

## Range Sites of Florida <sup>1</sup>

J. Jeffrey Mullahey, George W. Tanner, and Steve Coates<sup>2</sup>

*This document focuses on 12 major range sites in Florida, emphasizes plant production and diversity, livestock use, and environmental aspects including wildlife and water management. Together, these sites comprise the resource known as range. Our intent was to develop a general reference presenting an overview useful to ranchers; public and private agencies concerned with range management; and to assist the general public in understanding and recognizing range as a diverse and valuable resource. In this document, a general description of each of 12 range sites in Florida is given, followed by data about soils, vegetation, grazing value, and wildlife. A glossary of terms has been included to assist the reader with interpreting information presented.*

### Background

In Florida there is approximately 11 million acres of grazing lands which is comprised of 3,591,00 acres as non-federal rangeland; 4,204,900 acres as non-federal pastureland; 2,506,000 acres as non-federal grazed forest; and 1,000,000 acres as federal grazing lands. Acreage associated with each of the 12 range sites is not available. Range is a

primary natural resource of many ranching operations. The native vegetation of range lands includes grasses, grasslikes, forbs, or shrubs suitable for grazing and browsing use by livestock and wildlife. Some range sites have an overstory of trees, others are comprised of only herbaceous vegetation.

Range management--the science and art of planning and directing range use--is founded on ecological principles and deals with using rangelands and range resources for a variety of purposes. Range management involves the concept of multiple use: grazing of range while managing for game animals, tree products, recreation, and water (quality and quantity).

Stocking rates (acres/animal unit) are given for each range site as general guidelines to assist the rancher in grazing management. These values are based on ecological needs of the range, not dry matter or nutritional needs of livestock, and relate to a year-long continuous grazing system. Stocking rate suggestions are conservative and designed to maintain or improve range condition, assuming no other limiting factor exists (i.e. precipitation, brush cover, etc.). Actual stocking rates for each range site

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2. J. Jeffrey Mullahey, Ph. D., Professor, and George W. Tanner, Ph.D., Professor, Department of Wildlife Ecology and Conservation, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611; and Steve Coates, biological scientist, Southwest Florida Research and Education Center, Immokalee, 34142.

will vary depending on factors such as variations in forage production and forage inventory. Ranchers could increase the suggested stocking rates by 30 percent to improve forage utilization especially when using a controlled grazing system (rotational grazing) and/or range improvement practices ( *e.g.* prescribed burning) which improves forage quality and quantity.

Total annual plant production given for each range site represents total forage yield, measured between October and January. To estimate amount of grazeable forage, a rancher should multiply the forage yield value by 50 percent (animal should graze one-half and leave one-half of the plant) and by 20-35 percent (estimate of utilization). Forage quality, trampling loss, grazing from wildlife, etc. are factors considered in the estimate of percent utilization.

## Cabbage Palm Flatwoods

### Description

This range site is characterized by nearly level land and a high alkaline pH. Water movement is very gradual to and through the natural drainage ways, swamps, ponds, and marshes. During the rainy season, usually June through September, the water table is on or near the soil surface. (See Figure 1 .)

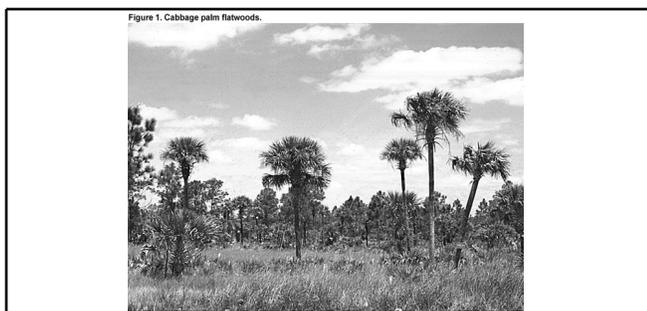


Figure 1 .

### Soils

The soils are most often nearly level, poorly to somewhat poorly drained, shallow to deep, and coarse- textured to fine-textured in the subsoil. Some parts of the subsoil are calcareous or neutral to moderately alkaline. The surface and subsurface layers are coarse-textured. Representative soil series are Broward, Ft. Drum, Matmon, and Pinellas.

### Vegetation

Scattered slash pine and cabbage palm are characteristic overstory trees of this range site. When the range site is in excellent condition, vegetation is dominated by creeping, chalky, and south Florida bluestem, toothachegrass, blue maidencane, and lopsided indiagrass. When increaser species such as saw-palmetto, wax myrtle, gallberry, and pineland threeawn are present, poor or fair range condition exists.

