

**Potential Locations for Primitive Campsites,
Cumberland Island National Seashore**

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Abstract

A series of potential locations for new primitive campsites were investigated on Cumberland Island National Seashore, Georgia. Of the possible sites, three were subjected to field evaluation for vegetation, soil density, water levels, fauna, wilderness character, and archaeologic and historic resources. Of the three sites, a location on Roller Coaster Trail south of South Cut Road best met the criteria for establishing a new campsite. This site could potentially be named Sweetwater. The potential camping areas at Terrapin Point are too close to known and possible archeological sites and will also tend to divert traffic along the Main Road. The potential site at Long Point is suitable, but somewhat smaller than the Sweetwater location, and presents some problems with drainage. The Long Point site would probably also require some minor rerouting of trails and a road closure.

Freshwater is a potential problem at all the locations, and establishment of pumps is probably necessary to prevent trampling damage and fouling of water sources in freshwater wetlands. Opening of the Sweetwater site, and possibly the Long Point site would help to divert backpackers from the Main Road, thus reducing backpacker encounter with vehicles.

Introduction

The 1984 General Management Plan for Cumberland Island National Seashore stated that "four sites in the mid-northern portion of the island will be designated primitive campgrounds. Use will not exceed 80 persons at any one time and actual campsites will be equitably disbursed and their use periodically rotated to insure minimal impact on the natural environment and the human experience." Congress has designated 8,840 acres of land as legal wilderness, and 11,718 acres as potential wilderness. The wilderness area includes most of the park lands north of Stafford.

At present, the park has three primitive campsites located in the wilderness area of the park. These sites have established limits of 20 person per campsites (total 60 persons per night). Thus an opportunity exists for identifying an additional site(s) in the wilderness area to accomodate up to 20 persons.

In reviewing present wilderness use patterns on Cumberland Island, park managers and research staff have identified a number of concerns about present campsite placement:

- 1) Bratton (1986) found almost all hikers traveling to the wilderness area from Sea Camp were likely to encounter vehicle traffic on the main road. Data collected by Jim Absher indicate vehicle encounters are also frequent on the ocean beach. Vehicles are less frequent on the Main Road between Plum Orchard and Brickhill than further south, but a "wilderness" backpacker is still likely to encounter motorized vehicle traffic when traveling to Brickhill.

- 2) Although most of the groups hiking in the wilderness are small, one to three people, a significant portion of the total hikers is large groups of 10 or more. Many of the small parties prefer not to share sites with large groups (due to increased noise and spatial conflicts). Due to the limited selection of sites, and the present site capacities of 20 people, however, small groups and large groups frequently camp in the same site. Crowded sites detract from the wilderness experience.

- 3) Brickhill Bluff campsite is visible from the main road. Wilderness campers thus can see and hear motorized vehicles while in camp. When a vehicle passes at night the headlights illuminate the hikers tents.

- 4) Many backpackers prefer a campsite near the ocean, since swimming, sun bathing, and beach walking are important hikers activities. The distance of Brick Hill and to a lesser extent, Yankee Paradise, from the Atlantic, reduces their attractiveness to long distance hikers. In addition, Brickhill Bluff has dense populations of insects ("no-see-ums") at certain times of the year.

- 5) Hickory Hill and Yankee Paradise are very close to each other. This concentrates hikers in the southern part of the wilderness area.

6) When Stafforrd Beach campsite is full, backpackers wishing to camp near the ocean overflow to Hickory Hill and, if necessary, Yankee Paradise. Many of these campers desire an "ocean" or "beach" experience rather than a wilderness experience, yet they camp with "wilderness" oriented backpackers.

These concerns indicate there is a need:

1) To provide more isolated opportunities for small groups and "wilderness" oriented hikers, and reduce inter-group conflicts.

2) To provide "wilderness" hikers with a site or sites away from the main road where vehicle traffic will continue as long as there are retained rights and inholdings on the Island.

3) To provide primitive campsites with ocean beach access.

The purpose of this report is to review potential locations for new campsites which would meet these concerns and increase the number of wilderness site users to 80 per night without causing significant environmental damage.

Criteria for campsite placement

The location of potential campsites on Cumberland Island must be based on selecting for positive aspects, such as proximity to the beach, and avoiding negative ones, such as possible environmental degradation. The following were considered desirable site attributes:

- 1) Proximity to the ocean beach
- 2) Access via interior trails rather than the main road
- 3) Access via established trails
- 4) Proximity to possible hiker goals (See Table 1)
- 5) Vegetation and soils resistant to trampling
- 6) Shade
- 7) Good drainage
- 8) Proximity to natural water source
- 9) Distance of two miles (preferably more) from an established site
- 10) Aesthetic surroundings
- 11) Seclusion
- 12) Adequate room for camping

Table 1: Possible wilderness hiker goals

I. Long distance hiking goals (I made it to...)

1. Long Point
2. Lake Whitney
3. Cumberland Wharf, Terrapin Point
4. Table Point

II. Exceptional natural features

1. Lake Whitney
2. Christmas Creek and marshes
3. Long Point
4. Sweetwater Lakes
5. Lake Retta
6. Willow Pond
7. Table Point marshes
8. Abraham Point marshes
9. Ashley Pond - Johnson Pond
10. The 1981 burn
11. Terrapin Bluff
12. Whitney overflow
13. The northern dunes
14. Plum Orchard pond
15. The sloughs

III. Historic features (not restricted access under retained rights)

1. Plum Orchard area and mansion
2. Brickhill
3. The Duck House
4. Cumberland Wharf
5. Black Settlement and church
6. Middens at various locations
7. High Point Cemetery

The following were considered negative site attributes:

- 1) Possibility of visual or auditory intrusion from a vehicle on the road
- 2) Rare species or sensitive areas nearby
- 3) Easily eroded surfaces, such as dune ridges, nearby
- 4) Potential for sanitation problems
- 5) Existing high use by hikers
- 6) Very close proximity to a potential hiking goal , or possible interference with day hikers
- 7) Site liable to heavy insect populations
- 8) Proximity to highly flammable vegetation
- 9) Potential for seasonal flooding
- 10) Close proximity to inholdings or retained right property
- 11) Close proximity to historical and archeological sites
- 12) High visibility to hikers not camping at the site

