

# Chapter One: Natural Resource Planning

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As of October 2013, land owned or leased by CCPRC (both developed and undeveloped) represents 1.5% of Charleston County's total land area of 587,136 acres. Additionally, this land provides access to public beaches and waterways in some of the most populated areas of the county.

Charleston County is the third most populous county in the State of South Carolina. According to the 2010 census the county had a total population of over 350,000 people. In anticipation of future population increase, CCPRC will be prepared to provide residents with an adequate distribution of parkland. A large push has occurred over the last five years by CCPRC to acquire land to protect streams, wetlands, forests, and other resources for the future enjoyment of Charleston County residents and visitors. Since 2005, approximately 4,857 acres has been purchased by CCPRC (Figures 1-1 and 1-2). Most of these properties will remain undeveloped and with limited access until funding for facility development becomes available.

The conservation of parkland through appropriate management practices has become an integral part of CCPRC's master planning process. Appropriate natural resource planning provides for the protection and enhancement of sensitive natural resources, while also protecting the inherent monetary and intrinsic value of diverse and healthy landscapes. Resource-based planning (RBP) begins with the preparation of a natural resources inventory so that CCPRC can fully understand and appreciate a property in the condition it was acquired. RBP then requires that the maintenance, protection, or manipulation of various resources be prioritized. Plans and regulations then direct development to areas most suited for protection, ensuring minimal impact on priority natural resources during the placement, design, and engineering of new facilities.

## 1.1 OPEN SPACE PLANNING

As the population of Charleston County increases, CCPRC should anticipate growth and should continue to acquire land in areas most susceptible to development. An Open Space Analysis was conducted in 2002 to determine the parkland acreage needs for Charleston County. In determining the need for additional parkland, CCPRC's goals consisted of protecting Charleston County's natural resource base, acquiring recreational lands to meet the needs of future generations, and providing reasonable access to regional park facilities for all Charleston County residents.

In developing the Open Space Analysis, CCPRC followed the National Park and Recreation Association (NRPA) guidelines for local and regional open space to determine the need for additional parkland. These guidelines define two basic facility types appropriate to CCPRC: regional parks and special use facilities. Regional parks are typically large, passive parks a minimum of 200 acres, and preferably over 500 acres. The NRPA recommends that a park system provide 20 acres of open space per every 1,000 people. These standards do not account for inaccessible wetland areas – only highland acreage. Special use facilities include parks with water access (beach parks, marinas, fishing piers, and boat landings), bikeways, and natural/cultural/historical parks.

The Open Space Analysis (2002-2015) plan determined that an additional 4,675 acres would be needed to meet the regional parkland needs of Charleston County. Areas with greatest need for parkland were East Cooper, West Ashley, and North Charleston. It was identified that additional acres should also be acquired in other underserved parts of the County. Through the Charleston County Half-Cent Sales Tax Greenbelt Program, 4,857 acres were added to the park system between 2006 and 2013. The Open Space Analysis served as a guide during this most recent period of land acquisition.

