partial fulfillment of the requirements
for the degree of
Bachelor of Landscape Architecture
Athens, GA
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Introduction

Project Narrative

Site Analysis
  site development history, suitability, photo inventory

Site Photos

Project Directive
  precedent studies, cultural landscape report, incremental program phasing

Concepts

Design Strategies + Program Development
  systems analysis, site programming

Masterplan

Planting Plan

Site Connectivity
  historical connectivity, saltmarsh restoration, ecological connectivity

Treatment Options

Credits + Acknowledgements

Appendices
SPECIAL THANKS

This project could not have been undertaken without the support and guidance of the Wormsloe staff and caretakers.

A special thanks belongs to Craig and Diana Barrow, who opened up their beautiful home and property to my research. Through their faithful stewardship, the legacy of Wormsloe is alive and well. Their support was critical to the successfulness of this project.

A special gratitude also goes to Sarah Ross, whose support made it possible for me to continue my work with Wormsloe. I am delighted to be a part of preserving such a significant cultural landscape.
Wormsloe stands apart among Georgia’s cultural heritage sites, serving as an important gateway to the state’s history. The site’s environmental stewardship sets a precedent for post-wilderness conservation, reflecting a correlation between human and environmental interaction. Additionally, Wormsloe is poised to become a leading contributor in the study, interpretation, and outreach of environmental history.

**Insert:**  
Wymberly Jones De Renne laid out the main entrance oak allée in the mid-1890s.
The Wormsloe property encompasses 822 acres and lies approximately 11 miles southeast of the city of Savannah, Georgia. The property is flanked by the Moon River to the west; the Isle of Hope River to the east; the Diamond Causeway to the south; and the Wymberley subdivision to the north.

Current Land Use + Context
Ownership of the property is subdivided among the private estate, the Wormsloe Foundation, and the Georgia Department of Natural Resources. The property remained largely a private domain until 1927, when the family, spurred by financial difficulties, opened the old plantation grounds to a paying public. Today, the focal features of the property continue to be the 1.5 mile live oak alley entrance drive and the colonial era remnants of Noble Joneses’ fortified house. A visitor center and living history demonstration area provide some context for a visiting public. However, interpretation of the landscape remains largely fragmented, and in some cases, ignored completely.

Environmental Degradation
Two events feature prominently in the environmental degradation of the site. The first occurred in 1972 with the construction of the Diamond Causeway, an important connection linking Savannah to Skidaway Island. The connection effectively bisected important salt marsh communities, choking off tidal flow north of the causeway. Excess fill was deposited north of the causeway, resulting in thinly vegetated areas of high marsh as well as upland hammock. Increased salinity levels have led to the formation of extensive salt flats devoid of vegetation. Recent soil sampling of the site area suggests the buried marsh to be under two to three feet of fill. Recent plans to widen the causeway place additional strain on the functionality of this delicate estuarine environment.

A second disruption occurred in 1974 with an infestation of the Southern Pine Beetle on the Isle of Hope. Subsequently, a large tract of old-growth forest had to be clear-cut to avoid further contamination.
Above: Live oaks, draped in Spanish moss, mark the entrance drive into Wormsloe. (photo by author)
A thorough analysis was conducted for hydrological, ecological, and ethnographic systems. By analyzing these systems, we gain a more thorough understanding of the complex relationships between the various elements—both contrived and "natural"—that comprise Wormsloe’s character. This understanding then directs design applications in ways that support the environment and allow for flexibility and change over time.
Prior to 1733  Pre-Colonial and Early European Contact

1733  Queen Anne makes landfall at Yamacraw Bluff initializing the colonization of Georgia

1736  Noble Jones is granted an outlying 500 acres, which are to become Wormsloe

Steer imported from S. Carolina left to subsist on native saltgrass, knotroot bristlegrass, panic grass, paspalum

Edward Kimber notes ecological diversity including: marsh oak, shrub oak, alligator, bear, wolf, snipe, mullet, mosquito

Jones acknowledges shift to slave labor

1737-1738

1743

1750

1765

1800

1815

John Bartram notes agricultural diversity including: orange, grape, pomegranate, fig, nectarine, apricot