A map of Cumberland north at the wilderness boundary was constructed which deleted wetlands, areas of flammable scrub, road corridors, ecologically fragile areas, areas around historical structures, and areas within 500 m of inholdings or retained rights from consideration. Areas south of Duck House Road were considered adequately covered by existing campsites (i.e. Hickory Hill). (Figure 1, at the end of this document)

Several areas for consideration were identified, these included:

- 1) Most of Terrapin point
- 2) An area along the underground power line right of way north of Candler and North Cut Roads
- 3) An area along Roller Coaster Trail south of South Cut Road
- 4) An area along Killman Field Trail north of South Cut Trail
- 5) An area along Oyster Pond Trail, north of Lost Road
- 6) The area between Kings Bottom Trail and Rayfield Trail
- 7) The shore of Table Point, particularly the east side.

These sites were inspected in the field. Four sites (#1,2,3,4) were considered good potential locations and three of these were subject to more detailed analysis (#1,2,3). The Oyster Pond (#5) area was dropped due to poor access to ocean beaches. The area around Killman Field Trail (#4) was dropped because the vegetation is very similar to the area south of South Cut Road (#3), and the latter has had better beach access. Kings Bottom (#6) was considered too close to Yankee

Paradise, and Table Point (#7) was considered a potential location but less attractive for long distance hiking than #1,2, or 3. Both Table Point and Terrapin Point is further north. Site #1 is hereafter called Terrapin Point. Site #2 is called Long Point, and site #3 is called Sweetwater Lakes. (See Figure 1 for site locations). Table Two evaluates possible names for campsites in these areas.

Description of Potential Sites

Each potential site was surveyed for vegetation composition using 20 x 40 m monitoring plots in areas thought to be probable locations for camping. All woody plants one cm or greater in diameter at breast hight were indentified by species and dbh. A series of 10 2 x 2 m plots was laid on alternate sides of the 40 m center line. All woody plants in each 2 x 2 quadrant were recorded by species, percent coverage, and stems in each in each of eight size classes. The plots were marked with a concrete bench mark and a brass cap at the center of one end and by six aluminum tree tags marking each corner and the ends of the center line. The details on the sampling scheme and the data sheets will be made available in a publication on deer grazing and browsing.

The sites were surveyed for ungulate activity in April and May, 1986 and were surveyed for birds and wildlife activity in August, 1986. Soils were evaluated during site visits and by using soil maps for the park. At the Sweetwater Lakes site, additional transects were added. Soil penetrometer readings were taked at the proposed site and compared to penetrometer readings from established campsites.

The sites were inspected for middens and remains of historic structures. The evaluation included visits to nearby wetlands and water sources. A site inspection for standing water was made during March, 1987.

Table 2: Possible names for new sites (based on nearby landmarks)

I. Site South of intersection of South Cut Road and Roller Coaster Trail

- A. Sweetwater
- B. Sweetwater Lakes
- C. South Cut
- D. Roller Coaster
- E. Whitney Lake

Preferred alternative A.

This name implies pleasant surroundings and is short to write on permits. "South Cut" Road is a recent feature. "Roller Coaster" may not give the correct impression about the site. "Whitney Lake" is actually some distance north of the site and may confuse hikers who may try illegally to camp at the lake. "Sweetwater Lakes" may also be misleading due to the lack of large lakes near the site.

II. Site North of North Cut Road, along the power line right of way

- A. Cedar Dock
- B. Long Point
- C. North Cut
- D. Christmas Creek
- E. Candler Road

Preferred alternative B.

Alternatives "Cedar Dock" and "Christmas Creek" are both acceptable since they identify traditional features of the area. "Long Point" is probably preferable, however, because it indicates the campsite is on the northern most point of the island. There may however be some confusion with the beach at Long Point and hikers will need to be well directed. "North Cut" and "Candler Road" strongly suggest development for vehicle use.

Table Two (cont.)

III. Site at Terrapin Point

- A. Terrapin Point
- B. Terrapin Bluffs
- C. Cumberland Wharf
- D. Cumberland River
- E. Abraham Point

Preferred Alternative A or B

"Terrapin Point" and "Terrapin Bluffs" indicates the site is on the water and suggests a long walk. "Abraham Point" is also suitable although less geographically accurate since it refers to a point in the marsh. "Cumberland Wharf" is in decay and may imply a location which is unsafe for visitor use. Many visitors will be confused about the location relative to the Cumberland River, so this name is of low desirability.

Site locations

Sweetwater - The best area for the site begins south of South Cut Road, along an unmaintained trail (an old road bed) that extends from the South Cut to Roller Coaster Trail. The potential area for the site extends about 800 meters south to the edge of the wetlands surrounding Roller Coaster Trail. The site may be 500 meters or more in width.

Long Point - The site begins about 100 meters north of the intersections of Cedar Dock Road (the power line right of way) and Candler Beach Road. The site should begin past the first small "fossil" dune ridge. It may extend as far as 1200 meters to the north of Candler Beach Road, in order to encompass a second more remote stand of oaks. The site extends for the width of the oak forest.

Terrapin Point - The site could begin 200 meters west of the main road at either end of Terrapin Point. Due to the large midden on Terrapin Point itself, the point should be restricted from camping. Two zones marks in Fig. 1 offer the best campsites in the area.

Vegetation and Flora

Sweetwater - The area of the potential Sweetwater site is occupied by evergreen oak forest dominated by live oaks (*Quercus virginiana*) and to a lesser extent by laurel oaks (*Quercus laurifolia*). Other hardwoods are present in low density, including Pignut Hickory (*Carya glabra*) and American Holly (*Ilex opaca*). The woody understory is primarily Sparkleberry (*Vaccinium arboreum*) and Rusty Lyonia (*Lyonia ferruginea*). The forest is very similar to other open oak stands in the park. There were no oaks less than 15 cm dbh in the monitoring plots, and a number of trees were 50 cm dbh or larger. The largest oak within the plots was 84 cm dbh.

