

Big Shoals (and Little Shoals) State Park

Big Shoals State Park consists of 1,690.17 acres that is located in Columbia and Hamilton Counties, near the city of White Springs. The park is contained within the Northern Highlands Physiographic Zone, generally characterized by gently rolling topography, but with areas of steep slopes, ravines, and high bluffs. The topography within the park includes expanses of flat zones to steep slopes and ravines (Florida Department of Environmental Protection 2005a). The predominant hydrological feature located within the park boundaries is the Suwannee River, although multiple streams, wetlands, and numerous depressions that can hold rainwater exist throughout the park (Florida Department of Environmental Protection 2005a). Additionally, the park contains fifteen distinct natural communities with Mesic Flatwoods dominating at most of the park's locales (Florida Department of Environmental Protection 2005a). The park consists of an eastern and western section, subsumed under the names of Big and Little Shoals State Park.

A review of FMSF data indicate that two archaeological surveys had been previously completed within the Big Shoals State Park boundary (Stanton 2002; Wheeler 1999), and a total of 16 archaeological sites and one historic structure have been identified within the park. Table 2 summarizes these 16 archaeological sites. None of the 16 sites are listed as having human remains, and only one archaeological site, 8HA77 (Hooker's Homestead) is identified as being NRHP-eligible. The single historic structure located within the park, 8HA331 (Old House), is situated within site 8HA332, the Downing & Tippins Turpentine Camp (Figure 11).

Park Visit

AIST visited Big Shoals State Park on August 2, 2011. An aerial LiDAR derived DEM was produced prior to conducting field work and areas of prospection and spatial confirmation were targeted (Figures 12 and 13). FMSF data was also pre-loaded on the GPS datalogger to allow for navigation and to be able to visualize in the field previously recorded information and spatial locations. GPS point and line data and GPS photographs were collected at multiple locations throughout the park (Figure 14 and 15). As a result of the park visit, three new historic structures and one new resource group were located and recorded in the FMSF, and the boundaries of one previously recorded archaeological site was expanded (Table 3) (discussed below). Additionally, point data was collected at several of the lithic and artifact scatters (8HA318, 8HA319, 8HA324, 8HA325, 8HA327, 8HA332, 8CO111, and 8CO774) located within the park boundaries using the spatial location obtained from the FMSF, as no materials were visible on the ground surface at any of these sites with the exception of 8HA332, where a single lithic flake was encountered. Also, although no cultural materials were evident at 8HA325, multiple coral deposits were clearly visible, and these outcrops are often associated with stone tool production. Additionally, GPS photographs were taken at all locations visited and documented in this park.

Table 2. Previously recorded archaeological sites located within Big Shoals State Park.

Site #	Name	Type	Human Remains	Surveyor Evaluation
CO111	Big Shoals	Prehistoric quarry/Lithic scatter	No	Ineligible for NRHP
CO773	Old Godwin Bridge	Bridge	No	Insufficient Information
CO774	Robinson Hill	Lithic scatter/quarry	No	Insufficient Information
HA177	Hooker's Homestead	Homestead	No	Eligible for NRHP
HA317	Godwin Bridge Site	Artifact scatter-dense	No	Insufficient Information
HA318	Check Station	Artifact scatter-low density	No	Insufficient Information
HA319	Road 12 Site	Lithic scatter/quarry	No	Insufficient Information
HA320	Boundary Line	Ceramic scatter	No	Insufficient Information
HA321	Old Godwin Bridge	Bridge	No	Insufficient Information
HA322	Downing & Tippins Turpentine Camp	Land-terrestrial	No	Not Evaluated by Recorder
HA325	Little Shoals	Lithic scatter/quarry	No	Insufficient Information
HA327	Road 2 Scatter	Artifact scatter-low density	No	Insufficient Information
HA328	Palmetto Island	Artifact scatter-low density	No	Insufficient Information
HA329	Long Branch Trail No. 1	Artifact scatter-dense	No	Insufficient Information
HA330	Long Branch Trail No. 2	Artifact scatter-dense	No	Insufficient Information
HA332	Lucky Hole	Artifact scatter-low density	No	Insufficient Information