Introduction of day-neutral Sea Island cotton ushers in labor-intensive shift

Cotton production eclipses rice

Inventory of property reveals cotton house, corn building, pea shed, fodder barn

1150  Guale Indians make use of coastal resources for food including: white-tailed deer, Atlantic sturgeon, shellfish, maize, small mammals, birds

1733-c. 1790  Colonial and Early Federal Period

c. 1790-1860  Cotton Culture

1737  Architect Alexander Shaw of Savannah commissioned to build 40’ x 20’ two-story plantation house

1765  Surviving recipe books reinforce centrality of marshes as food source

1790s  Agricultural innovation and diversification characterize the dramatic shift in operations at Wormsloe, further illustrating the reciprocal relationship b/t man and nature

1854

1850

1825
1861-c. 1869  Civil War, Reconstruction, and Freedmen Tenancy

- 1861-1864: Wormsloe functions as a Confederate armed base camp following Union blockade. Presence leaves a noticeable scar on land.
- 1861-1864: Subsistent crops of corn, peas, hay, and fodder production replace cotton
- 1865: Long Island tracts given to freedmen, Linnus Howell, Bristol Drayton, Prince Jackson, and Charles Steele after seizure by federal authorities

1870
- Oyster harvesting rights leased to Edward Nelson, revealing the continued importance of marsh ecology
- Second oak allee established along main drive
- Closure of open range ends more than a century and a half of livestock encroachment in forests

1897
- Wymberley Jones De Renne adds fifty-eight new exotic ornamentals to site, stressing "naturalistic style" pioneered by Frederick L. Olmsted at Biltmore Estate
- Rapid growth of Savannah threatens to envelope Wormsloe
- Neoclassical Library completed
- Professional landscaper T. Bignault commissioned to design formal gardens
- Family continues horticultural heritage with establishment of "Wormsloe Gardens," allowing visitor access to the formal gardens, house grounds, tabby fort ruins, slave cemetery, and remnant slave cabin
- Restored slave cabin opens to public featuring stories by mammy, “Aunt Liza”

1896-c. 1940  Family Retreat and Public Tourism

1917
- Decline in dairy production on site allows natural succession to resume

1928
- Family continues horticultural heritage
Hydrology + Flood Zones

- 500 yr flood
- 100 yr flood
- Water bodies
- Saltmarsh

Soil Analysis + Structural Stability
- Pol: Portsmouth loam
- RuL: ripple-laminated sand
- LeS: iron sand
- ChS: clayey fine sand
- Ais: alluvial sand
- LyS: Lynchburg loamy fine sand
- GaS: glacial moraine
- T.S.: tidal marsh

- Severe
- Moderate
- Light
Composite Analysis
- existing structures
- primary (visitor access)
- secondary (trails with vehicular access)
- tertiary (hiking trails)
- flood zones (100 yr./500 yr.)
- structurally unsuitable soil
- site archaeology
- water bodies
Opposite:
Rear of the estate house with Victorian elements still intact.
(circa 1896)
Opposite:
“Aunt Liza,” a former slave, engaging in a staged activity. (circa 1940s)
Opposite:
An eastern red cedar appears to reach out into the marsh. Cedars were prized for shipbuilding by early colonials.
Opposite:
Front view of the estate house stripped of Victorian embellishments.
Above: One of the estate house walled-gardens with wrought iron embellishments.
Above: Concrete Dock with Bell’s Point in the distance

Opposite: Ecological diversity on site ranges from a champion old growth tulip poplar to naturalized swamp lilies which grow along drainage ditches.
Opposite: Ruins of the colonial-era fortified tabby house.

Above: Civil War Artillery Earthwork and rifle pit.
The initial program for the site called for infrastructure improvements necessary to accommodate an annual visitation increase of 50,000 to 150,000 patrons. A new visitor center has been proposed along with complementary research and dormitory buildings. Additionally, the owners seek to establish Wormsloe as a leading contributor in field of environmental history through research and educational opportunities.
Guiding Principles + Objectives

Design strategies took a comprehensive and holistic approach accounting for cultural, economic, and environmental factors. A strategic framework was established for re-envisioning the cultural landscape in accordance with the Wormsloe Foundation’s goal “to conserve the natural, historic, and archaeological features of the site thereby contributing to public education, research, inspiration, and enjoyment.”