Relative percentages of annual plant production (air dry) by weight for this range site in excellent condition are: grasses and grasslikes, 70 percent; woody plants and trees, 15 percent; and forbs, 15 percent. Plants that characterize this site are:

- **Grasses and grasslikes** : creeping, south Florida, and chalky bluestems, other bluestem spp., lopsided indiagrass, switchgrass, toothachegrass, wiregrasses, panicums, sedges, and rushes.
- **Forbs** : gayfeather, deertongue, grassleaf goldaster, creeping beggarweed, and annual forbs.
- **Trees and shrubs** : cabbage palm, pine species, oak species, gallberry, fetterbush, saw-palmetto, starflower, wax myrtle.

### Grazing Value

This range site has the potential to produce significant amounts of high-quality forage (crude protein=8-10 percent, TDN=50-55 percent). Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 4500-9000 lb/A depending on growing conditions. The suggested stocking rates are as follows in Table 1 .

### Wildlife

Cabbage palm flatwoods offer good food and cover to many species of wildlife. Food value comes from palm and saw-palmetto fruit, pine mast, and acorns from associated oaks. Legumes and grasses furnish good food sources to quail and other small birds. Habitat is well- suited for deer and turkey and

offers refuges to migrating birds during winter months.

### Endangered and Threatened Plants, Animals, and Species of Special Concern

- **Mammals** : Florida panther, mangrove fox squirrel
- **Birds** : southeastern American kestrel, bald eagle
- **Reptiles** : eastern indigo snake

### Cutthroat Seeps

#### Description

This range site occurs on nearly level to gently sloping or depressed areas where water seeps from the adjacent longleaf pine-turkey oak hills communities and similar, better-drained sites. (See Figure 2 .)

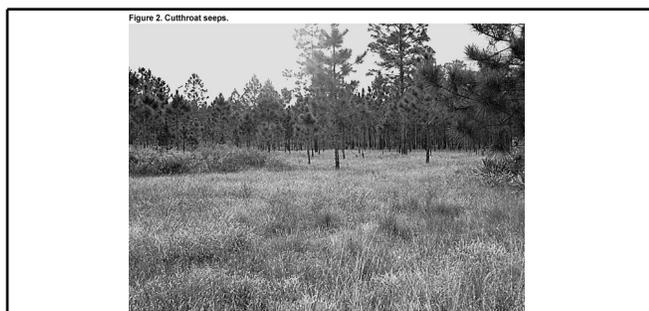


Figure 2 .

**Soils** The soils are nearly level to gently sloping, poorly drained, deep, and coarse textured throughout. The Basinger, Ona, and St. Johns soil series are representative of this site.

#### Vegetation

This site is recognized by its dominance of cutthroat grass. In excellent condition, vegetation consists of cutthroat grass, chalky and creeping bluestem, and toothachegrass. However, in poor-to fair condition, saw-palmetto and pineland threeawn dominate. The relative percentages of annual plant production by weight for this range site in excellent condition are: grass and grasslikes, 90 percent; woody plants and trees, 5 percent; and forbs 5 percent. Plants that characterize this site are:

- **Grasses and grasslikes** : cutthroat grass, chalky and creeping bluestems, maidencane, toothachegrass, low panicums, paspalum species, pineland threeawn, sedges, and rushes.
- **Forbs** : gayfeather, aeschynomene, deertongue, creeping beggarweed, red root, dogfennel, and annual forbs.
- **Trees and shrubs** : slash pine, saw-palmetto, dwarf huckleberry, wax myrtle, fetterbush, gallberry, St. John's-wort.

#### Grazing Value

Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 3000-9000 lb/A depending on growing conditions. Suggested stocking rates are as follows in Table 2 .

Environmental values are especially important. Water from better drained areas seeps out to the ground surface at these range sites. They serve as natural drainage ways and help to improve water quality by the filtering action and nutrient uptake of plants.

#### Wildlife

Cutthroat seeps are well suited for deer, turkey, and songbirds. They are fair for quail and good for many mammals, such as skunks, opossums, and raccoons. Reptiles such as ratsnakes and rattlesnakes find suitable habitat in this site. It is poorly suited for squirrel and dove.