The forest floor was dominated by herbs, grasses and sedges, with little palmetto present. No rare plants were located on the site.

The vegetation of the Sweetwater site is neither unusual nor very sensitive to trampling. The vegetation should withstand scattered camping as well.

The scattered clumps of palmetto and lack of dense woody understory suggests campers will be able to see each other at moderate distances across the forest floor. For this reason the area used for camping should be extensive enough to allow parties to move away from each other.

To the east of Roller Coaster Trail the site adjoins wetlands that may be easily disturbed by trampling. It is important to keep visitor use to the west of Roller Coaster Trail.

Long Point - The vegetation of the west side of Long Point is open Live Oak stands on higher ground, interspersed with wet meadows and open grasslands. The edge of Christmas Creek Marsh supports a narrow, but dense oak - buckthorn scrub thicket.

The canopy of the well developed forest at the potential Long Point site is almost entirely Live Oak. The understory is open, or near the marshes edge, dominated by buckthorn (*Bumelia tenax*). There are a few pines, primarily *Pinus elliottii*. Despite its low diversity, the forest is very scenic. The oaks are of moderate size with low spreading branches. The largest oaks in the plots was 81 cm dbh, but a more typical size was 20 to 45 cm dbh.

The herbaceous understory directly under the dense oak canopy was very low in cover. Where the canopy opens, however, herbs and grasses intrude forming a meadow between the oak groves. No rare plants were found.

The oak groves can withstand light use and low density camping should have little impact on the flora. The major problem here is the small size of the oak stands. There may be some tendency for campers to concentrate in the same areas, therefore the site needs to be large enough to include several groves of oak.

Terrapin Point - Two vegetation plots were placed too near Terrapin Point Trail to the north of Terrapin Point and three were placed to the south in the area of Abrahams Point. The two northern plots were dominated by Laurel Oaks with Live Oaks, American Holly, and Southern Red Cedar (*Juniperus salicola*). The oaks were of moderate size, with the largest measuring 70 cm dbh. The woody understory was dominated by yapon (*Ilex vomitoria*). Cover of the herb layer was low.

The three sites south toward Abrahams Point were also open hardwoods but much more diverse. Aside from oaks and red bay (*Persea borbonia*) there were a variety of other hardwoods and softwood species, including Sabel palmetto, red cedar, and hackberry (*Celtis laevigata*). The woody flora is relatively diverse, although not unique. The largest oak was 88 cm dbh. The understory was variable, some areas had patches of saw palmetto (*Serona repens*) and some supported low cover of scattered herbs and seedlings.

The forest of both sites can withstand moderate use. Room for camping to the north of Terrapin Point is restricted by shrubby areas and the presense of the high bluff. Site use should thus be kept low to prevent vegetation damage.

Soils

Sweetwater - The Sweetwater site is primarily Leon fine sand (0 - 2 % slope). This is the same soil on which Sea Camp campground is located. The site is very level and should take moderate trampling. Leon soils are often poorly drained but drainage in this area appears to be adequate.

To the east is an area first of wetlands and then of unstable dunes. It is important to prevent visitors from trampling these fragile sites. Fortunately, the wetlands between the potential campsite and the beach are impassable enough to discourage foot traffic. A sign indicating beach access via South Cut Road should prevent problems.

Long Point - The west side of Long Point is primarily Duckston Sand (2% slope) mixed with unstable dunes (to the east) and Fripp - Leon sand complex to the south (2 - 15% slope). There are indeed some old dune ridges at the south end of the site that may be prone to erosion. The Duckston Sand tends to be poorly drained, so only sites with oak forest cover will be suitable for camping. This site can absorb less use than Sweetwater Lakes because of seasonal high water tables, and the small dune ridge at the south end of the site. Because of poor drainage sanitation sites are likely to be in the woods or areas along Cedar Dock Road, again limiting the carrying capacity of the site.

Terrapin Point - The western rim of Terrapin Point is primarily Lakeland Sand (0 - 8% slope). These soils are deep and excessively drained. The area along the Terrapin Bluffs is dissected by small drainage ways. The bluffs themselves are unstable with eroding faces. Although the ridge should tolerate light camping, the bluffs could be further eroded by hikers. A short maintained trail to the shore of the Cumberland River could help prevent bluff erosion. Again visitation should be light enough to prevent development of "manways" and "reroutes".

Elevated Water Levels

Sweetwater - An inspection of this site during March 1987, when water levels were elevated enough to flood the eastern end of Willow Pond trail and to flood the inter-dune grasslands, indicated the proposed campsite itself was dry, with no pools of surface water.

The entrance to the site from the west (South Cut Trail to the Old Killman Field Road) was dry. There were, however, flooded patches on Roller Coaster Trail. The small pond just to the east

of the site was full and looked very attractive, framed by palmetto and dried grass.

Long Point - During the same time period portions of the Long Point site did develop scattered pools of water. The lower oak grove was dry, except for the bed of Cedar Dock Road. The wetlands and inter-dune areas to the east were flooded.

The stand of oaks about 400 meters north of Candler Beach Road had some flooded areas. The stand of oaks, about 800 to 1200 meters north of Candler Beach Road had a few pools of water in depressions but was largely dry.

The most serious problems at this site during high water is that Cedar Dock Road floods with a area of 2 to 10 cm of water. Since hikers will tend to make reroutes of their own around wet areas, a small trail to the west of the road may be necessary to allow access.

Portions of all the roads and trails leading to the site had large puddles including Candler Beach Road and North Cut Road.

Terrapin Point - Terrapin Point is a bluff and neither the potential camping site northeast of the point nor the site southwest of the point had any standing water. Terrapin Point Trail was also clear. The main Road south of Terrapin Point Trail had several large puddles.