Economics+ Self-Supporting Infrastructure
Projects of similar size or scope were referenced as a basis for establishing diversified programming. Design strategies focused on connecting to a broad range of users and stakeholders, while incorporating infrastructure improvements necessary to accommodate a regenerative economic model.

Cultural Landscape Report
An initial investigation revealed Wormsloe’s listing on the National Register of Historic Places (NRHP). Consequently, the property’s unique history supports pursuing National Historic Landmark status. A Cultural Landscape Report facilitates this process. The initial development of the report shall constitute a basis for design operations, yielding critical information relevant to site and program development. Additionally, the report promotes low-impact development, minimizing loss to historically significant features, while promoting a greater understanding of associations between layers.
JONES ECOLOGICAL RESEARCH CENTER: NEWTON, GA

IMAGES
1. Long-leaf Pine Ecosystem Management
2. Wildlife Education
3. Sustainable Forestry Practices
4. Aquatic Ecology

PROGRAM ELEMENTS
1. Connectivity to Ecological Systems
2. Native Restoration
3. Prescribed Burns/Firebreak Management
4. Conservation Mindset
5. Educational Opportunities for Private Landowners
6. Quantifying Ecological Relationships

SHELLBURNE FARMS: SHELLBURNE, VT

IMAGES
1. Instructional Programs
2. Sustainable Farming Practices
3. Functional Landscape
4. Functional Landscape

PROGRAM ELEMENTS
1. Educational Programming
2. Living History Demonstrations
3. Environmental Summer Camp
4. Market Garden and Restaurant
5. Wedding venue
6. Retreat for Poets/Writers
7. Artist-In-Residence
8. Restoration of Historical Structures
9. Green Technology: biodiesel, organic food, local food sourcing
10. Sustainable Forestry Practices

FORT KING GEORGE: DARIEN, GA

IMAGES
1. Living History Demonstrations
2. Restoration of Historic Structures
3. Restoration of Historic Structures
4. Archaeological Remnants

PROGRAM ELEMENTS
1. Colonial Coast Birding Trail
2. Remnant Structures

BOONE HALL PLANTATION: CHARLESTON, SC

IMAGES
1. Slave Cabin Restoration
2. Gullah Theater
3. Equestrian Facilities
4. Oak Allee

PROGRAM ELEMENTS
1. Lowcountry Strawberry Festival
2. Starlight Pops Concert
3. Boone Hall Summer Concert Series
4. Boone Hall BBQ Championship
5. Scottish Games/Highland Championship
6. Fright Nights
7. Pumpkin Patch
8. Living History Field Trip
9. Taste of Charleston
10. Wine Under the Oaks
11. Boone Hall Christmas
12. Oyster Roast
13. Gullah Theater

MIDDLETON PLACE PLANTATION: CHARLESTON, SC

IMAGES
1. Equestrian Trails
2. On-site Restaurant
3. On-Site Nursery
4. Contemporary Architecture
5. Kayak Tours
6. Restored Gardens

PROGRAM ELEMENTS
1. Wedding Venue
2. Patron Newsletter
3. Monthly Events
4. Garden Market
5. Biking, Equestrian, Walking Trails
6. Ashley River Kayak Tours
7. Restaurant w/Culturally Significant Recipes
8. Plantation Days
9. Civil War Encampment
10. Summer Wine Strolls
11. Interactive Rice Cultivation
12. Interactive Rice Harvest
13. Holiday Yuletide
14. Spoleto Finale
15. Independence Day Celebrations
16. War Horses
CULTURAL LANDSCAPE REPORT: A BASIS FOR DEVELOPMENT

In order to be considered a National Historic Landmark, the property must undergo a Cultural Landscape Report. The report yields critical new information relevant to future program development. The report fosters non-destructive methods and promotes low-impact development.
ARCHAEOLOGY ANALYSIS: INCREMENTAL PROGRAM PHASING

The archaeological process shall be included in the educational experience. Supplemental programs provide a richer understanding of the landscape. Additionally, portable audio devices can be utilized on site to gain access to previous exhibits, enabling individually-tailored experiences.