### Endangered and Threatened Plants, Animals, and Species of Special Concern:

- **Mammals** : Florida panther
- **Birds** : Florida grasshopper sparrow, southeastern American kestrel, red-cockaded woodpecker, Florida sandhill crane, bald eagle
- **Reptiles** : eastern indigo snake

### Everglades Flatwoods

#### Description

This range site is located in the Everglades region of south Florida. This range site occurs on nearly level land. It is underlain at shallow depths by a porous pinnacle limestone rock. Many areas have little or no soil and the pinnacle rock occurs on the surface. Water movement is rapid through the porous limestone. Consequently, the sites are wet for only short periods following heavy rains. (See Figure 3 .)

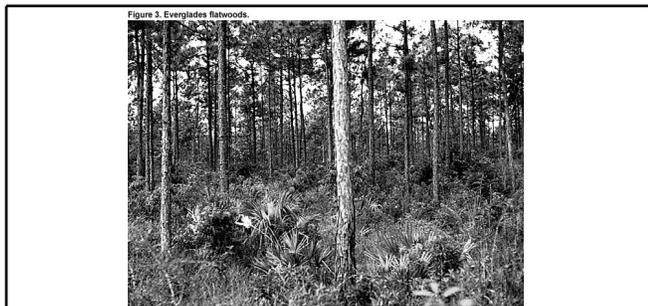


Figure 3 .

#### *Soil*

The soils are nearly level, shallow and coarse textured over porous limestone rock. Representative soil series are Dade, Hallandale, and Rockdale.

#### *Vegetation*

In excellent condition, this site is recognized by an association of grasses such as bluestems (creeping, chalky, cabanis, south Florida), and lopsided indiagrass. In poor to fair condition, the vegetation is dominated by saw-palmetto, pineland threeawn, and gulf mushy. Relative percentages of annual plant production by weight for this range site in excellent condition are: grasses and grasslikes, 75 percent; woody plants and trees, 15 percent; and forbs 10 percent.

- **Grasses and grasslikes** : chalky, south Florida, and creeping bluestems, low panicums, lopsided indiagrass, pineland threeawn, saltmarsh windmillgrass, dropseed spp., sawgrass, sedges, and rushes.
- **Forbs** : creeping beggarweed, gayfeather, Spanish needles, annual forbs, and perennial legumes.
- **Trees and shrubs** : south Florida slash pine, saw-palmetto, wax myrtle, dwarf huckleberry, greenbriar, and gallberry.

#### *Grazing Value*

Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 1,500-3,000 lb/A depending on growing conditions. Suggested stocking rates are as follows in Table 3 .

#### *Wildlife*

Due to its geographic location, this community is valuable to birds migrating to and from South America for wintering. It is well suited for deer, bobcat, owls, and small rodents. Many reptiles find suitable habitat in this site.

#### **Endangered and Threatened Plants, Animals, and Species of Special Concern**

- **Shrubs** : Big Pine partridge pea
- **Herbaceous plants and vines** : night scent orchid, pineland clustervine, Small's milkpea, crenulate leaf plant
- **Mammals** : Florida panther, mangrove fox squirrel
- **Birds** : red-cockaded woodpecker
- **Reptiles** : eastern indigo snake, Miami black-headed snake

#### **Freshwater Marsh and Ponds**

##### **Description**

This range site appears as an open expanse of grasses, sedges and rushes, and other herbaceous plants in an areas where the soil is usually saturated or covered with surface water for two or more months during the year. (See Figure 4 .)



Figure 4 .

**Soils** Soils are nearly level and very poorly drained with coarse textured or organic surfaces underlain by clay or sand. Representative soil series are Basinger depressional, Brighton, Charlotte ponded, Dania, Everglades, Felda depressional, Iberia, Kaliga, Lauderhill, Monteverde, Micco, Ocoee, Okeechobee, Sanibel, Tequesta, and Torry.

#### *Vegetation*

In excellent condition, a freshwater marsh and pond site is dominated by maidencane and cutgrass. Where the site is in poor condition, vegetation consists of cattails, pickerelweed, smartweed, wild millet, and sawgrass.

The relative percentages of annual plant production by weight for this range site in excellent condition are: grasses and grasslikes, 90 percent; woody plants and trees, less than 1 percent; and forbs, 10 percent. Plants that characterize the freshwater marshes and ponds are:

- **Grasses and grasslikes** : blue maidencane, clubhead cutgrass, maidencane, sawgrass, chalky bluestem, American cupscale, sedges, and rushes.
- **Forbs** : aeschynomene, red root, yellow-eyed grass, pickerelweed, pennyroyal, smartweed, dogfennel, dayflower, marshpink, aster, duckpotato, cattails, rattlebox, and bidens species.
- **Trees and shrubs** : buttonbush, willow, wax myrtle, cypress, persimmon, and maple.