Soil Density and Compaction

Penetrometer readings were taken at both existing wilderness campsites and the proposed campsites. Trampled areas at existing sites did show some signs of compaction, with average resistance in kg/cm^2 varying from 1.70 to 2.0. The areas around these sites varied from 1.35 to 1.80 (Table 3).

Of the proposed sites, Long Point already had relatively dense soil, probably due to the youth of the soil and poor development of surface organic horizons (Table 4). One of the plots averaged 1.70 kg/cm^2 and one averaged 1.80 , both high readings. Horse trampling may also play a role in this. The Sweetwater site had soils quite comparable to those of the soils near existing campsites, the average reading ranging from 1.25 to 1.65 kg/cm^2 . These soils may also be slightly compacted due to hog rooting and past grazing. Terrapin Point had "lighter" soils than the other sites, averaging 1.2 to 1.25 kg/cm^2 . This indicates this area maybe somewhat more liable to disturbance by trampling than other areas, and relatively more trampling induced change is likely to occur with each camping party. Monitoring of trampling impacts is therefore very critical to maintaining the long term health of this site.

Table 3: Penetrometer Readings for existing campsites

<i>Existing sites</i>	<i>Resistance in kg/cm²</i>	
	<i>Average of 20 readings</i>	<i>Maximum of 20 readings</i>
<i>Hickory Hill</i>		
Sign Area	2.40	2.75
Tent Area	1.80	2.25
Tent Area	1.90	2.50
North Edge	1.35	1.75
South Edge	1.60	2.25
<i>Yankee Paradise</i>		
Sign Area	2.00	3.00
Tent Area	1.70	3.75
Tent Area	1.70	2.25
North Edge	1.60	2.00
South Edge	1.80	2.50
<i>Brickhill</i>		
Pump Area	1.70	3.00
Shore	1.90	3.50
Shore	1.70	4.25
Sign Area	2.10	3.00
Tent Area	1.50	2.25
North Edge	1.65	3.00
South Edge	1.50	2.00

Table 4: Penetrometer readings for proposed camp sites

<i>Proposed Sites</i>	<i>Resistance in kg/cm²</i>	
	<i>Average of 20 readings</i>	<i>Maximum of 20 readings</i>
<i>Sweetwater Plots</i>		
C1	1.25	
C2	1.50	2.25
C3	1.55	2.25
C4	1.40	1.75
C5	1.65	3.50
<i>Long Point Plots</i>		
C6	1.70	2.75
C8	1.80	3.25
C9	1.45	3.25
C10	1.30	2.00
<i>Terrapin Point Plots</i>		
C11	1.20	2.50
C12	1.25	2.00
C13	1.20	2.50
C14	1.20	2.00
C15	1.20	1.75

Fauna

Sweetwater -

On August 17 and 18, 1986 the following birds were observed in the Sweetwater area:

Carolina Chickadee
Barn Swallow
Red - Bellied Woodpecker
Summer Tanager
Red - Eyed Vireo
Yellow - Throated Vireo
Acadian Flycatcher
Eastern Wood Peewee
Tufted Titmouse
Black Vulture
Cardinal
Painted Bunting
Northern Parula
Yellow - Throated Warbler
Black and White Warbler

Other vertebrates seen include: armadillo, white-tailed deer, grey squirrels, green anoles, fence lizards, and blue-tailed skinks. Signs were also seen of feral horses. The Sweetwater Lakes site has a history of rooting by feral hogs. The soils have been severely disturbed in the past.

Long Point -

On August 19, 1986 the following bird species were observed in the Long Point area:

Cardinal
Carolina Wren
Great Blue Heron
Chimney Swift
Red - tailed Hawk
Carolina Chickadee
Summer Tanager
Black and White Warbler

Eastern Wood Peewee
Turkey
Yellow - Throated Warbler
Red - Bellied Woodpecker
Downy Woodpecker
Northern Parula

Other vertebrates seen in the area included armadillos, white-tailed deer, garter snakes, and black racers. Signs were also seen of raccons and feral pigs.

The area is heavily used by feral horses moving out off Christmas Creek Marsh. On every visit by the investigators there were horses in or near the site.

Terrapin Point -

On August 20 and 21, 1986 the following bird species were seen in the site area of Abrahams Point - Terrapin Point:

Pileated Woodpecker
Carolina Chickadee
Carolina Wren
Barn Swallow
Green Heron
Yellow - Throated Warbler
Belted Kingfisher
Great Blue Heron
Red - Bellied Woodpecker
White - Eyed Vireo
Blue Jay

Other vetebrates seen in the area included: armadillos, raccons, and feral horses. Signs were seen of white-tailed deer and feral pigs. In all three sites feral horses are frequent in the area and have established several trails.

The bird obseervations were made at such a date that although the species composition was nearly the same as in the earlier summer, some migration had begun, thus altering the species composition somewhat.

All three sites contain some trees with suitable cavities for nests or dens. However, none

were observed to be in use.

Other birds which very likely use all three areas either during the summer or winter include:

Turkey Vulture
Northern Harrier
Yellow - Billed Cuckoo
Chuck - will's - widow
Common Nighthawk
Common Flicker
Great - Crested Flycatcher
Eastern Phoebe
Purple Martin
Fish Crow
Brown - Headed Nuthatch
Mockingbird
Grey Catbird
Brown Thrasher
American Robin
Hermit Thrush
Blue - Gray Gnatcatcher
Ruby - Crowned Kinglet
Cedar - Waxwing
Yellow - Rumped Warbler
Pine Warbler
Boat - Tailed Grackle
Common Grackle
Rufous - Sided Towhee
Dark - Eyed Junco
White - Throated Sparrow
Song Sparrow

None of the three area are believed to be used by any endangered species with the possible exceptions of brief visit by migratory birds.

Attractivness to backpackers and wilderness character of the sites

Sweetwater - Although the appearance of the site is nothing unusual, it is located near several major attractions, including the ocean beach (about 1/2 to 3/4 mile), Lake Whitney (about 1 to 1 1/2 mile) and the Sweetwater Lakes. (Table 5).