Mobile work stations permit archaeologists direct and efficient access to site excavation, safeguarding sensitive areas from disturbance.
The bateau, a shallow draft, flat-bottomed boat, was used along the eastern coast by colonists to carry cargo along tidal tributaries.

Nearby Skidaway Island was once a ceremonial and hunting ground of the Timucua Indians. Artifacts, including this pottery shard, provide details of their extensive trade networks.

A company of marine boatmen under the command of Noble Jones were stationed at Wormsloe to guard the southern approach to Savannah against Spanish invasion.

Free-range cattle once grazed on site vegetation, including marsh grasses. This would have had a noticeable effect on site ecology.

Fig. 2.1. Narrative Threads
Fig. 2.2. Augmenting Visitor Experiences

+ tidal alterations of Jones’ Narrows
+ bird migration
+ native American
+ oyster harvesting
+ Long Island
+ smooth cordgrass
  *spartina alterniflora*
CONCEPT 1: Light Impact

- Visitor Center
- Dormitory Complex
- Research Facilities
- Water Bodies

CONCEPT 2: Moderate Impact

- Visitor Center
- Dormitory Complex
- Research Facilities
- Water Bodies

Map Key:
- V: Visitor Center
- D: Dormitory Complex
- R: Research Facilities
- : Water Bodies

Trail Network Provides Connectivity to Site Ecology

Vehicular Access to Site Bypasses Historic Area

Wildlife Viewing Stations

Civil War Ruins

Information Kiosk

Shuttle Service Limits Impact to Historic Area

Shuttle Service Provides Access to Full Site

Trail Extension

Kayak Launch

Civil War Ruins

Living History Demonstration Area

Gullah-Geechee & Agro-History Area

Wildlife Viewing Area

Fortified House Ruins

Main Visitor Center
- Orientation to site
- Pavilion for groups
- Bike rental
- Shuttle service
- Field restoration

Research Facility
- Museum
- Research labs
- Trial gardens
- Plant nursery

Dormitories
- Researchers
- Graduate students
- Archaeologists

Long Island

Gullah Theatre

Slave Cabin Restoration

Wildlife Viewing Stations

Shuttle Service Limits Impact to Historic Area

Shuttle Service Provides Access to Full Site
CONCEPT 3: High Impact

- Wildlife Viewing Stations
- Kayak Launch
- Security Booth/Information Kiosk
- Research Facility
  - museum
  - research labs
  - trial gardens
  - plant nursery
- Dormitories
  - researchers
  - graduate students
  - archaeologists
- Shuttle Service Limits Impact to Historic Allee
- Trail Extension

Parking and Circulation

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<thead>
<tr>
<th></th>
<th>Concept 1</th>
<th>Concept 2</th>
<th>Concept 3</th>
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<td>Shuttle System</td>
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<td>Connection to Diamond Causeway</td>
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<td>Boardwalk</td>
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<td>Kayak Launch</td>
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<td>New Visitor Center</td>
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<td>Nature Trails</td>
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<td>Primitive Camping</td>
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<td>Dormitory Complex</td>
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<td>Museum</td>
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<td>Venue Space</td>
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<td>Restaurant</td>
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<td>Bed and Breakfast</td>
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<td>Research Facilities</td>
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<td>Orientation Pavilion</td>
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<td>Interpretive Areas</td>
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<td>Fortified House Reconstr.</td>
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<td>Wildlife Observation</td>
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<td>Low Impact Development</td>
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<td>Stormwater Mgmt</td>
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<td>Nursery</td>
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Human Experience

- Main Visitor Center
  - orientation to site
  - pavilion for groups
  - bike rental
  - shuttle service
  - field restoration
- Historic Pavilion
  - events
  - festivals
- Gullah-Geechee & Agro-History Area
  - theatre
  - guest houses
  - restored fields/gardens
  - restaurant
- Estate House Becomes Bed & Breakfast
- Vehicular Access to Diamond Causeway
- Bike Trail Network
- Map Key
  - visitor center
  - dormitory complex
  - research facilities
  - water bodies

CONCEPTS CHART: BASIS FOR DESIGN DEVELOPMENT
Sustainable landscape design must do more than function or perform ecologically; it must perform socially and culturally.