#### *Grazing Value*

This range site has the potential for producing significant amounts (10,000 lb/A) of high quality forage (8-10 percent crude protein, 50-55 percent TDN). Annual plant production (air dry) from all plant groups averages for a site in excellent condition ranges from 5,000-10,000 lb/A depending on growing conditions. Suggested stocking rates are as follows in Table 4 .

Freshwater marshes and ponds serve as a filter system for rivers and lakes, generally acting as a sink, but sometimes as a source for nutrients. Marshes

retain water during drought and large marshes also help slow down water flows at flood times.

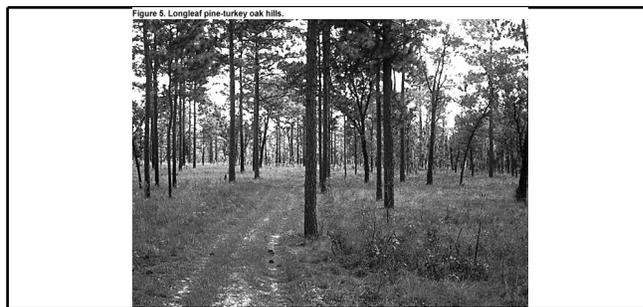
#### **Endangered and Threatened Plants, Animals, and Species of Special Concern**

- **Mammals** : Everglades mink, Key Vaca raccoon, silver rice rat
- **Birds** : Cape Sable seaside sparrow, crested caracara, Florida sandhill crane, snail kite, wood stork
- **Reptiles** : American alligator, Florida ribbon snake, Key mud turtle

#### **Longleaf Pine-Turkey Oak Hills**

##### **Description**

This range site occurs on rolling land with nearly level to strong slopes. Water movement is rapid through the soil. It is easily recognized by the land form and dominant vegetation of longleaf pine and turkey oak. (See Figure 5 .)



**Figure 5 .**

**Soil** The soils are nearly level to strongly sloping, deep, acid, moderately well to excessively drained, and mostly coarse textured throughout.

Representative soil series are Alpin, Bonifay, Candler, Chiefland, Cocoa, Deland, Hurricane, Kershaw, Lake, Lakeland, Orlando, Troup.

##### *Vegetation*

Mature, natural stands of trees which have not been logged have scattered longleaf pine as an overstory. Areas on which pines have been removed are predominantly oaks. Ground cover under the trees and shrubs is scattered and numerous bare areas are noticeable. The relative percentages of annual plant

production by weight for this range site in excellent condition are: grass and grasslikes, 60 percent; woody plants and trees, 20 percent; and forbs, 20 percent. Plants that characterize this site are:

- **Grasses and grasslikes** : creeping, purple, and broomsedge bluestems, lopsided indiagrass, low panicums, pineland threeawn, and sedges.
- **Forbs** : grassleaf goldaster, sensitive briar, devil's shoelace, annual forbs, crotalaria.
- **Trees and shrubs** : longleaf pine, turkey oak, other oak spp., greenbriar, saw-palmetto, gopher apple, and prickly pear.

#### *Grazing Value*

The natural fertility of this range site is low due to adverse soil conditions. This site has a moderately low potential for production of desirable forage species. Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 2,000-4,000 lb/A depending on growing conditions. Suggested stocking rates are as follows in Table 5 .

#### *Wildlife*

This site is suited for deer and turkey, especially for use as escape cover. Many songbirds inhabit this area including warblers, towhees, crested flycatchers, and quail. Several varieties of native legumes furnish food (seeds) for bird life.

#### **Endangered and Threatened Plants, Animals and Species of Special Concern**

- **Mammals** : Florida panther, Florida mouse
- **Bird** : southeastern American kestrel, red-cockaded woodpecker
- **Reptiles** : blue-tailed mole skink, eastern indigo snake, short-tailed snake, gopher tortoise
- **Plants** : clasping warea, pigeon wing, bent golden aster

## **North Florida Flatwoods**

### **Description**

This range site occurs on nearly level land. Water movement is very gradual to the natural drainage ways, swamps, ponds, and marshes associated with this range site. Wet conditions prevail during the rainy season with the water table on or near the surface. It is recognizable from the topography, slash pine and saw-palmetto vegetation. Typically this site has a greater stand density of slash, longleaf, and loblolly pine than are present in south Florida flatwoods. (See Figure 6 .)



