Paleoindian Occupation Along the St. Johns River, Florida

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The Paleoindian occupation of Florida during the late Pleistocene Epoch (approximately 11,500 to 10,000 B.P.) – whether measured by the number of artifacts or sites– has conventionally been perceived as concentrated along river basins that empty to the Big Bend region of the Gulf of Mexico, from the Apalachicola River to Tampa Bay. The geology of this region provided more accessible water and chert resources during that time (Dunbar 1991; Thulman 2009), while deep overlying sands tended to cover those resources on the Atlantic coast. Other than the sites in and near Silver Springs in Marion County (Hemmings 1975; Hoffman 1983; Neil 1958, 1964) and the Helen Blazes site (8BR27) on the upper St. Johns River in Brevard County (Edwards 1954), Paleoindian presence along the St. Johns River and its tributaries appeared to be sparse. However, recent work indicates the Paleoindian occupation was more extensive than earlier recognized (Thulman 2006, 2009). This article reports on the Lake George Point site (8PU1470), a newly identified Suwannee-age site submerged in Lake George in the St. Johns River and places it in a larger context of Paleoindian sites in the St. Johns River watershed. Suwannee-aged sites have not been dated, but they likely date to the post-Clovis, Middle Paleoindian period (approximately 10,500 to 10,000 B.P.). The Lake George Point site fits a pattern of larger Middle Paleoindian sites in Florida located on a vantage point immediately adjacent to and overlooking a broad plain, such as Helen Blazes, Bolen Bluff (8AL439; Bullen 1958), and Harney Flats (8HI507; Daniel and Wisenbaker 1987). Figure 1 shows the location of these and other sites discussed in this paper.

The St. Johns River Watershed during the Late Pleistocene

The St. Johns River is Florida's longest river, but unlike most of the other northern rivers in the state, it receives less of its flow from large springs or groundwater infiltration; most of its flow comes directly from precipitation (Florida Department of Natural Resources 1989; Miller 1998). The north-flowing river has a shallow slope and only drops 8.2 m (27 feet) in elevation from its headwaters in St. Lucie County to its mouth near Jacksonville, about 0.19 m per 10 km (1 foot/10 mile). The river originates in a broad swampy valley and does not create a defined channel until just north of Lake Helen Blazes (White 1970:103). The upper river, between its headwaters and its confluence with the Econlockhatchee River, follows the St. Johns Valley, connecting a series of elongated lakes aligned with the river's channel (White 1970:93-204). The outline of the valley has been obscured in places by agricultural fields, but Figure 2, based on the present extent of mucky soils, shows an approximation of the likely original configuration. Today, the St. Johns Valley is filled with muck and peat, except for the channel and lakes (Davis 1946). The precise basal depth of this valley is not known but is probably about 3.0 to 3.6 m at its deepest point; several of the lakes in this area are about 3.05 m deep with about 0.3 m of organic sediments overlying marine clays (Brenner 1997). North of Lake George, the river channel was deeply incised during the late Pleistocene (Miller 1998).

From Sanford to Palatka, the St. Johns River is offset to the west and apparently follows a valley of different geological history. In this stretch, the river follows a narrower valley that connects larger lakes, including Lakes Monroe, Woodruff, and George (Florida Department of Natural Resources 1989; White 1970). Given its width and location, Crescent Lake may have been part of the original river channel before it was captured by the offset (Miller 1998). Lake George is the last and largest lake intersected by the river before it enters its broad, high-banked channel north of its confluence with the Oklawaha River. Lake George is 186 km^2 (71.8 square miles) in area and occupies a broad shallow basin that is rarely more than 4.6 m deep. Two large springs empty into the lake from the west: Silver Glen Spring and Salt Spring (Scott et al. 2004).

During the late Pleistocene Epoch when sea levels were lower, the St. Johns was significantly different, likely dry or intermittent in its lower reaches (Miller 1998; Thulman 2009). With lower sea levels, the Floridan Aquifer, which is the source for the largest springs in Florida, would probably not have been discharging to the surface in the St. Johns during drier episodes as it does today (Thulman 2009), although water may have been available in non-flowing spring vents. Coupled with the lower precipitation at that time, the river may not have flowed and may only have held water intermittently in scattered locations, such as perched water sources. Likewise, peat and muck, which form in anaerobic subaerial conditions (Davis 1946), would have been spotty at best and possibly

