VI. NATURAL AND CULTURAL RESOURCE MANAGEMENT

NATURAL RESOURCE MANAGEMENT POLICY

The Division of Parks and Recreation's approach to natural resource management is directed by the North Carolina Constitution and the State Parks Act, both of which require the prudent management of natural resources. The constitution sets the overall policy by broadly defining the conservation and protection of natural resources and the acquisition of such resources as a proper function of government. The State Parks Act states that unique archaeological, geological, biological, scenic and recreational resources are a part of the heritage of the people that "*...should be preserved and managed by those people for their use and for the use of their visitors and descendants."*

The North Carolina State Parks System plays an important role in maintaining, rehabilitating and perpetuating the state's natural heritage. The natural resources of the state parks system are: high quality, rare or representative examples of natural communities; native plants and animals; geological features and landforms; water resources; and the natural processes that affect these resources. The primary objective in natural resource management will be the protection of natural resources for their inherent integrity and for appropriate types of enjoyment while ensuring their availability for future generations.

It is the Division's policy that natural resources will be managed by allowing natural environments to evolve through natural processes with minimal human influence. Natural resource management will not attempt solely to preserve individual species or processes; rather, it will attempt to maintain all the components and processes of a park's naturally evolving ecosystems. When intervention is necessary, direct or secondary effects on park resources will be minimized to the greatest extent possible. Intervention of natural processes may occur:

1. To correct or compensate for the previous human disruption of natural processes;
2. To protect, restore or enhance rare species and natural communities;
3. To protect, restore or enhance significant archaeological resources;
4. To construct, maintain, improve or protect park facilities; and,
5. To prevent danger to human health or safety around park facilities.

All park facilities will be designed, constructed and maintained to avoid adverse impacts to high quality natural communities, rare plant and animal species, major archaeological sites and other significant natural and cultural resources.

NATURAL COMMUNITIES

Community descriptions follow the *Classification of the Natural Communities of North Carolina: Third Approximation* (Mike Schafale and Alan Weakley, 1990).

Coastal Fringe Sandhill

This fire-adapted community features an open to sparse canopy of longleaf pine *(Pinus palustris),* sometimes mixed with loblolly pine *(Pinus taeda).* It is distinguished from Pine/Scrub Oak Sandhill and Xeric Sandhill Scrub by the occurrence of maritime-associated species such as sand live oak *(Quercus geminata),* live oak *(Quercus virginiana),* Darlington oak *(Quercus hemisphaerica),* yaupon *(Ilex vomitoria),* and reindeer lichen (*Cladina* sp.). Shrubs include huckleberry *(Gaylussacia sp.),* inkberry *(Ilex glabra),* wax myrtle *(Myrica cerifera),* and wild olive *(Osmanthus americanus).* The herb layer at Lake Waccamaw features wiregrass *(Aristida stricta).* At Lake Waccamaw, Coastal Fringe Sandhill is found east of the picnic area, where the Sand Ridge Nature Trail meets State Park Drive. This is a rare example in that it occurs farther inland than is the norm for this community type.

Pond Pine Woodland

Pond Pine Woodlands are distinguished from other peatland communities by the substantial pond pine *(Pinus serotina)* canopy. Other common tree species may include loblolly bay (*Gordonia lasianthus),* Sweetbay *(Magnolia virginiana),* red maple *(Acer rubrum),* and loblolly pine *(Pinus taeda).* The shrub layer is generally taller than that in High Pocosin. Commmon shrubs are swamp cyrilla *(Cyrilla racemiflora),* fetter-bush *(Lyonia lucida),* maleberry *(Lyonia ligustrina),* gallberry *(Ilex coriacea),* inkberry *(Ilex glabra),* and blue huckleberry *(Gaylussacia frondosa).* Laurel-leaf greenbrier *(Smilax laurifolia)* is common, and there is little herb layer due to the dense woody cover. At Lake Waccamaw State Park, Pond Pine Woodland is found between the picnic area and the lake.