The site is less than 4 miles from Yankee Paradise and less than 5 miles from Hickory Hill, which makes it a reasonable stop-over for the second night out. The site is accessible to strong hikers in a one day trip from Sea Camp.

One of the primary advantages of the site is its wilderness character. The best route to the site from the south is along Lost Road and Roller Coaster Trails, both very scenic, traversing isolated wetlands.

If properly placed the site should be far enough from South Cut Road so that vehicles can not be seen or heard. Traffic on South Cut is low in any case. Surrounded by forest and wetlands, the site offers considerable potential for solitude. Walking into the site should give the backpacker the feeling he or she is penetrating the wilderness, rather than remaining at the edge of it, as is the case with Hickory Hill.

The area is large enough to accomodate more than one party without conflict and should provide adequate sanitation.

Long Point - The potential Long Point site is outside the present wilderness boundary, but is near the north end of the park. It is close to the tip of Long Point and to Christmas Creek, as well as to Lake Whitney. For the long distance hikers it offers a goal at least two to three days walk from Sea Camp. The best route to follow to the site is the very scenic portion of Roller Coaster Trail that skirts Lake Whitney.

The site is not as secluded as Sweetwater Lakes. The lights of the buildings at High Point are visible from the site as are human developements in the Half Moon Bluff area. If the site begins about 100 meters from Chandler Road, cars can be heard passing, although they are not as visible as they are at Brick Hill Campsite. Hikers camped in the distant oaks (1000 m) would have more difficult beach access but would be more isolated from vehicles, and from developements.

Candler Beach Road and the road into Lake Whitney are frequently travelled by motorized vehicles, so encounters by hikers are likely over a stretch of about a mile and a half as one approaches the campsite from the south.

The Cedar Dock Road is next to or over a buried powerline, and there is evidence of power line maintenance activity, such as disturbed soil and the presence of electrical junction boxes.

In order to provide for camper safety, the Cedar Dock Road should be closed to vehicles except utility trucks. Despite the intrusion of the underground powerline and its utility boxes, a hiker can easily walk to the bank of Christmas Creek and travel around Long Point. Seasonal flooding (especially in spring) may limit hiking on Cedar Dock Road.

Terrapin Point - The potential site or sites on Terrapin Point offer easy walks to Cumberland Wharf and the Black Settlement. The site is also attractive because of its distance from Sea Camp and its spectacular views of Cumberland River.

Vehicle traffic on the Main Road can not be seen or heard from the site, but boat traffic on the Cumberland River can. The potential site in the Abrahams Point area is quite secluded, and surrounded by marshes.

A disadvantage of this site is that the best access from the south is along the Main Road to the South End of Terrapin Point Trail. Opening the site might encourage a few long distance hikers to loop up Roller Coaster, across North Cut, to Terrapin Point and then down the Main Road. This would also mean additional potential contacts between backpackers and vehicles.

Retained Rights and Inholdings

Sweetwater - This site is well away from retained right houses and docks. South Cut Road is still used by private vehicles, and there is some potential for conflict between hikers and vehicles, particularly at the entrance to the beach. This campsite location probably presents minimal potential for interactions, however.

Long Point - This site is close to High Point and would tend to bring hiker traffic by Candler Beach shelter. The shelter is a temptation to illegal camping and would need more patrol. Private vehicle traffic is frequent on Candler Beach Road, particularly in the summer. Chances for backpacker - vehicle encounters are high. An occasional backpacker might wander into private property, in the neighborhood of the campsite. Development of a trail from the campsite to the beach and better signing of retained rights areas would help to prevent conflicts.

Terrapin Point - No retained right structures are close to this proposed site. Use of the site might result in a slight increase in traffic to the Black Settlement.

Table 5: Attractions of existing and proposed campsites

Hickory Hill -

- Moderate access from the south
- Easy access to wetlands along Willow Pond Trail
- Moderate access to ocean beach
- Moderate access to Plum Orchard

Yankee Paradise -

- Moderate access from south
- Easy access to Plum Orchard
- Moderate access to Duck House, ocean beach
- Day trip to Table Point

Brickhill Bluff -

- Views of river, sunsets
- Moderate access to the Settlement
- Pump with good water

Sweetwater Lakes -

- Easy access to Sweetwater Lakes, and Lake Whitney
- Easy access to ocean beach
- Scenic interior trails system

Long Point -

- Easy access to ocean beach
- Easy access to Christmas Creek, and salt marsh
- Easy access to Long Point
- Moderate access to the Settlement

Terrapin Point -

- Views of river and sunsets
- Easy access to historic and archeological sites
- Easy access to salt marsh and to river shore

Archaeologic and historic resources

Sweetwater Lakes - There is an old field ditch line to the east of the site, but no resources were noted that visitors were likely to damage.

Long Point - The site is near a number of historic resources, but most are some distance from the site or within the retained right at High Point.

Terrapin Point - This site has a large midden which is traversed by Terrapin Point Trail. Cumberland Wharf (in ruins) is also near by. A recent investigation, by the senior author, of historic accounts suggested Fort St. Andrews may be at this location. Further field investigation produced several suspect mounds and the remains of a tabby dock to the south of Cumberland Wharf. There is a serious possibility there may be unidentified archaeological features in the immediate area of the campsite. There is already a chance of visitor abuse of known cultural resources. The midden should be off limits to camping (Brickhill Campsite, however is on a midden and the historic location of a brick kiln.) Without further archaeological investigation, it would be unwise to open a campsite on the bluff.

Special natural features

Use of both the Sweetwater and Long Point sites would increase hiker traffic in the Lake Whitney area. Although additional trampling is not likely to be a problem, hikers would be able to get to the lake earlier in the day. This might cause some additional disturbance of wading birds and needs to be monitored.

Use of the Terrapin Point site would increase hiker traffic on the shores of the Cumberland River. Again few problems are anticipated except for possible disturbance of wading and shore birds which feed on the flats below the high banks.