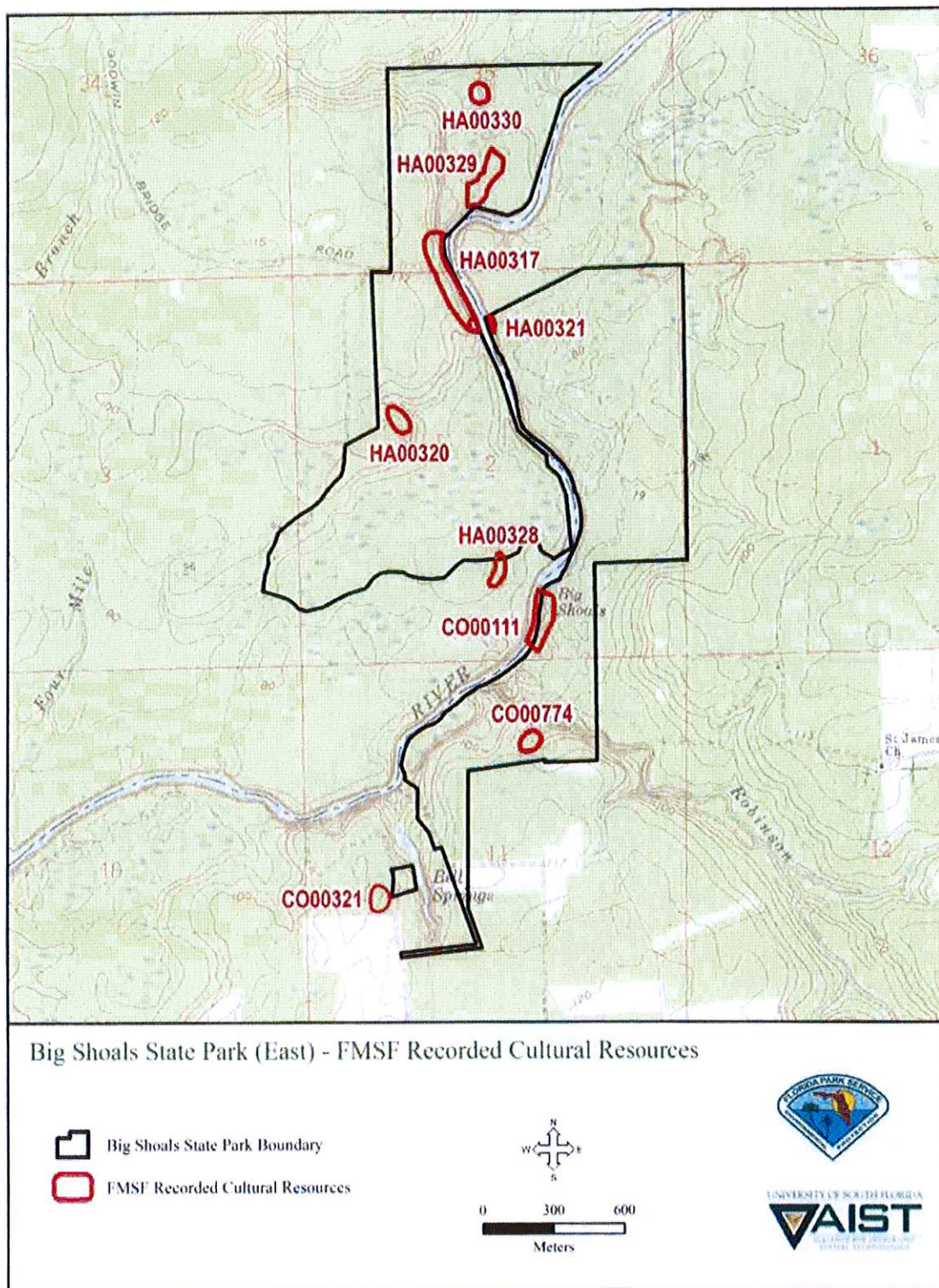


Figure 11. Previously recorded archaeological sites located within the eastern portion of Big Shoals State Park.

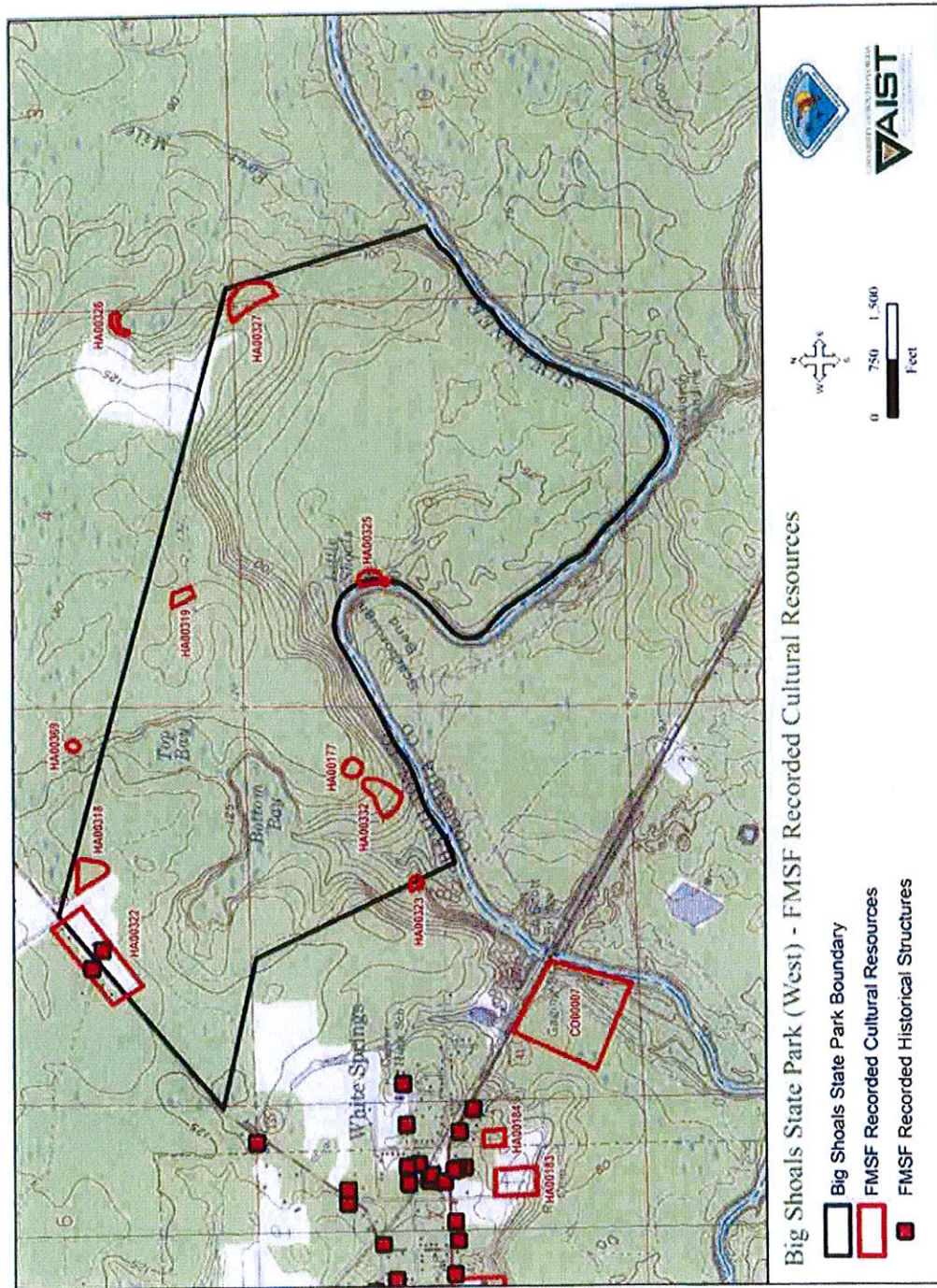


Figure 12. Previously recorded archaeological resources and historic structure located within the western portion of Big Shoals State Park.