Natural Lake Shoreline

This community type refers to the landward shoreline zone of a large natural lake. Like most of North Carolina's natural lakes, Lake Waccamaw is surrounded by peatland and is rimmed mainly by organic soils, but sections of the park's lakeshore are sandy. A number of rare and endemic plant species, including carnivorous plants such as Venus flytrap *(Dionaea muscipula),* are found in the vegetative communities that ring the lake.

Coastal Plain Levee Forest (Blackwater Subtype)

Levee Forests are found on alluvial deposits in or adjacent to a river and are affected by the forces of the river. New deposits may create new sites for establishment of a Levee Forest community, or vegetation may be disturbed by flooding. Levee Forests tend to be slightly higher in elevation than Cypress-Gum Swamps and to include more oak

(Quercus sp.), birch *(Betula sp.)*, and pine *(Pinus sp.)* species than baldcypress *(Taxodium distichum)* or swamp tupelo *(Nyssa biflora)*. At Lake Waccamaw State Park, this community is found on alluvial deposits of the Waccamaw River.

REGISTERED NORTH CAROLINA NATURAL HERITAGE AREA

Lake Waccamaw represents a nationally significant aquatic system consisting of a water-filled Carolina bay hosting several endemic fishes and mollusks as well as a number of rare plant species in and around the edge of the lake. The five mollusks that occur only in this lake are: Waccamaw fatmucket (*Lampsilis fullerkati)*, Waccamaw snail *(Amnicola sp. 1)*, Waccamaw ambersnail *(Catinella waccamawensis)*, Waccamaw spike (*Elliptio waccamawensis*), and Waccamaw siltsnail *(Cincinnatia sp. 1).* Other mollusks, including Tidewater mucket *(Leptodea ochracea)*, occur at just a few other sites in the state. The endemic lake fishes include the Waccamaw silverside (*Menidia extensa)* and Waccamaw darter *(Etheostoma perlongum).* The Waccamaw killifish (*Fundulus waccamensis)* has been found in only one other location. Rare plants found along the lakeshore include Venus-hair fern (*Adiantum capillus-veneris)*, Green-fly orchid (*Epidendrum magnoliae)*, Seven-angled pipewort (*Eriocaulon aquaticum*), and narrowleaf cowlily *(Nuphar sagittifolia)*.

NATURAL HERITAGE ELEMENT OCCURRENCES

In addition to the endemic and rare species named in the previous section, Natural Heritage Element Occurrences include the bald eagle *(Haliaeetus leucocephalus)* and American alligator *(Alligator mississippiensis)*, each threatened at both the state and federal levels; state-rare lace-lip ladies' tresses *(Spiranthes lacinniata)*, considered imperiled at the state level; Venus flytrap *(Dionaea muscipula)*, endemic to the Carolina coastal plain and a state and federal species of special concern; and horned bladderwort *(Utricularia cornuta)*, considered critically imperiled to imperiled at the state level.

NATURAL AND CULTURAL RESOURCE MANAGEMENT ISSUES

Division of Parks and Recreation staff identifies natural and cultural resource management issues as a component of the general management plan process and groups them according to the categories shown in Table VI-6. Staff assigns a high, medium or low priority to each issue using the criteria described at the end of the table. The Division's Natural Resources Program will work with field staff to address the various management issues following the priorities shown. A more detailed description of the six high priority issues follows the table.