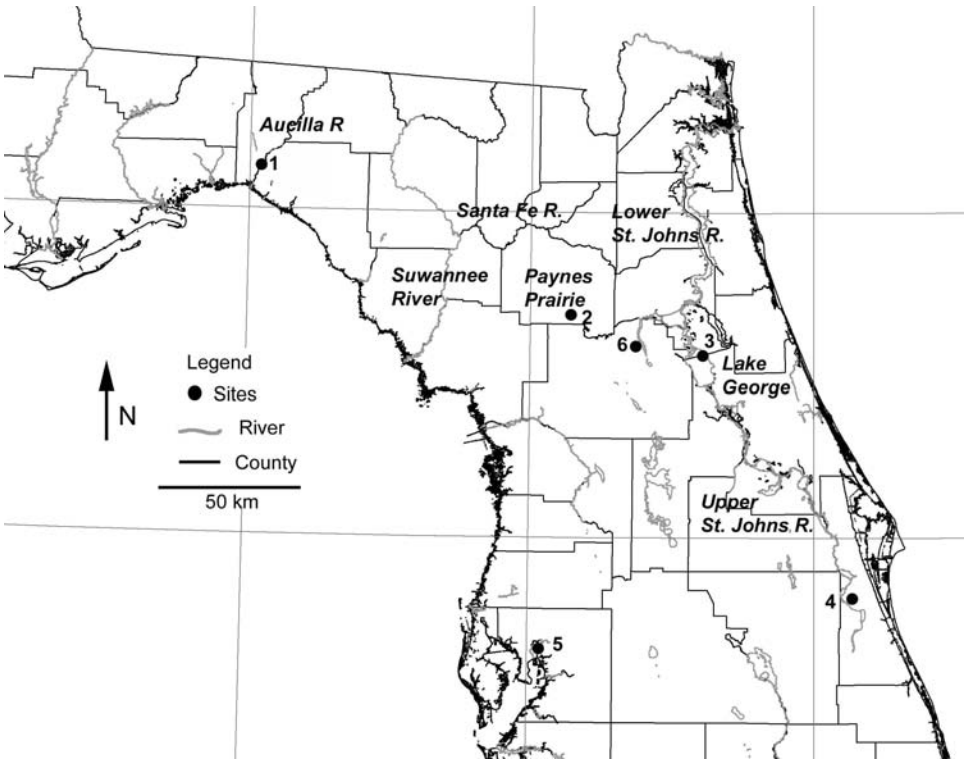

Figure 1. North-central Florida. Paleoindian sites mentioned in the text: 1 Goose Pasture, 2 Bolen Bluff, 3 Lake George Point Site, 4 Lake Helen Blazes, 5 Harney Flats, 6 Silver Springs.

absent in the St. Johns Valley. Thus, the modern muck and peat-filled headwaters of the St. Johns would also have been a wide shallow basin.

The northern end of Lake George was probably an area of reliable surface water during the late Pleistocene Epoch (Thulman 2009). Highly fractured geological formations underlie an area from the north end of the lake to the confluence of the Oklawaha River, which could have provided an outlet for water under artesian pressure from the Floridan Aquifer system during periods of higher precipitation. Thus, people at Lake George could have had access to a variety of resources: water, open savannahs, swamp margins, relatively high vantage points, and perhaps access to raw materials for stone tools in the spring vents or in now-drowned exposures in the bottom of the lake and river. A Paleoindian standing on the edge of the St. Johns Valley or Lake George at the end of the Pleistocene would have seen a dramatically different vista than a modern Floridian. Rather than the modern view of a broad flat expanse of water or muck, a Paleoindian would look out over a broad plain. The vista would have been similar to that seen from the Bolen Bluff site (Bullen 1958) at the southern edge of Paynes Prairie in Alachua County.

The Lake George Point Site (8PU1470)