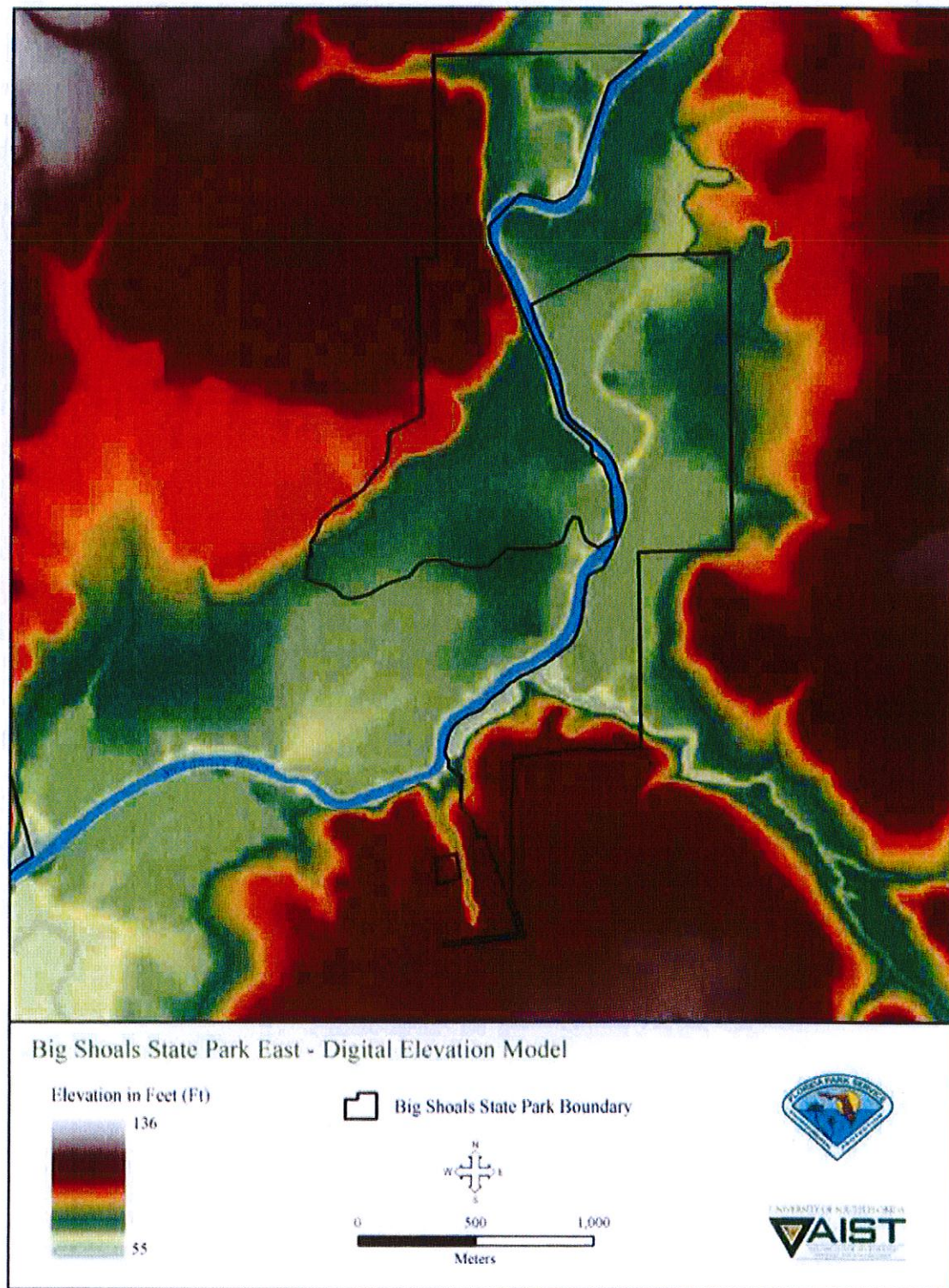


Figure 13. Aerial LiDAR-derived DEM map for east portion of Big Shoals State Park area.

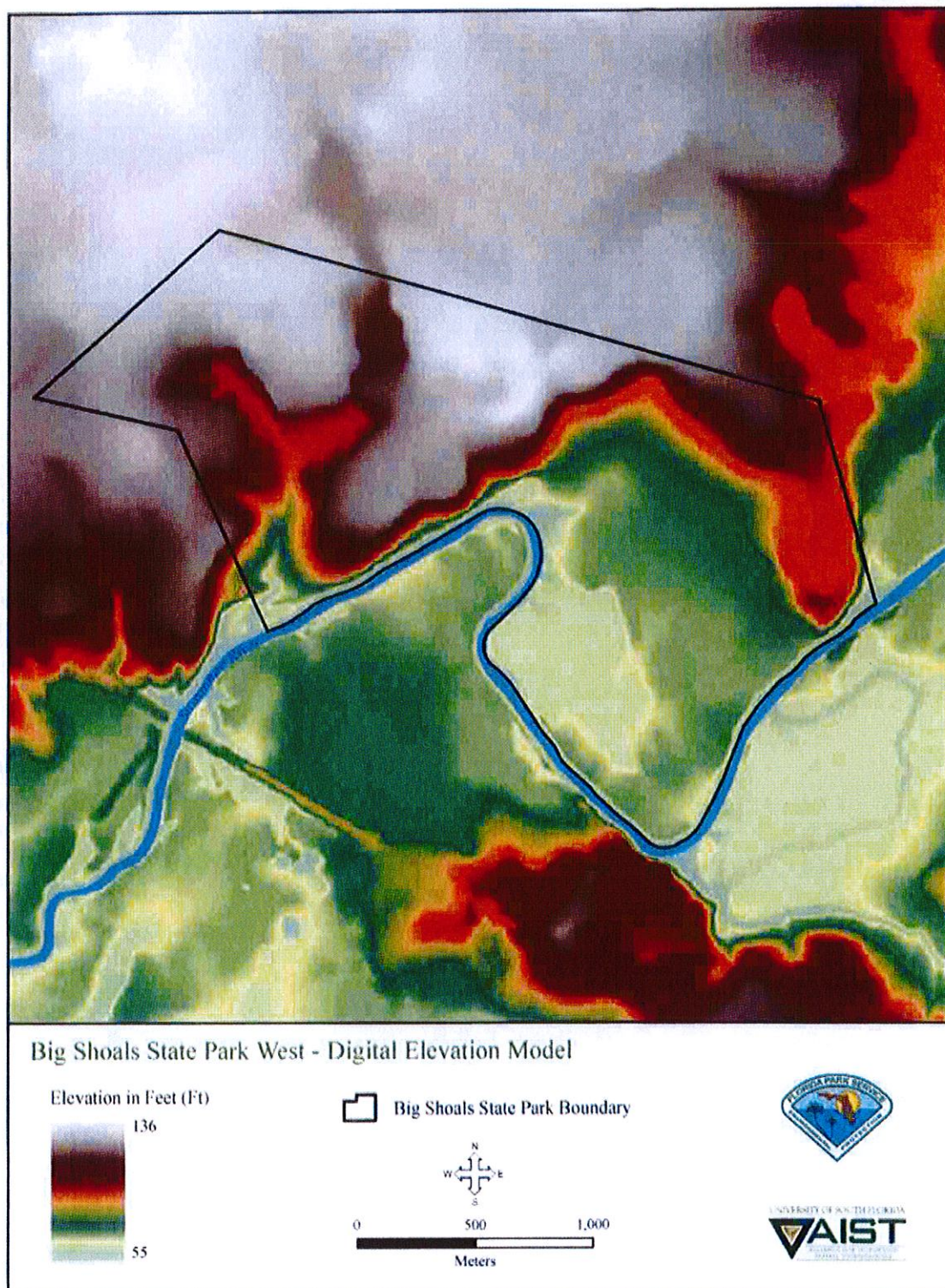


Figure 14. Aerial LiDAR-derived DEM map for the western portion of Big Shoals State Park area.