Table VI-1. Resource Management Issue Summary

Category	Subcategory	Project Description	Priority *
Animal Management	Inventory Deficiencies	Need for terrestrial species surveys.	Medium
		Aquatic survey of mussels and fish species.	Medium
	Rare Species Management	Continue to monitor reptile species.	Medium
	Nuisance Animals	Continue educational efforts about alligators. If Regal Ridge landfill opens, develop a monitoring program for sea gull populations.	High Low
Botanical Resource Management	Exotic Species Management	Based on the 2000 exotic species inventory, privet, lespedeza, Japanese honeysuckle, and multiflora rose were identified as the main exotic species. Within the Lake, alligatorweed is present in the canals and along the shoreline but not on park property. Kudzu is also present along the park boundaries.	High
	Inventory Deficiencies	All existing botanical surveys need to be compiled and indexed.	Medium
		A natural community map is needed for the park.	Medium
	Rare Species Management	Continue to search for rare species in the park and monitor new populations.	Medium
		Need to restore xeric sandhills scrub community that is currently in pine plantation.	High
Cultural Resources	Cultural Resources	Restoration of canoes found in the lake needs to occur.	Low
Infrastructure Management	Environmental Compliance for Planned Construction Projects	Environmental review of pine plantation restoration will be necessary.	High
		Review for upcoming construction projects (campgrounds).	Low
	Septic/Wastewater Management	Potential for retirement of current well will require closure.	Low
	Trails Management	Lakeshore trail is a potential problem related to overuse.	Medium
		ATV use coming from International Paper has been an issue in the past.	Low
Land Use Management	Boundary Management	Issues related to leased hunting on International Paper land and hunting on park property.	Medium
		Boundary of property near the dam is in question.	Medium
	Fire Management	Staff is unable to keep-up with prescribed burning needs at the park.	High
	Trash and Debris Disposal	Trash from boats and piers is heavy on the Lake.	Medium
	Viewshed Management	Viewshed issues may be associated with the new landfill and telephone lines.	Low
Visitor and Recreational Resource Management	Soil compaction	Soil compaction is occurring around the picnic area and campgrounds.	Medium
Water Resource Management	Riparian Buffer Zone Protection	Stormwater management study of Lake Waccamaw needs to be implemented.	High
		Review information on the installation of a weir at the canal outlet to Lake Waccamaw.	High
	Water Pollution	Impacts of the canal on lake water quality need to be studied.	Medium
		Hydrology of the area needs to be studied and restored if possible.	Medium
		Potential impacts from the proposed landfill.	Low
		Mosquito spraying may affect water quality within the lake.	Medium
		Individuals living at the lake are spraying for aquatic weeds.	Medium
		Park access road is sinking and causing erosion impacts.	Medium

***** Explanation of priority codes

High If the resource management activity is not undertaken in the near future there is a distinct possibility that natural resources will be compromised. These issues should be addressed within the next five years.

Medium Although there is a possibility that resources could be compromised, the priority is not as critical as the high priority projects.

Low Projects with low priority have significantly less chance for compromise of the natural resources if the project is not undertaken in a timely fashion or the project may depend on completion of other projects.

Nuisance Animal Management

The Lake Waccamaw area is important alligator habitat. Conflicts between humans and alligators (or pets and alligators) become more likely when human behavior attracts alligators to areas frequented by humans. The biggest problem behaviors are the feeding of alligators and the feeding of waterfowl (which serves to attract alligators). Through park programs and newspaper articles, park staff will continue to educate visitors and local residents not to feed or otherwise attract alligators.

Exotic Species Management

Based on the 2000 exotic species inventory, Chinese privet (*Ligustrum sinense*), lespedeza *(Lespedeza cuneata),* Japanese honeysuckle *(Lonicera japonica),* and multiflora rose *(Rosa multiflora)* have been identified as the main exotic species. The park requires control plans for each of these exotic species. Alligatorweed (*Alternanthera philoxeroide)* is present in the canals and along the lake shoreline but not on park property. Kudzu (*Pueraria montana)* is also present along the park boundaries. These species should be monitored to avoid problems in the park.

Rare Species Management

A restoration site has been identified on the sand ridge about a half-mile south of the visitor center, where a pine plantation should be restored to a Xeric Sandhill Scrub community. This community type is known to support a number of rare plant species, especially in the herb layer.

Environmental Compliance for Planned Construction Projects

Environmental review of the pine plantation restoration (discussed above) will be necessary.

Fire Management

Currently about 350 to 400 acres are under burn prescription, and more land should come under prescription. Staff are currently unable to keep up with prescribed burning needs at the park.

Riparian Buffer Zone Protection

A lakewide stormwater management study has been completed and needs to be implemented by the town and local stakeholders. Park staff are working with the town to protect water quality and control invasive species by keeping canal water separate from the lake water. They are considering a plan to install a weir at the canal outlet to Lake Waccamaw.

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