**Figure 6 .**

*Soil* The soils are nearly level, deep, acid, poorly to somewhat poorly drained, and coarse textured or coarse textured in the upper part and moderately coarse textured or moderately fine-textured in the lower part. Representative soil series are: Chaires, Garcon, Leon, Lumber, Lutterluh, Lynn Haven, Olustee, Pelham, Pottsburg, Ridgeland, Sapelo, Scranton, and Talquin.

#### *Vegetation*

In moderate-to-high water levels, the predominant vegetation from this site in excellent range condition is chalky or creeping bluestem. When low-to-moderate water levels occur, lopsided indiagrass and creeping bluestem are present. In poor-to-fair range condition, vegetation consists of wax myrtle, gallberry, saw-palmetto, and wiregrasses. The relative percentages of annual production by weight for this range site in excellent condition are: grass and grasslikes, 65 percent; woody plants and trees, 25 percent; and forbs, 10 percent.

- **Grasses and grasslikes** : Chalky, creeping, and broomsedge bluestems; lopsided indiagrass, maidencane, toothachegrass, blue maidencane, panicum species, pineland threeawn, sedges, and rushes.
- **Forbs** : creeping beggarweed, deertongue, gayfeather, red root, partridgepea, dogfennel, brackenfern, annual forbs, and grassleaf goldaster.
- **Trees and shrubs** : live oak, longleaf and slash pine, gallberry, saw-palmetto, wax myrtle, greenbriar, dwarf huckleberry.

#### *Grazing Value*

This range site has a moderate to high potential for producing native forages. More pines occur on this range site than in south Florida flatwoods with much of the original acreage planted to slash pine plantations. Vegetative production differs from the South Florida flatwoods due to a denser overstory, shorter growing season, and lower winter temperatures.

Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 3,000-5,500 lb/A depending on growing conditions. Suggested stocking rates are as follows in Table 6 .

#### *Wildlife*

The north Florida flatwoods range site is well-suited for deer, quail and turkey. It is fair for squirrels and well suited for many songbirds, particularly warblers. It is also well-suited for bobcat, skunks, opossums, and raccoons. It is poorly suited for dove.

#### **Endangered and Threatened Plants, Animals and Species of Special Concern**

- **Shrubs** : Chapman's rhododendron
- **Mammals** : Florida black bear, Florida panther
- **Birds** : southeastern American kestrel, red-cockaded woodpecker, Florida sandhill crane, bald eagle
- **Reptiles** : eastern indigo snake

## **Salt Marsh**

### **Description**

This range site occurs on level, tidal-influenced areas. Usually there is a matrix of interconnected shallow natural channels that aid tidal influx. (See Figure 7 .)



**Figure 7 .**

**Soils** Soils commonly associated with this community are level, very poorly drained, muck or sandy clay loams underlain by loamy sand or organic soils, in turn underlain by clay or sand or are clayey throughout. Many of the soils have a high sulfur content. Some of the soils are soft and will not support the weight of a man or large animal. Tidal action causes saturation of the soil with salt water and inundation to a depth of a few inches. Representative soil series are Bohicket, Homosassa, Lacochee, Tisonia, Turnbull, and Weekiwachee.

### *Vegetation*

Vegetation often occurs in distinct zones within the salt marsh complex as a result of water levels from tidal action and salinity concentrations in water and soils. In excellent condition, a salt marsh site will be dominated with desirable grasses such as smooth cordgrass, big cordgrass, marshhay cordgrass, seashore saltgrass, seashore paspalum, and seashore dropseed. The relative percentages of annual plant production by weight for this range site in excellent condition are: grasses and grasslikes, 90 percent; woody plants and trees, 5 percent; and forbs, 5 percent. Plants that characterize the salt marsh site are:

- **Grass and grasslikes** : smooth cordgrass, big cordgrass, marshhay cordgrass, switchgrass, seashore saltgrass, seashore dropseed, seashore

paspalum, shore grass, whorled dropseed, sedges, and rushes.

- **Forbs** : sea lavender, sea purslane, annual forbs, glassworts, and sea blite.
- **Woody trees and shrubs** : bushy seaoxeye, mangroves, cabbage palm, matrimony vine, bigleaf sumpweed, and lynoia species.

#### *Grazing Value*

Salt marsh range sites have a potential for producing significant amounts of cordgrass, saltgrass, and other grasses and forbs. Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 4000-8000 lb/A depending on growing conditions. The suggested stocking rates are as follows in Table 7 .