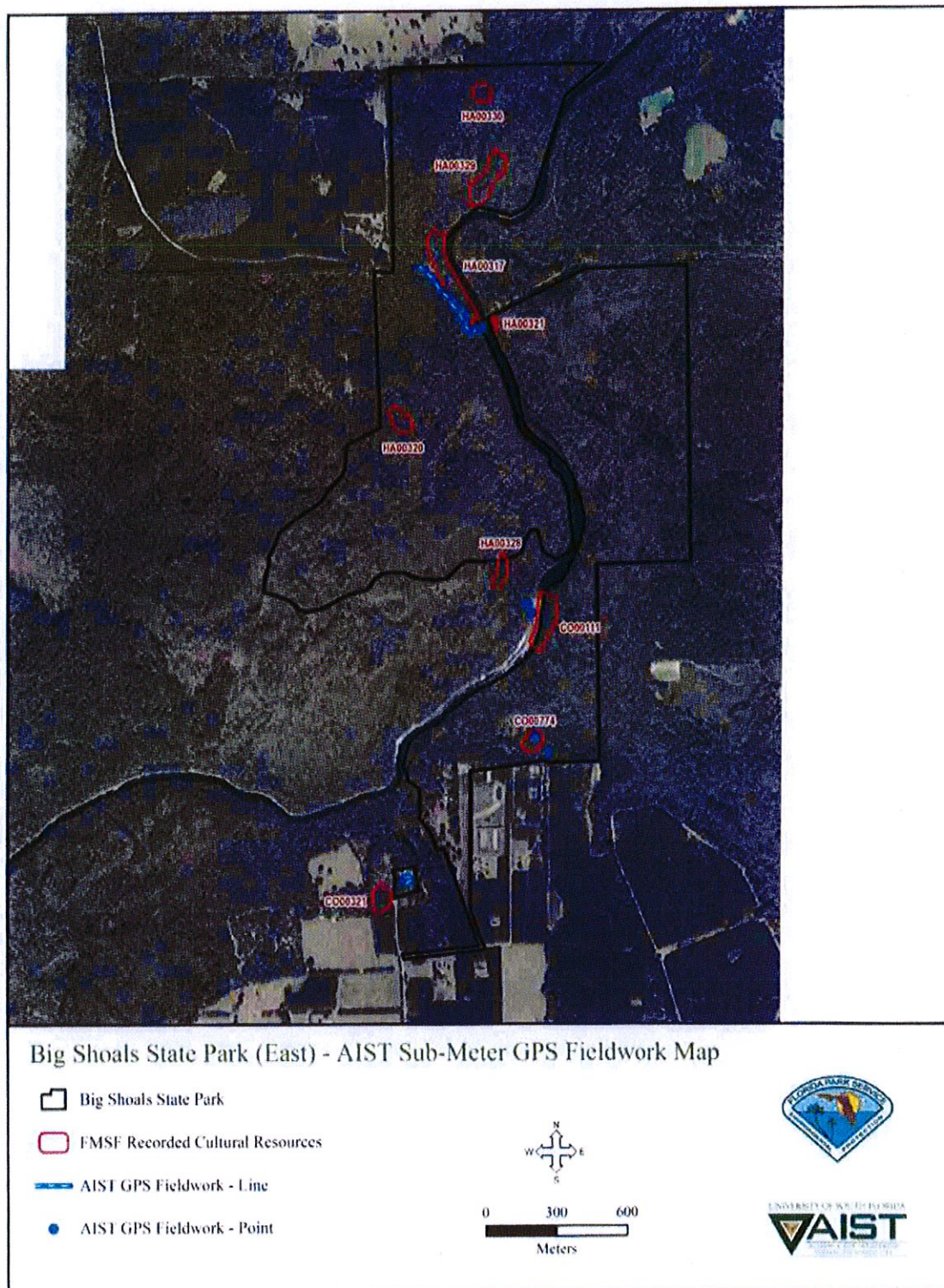


Figure 15. GPS survey data collected within the eastern portion of Big Shoals State Park along with FMSF location data.