The Lake George Point Site (8PU1470) was found by local artifact collectors in Lake George and reported on a State of Florida Isolated Finds form[1]. It is located in the vicinity of Lake George Point, which is near the unincorporated town of Georgetown, Putnam County, at the northern end of Lake George (Figure 3). The Lake George Point site maintains the potential to be an important Paleoindian site, although a recent survey of the site showed that at least the easily accessible part of the site was likely completely collected by amateurs. I examined more than 40 Suwannee-type points and broken lanceolate point bases, scores of unifacial chipped stone tools, and fossils of extinct fauna recovered by the collector. (Some of these artifacts would probably meet one of the definitions of a Simpson point [see, Bullen 1975:56; Daniel and Wisenbaker 1987:53], but I adopt Dunbar and Hemming's [2006] argument that the differences between Simpsons and Suwannees—other than the rare bull-tongued Simpsons—are not defined well enough to make a rigorous distinction.) Figure 4 shows a small sample of the complete Suwannee points from the site. Based on this assemblage and an estimate of site dimensions (approximately 28,000 m^2), the site appeared to have been substantial in size, comparable to the Suwannee-Bolen Harney Flats site in Temple Terrace (Daniel and Wisenbaker 1987). The approximate boundaries of the site are outlined in Figure 5. The western boundary runs along the edge of a submerged, shallow spit, which drops off to depths exceeding 2 m. Because the private artifact collection contained relatively few Early Archaic-period Bolen and Middle Archaic-period stemmed points, it appeared likely that the Lake George Point site may have had a distinct Suwannee component, which could have provided a means to distinguish between the Suwannee and Bolen assemblages.

Faunal and botanical material is preserved in the lake

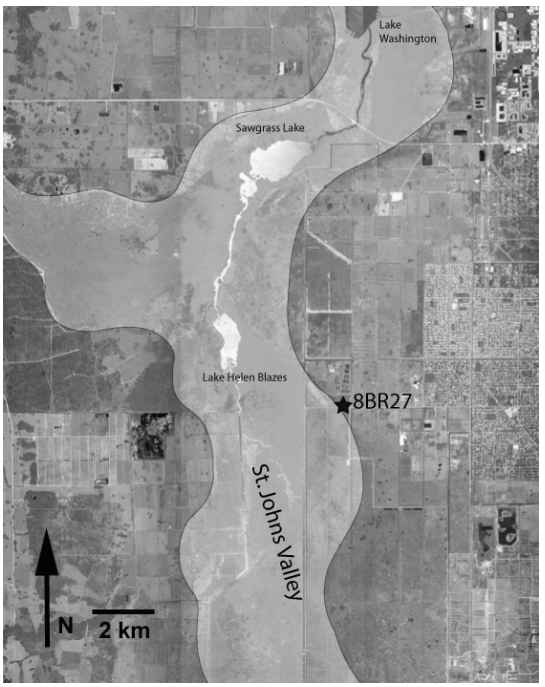

Figure 2. A portion of the upper St. Johns River Valley showing the approximate boundaries of the relict lagoon system and the Helen Blazes site (8BR27).

sediments. In addition to the extant and mineralized extinct faunal material collected at the site, cores taken by the United States Geological Survey (USGS) and the St. Johns Water Management District in the northern part of the lake revealed wood and peat preservation, although the ages of these materials are unknown (Kindinger et al. 2000; Nancy DeWitt, personal communication 2008). Because the site presented the opportunity for significant organic preservation, the Archaeological Research Cooperative, Inc., agreed to sponsor an underwater survey of the site as part of a larger effort to identify sites in Florida that may preserve Paleoindian-age organic artifacts. The purposes of the survey were to identify the dimensions of the site, determine whether any portion of the site remained intact after years of intensive collection and still contained an undisturbed Suwannee-age component, and evaluate the potential for more intensive survey and excavation.

The survey was done during March 2009 when water levels were low and the warm weather algae blooms had not started. Nevertheless, visibility in the lake was very poor to non-existent, and work at depths deeper than 1.5 m was by feel. Three 60 m transects were done in the shallower areas within the site boundary. Due to the large size of the site and our limited time, transects and random loci were positioned to assess the potential of the site to preserve undisturbed archeological deposits. Transect 1 extended beyond the site boundary; Transect 3 was along what appeared to be an exposed section of hardpan; and Transect 4 was set to the west of the exposed hardpan. Sediment cores were taken with a hand auger along Transect 5 to assess the potential for preservation nearer to the shore where sand deposits were deeper; no material was collected. Transect 2 was taken at an offsite location in the area. The initial protocol was to have a team of divers swim along the transect, fan the bottom, and collect artifacts, but it was soon apparent that fanning the bottom stirred up the bottom sediments and produced zero visibility. This protocol was changed midway along the first transect to sample every 10 m by fanning the bottom for 10 minutes as a control. Transects 3 and 4 were sampled every 10 m by establishing a 1 m square and fanning until the hardpan was reached. Three Random Loci (5, 6, and 7) were also collected in deeper water outside the approximate site boundaries (Figure 5).