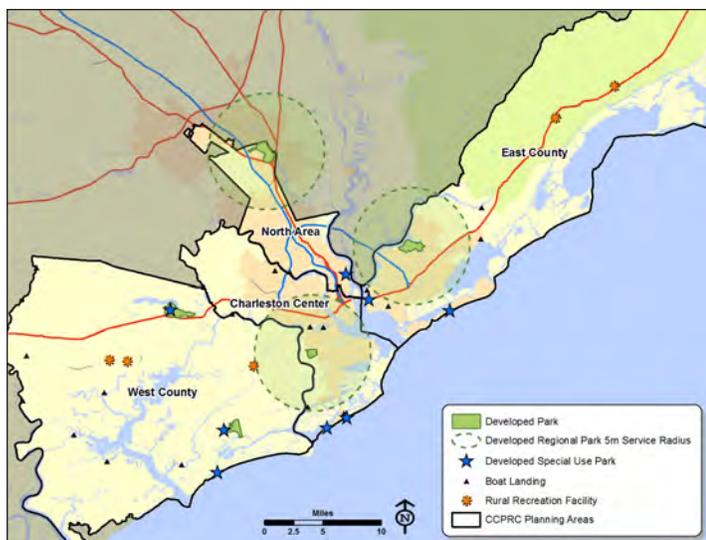


Figure 1-1. CCPRC 5-mile service radius map, pre-2005

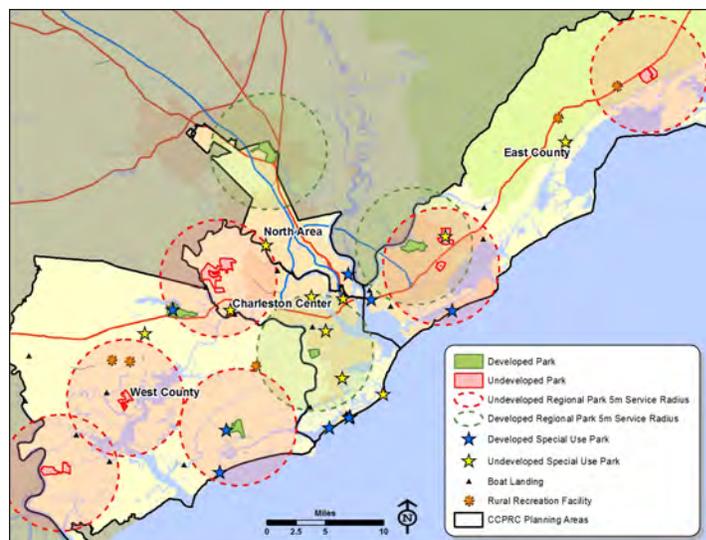


Figure 1-2. CCPRC 5-mile service radius map, post-2005

In 2013, the *Parks, Recreation, Open Space and Trails (PROST) Master Plan* (Executive Summary included in Appendix A) provided an update to the Open Space Analysis 2002-2015. The PROST Plan recommends that priorities and strategies for land acquisition should include identifying parcels adjacent to existing facilities, as well as properties providing opportunities for boat landings, beach access, trail easements, or historical sites.

The Open Space Analysis plan should be updated every ten years to adequately address the needs of the growing population, and should be reflective of emerging trends in recreational park, trail, and greenway conservation and development. This plan will be instrumental in identifying strategic land acquisition priorities as funds they become available.

*Strategies:*

1. Continue seeking opportunities to acquire additional land that would benefit the park system and Charleston County residents;
2. Identify location, amount, and criteria of lands to be conserved;
3. Identify a funding source for strategic parkland acquisitions;
4. Continue seeking public input on ways to improve the park system;
5. Designate park and private lands which are particularly sensitive to impacts from off-site development, encroachments, and public utility corridors under conservation easements and/or deed restrictions;
6. Identify other appropriate strategies for protecting designated public and private lands; and,
7. Develop master plans for undeveloped properties.

**1.2 INVENTORY AND ASSESSMENT**

Natural Resource Inventories (NRIs) are designed to contribute to a statement of the condition of park resources and involve both the compilation of existing information and the acquisition of new information. The NRI is used to develop a plan for the protection and management of these resources. An inventory should be constantly

updated as new data is collected in response to management prescriptions and park development and usage. When significant natural resources are identified at a park, a natural resource management plan should be prepared to specify procedures to monitor, maintain, and enhance the quality of those resources.

As part of the NRI, the following studies have or will be conducted on all park properties based on need:

- Boundary, Wetland, Hydrographic, Topographic, and/or Tree Surveys
- Cultural Resource Studies
- Environmental Site Assessments (Phase I)
- Ecological Baseline Assessments and Plant Community Assessments
- Threatened and Endangered Species Surveys (plants and animals)
- Natural Resource Management Plans (including Aquatic and/or Forest Management Plans)
- Land Use Plan
- Conceptual Plan and/or Master Plan

These studies have been conducted on most undeveloped park properties. A current list of completed studies is included in Appendix D. Data gathered for these various studies are often recorded spatially, using either AutoCAD or ArcGIS software. When data are available in raw, electronic format, and transferrable between these two systems, data should be uploaded to CCPRC's Geographic Information System (GIS). When spatial data are only available on print media, this information should be "georeferenced" (i.e. drawn in GIS from scanned media), and added to CCPRC's GIS. Additionally, roads and trails within parks are also to be included CCPRC's GIS. Data collected in the field by CCPRC staff or hired consultants are recorded with the aid of Global Positioning System (GPS) technology and then transferred to the GIS.

