

sparse, with patches of bare ground often exposed.

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Southern Redcedar

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Definition and composition. — Southern redcedar comprises a plurality of the overstory. Associated species generally include at least some of the following: live oak, sand live oak, cabbage palmetto, slash pine, southern magnolia, laurel oak, redbay, and American holly.

Geographic distribution. — This type reaches its best development in Florida's Gulf Hammock Region, which borders Apalachee Bay from St. Marks nearly to Tampa. Stands are scattered in northern peninsular Florida and occur in narrow coastal strips northward into North Carolina and westward to the Mississippi River. Additional stands may occur elsewhere in Louisiana and eastern Texas.

Ecological relationships. — The type is closely associated with limestone outcroppings and Indian shell middens, primarily along the coast, bordering tidal marshes, and on sea islands on the leeward side of dunes, where salt spray is minimal. These habitats rarely experience fire, which is deleterious to the southern redcedar. Soils tend to be moist or wet but not saturated.

Variants and associated vegetation. — The southern redcedar was virtually eliminated as an overstory species during the 19th century by logging. The original trees, which reached 80 cm (36 in.) in diameter and over 30 m (100 ft.) tall, were harvested primarily for the manufacture of pencils. Live oaks and other associated trees were left untouched, and their competition presumably has retarded the reestablishment of cedar-dominated stands.

Because of past harvesting, most stands of this type are quite similar to the cabbage palmetto type, which now combines the sand live oak—cabbage palmetto and the cabbage palmetto—slash pine types that were formerly recognized separately (SAF 1954). All are variants of a general maritime forest or coastal hammock, in which southern redcedar, live oak, sand live oak, and cabbage palmetto predominate, either singly or, more commonly, in combination. This maritime forest may be considered climax, although there is some evidence that southern magnolia may assume dominance in time. The southern redcedar type sometimes intergrades with the slash pine type and various creek and river swamp variants such as sweetbay—swamp tupelo—red maple.

Common understory species are yaupon, wax myrtle (southern bayberry), wild olive, Carolina

laurelcherry, beautyberry, gum bumelia, tree spangleberry, and several vines including muscadine grape and greenbriers. Herbaceous vegetation is rather sparse but may include St. Augustine grass, bracken, vetch, beak-rush, and goldenrod.

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Cabbage Palmetto

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Definition and composition. — Through most of its range cabbage palmetto comprises a plurality of the stocking; locally it predominates in small stands. Sand live oak, an associate, was formerly recognized in the type name (SAF 1954) but has now been dropped from the title. Common associates in the type from south Florida northward include south Florida slash pine, slash pine (typical), sand live oak, live oak, laurel oak, water oak, baldcypress, southern magnolia, red maple, redbay, swamp tupelo, sweetgum, southern redcedar, and loblolly pine. In south central Florida, cabbage palmetto grows in pure stands in wet prairie areas (Davis 1943); in extreme southern Florida, tropical hardwoods replace temperate hardwoods as associates.

Cabbage palmetto is so called because of its edible bud or "cabbage" (Bornhard 1950), which tastes somewhat like cabbage. Seminole Indians made use of the cabbage palm fronds to thatch the roofs of their huts ("chickees") (Davis 1943).

Geographic distribution. — From the center of its distribution in central and southern Florida, the cabbage palmetto type extends northward. Along the Atlantic Coast north of Jacksonville, it usually occurs within 10 km (8 mi.) of the coast. It runs northward to Cape Fear in eastern North Carolina, westward along the Gulf Coast to St. Andrews Bay, Florida, and southward into the Florida Keys. To the east it occurs in the Bahama Islands (Little 1978, Brown 1976). Throughout central and southern peninsular Florida, cabbage palmetto usually occurs on moist sites below 30 m (100 ft.), an elevation that defines the approximate shoreline of the Wicomico Sea of the Pleistocene (Brown 1976). Stands generally are no larger than 10 ha (25 a.) and cabbage palmetto should be considered a minor forest cover type except locally in southern Florida and the Florida Keys.

Ecological relationships. — Cabbage palmetto can tolerate a broad range of soil pH, salinity, and drainage. In the northern parts of its range it is frequently found on coastal dunes and along the floodplains of major rivers. In peninsular Florida it occupies coastal marsh islands, mainland marshy

shorelines, lowland savannas, floodplains of rivers, bay heads, swales, and relic inland dune ridges (Brown 1976).