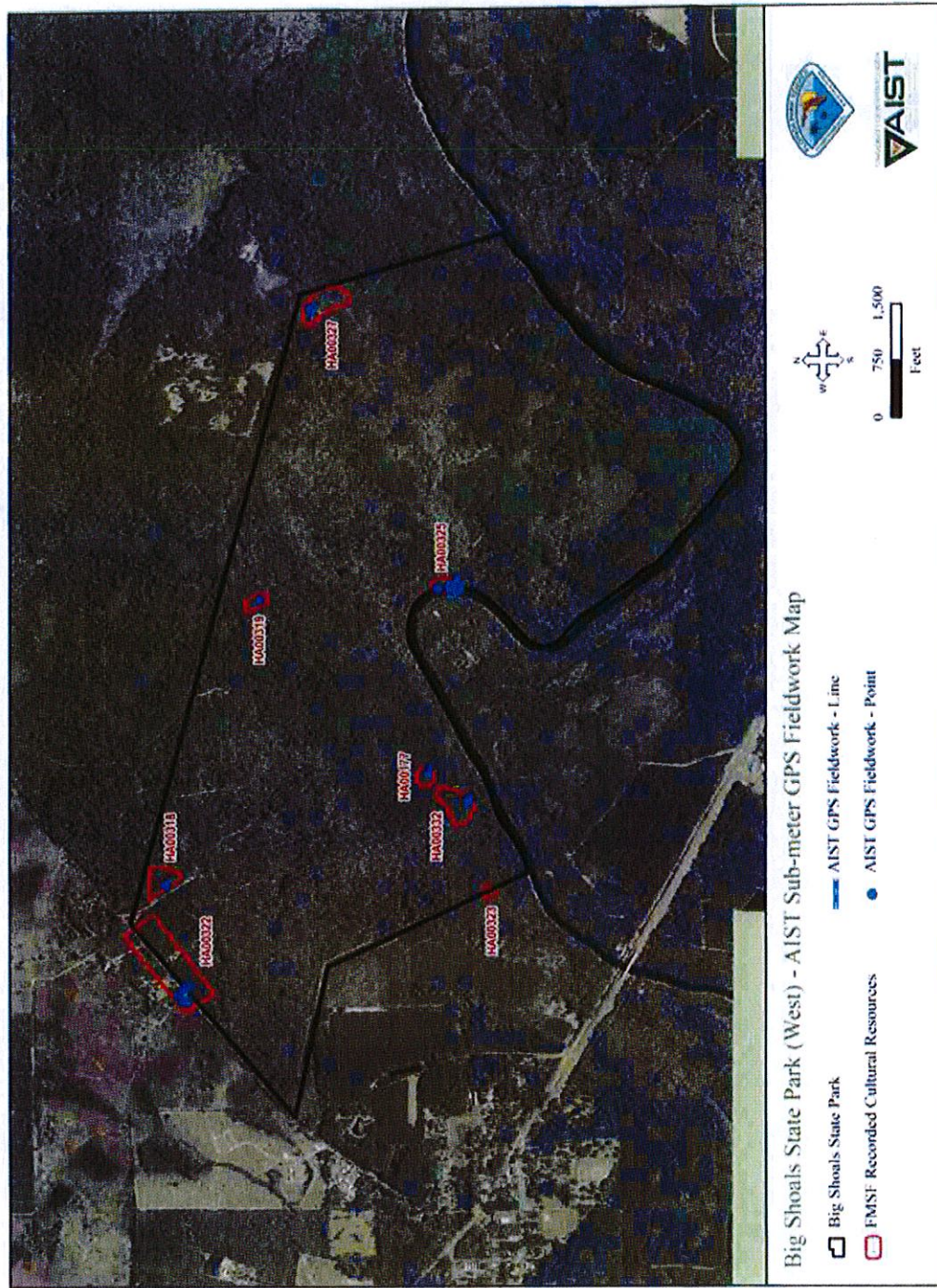


Figure 16. GPS survey data collected within the western portion of Big Shoals State Park along with FMSF location data.

Table 3. Updated and newly recorded cultural resources within Big Shoals State Park

Newly recorded cultural resources within Big Shoals State Park			
Site Number	Site Name	T/R/Section	Type
8CO1106	Morrell House	T2S/R16E/Sect. 11 (SW ¼)	historic structure
8HA429	Downing and Tippins Turpentine Camp #1	T2S/R16E/Sect. 5 (SW ¼)	historic structure
8HA430	Downing and Tippins Turpentine Camp #2	T2S/R16E/Sect. 5 (SW ¼)	historic structure
8HA431	Old Godwin Bridge Road	T1S/R16E/Sect. 35 (SW ¼) and T2S/R16E/Sect. 2 (NW ¼)	resource group
Updated previously recorded archaeological site within Big Shoals State Park			
Site Number	Site Name	T/R/Section	Type
8CO774	Robinson Hill	T2S/R16E/Sect. 11 (NE ¼)	archaeological site

Newly recorded or updated location sites as part of this survey include:

8CO774 (Robinson Hill)—updated plot location

Archaeological site 8CO774, Robinson Hill, is a previously recorded prehistoric Archaic stage lithic scatter located in the northeast quarter of Section 11 of Township 2S, Range 16E (Figures 17 and 18). It was originally recorded in 1999 during a Florida Bureau of Archaeological Research survey of Big Shoals. Chert and coral flakes were observed on the surface of the site area. No excavation was conducted during this survey, but the original recorder of the site stated that there are most likely subsurface deposits of artifacts at the site. During the AIST visit to the park, a sub-meter GPS data point was taken at the location of a surface lithic flake located encountered approximately 40m to the southeast of the recorded site location. As a result, the previously recorded site location was expanded and an updated FMSF site form indicating the site's new boundary location was submitted to the FMSF as part of this project (see Appendix B).

8CO1106 (Morrell House)—new structure

The Morrell House (8CO1106) is a newly recorded historic structure located in the southwest quarter of Section 11 of Township 2S, Range 16E. Built ca. 1900, structure 8CO1106 is an L-shaped wood frame vernacular style house covered in asbestos shingles (Figures 19 and 20). It has a gable roof with a shed extension over the closed porch located on the back of the house. The front has an incised porch with wood and decorative stone support posts, a wood floor, and concrete steps. There is a carport with a gable roof attached to the house. The open porch has a shed roof, wood supports, and a wood floor. The windows are mostly double-hung sash with some jalousie. The house also has gable vents and exposed rafter tails. The Morrell House has three brick chimneys and is in excellent condition. Parcel number 11-SS-16-01490-000, the location of the structure, was deeded to the Suwannee River Water Management District in 2007 by Monroe L. Morrell. It had previously been deeded to Morrell in 1989 from the Nature Conservancy. According to Gary Erixson of the Big Shoals State Park, 8CO1106 was moved to this location by Moses Morrell, the former owner of the parcel of land on which it sits. During the current investigation sub-meter GPS line data was collected around the outside of the



Figure 17. Photograph of 8CO774 (Robinson Hill) area.



Figure 18. Photograph of the lithic flake observed on the surface of 8CO774 (Robinson Hill).



Figure 19. Photograph of the façade of 8CO1106 (Morrell House)



Figure 20. Photograph of 8CO1106 (Morrell House)

Morrell House to accurately record its location (Figure 15 above). No subsurface testing was conducted around the structure, and no artifacts were observed or collected on the surface.

8HA429 (Downing and Tippins Turpentine Camp #1)—new structure

Located in the southwest quarter of Section 5 of Township 2S, Range 16E, on the north side of CR 135 just outside of the boundaries of the Big Shoals State Park, is the Downing and Tippins Turpentine Camp #1 (see Appendix B). This is a newly recorded, vacant structure that, according to Wheeler (Wheeler 1999) and Gary Erixson of Big Shoals State Park, was once used as worker housing for the Downing and Tippins Turpentine Camp (8HA322), located at this site from 1911 to 1940 (Figures 21 and 22). Wheeler (Wheeler 1999), suggests that this camp was staffed by African American men and women. Site 8HA322 was recommended as being potentially eligible for inclusion in the NRHP based on the relationship between turpentine camps from this time period and the history and heritage of rural African Americans. The land was owned by Columbia Downing and John W. Tippins of Georgia, who leased the property for use as turpentine quarters, pine tree tapping, and the operation of a farm (Wheeler 1999). Structure 8HA429 consists of a small, irregular-shaped structure with a gable roof and shed extension covered in 5V metal sheeting. It is covered in asbestos shingles and has an incised porch with wooden supports. This structure is in a ruinous state.

During the current investigation a sub-meter GPS point was taken at the location of the Downing and Tippins Turpentine Camp #1 structure. No subsurface testing was conducted around the structure, and no artifacts were observed or collected on the surface.