While 109 fragments of extinct faunal material were recovered, indicating parts of the site date to the late Pleistocene Epoch, no unambiguously diagnostic Paleoindian artifacts were recovered. The faunal material consisted of both extinct

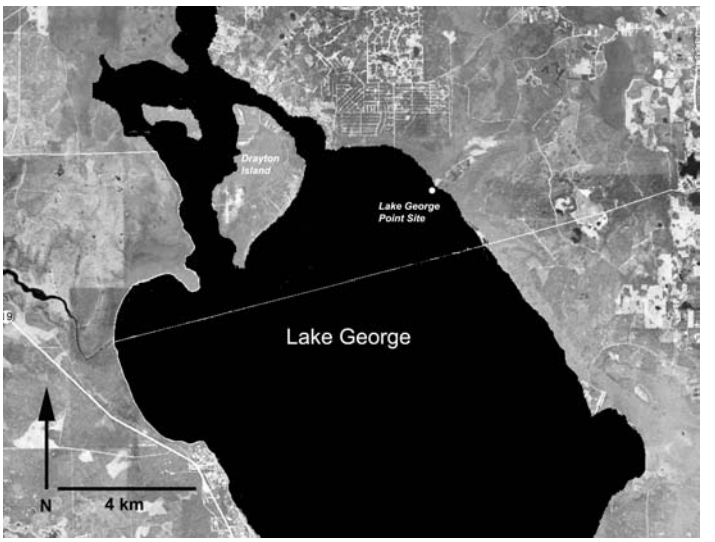

Figure 3. Northern portion of Lake George showing location of the Lake George Point site. The white line bisecting the lake is the Putnam County/Volusia County boundary.

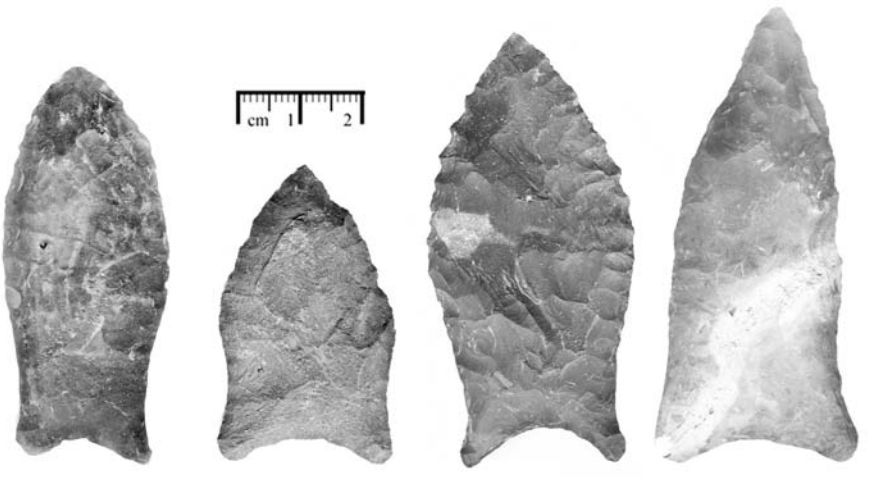

Figure 4. Four of the complete Suwannee points collected from the Lake George Point site. These are representative of the majority of the Paleoindian points found.

(21 percent) and extant (79 percent) species (percentages based on counts of terrestrial species; fish were not included). Table 1 lists the number of bones of extinct and extant terrestrial species collected from each transect and locus. None of the faunal material showed clear signs of human modification. A large number of highly water worn St. Johns Plain sherds were recovered along with stained faunal remains of extant species, which suggests the presence of a Woodland-period midden. Extant and extinct faunal species (Table 1), including mammoth, giant tortoise, and horse, were identified, but of more interest is that 96 percent (101 of 105) of the extinct faunal material was unstained, while 49 percent (204 of 413) of the extant material was unstained. Thus, it appears the Pleistocene age material was covered and segregated from the absorption of minerals such as magnesium or tannins in the water. The surface much of the Pleistocene-age material was cracked, friable, and degraded, which indicates that it was exposed for some time and degraded before it was covered (Behrensmeyer 1978).

The small amount of staining on the Pleistocene-age faunal material is an indication of the integrity of the Pleistocene strata. Based on the percentages of unstained to stained material, we can infer that the Pleistocene surface was covered by sand before it was inundated. We do not know how fast it takes bone and ivory to absorb the distinctive dark stain that is common for bone recovered in many Florida rivers, although it does not appear to take long (James Dunbar, personal communication, 2011). However, it is likely that the Pleistocene surface at the Lake George Point site was several meters above the bottom of the channel of the paleo-St. Johns River and would only have been inundated in the middle to late Holocene Epoch (approximately 5000 B.P to present) when sea-levels rose, forcing levels in the St. Johns River also to rise (Miller 1998).