Soils are typically shallow, medium- to fine-textured wet sands, sandy loams, and mucks. Lime rock outcroppings or calcareous deposits within the soil profile frequently characterize cabbage palmetto sites (Craighead 1971). In south Florida flatwoods, cabbage palmetto, in association with south Florida slash pine, occurs on fine sandy soils with subsoils of limestone or marl. However, in dune areas cabbage palmetto can be found on deep, well-drained sands of coarse texture, although the water table on such sites is not much deeper than the species' rooting depth of about 5 m (16 ft.). Climate in the type range is principally subtropical to warm temperate, humid, with average annual rainfall of 1,000 to 1,700 mm (39 to 67 in.) and an average temperature range of 7° to 32°C (45° to 90°F).

Cabbage palmetto reaches its maximum development in the Indian Prairie north of Lake Okeechobee (Davis 1943). Good growth also occurs along the Gulf Coast to the Appalachicola River. Mature trees are straight, unbranched, with heights of 10 to 25 m (33 to 82 ft.) and diameters of 30 to 60 cm (12 to 24 in.) (Preston 1976). Abundance of stocking along the Atlantic shorelines has been attributed to the cabbage palmetto seed's buoyancy and tolerance of saltwater, characteristics that have allowed it to be dispersed by coastal waters (Brown 1976). Cabbage palmetto is shade tolerant and probably climax.

Variants and associated vegetation.—An important variant is cabbage palmetto—slash pine, formerly recognized as type No. 83 (SAF 1954). This variant is most abundant at the edge of coastal marshes and on calcareous soils of the flatwoods in peninsular Florida (Barry F. Malac 1978, personal communication). Cabbage palmetto is also a component in a second variant—called the rockland pine forest by Davis (1943)—that is restricted to soils derived from limestone or calcareous rock in the Big Cypress and Miami Rock Ridge physiographic regions. Another variant is the cabbage palmetto—live oak type of maritime forest, found principally on the lee side of dunes. Cabbage palmetto is also a major component of both temperate and subtropical hardwood communities that in Florida are called “hammocks.” Hammocks include a wide spectrum of hardwood species, such as red maple, sweetbay, sweetgum, laurel oak, water oak, live oaks, gumbo-limbo, Florida strangler fig, Florida poison-tree, and Florida royalpalm.

Common associated understory vegetation in the cabbage palmetto type includes gallberry, fetterbush, lyonia and other ericaceous species, southern bayberry (waxmyrtle), holly, saw-palmetto, blue-stem, saw-grass, bracken, and beak-rush, and such

epiphytic plants as the common tree orchid and various bromeliads in the sub-tropical hammocks.

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Sweetgum—Yellow-Poplar

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Definition and composition.—The type is a part of the mixed bottomland forest in which sweetgum and yellow-poplar comprise a majority of the over-story stocking. Sweetgum, however, usually occurs with greater frequency. A wide variety of associates are all adapted to moist sites. A mature stand may commonly contain one or more of the following species: red maple, loblolly pine, boxelder, sycamore, river birch, ash, willow oak, blackgum, and American elm.

Geographic distribution.—The type reaches maximum importance in the Coastal Plain from Maryland to central Florida, where it occurs on well-drained floodplains of major drainages. It extends into the Piedmont Plateau also along a multitude of rivers and large streams.

Ecological relationships.—The type is most frequently found on abandoned farmlands. Excessive moisture or prolonged flooding limits the type. Soils are largely alluvial, and the type is favored by soils of coarse texture and good aeration. Site productivity is high, the index for yellow-poplar often ranging above 100 at 50 years. The ability of sweetgum to root sucker and the accumulation of yellow-poplar seeds in the litter permit the type to replace itself after a serious disturbance such as logging. If left undisturbed the type will maintain itself for a very long time—perhaps up to 200 years. It is likely, however, to yield gradually to a more mixed hardwood type, dominated by more shade-tolerant species such as beech, red maple, ashes, holly, and blackgum. Barring disturbance, particularly fire, beech and maple may finally dominate.

Variants and associated vegetation.—There are no recognized variants. Common understory trees include the elms, ashes, red maple, oak, hickory, American holly, American hophornbeam (ironwood), flowering dogwood, and red mulberry. Understory shrubs frequently found are the viburnums and various hollies. Greenbrier, poison-ivy, trumpet-creeper, Virginia creeper, and Japanese honeysuckle are vines that frequently occur. Violets, sedges, touch-me-not (jewelweed), and gums