Potential water sources

One of the most important characteristics of a good campsite is a dependable water source. Table 6 shows potential existing natural or developed water sources for the proposed sites. All sites have natural sources within a half mile walk. Under drought conditions, however, both Sweetwater and Long Point would have to depend on Lake Whitney.

Also important to determining water sources, is the damage caused by campers drawing water and the potential risk of using the water source to the hikers. Areas around springs and lake shores will be disturbed if frequently used to obtain water. Since the water sources near the campsites are, by in large, not free flowing, they could be easily contaminated. Since trampling the shores of Lake Whitney will disturb a fragile ecosystem and washing dishes in the lake may cause local pollution, Lake Whitney should not be used as a water source. If the Sweetwater and Long Points sites are going to be opened for use, they either need artificial water sources or they should be closed during drought. The best alternative, to prevent environmental damage, is probably a pump some distance away from both the campsite(s) and from natural wetlands.

Identification of a natural water source for drinking presents potential legal and tort claim problems. This should be considered before instructing visitors to use any natural site.

If artificial sources are used, placement should be carefully made, both to allow access for testing and to properly concentrate impact from use of the source. At Sweetwater, visitors are likely to camp toward the northern and eastern portions of the site, since this is closer to the beaches. The pump should be located to the northeast of the campsite, toward the beach, or somewhat to the west of the intersection of the Old Road and Roller Coaster. This can be sampled easily and will be easy access for visitors.

Table 6: Water Sources for Campsites

<i>Present sites</i>	<i>Nearest Source</i>	<i>Distance in miles</i>
<i>Hickory Hill</i>	Sulfur spring	.8 mi
	Wetlands	.2 mi
<i>Yankee Paradise</i>	Sulfur Spring	.4 mi
	Wetlands	.2 mi
<i>Brickhill</i>	Brickhill River	.0 mi
	Wetlands	.7 mi
	Pump	.5 mi
 <i>Proposed Sites</i>		
<i>Sweetwater Lakes</i>	Wetlands to east	.05 mi
	Springs on Beach	.5 mi
<i>Long Point</i>	Lake Whitney	1.0 mi
	Spring on beach	.5 mi
<i>Terrapin Point</i>	Sulfur Spring	.5 mi
	Pump at Brickhill	1.8 -2.5 mi
 <i>Under dry Conditions</i>		
<i>Sweetwater Lakes</i>	Lake Whitney	1.2 mi
<i>Long Point</i>	Lake Whitney	1.0 mi
<i>Terrapin Point</i>	Sulfur spring	.5 - 1.2 mi
	Pump at Brickhill	1.8 - 2.5 mi

Note: All the distance measurements were made using maps, and have not been field verified.

Discussion

Of the three sites, Sweetwater has the best location, relative to diverting backpackers into the wilderness and can also withstand the most use. This site can accomodate several camping parties simultaneously and can probably be used for a long period of time with little noticable impact. If only one site is added, this is the best choice.

Terrapin Point probably should not be used until further archaeological survey data are available. There is a possibility colonial Fort St. Andrews is at or near the potential campsite location.

In terms of routing hikers, Long Point is preferable to Terrapin Point. The Terrapin area, on the other hand has more room for camping and is better drained. Neither site can carry large groups or large number of hikers. If either is opened, camping should be limited to no more than 10 people and no more than two parties a night.

Cumberland Island presently has two types of wilderness backpacker. Most hikers come for the weekend or for short trips and can not penetrate very far into the wilderness. Some of the hikers who come from outside the Georgia-Florida area, and some who are on vacation, prefer longer trips and make an attempt to get as far north as possible. The opening of one or more sites further north in the park would give the long distance hikers more options and would improve their ability to loop hike. These backpackers are not a majority of the wilderness users, however.

A possible compromise is to leave Hickory Hill and Yankee Paradise open for "short term" trips and groups wishing to see Plum Orchard or Table Point. Sweetwater Lakes could be opened with a capacity of either 20 (if large groups are to be accomodated) or 10 and two parties a night (to provide more seclusion). Although the general management plan suggests four sites, Brick Hill could be kept primarily as a large group site, while Long Point is also opened as very limited capacity site. The total number of overnight users could be maintained at 80 per night but the ceilings for individual campsites could be allowed to total more than that. This would continue to limit the number of over-night users in the wilderness, while allowing more options for backpackers of different types and giving small groups more opportunities to avoid sharing a camp with a large group.

The suggested method for managing the potential new sites is to mark camping zones in the area. A second alternative is to establish sites similar to the existing ones. If the second alternative is followed, Sweetwater should be marked to allow camping over a large area, because of the lack of screening by dense understory. If pumps are placed near the sites, they will tend to attract campers and cause a concetration of camping nearby, unless marked off limits.

Any new site established should be monitored. This task could possibly be accomplished by one of the conservation organizations interested in wilderness management. The data from this report will be available, both from the Institute of Ecology, University of Georgia, and at Cumberland Island National Seashore. After a new site is opened, monitoring should take place at least twice a year for the first two years in order to identify potential problems. After the site is well established, monitoring should be annual.

Sweetwater Lakes needs no development other than signs to mark the area. Addition of pumps would be advisable at Sweetwater and Long Point, however, to prevent damage to fragile wetlands during low water periods. If pumps are not installed (a controversial matter in wilderness), the sites will need additional monitoring and visitors will need to be advised of potential problems obtaining water.

In order to open a site at Long Point it will be necessary to close Cedar Dock Road. This can be accomplished with a simple wooden gate or barrier. Use of the camping area will eventually reduce the temptation to drive the road in any case. A short reroute trail, away from wet areas, would also be advisable, as might a direct trail to the beach.

Possible initial strategy

It is not the purpose of this report to make decisions concerning park management but rather to advise in terms of possible environmental impacts. Two possible management strategies suggest themselves, however.