There is no obvious indication that the site was used for tool production, as was the case at Harney Flats, although this is not easy to evaluate because the collectors did not gather flaking debris. Several lines of evidence, however, suggest that the site did not contain an area of tool production. Virtually all the points were made of chert from the Ocala Quarry Cluster (Austin and Estabrook 2000); the nearest known source of which is approximately 30 km west of the Oklawaha River. The relatively complete points (n=32) are all resharpened to some degree, some to exhaustion, and there were no preforms in the

Table 1: Number of elements of extinct and extant species and percentage of the total extinct species found at each transect and random locus (RL).

	Transect 1	Transect 3	Transect 4	RL 5	RL 6	RL 7
Extinct Species	65	1	0	4	8	31
Extant Species	138	7	21	74	125	48

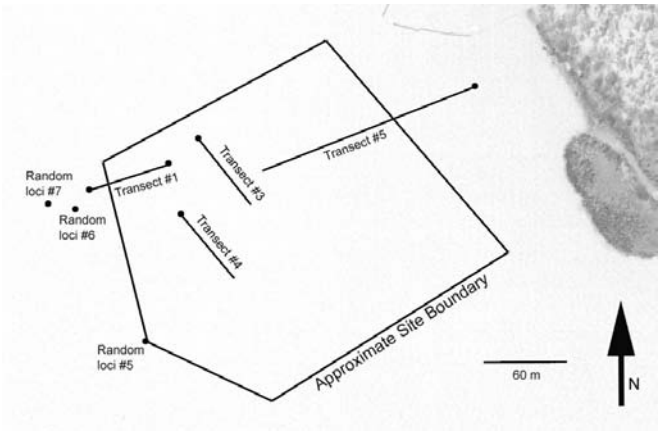

Figure 5. The site, showing approximate site boundaries, transects and random loci.

collection, although these may have been stored elsewhere. The collection included 13 bases that were snapped at or near the haft.

Discussion

Previous analyses of the distribution of Paleoindian artifacts in Florida found a robust correlation between the number of artifacts and water bodies, i.e., significantly more Paleoindian artifacts are found in or adjacent to rivers and lakes than are found in uplands (Dunbar 1991; Neil 1964; Thulman 2006; Waller 1970). Dunbar's (1991) work demonstrated that most of the artifacts were found in or near water bodies west of the central Florida ridge, but later work by Thulman (2006), using somewhat different criteria[2], identified a previously unrecognized Paleoindian presence in the Atlantic watershed. Thulman collected data on 744 Middle Paleoindian points (unfluted lanceolates with ground bases) from public and private collections from the north-central Florida peninsula, a region generally bounded by the Chipola River, Tampa Bay, Atlantic Coast, and Florida-Georgia border. Eighty-one (11 percent) of the points were from the St. Johns River (n=55), its tributaries (Oklawaha [n=6] and Silver [n=5] rivers) or nearby waterbodies (Crescent Lake [n=19]). While this represents only about one-tenth of the entire assemblage, the percentage compares favorably with that of Middle Paleoindian points in the Aucilla-Wacissa River basin (9 percent), Chipola River (8 percent), and Suwannee River (11 percent); the bulk (30 percent) of the river-associated points examined by Thulman were from the Santa Fe River (30 percent). Thus, while a clear concentration of Middle Paleoindian activity was in the Santa Fe River (downriver from River Rise to the confluence with the Ichnetucknee River), there seems to have been a relatively broad but even distribution of Paleoindians across the region, concentrated in several stretches of these rivers: northern Lake George in the St. Johns, the lower Aucilla and Wacissa rivers, the Chipola River below Marianna, and in the Suwannee River between the Withlacoochee River and Santa Fe River confluences.[3]

Paleoindian site distributions generally follow the pattern of occurrence of individual diagnostic points, although larger sites have not been found in locations with the highest concentrations of individual artifacts. Three large Paleoindian sites have been recorded: Harney Flats in Temple Terrace near the Hillsborough River (Daniel and Wisenbaker 1987), Goose Pasture near the Wacissa River, and Lake George Point (Figure 1). The excavated portion of Harney Flats is the only site not significantly disturbed by private collectors. Smaller sites discussed below include Helen Blazes (Edwards 1954) on the upper St. Johns River and Bolen Bluff (Bullen 1958) adjacent to Paynes Prairie (Figure 1).