*Strategies:*

1. Document current conditions as part of the NRI so changes over time can be assessed;
2. Develop natural resource protection and land conservation priorities based on data gathered for the NRI;
3. Provide a basis for master planning and planning decisions based on resource protection and land conservation priorities;
4. Determine which parks require a site-specific NRMP;
5. Create and utilize a standard format for site-specific biodiversity reports on properties with significant natural resources;
6. Create a standard format for site-specific natural resource management plans on parklands with significant natural resources;
7. Inventorying vegetation and wildlife on an ongoing basis as part of the NRI;
8. Update archaeological information as new artifacts are; refer to the agency-wide CRMP for management guidance;

9. Identify rare, threatened, or endangered species and ecosystems as part of biodiversity assessments and incorporate in the NRI for purposes of directing management;
10. Continue to create plan maps utilizing AutoCAD and GIS as part of the master planning process;
11. Digitize existing master plans as part of the NRI; and,
12. Continue to educate and promote awareness about Charleston County's natural resources through appearances at local, state, and/or national advocacy group meetings and conferences.

### **1.3 BIODIVERSITY ASSESSMENTS AND REPORTS**

Biodiversity is the variety of all life forms on earth – the different plants, animals, protists, fungi, and micro-organisms, their genes, and the terrestrial, marine and freshwater ecosystems of which they are a part. Healthy and well-functioning freshwater, terrestrial, and marine ecosystems are important for a productive and healthy environment. Intact and well-connected ecosystems provide habitat for native plants and animals, and provide services such as clean water for drinking, and fertile soils and oceans for production.

Typically following the acquisition of a property it could take several months to several years before a master plan is created. To monitor the evolving biodiversity of our park properties, our agency conducts a baseline biodiversity assessment (BA) and prepares annual biodiversity reports (BRs). Although other park systems use a similar approach for tracking biodiversity, the BR forms used by CCPRC were developed by our agency with specific attention to the ecology of our region (Appendix E). Annual BAs and BRs build on baseline data for the various plant and wildlife communities identified on our properties, and help to track biodiversity improvements resulting from active management tasks (see *Section 3.1: Managing for Biodiversity*). Once master planning and park development begins the property should undergo continual monitoring. Photographs should be taken annually at cardinal directions at specified points (i.e. latitude/longitude) and incorporated into BRs as a means of tracking improvements/changes to the landscape over time.

#### *Strategies:*

1. Map vegetative and wildlife zones (i.e. “plant communities” [Figure 1-4]) as they presently exist throughout all the parkland with the use of GPS, GIS, and/or AutoCAD;
2. If several years pass between acquisition and master planning, update data during periodic resource inventories;
3. Use consultants to help conduct field inventories and aid in the creation of the spatial data and maps;
4. Establish and/or maintain buffers around sensitive vegetative communities;
5. Establish and/or maintain buffers around endangered species populations;
6. Educate the public and staff on the rare, threatened and/or endangered ecosystems found within the park system and how they can help preserve them through every day activities;
7. Use information gathered through the BA process to prepare annual BRs; and,
8. Consider information gathered through the BA process in the development of site-specific management plans.