Strategy 1: Open the Sweetwater site for 20 visitors per night. Wait one to two years and evaluate:

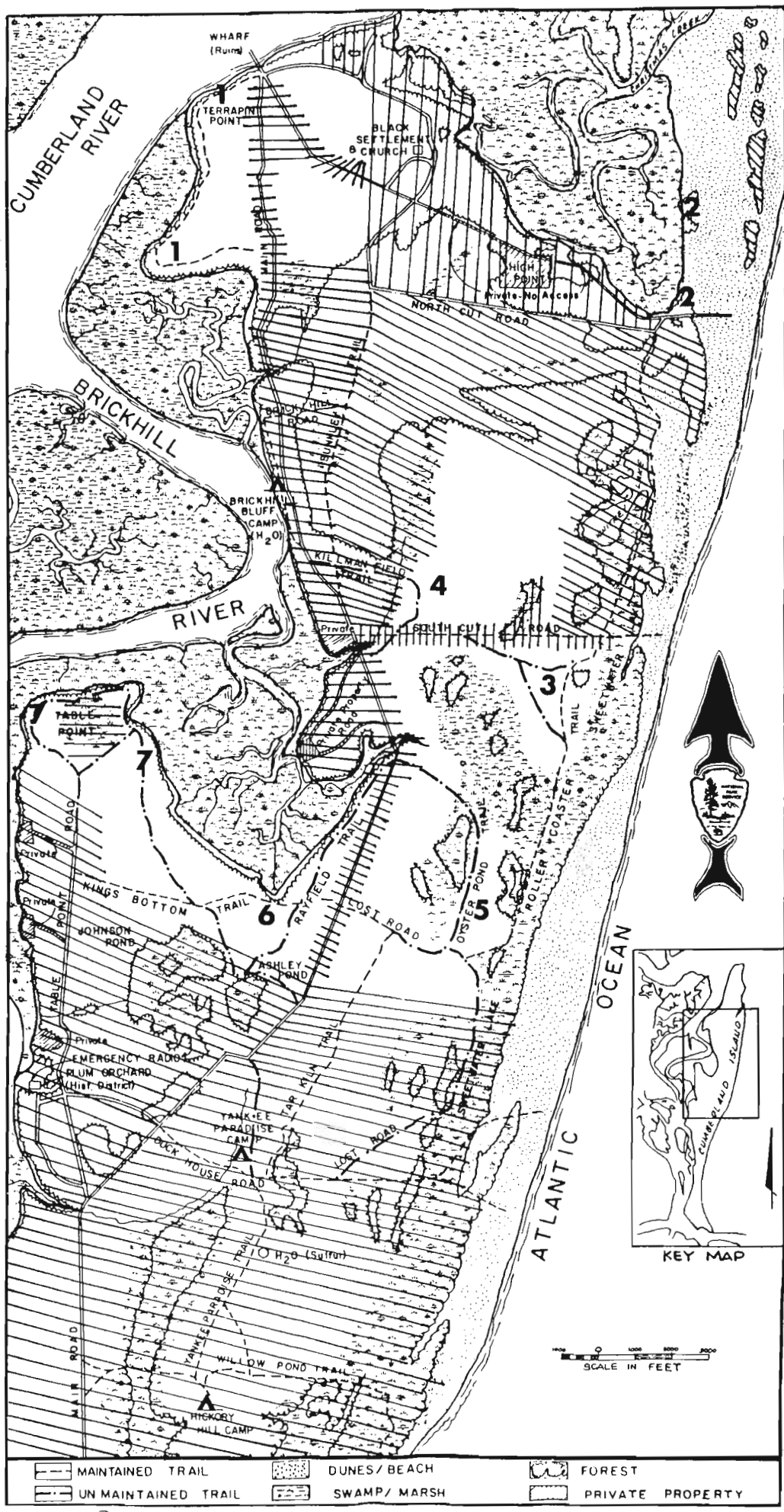
- 1) The popularity of the site
- 2) Patterns of site use
- 3) Any impacts on Lake Whitney area, particularly on wildlife
- 4) Relief of visitor-vehicle conflicts.

If the site is well used, but little environmental impact has resulted, or if the site attracts large groups, leaving no sites for primarily small parties, consider adding the Long Point site or primitive camping at one or two other wilderness locations.

Strategy 2: Open the Sweetwater site for 20 visitors a night and the Long Point site for 10 visitors a night or two parties. If these new sites prove popular, review the other sites, considering possible closures. Consider adding other remote sites for 10 visitors or two parties.

Figure 1: The areas investigated for possible primitive campsites on Cumberland Island. The cross-hatching indicates areas not considered, due to the presence of roads, highly flammable vegetation, historic resources, or retained rights. Wetland areas and dunes (marked with stiples) were also not considered. The potential camping areas are:

- 1) **Terrapin Point.** This area was surveyed in the field. The northern "1" is the potential site on the bluff, and the southern "1" is the potential site at near Abrahams Point.
- 2) **Long Point.** The northern "2" is in a live oak grove slightly over 1/2 mile from the intersection of the power line road and Candler Beach Road. The southern "2" is in the first oak grove north of Candler Beach Road.
- 3) **Sweetwater.** The potential site is in an open oak flat accessed by the "old road" and by Roller Coaster trail.
- 4) **Kilman Field.** Not investigated in the field, because Sweetwater is similar and closer to the beach.
- 5) **Lost Road.** Not investigated in the field because of lack of beach access.
- 6) **Kings Bottom.** Not investigated because of proximity to existing sites.
- 7) **Table Point.** Considered good area for camping, but not investigated in detail, since it was felt most backpackers would rather travel to the east side of the park.