**ELIZABETH MEYER,** *Sustaining Beauty: The Performance of Appearance*

Design need not be conducted in isolation, but through an understanding of the complexity of relationships which shape the cultural, political, and economic processes.

**JOAN WOODARD,** *Signature-Based Landscape Design*
Site Connectivity + Infrastructure Improvements

Connectivity has been achieved while mitigating impact to archaeologically and environmentally-sensitive areas. In particular, vehicular access to the Live Oak alleé has been re-routed in favor of an eco-shuttle service. Practical phasing options provide a framework for continued development as necessitated by increased visitation levels.
**Ethnographic Programming**

A thorough historical analysis was instrumental in determining layers of interpretation. However, archaeology will also play a vital role in the future. The only authorized excavation took place in 1968-69; recent work has been limited to the 18th century rice mill. Programming focuses on presenting a holistic experience, bringing greater attention to associations across layers. A renewed focus has been placed on Pre-Columbian habitation by the Guale Indians as well as the cultural contributions Africans made in transforming the agrarian landscape. Furthermore, contributions of African slaves at Wormsloe will connect to the proposed Gullah/Geechee cultural heritage corridor along the Atlantic coast.

**Environmental Programming**

Environmental programming was centered on 4 principles: (1) restore functionality to ecosystems, (2) achieve species diversity (3) reconnect fragmented ecosystems, and (4) maximize educational opportunities.

The goal of re-establishing ecosystem diversity on site was guided by the principle of sustainable land management practices, including the eradication of invasive species and the restoration of prescribed burns. Restoring functionality involved a bottom-up approach, designing to support natural ecosystems. The restoration of flow to Jones' Narrows constitutes one example of reconnecting fragmented systems. Design strategies include removing excess fill, improving tidal flow, and incorporating wetland restoration strategies in order to ensure the vitality of salt marsh communities. The promotion of healthy ecosystems, fostered by sustainable environmental stewardship strategies, safeguards the landscape in perpetuity.

**Educational Programming**

By siting the visitor center at the entrance of the property, visitors are immediately oriented to the history of the site, and can proceed to their area of interest. A series of interpretive trails and contact nodes sited along the path system maximize visitor exposure to the temporal landscape. Additionally, portable audio devices can be utilized on site to gain access to previous exhibits, enabling individually-tailored experiences. Incremental program phasing provides added layers of complexity to the landscape. Furthermore, a research center and dormitory complex allow educators continued access to the site.
Connectivity throughout the site has been achieved while minimizing impact to sensitive areas. Vehicular access has been contained in favor of maximizing the experiential quality of the landscape. This will allow for the recovery of natural systems.

**SYSTEMS ANALYSIS: SPATIAL RELATIONSHIPS**
Program development was facilitated by formulating a design approach, which melded human and environmental interaction while preserving the site’s historic fabric. Practical phasing options provide a framework for additional development on site while mitigating its impact.
<table>
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<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
<th>CONDITION</th>
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<td>Persea borbonia</td>
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<td>Symlocos tinctoria</td>
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<td>Buxus sempervirens ’Newport Blue’</td>
<td>English Boxwood</td>
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<td>Buxus sempervirens ’Suffruticosa’</td>
<td>Dwarf Boxwood</td>
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<td>Hydrangea arborescens ’Annabelle’</td>
<td>Annabelle’ Hydrangea</td>
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<td>Piedmont Azalea</td>
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<td>Agapanthus praecox</td>
<td>Lily of the Nile</td>
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<td>Baptisia alba</td>
<td>White False Indigo</td>
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<td>Eupatorium rugosum</td>
<td>White Snakeroot</td>
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<td>Helleborus argustifolius'Silver Lace'</td>
<td>Silver Lace’ Lenton Rose</td>
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<td>Hosta x tardiana ‘Halcyon’</td>
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<td>Pycnanthemum muticum</td>
<td>Hoary Mountain Mint</td>
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<td>15-18&quot;</td>
<td>Stachy byzantina</td>
<td>Lamb’s Ear</td>
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</table>
**HISTORICAL RESTORATION: ESTABLISHING HISTORICAL CONNECTIVITY**