Figure 21. Photograph of 8HA429 (Downing and Tippins Turpentine Camp #1)



Figure 22. Photograph of 8HA429 (Downing and Tippins Turpentine Camp #1)

8HA430 (Downing and Tippins Turpentine Camp #2)—new structure

Located in the southwest quarter of Section 5 of Township 2S, Range 16E, on the north side of CR 135 just outside of the boundaries of the Big Shoals State Park, is the Downing and Tippins Turpentine Camp #2 (see Appendix B). This is a newly recorded, vacant structure that, according to Wheeler (Wheeler 1999) and Gary Erixson of Big Shoals State Park, was once used as worker housing for the Downing and Tippins Turpentine Camp (8HA322), located at this site from 1911 to 1940. Wheeler (Wheeler 1999) suggests that this camp was staffed by African American men and women. Site 8HA322 was recommended as being potentially eligible for inclusion in the NRHP based on the relationship between turpentine camps from this time period and the history and heritage of rural African Americans. The land was owned by Columbia Downing and John W. Tippins of Georgia, who leased the property for use as turpentine quarters, pine tree tapping, and the operation of a farm (Wheeler 1999). Structure 8HA430 consists of a small, L-shaped structure with a gable roof and shed extension covered in 5V metal sheeting. It is covered in asbestos shingles. This structure is in a ruinous state (Figure 23).

During the current investigation a sub-meter GPS point was taken at the location of the Downing and Tippins Turpentine Camp #2 structure. No subsurface testing was conducted around the structure, and no artifacts were observed or collected on the surface.



Figure 23. Photograph of Downing and Tippins Turpentine Camp #2 (8HA430)

8HA431 (Old Godwin Bridge Road)—new resource group

The Old Godwin Bridge Road (8HA431) is located in the southwest quarter of Section 35 of Township 1S, Range 16E, and the northwest quarter of Section 2 of Township 2S, Range 16E. Only the portion of this resource that was included within the boundaries of the Big Shoals State Park was recorded. This resource group associated with archaeological site 8CO773/8HA321 (Old Godwin Bridge), which provided access across the Suwannee River from approximately 1910 to 1950. The road is clearly visible on historic aerial photographs, featured in Figure 24. During AIST's site visit sub-meter GPS line data was taken along the portion of 8HA431 located within the park boundaries. Resource group 8HA431 continues out of the park to the west and northwest towards CR 135. The portion of this resource recorded during this survey is currently being used as a park trail and is maintained and clear of vegetation). The GPS data, along with aerial LiDAR and historic photographs assisted with the recordation of this resource group (Figure 25).



Figure 24. Aerial photographs through time showing the Old Godwin Bridge Road area (8HA431); from top to bottom, images are dated 1937, 1947, and 1966.

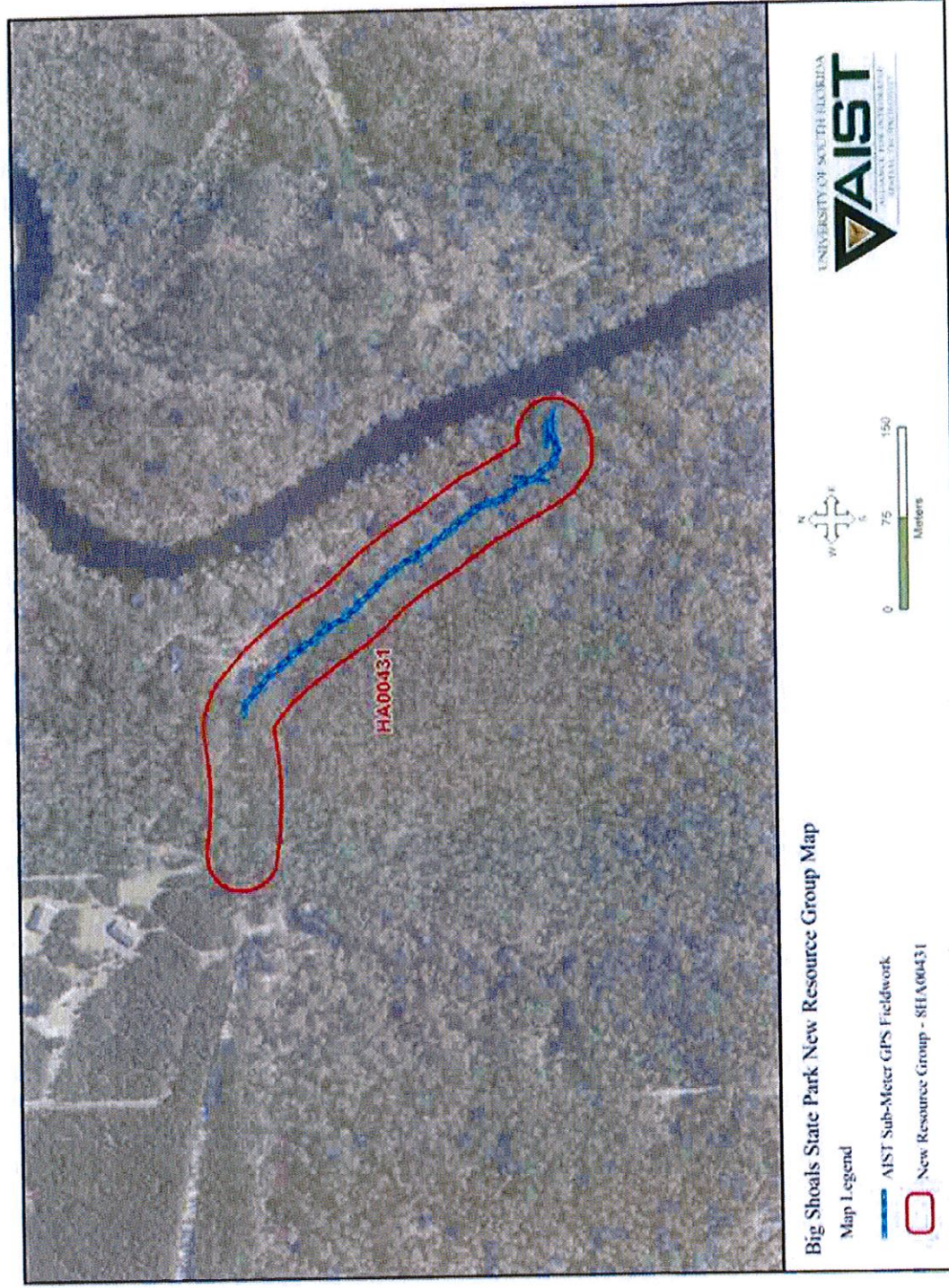


Figure 25. Newly recorded linear resource group, the Old Godwin Bridge Road (8HA00431), shown in relation to recorded sub-meter GPS line data.