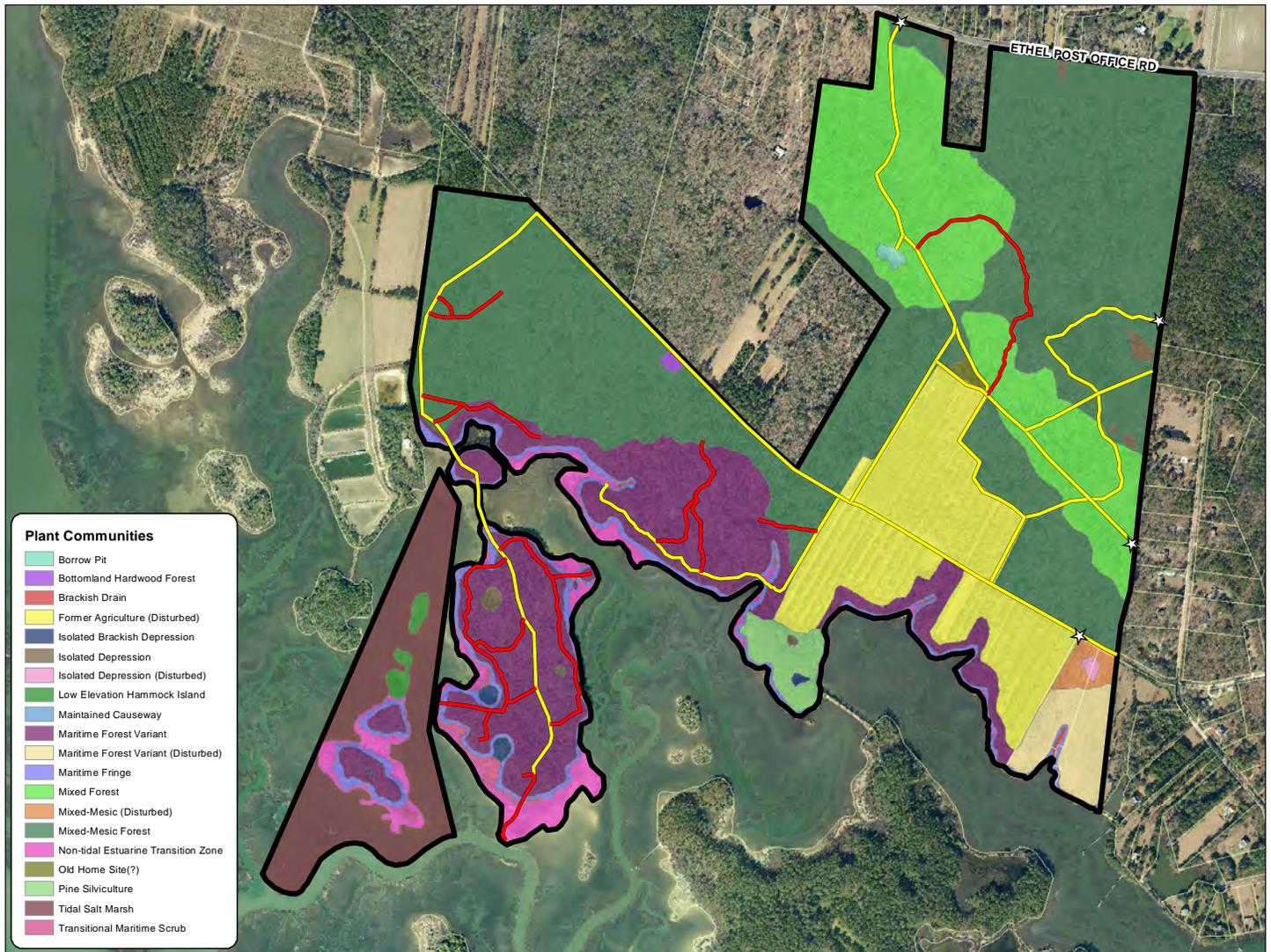


Figure 1-3. Plant communities for Meggett Future Park Site, as determined through field observations

#### 1.4 LAND STEWARDSHIP ZONING DESIGNATIONS

When integrated in GIS, data generated during field studies and other inventories can rapidly communicate areas (or “land stewardship zones”) suitable for active recreation; or alternatively, those in need of further conservation or preservation. Applied to a specific park property these zonal designations formulate a Land Use Plan (LUP) – a preliminary step to the master planning process which helps to define appropriate levels of public access, development, and maintenance. Guidelines for each land stewardship zone will also inform interim and ongoing land management practices at each property or facility. LUPs are to be prepared by CCPRC Planning staff in coordination with other divisions.