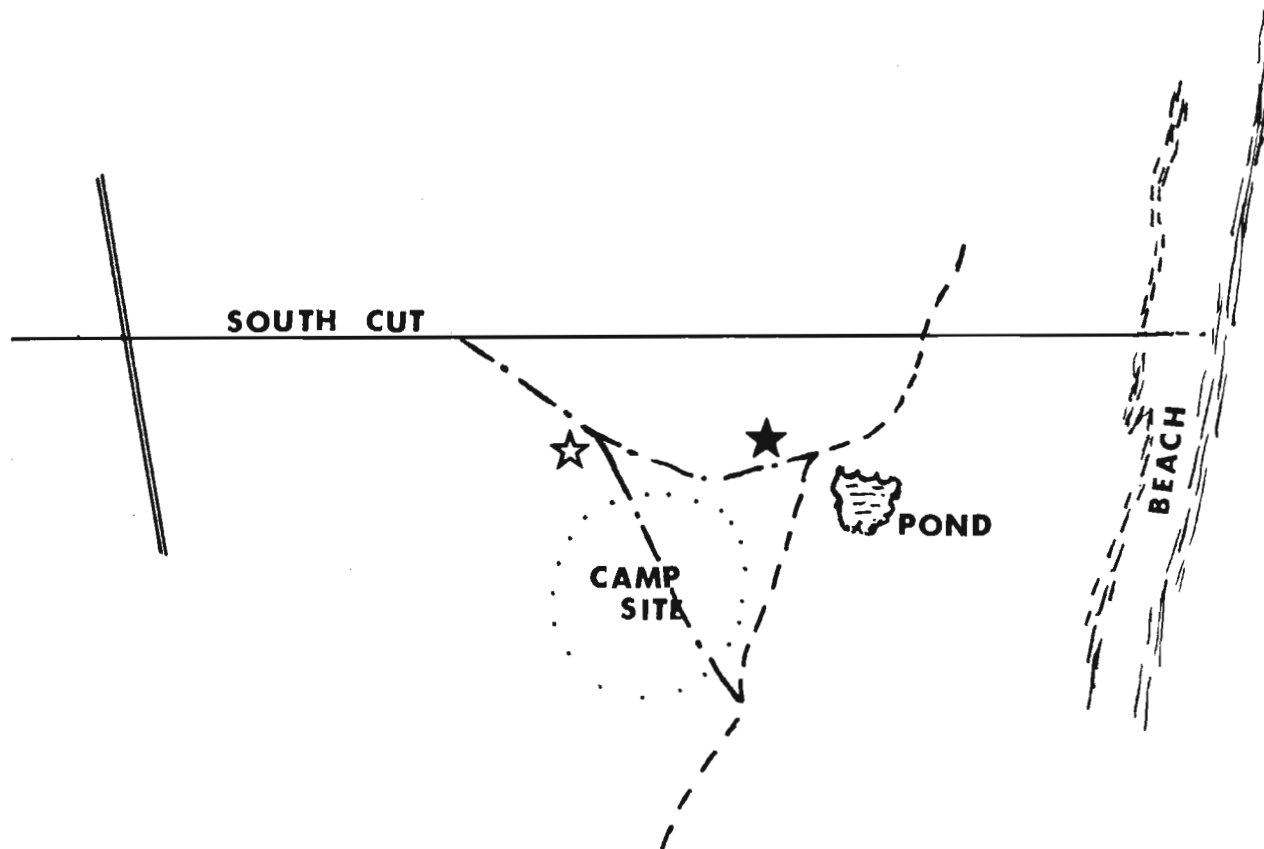


Figure 2. The potential location of the Sweetwater site. The stars are potential locations for pumps. The location for the campsite may be varied, but it should be away from Roller Coaster Trail (which is also used by dayhikers), and far enough off South Cut Road, so that vehicles can not be heard.

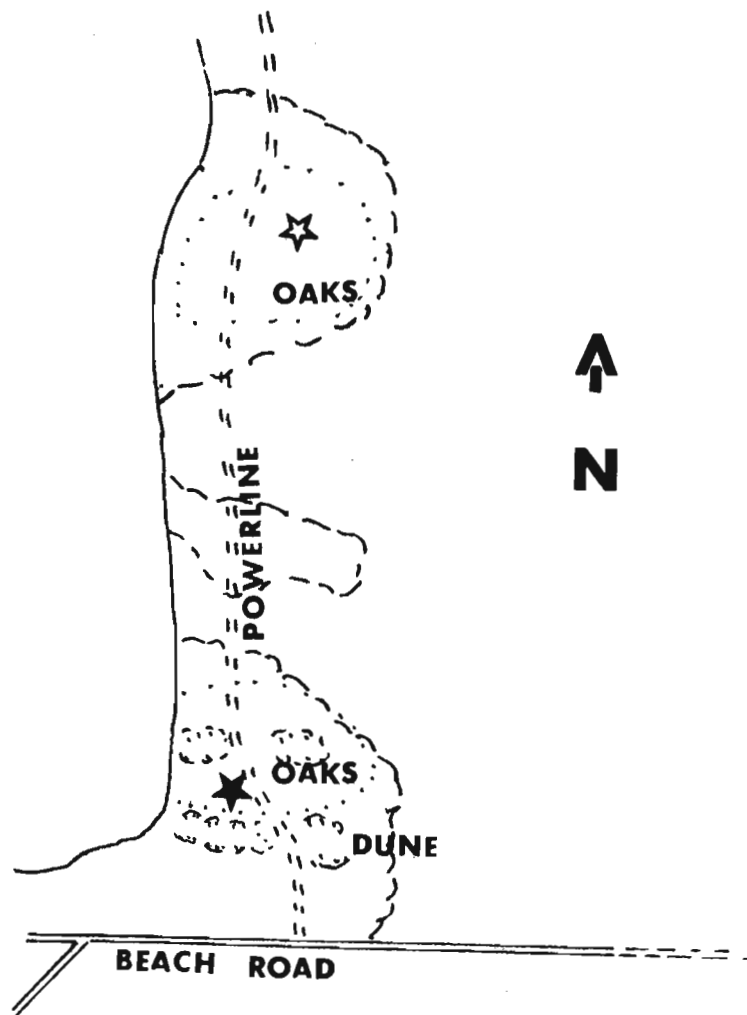


Figure 3. The potential location for the Long Point site. The site must be north of the dune line to the north of the beach road, but could be extended to the northern oak grove, which is more secluded and away from vehicles. The stars indicate potential locations for pumps. If the more northern area is used, a trail to the beach may be desirable. Note however, the meadows to the east of the oak groves are very wet and flood in the spring.