Results and Discussion

The archaeological sensitivity model development for Big Shoals State Park included factors that took in a variety of environmental and cultural variables that account for the presence of sites through time and space and account for the variability of site types known to occur within the park as demonstrated through previous survey or recordation of sites within the park vicinity. Matrix variables present in this park included: rivers and streams, lakes and ponds, wetlands, topographical (elevation), cultural factors, soils and negative factors relating to slope and soil (for specific variables, see Appendix A). LiDAR and historic aerial imagery provided valuable prospection information for this park, with new resources included a FMSF resource group recorded following field verification. The field data collected with the GPS also proved useful in updating and refining the sensitivity model. Cultural variables chosen from the matrix included other derived information than from the FMSF data, as we utilized historic maps and LiDAR to more accurately denote features. We also used the matrix variable relating to historic travel corridors rather than FMSF resource groups again because of the source of our data and that it was decided these features are more precisely described in this way.

Our terrestrial site model (Figures 26 and 27), shows a distribution of high, medium and low cultural sensitivity areas for this park. These models are designed to be utilized as planning tools, for the understanding and visualization of archaeological sensitivity. These models offer an operational approach for management planning that considers cultural sensitivity, and can and should be used along with traditional archaeological approaches to more effectively target and survey areas. Additionally, these models can be used for land planning activities, noting potential conflict areas between resource planning and culturally sensitive areas.

Model Performance

In Big Shoals State Park, 12 of the 16 previously recorded site locations fall within high or medium sensitivity areas for this location. The four resources that are not captured by the model sensitivity areas consist of artifact scatters that lie close to areas of mapped sensitivity and could be incorrectly plotted (we did not visit these site locales during the GPS survey as they were deemed ineligible for NRHP on the FMSF), and a quarry site location that is ineligible for listing on the NRHP. Additionally, there is a portion of a bridge location that our model did not capture.

Model performance testing is an important part of the development and refinement of archaeological sensitivity dynamics in GIS (Kvamme 2006). The model performance is relational to whether or not a site is likely to be present. To examine this question, an independent sample from those used to develop the model is the best choice. We are using the polygonal FMSF recorded archaeological site GIS layer as our sample to examine performance. The polygonal layer for sites is chosen because these data offer some understanding for the area occupied by archaeological features. Many GIS models rely on centroid point location to

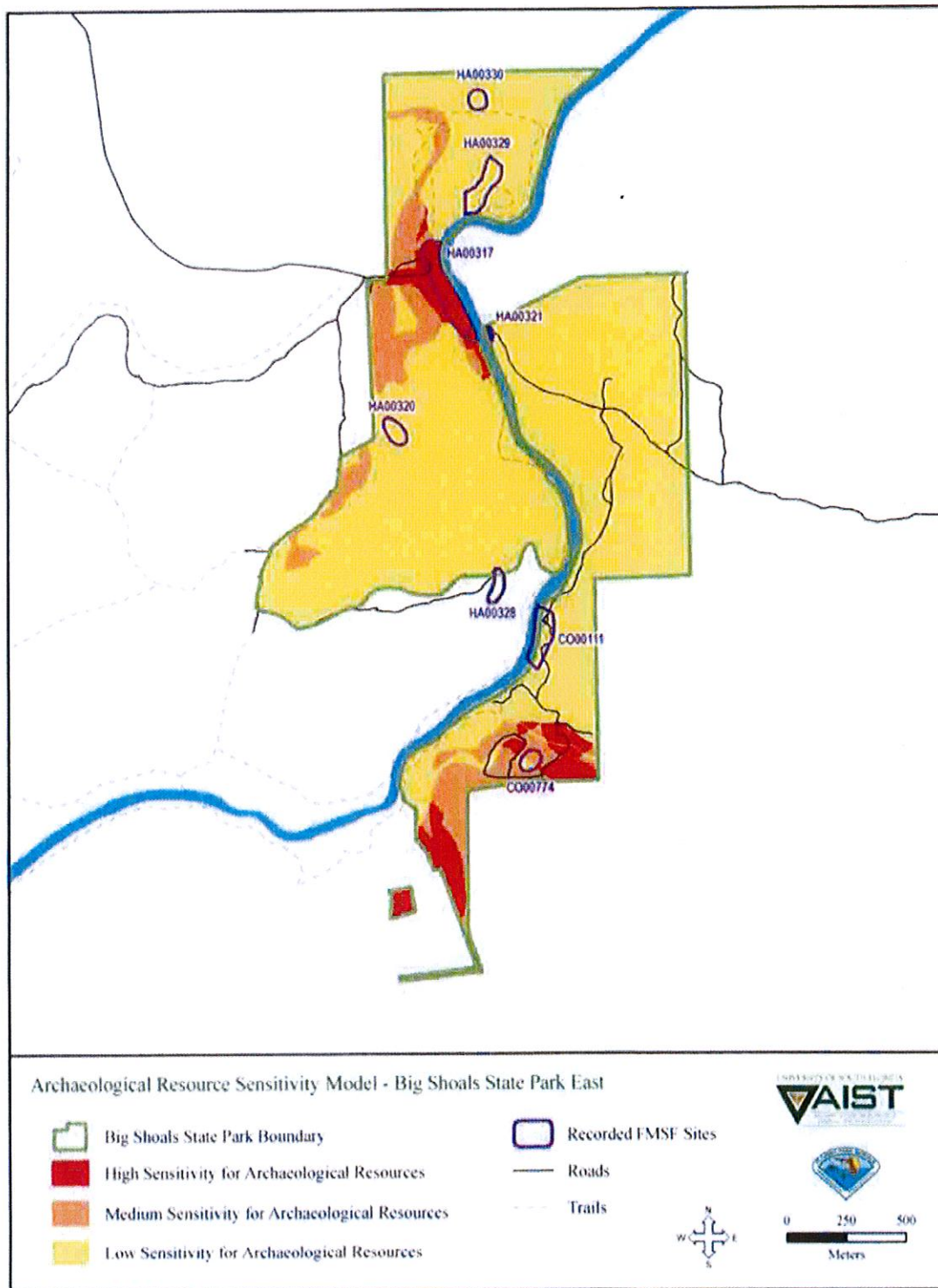


Figure 26. Archaeological Resource Sensitivity Model for the eastern section of Big Shoals State Park with known locations for cultural resources indicated.