##### Activity Zone

The Activity Zone allows for constructed or developed administrative, maintenance, and recreation sites, structures, and landscapes that accommodate concentrated use by visitors and staff. Examples include park offices, maintenance areas, parking lots, picnic areas, water parks, concessions areas, maintained meadows, and

other recreation areas. These areas are fully accessible to the public and have the most intensive level of use and maintenance.

- These sites are either already developed, or are deemed to be the most suitable for development based on a site assessment.
- Impacts to the site will be minimized to the greatest extent possible, utilizing a sustainable approach to structures and site improvements.
- Historic restoration, rehabilitation, or reconstruction for interpretation or adaptive reuse of historic structures will be undertaken only in conjunction with a historic restoration plan.
- Shorelines and surface waters may be used for recreation with constraints of maintaining public safety and water quality.
- Moderate to high intensity of use and maintenance.

### Conservation Zone

The Conservation Zone includes areas having typical yet important natural and cultural resources. Examples include areas having a diversity of wildlife and plant habitats, agricultural resources, and resilient cultural sites and landscapes. These areas have limited accessibility by the public, and have a moderate intensity of use and maintenance. Management actions may include a wide range of potential recreation opportunities that are consistent and compatible with natural resource opportunities and goals. Additional site inventory and analysis may be needed prior to management activities to fully evaluate potential impacts to resources and landscape features.

- Utilize best management practices (BMPs) for forestry and other resource management activities to protect and maintain water quality.
- Provide safe, efficient, and sustainable trails and roads that minimize impact on natural and cultural resources while serving public needs and allowing visitors a variety of outdoor experiences. Moderate intensity of use and maintenance. Generally accommodates lower impact recreational activities.
- Low to moderate intensity of use and maintenance.

### Preservation Zone

This zone includes unique and highly sensitive natural or cultural resources that have special management considerations. Examples include rare, threatened, or endangered species habitats; fragile ecosystems; or archeological and cultural sites. Public access to these areas is restricted or permissible with staff supervision. Management objectives emphasize the protection of these resources from adverse impacts.

- Forest management will be utilized only to maintain or enhance resources in/from their current condition.
- Only low-impact, non-motorized, sustainable recreation will be allowed, provided that the activities do not threaten resources.
- Existing trails and roads will be evaluated to ensure compatibility with sensitive resources. New trails or roads may be constructed only after strict evaluation and determination that there are no suitable alternatives.

- Recreational use is lower-intensity and low impact. Maintenance of historic sites or restoration of natural areas may be more substantial. Recreation activities are resource-focused and must be compatible with resource preservation.

### Marine Zone

The Marine Zone designation is used for managing shoreline parks with water access, allowing for surface water activities such as swimming and boating. This designation may also help guide maintenance and management decisions within other over/underlying stewardship zones, or where the adjacent shorelines are not necessarily owned by CCPRC. The marine zone designation may also accommodate water recreation at beach areas, piers, marinas, and boat landings where land-based zoning may vary from one section of shoreline to another, but use of surface waters does not.

### Significant Feature Overlay

Each of the land stewardship zones may be supplemented with significant feature overlays that identify specific resource features identified through inventory or research, and are formally designated. The overlays will provide more precise management guidance for identified resources and will serve to maintain and protect resources, regardless of the zone in which they occur. For example, an overlay would be useful when protecting a Civil War earthwork within an actively managed forest. Other examples may include temporary zoning considerations such as nesting areas, evolving resources such as partially developed park lands, or historic sites intended for adaptive re-use.