Based on a reconstruction of late Pleistocene water availability, Thulman (2009) found a correlation between high probability sources of available water and numbers of Middle Paleoindian (Suwannee-age) points. Although the highest probability for water availability and the greatest number of points was in the Santa Fe River, the segment of the St. Johns River from the northern part of Lake George through the Oklawaha River confluence also was determined to be a high probability locale. The Lake George Point site is within this area. Other high probability locations for surface water in the St. Johns watershed include the lower reaches of the Oklawaha River (much of which is submerged below the Rodman Reservoir) and Silver Springs. Locations with a moderate potential for surface water include the southern end of Crescent Lake and portions of the St. Johns upriver from Alexander Springs (Thulman 2006, 2009). Thulman (2009) did not analyze the surface water potential in the area around Lake Helen Blazes, because no points from this area were include in his data. However, based on the reconstruction of surface water availability downriver in the St. Johns River in and around Lake George, it is likely that the area around Lake Helen Blazes followed the general pattern in the river of reliable surface water in scattered locations.

The Lake George Point and Helen Blazes sites are on the edges of wide, flat-bottomed basins (Figures 2 and 3). While the vegetation in these basins during the Middle Paleoindian period is unknown, given the much drier conditions during that time, they could have been dry savannahs that provided an unobstructed vista. This choice of site location is not particular to the St. Johns; Bolen Bluff and Harney Flats also occupy similar landforms. Moreover, none of these sites occupies the highest vantage point in the area, rather they are located at a lower and closer vantage point to the basin proper. It seems likely that the Lake George Point and Helen Blazes sites were chosen to facilitate hunting animals foraging in the wide, flat landscapes in Lake George and the St. Johns Valley. These locations on the St. Johns must have been a powerful draw to Paleoindians, since their chert resources were distant, unlike at Bolen Bluff and Harney Flats, where chert crops out locally.

Conclusion

Previously, the absence of a robust Paleoindian presence on the eastern side of Florida was explained by the lack of accessible chert outcrops (e.g., Dunbar 1991), but it now appears that the region was attractive to Paleoindians despite the absence of chert. The Lake George Point site and isolated finds in Crescent Lake indicate this prior interpretation was based on incomplete data. Perhaps the St. Johns River sites were part of a larger Paleoindian territory that included the quarries in Marion and Alachua counties, or perhaps there are quarry sites in now-inundated sections of the lakes and the St. Johns River. Resolution of that question will require further work.

Paleoindian archaeology in Florida holds great promise for supplementing our understanding of the organic artifacts from that time period. The USGS cores show that organic preservation in several areas of Lake George is widespread and the remains from the Page-Ladson site (8JE591; Webb 2006), Windover (8BR246; Doran 2002), and other Middle Archaic burial sites in Florida (Beriault et al. 1981; Wharton et al. 1981) demonstrate that wood, fabric, and other delicate artifacts can be preserved in Florida waters for millennia. Lake George and other water bodies in the area may present the best opportunity for finding organic remains of Paleoindian age.

The Lake George Point site itself may be a lost opportunity for Paleoindian studies in Florida and the broader Southeast. Hidden from sight and mind, the St. Johns Paleoindian sites have eluded archaeologists until recently because they are totally inundated and located in places few people have bothered to explore. One reason may be the potential threat of animals such as alligators and alligator snapping turtles. At least one collector was bitten by a large alligator while collecting in Lake George. It is possible that portions of the site are preserved in deeper water, which is not easily accessible by collectors, and other unrecorded sites exist in the lake, but exploring those areas will take a more intensive effort and much better lighting.

Notes

1. The Isolated Finds program was instituted by the Bureau of Archaeological Research in an effort to gather information on the private collection of artifacts in freshwater, submerged state-owned lands, like navigable rivers. Collectors were supposed to report artifacts on a form that was submitted to the Bureau. The program ended in 2007, and presently it is illegal to collect artifacts on all state-owned lands.

2. Dunbar found 70 percent of his Paleoindian artifacts in these water bodies, but his totals included fluted and unfluted lanceolate points, diagnostic non-point artifacts (such as ivory shafts), and published site reports where the artifacts could not be examined. Thulman used only unfluted lanceolate points that he could examine.

3. The details of the artifact distribution, including the possible biases, are discussed at length in Thulman (2006, 2009).

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