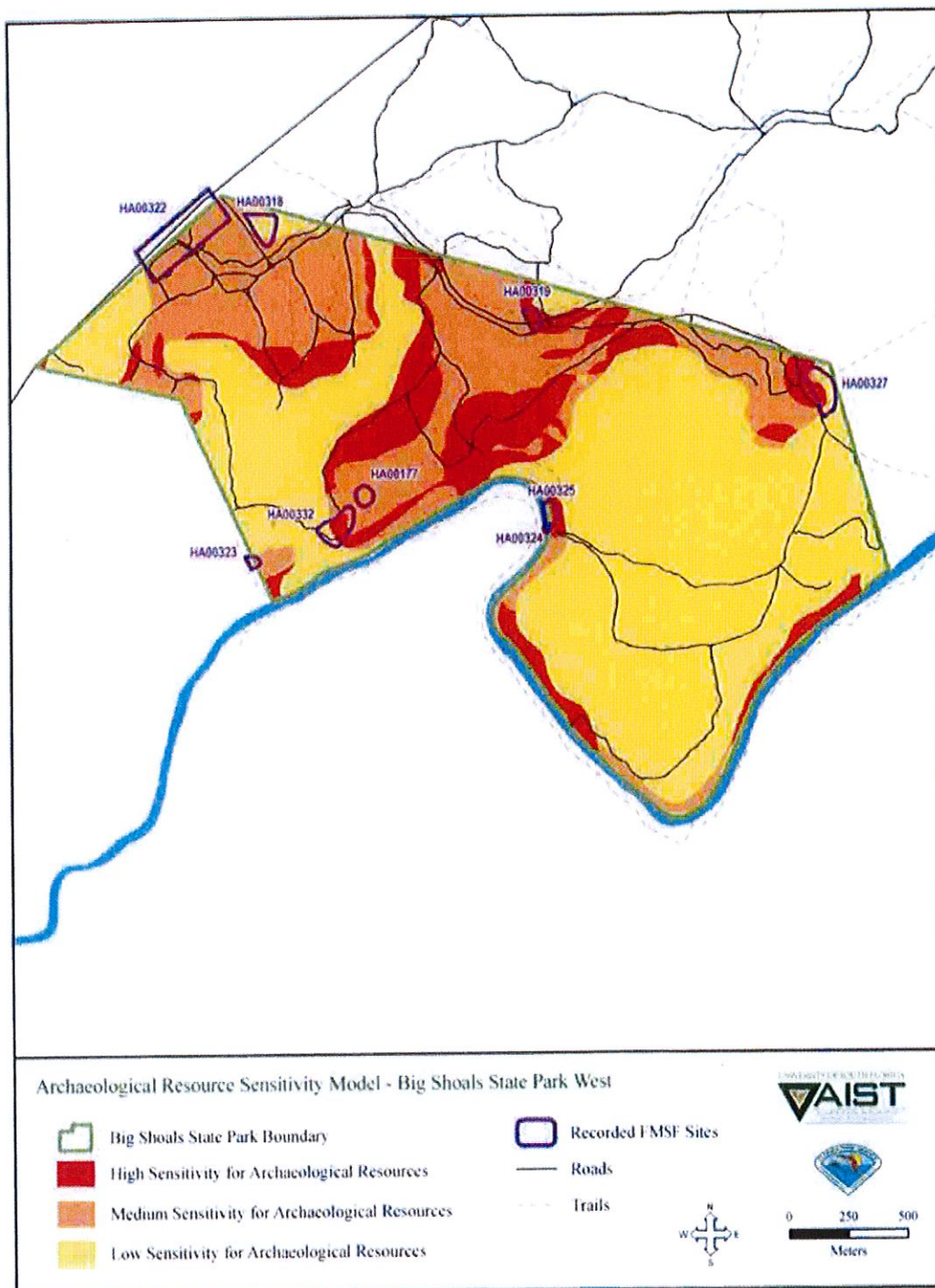


Figure 27. Archaeological Resource Sensitivity Model for the western section of Big Shoals State Park with known locations for cultural resources indicated.

examine performance, however this has been found to not be the best choice, because there is no area assigned to point data and this provides an often inaccurate view of the model (Mink 2006). The FMSF maintains a polygonal data layer that provides digitized site boundary information as plotted from 1:24,000 scale topographic map data. These data provide a measure of surface area for archaeological phenomena across space, although there are limitations to the accuracy standards for these data.

To test our model performance, we examined model area calculations in the GIS, and determined the total acreage covered by the model. Next, we determined the acreage associated with model factors of High, Moderate, and Low Archaeological Sensitivity. Once these calculations were made, we are able to consider the percentages of total model acreage associated with the High, Moderate, and Low categories. The same percentage of acreage attributed to phenomena was developed for archaeological site locations using the FMSF polygonal recorded site layer. These values were reported as a percentage of archaeological sites by acreage for the model (Table 4).

In performing these calculations, we are able to examine percent correct statistics for archaeological occurrence within a model area, or the probability that a model specifies a site when one is known to actually be present given the area of its mapping (Kvamme 2006). Taking this a step further, we can look at the performance of the model as an improvement over chance occurrence in mapped areas for high and medium sensitivity. For example, looking at Table 4 below, our model for Big Shoals State Park correctly indicated 59.4% of known sites in a mapping that covers 32% of the model area. Therefore, using statistics ($p[\text{Sites}] - p[\text{Acres}] = .27$), our model represents a 27% improvement over chance of locating archaeological sites within our designated high and medium probability areas (see: Kvamme 2006:28). This percentage in this case is improved slightly when we consider the adjusted acreage numbers that are based on refinements to the FMSF locations of sites using GPS ground-truthing data. Several site locations that are plotted, perhaps erroneously as large acreage areas, show up in low sensitivity portions of our model in this park. We feel that correctly bounding these sites through sub-surface survey and in conjunction using sub-meter GPS would improve the model validation in this instance. Additionally, our table breakdown below does not include acreage of resource groups, which are considered differently from sites by the FMSF. Consideration of the model capture of resource group areas also improves the validation scoring.

Table 4. GIS model performance calculations for Big Shoals State Park

	Entire Park		FMSF Sites		GPS Adjusted FMSF Sites	
	Acres	Percent	FMSF Acres	Percent	FMSF Acres	Percent
Big Shoals Sensitivity Model						
High Sensitivity Area	187.49	11.09%	11.54	28.28%	12.10	28.73%
Medium Sensitivity Area	353.19	20.90%	12.68	31.07%	13.39	31.79%
Low Sensitivity Area	1,149.50	68.01%	16.59	40.65%	16.63	39.48%
Total	1,690.17	100.00%	40.81	100.00%	42.12	100.00%