Historical programming focuses on presenting a holistic experience, infusing the natural landscape with the built environment. A renewed focus has been placed on integrating the cultural influences Africans made at Wormsloe in transforming the landscape while providing a broader connection to the proposed Gullah/Geechee heritage corridor along the Atlantic coast.
WORMSLOE: Re-envisioning a Cultural Landscape

Stationing Opportunities Establishing Historical Connectivity
The construction of the Diamond Causeway in 1972 had devastating impacts on the surrounding salt marsh communities, increasing siltation levels and choking off sections to tidal flow. Restoration efforts aid in reestablishing this important ecosystem, incurring ecological, environmental, and educational benefits.
WORMSLOE: Re-envisioning a Cultural Landscape

Stationing Opportunities Establishing Ecological Awareness
Restoring ecological diversity constituted a bottom-up approach, initially focusing on functioning members of selected ecosystems before connecting to a much broader systems network focusing on green space connectivity and wildlife corridors.
Treatment Options: Mulch With Rope Fencing

Treatment Options: Seeded Turf With Rope Fencing
WORMSLOE: Re-envisioning a Cultural Landscape

Treatment Options: Minimizing Impact to Sensitive Features

- 15-Passenger Electric Vehicle
- Bicycle Rentals

<table>
<thead>
<tr>
<th>Mid-Range Weekend Design Scenario</th>
<th>1344 visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Riders Per Day, Per Vehicle</td>
<td>32 rides</td>
</tr>
<tr>
<td>Approximate Shuttle Time Per Design Route</td>
<td>12mph, 15 minutes</td>
</tr>
<tr>
<td>Number of Vehicles Required</td>
<td>6 Electric Vehicles</td>
</tr>
<tr>
<td>Battery Life Per Vehicle</td>
<td>50 miles</td>
</tr>
</tbody>
</table>
Treatment Options Skidaway Road Rehabilitation Looking Toward Sandfly
Conclusion

Sustainable design at Wormsloe enhances the cultural legacy initiated by Noble Jones in 1736. Creating a teaching landscape experience that respects the many historic layers of the site, its resilience, and its adaptability, will serve both the landscape and the human experience there. Moreover, engendering a sense of place creates a framework for building connectivity and strengthening cultural identity.
I would like to acknowledge those individuals involved who have contributed towards making my experiences here so memorable. First and foremost is my wife, whose tireless devotion has kept me grounded and focused in my studies. Your words of encouragement to “finish strong” have enabled me to be proud of my accomplishments here. Additionally, I would like to extend my appreciation to the group of individuals whose company has made this journey so meaningful and worthwhile. I have truly enjoyed our time spent together over these last three years. I could not have done this without you all.
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De Renne Family Papers (mss. 1064 & mss. 2819)
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John Abbot’s Notebook
Noble Jones Family Papers
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IMAGE CREDITS

PHOTOGRAPHS

All site photographs completed by Wes Ryals

HISTORIC PHOTOGRAPHS

All historic photographs part of the De Renne Collection

CASE STUDIES

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RENDERINGS

All graphics and layout completed by Wes Ryals
HONOR AWARD

Wormsloe: Reenvisioning a Cultural Landscape

Wes Ryals, Student ASLA, University of Georgia
Faculty Advisor: David Spooner, ASLA and Doug Pardue, Associate ASLA

Project Statement

Upon its founding in 1736, Wormsloe has exhibited a diverse ethnographic and environmental history. The site’s environmental stewardship sets a precedent for post-wilderness conservation, revealing a close partnership between human and environmental interaction. Consequently, Wormsloe is poised to become a leading contributor in the study, interpretation, and outreach of environmental history. The project mission focuses on establishing infrastructure and program improvements, spearheading an initiative that weaves sustainable design solutions with the site’s historic fabric.

Project Narrative

Current Land Use + Context