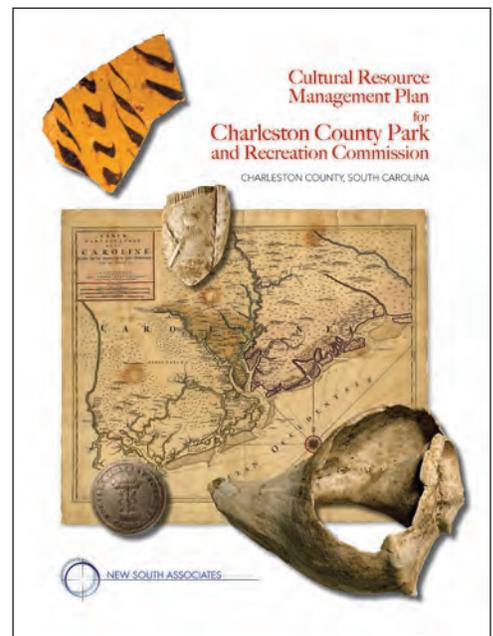
### Cultural Resources Overlay

Cultural resources are defined as the collective evidence of past activities and accomplishments of people. Buildings, objects, features, locations, and structures with scientific, historic, and cultural value are all examples of cultural resources. Specifically, these resources may include prehistoric and historic archaeological sites, historic standing structures, bridges, cemeteries, and monuments, among others. Cultural resources are finite and non-renewable resources that once destroyed cannot be returned to their original state.

Impacts to resources eligible for the National Register of Historic Places must be mitigated through excavation, avoidance, or preservation. All federal and most state agencies are required to identify and protect cultural resources on lands that they manage.

Charleston County and the surrounding region have a rich cultural history that greatly influences the historical context of the U.S., and is one of the primary reasons Charleston is recognized as a tourism landmark. It is critical that cultural resources in this region be protected to make future generations aware of past cultures and their societal contributions.

As the population expands and development increases in and around Charleston County, CCPRC should protect and properly care for the unique cultural resources of its properties. Therefore, the Cultural Resource Management



CCPRC Agency-wide Cultural Resource Management Plan, November 2013

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Plan (CRMP) should be consulted as the best management guide in the treatment of cultural resources within park boundaries.

*Strategies:*

1. Inventory natural and cultural resources of all park properties;
2. Include specific management guidelines for significant feature overlays (to be provided by consulting professionals or those groups holding conservation easements on specific properties);
3. Create LUPs reflecting appropriate land stewardship zones based on synthesized resource inventories to designate allowable future uses;
4. Consider LUPs during the development of management plans and master plans for each site;
5. Establish goals for limiting development impacts at each site, as relating to the LUP;
6. Develop planning guidelines to establish a consistent approach to park planning; and,
7. Enhance habitat quality in conservation and preservation zones, as designated by the LUP.

## **1.5 ASSESSING AND MANAGING ENVIRONMENTAL IMPACTS**

Negative impacts can occur to the environment through both naturally occurring and human-created situations. Some natural impacts can be unpredictable (e.g., earthquake, tornado, hurricanes) while others are more readily anticipated (e.g., erosion, rain/flooding). Proper management and monitoring help to mitigate or assess the impacts which may occur. Environmental impacts resulting from human activity can be foreseen and therefore prevented. This includes preventing the unauthorized use of motorized recreational vehicles and the use of improvised trail systems. These activities lead to erosion, pollution, and degradation of the park's natural resources. Park properties and trail systems must be monitored to ensure these types of activities are not present. CCPRC's working relationships with many county, state and federal agencies as well as private non-profit organizations involved with environmental issues have been greatly enhanced over the years. Additional cooperative relationships should be sought to help improve resource protection and management of all CCPRC parkland. Partnerships with agencies like SCDNR have been very important to CCPRC's natural resource management efforts. Their ability to help fund and enter some properties into programs to help strengthen our ability (i.e. dedicating Lighthouse Inlet as a Heritage Preserve) to enforce regulations has been valuable to our conservation efforts. Future work with these groups will be necessary in order to ensure we are protecting our natural resource assets to the best of our ability and preserving them for future generations.

*Strategies:*

1. Develop environmental (e.g., water, air, soil) monitoring programs and have park or project managers document natural and human-influenced environmental considerations;
2. Continue to foster and expand partnerships with similar organizations to enhance resource management and monitoring capabilities; and,
3. Organize facility-specific "friends" groups to enhance public understanding and support for the agency's resource management programs. Invite active participation in management efforts.