On low-energy coastlines and estuaries, the salt marsh site functions as a transition zone from terrestrial to oceanic life. Salt marshes also perform an important function in the stabilization and protection of shorelines, especially during storm tides.

Nutrients, sediments and detritus from upland systems are redistributed by tidal action, making the marsh one of the most productive natural ecological systems. The area serves as a habitat for the early life stages of numerous ocean species as they feed on countless invertebrate organisms. Many wildlife forms overlap normal ranges at least seasonally to become harvesters and, in many cases, part of the natural food chain.

#### *Wildlife*

Salt marsh range sites are good habitat for a variety of wildlife. The habitat type is usually maintained by natural forces and influences such as tidal action and periodic hurricanes.

#### **Endangered and Threatened Plants, Animals and Species of Special Concern**

- **Mammals** : West Indian manatee
- **Birds** : brown pelican, Cape Sable seaside sparrow, least tern, arctic peregrine falcon, roseate tern, bald eagle, wood stork

- **Reptiles** : American alligator, Atlantic green turtle, Atlantic hawksbill turtle, Florida ribbon snake, Atlantic saltmarsh water snake

#### **Scrub Cypress Range Site**

##### **Description**

This range site appears as marshes with scattered dwarf cypress. Seasonal changes in water levels and low levels of plant nutrients result in a limited diversity of plants and wildlife populations. (See Figure 8 .)



**Figure 8 .**

*Soils* This range site is characterized by nearly level poorly to very poorly drained soils with coarse to medium textured surfaces underlain by finer textured materials or fractured limestone. Representative soil series are Margate, Pompano flooded, Jupiter fine sand, and Riveria sandlime substratum.

##### *Vegetation*

This range site is recognized by the scattered scrub dwarf- like cypress trees. When the range site is in excellent condition, plants such as gulfdune paspalum, South Florida bluestem, blue maidencane, and chalky bluestem dominate annual production. When the site is in poor or fair condition, sand cordgrass, sawgrass, St. John's-wort, sedges, and rushes will persist. The relative percentages of annual plant production by weight for this range site in excellent condition are: grasses and grasslikes, 90 percent; woody plants and trees, 5 percent; and forbs, 5 percent. Plants which characterize this range site are:

- **Grass and grasslikes** : gulfdune paspalum, south Florida and chalky bluestem, blue maidencane, beaked panicum, lovegrasses, low

panicums, sand cordgrass, gulf muhly, sedges, and rushes.

- **Forbs** : aescynomene, red root, yellow-eyed grass, lemon bacopa, annual forbs, and other perennial legumes.
- **Trees and shrubs** : scrub cypress, wax myrtle, seamyrtle, slash pine, St. John's-wort, bulmelia species.

#### *Grazing Value*

Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 2,000-4,000 lb/A depending on growing conditions. The suggested stocking rates are as follows in Table 8

#### *Wildlife*

Wildlife habitat is poor due to the sparseness of vegetative growth. Deer will range through these areas. The primary usage is by frogs, turtles, snakes, raccoons, mink, and wading birds.

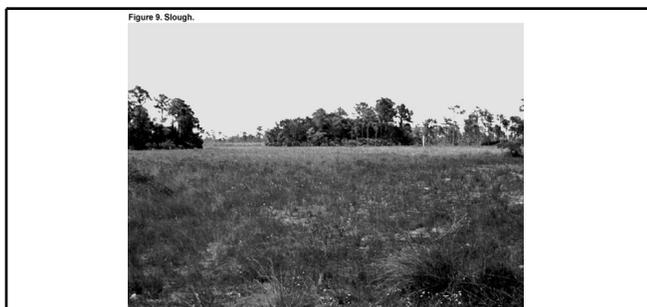
#### **Endangered and Threatened Plants, Animals and Species of Special Concern**

- **Mammals** : Florida panther
- **Birds** : wood stork

### **Slough**

#### **Description**

This range site appears as an open expanse of grasses, sedges, and rushes in an area where the soil is saturated during the rainy season. Most sloughs serve as drainage ways for water during periods of heavy and prolonged rainfall. (See Figure 9 .)



**Figure 9 .**

*Soils* Soils are nearly level and poorly drained with coarse textured surfaces underlain by clay or sand. Representative soil series are: Anclote, Arzell, Basinger, Charlotte, Placid, and Pople.

#### *Vegetation*

In excellent range condition, a slough range site will be dominated with blue maidencane, chalky bluestem, toothachegrass, and gulfdune paspalum. When in poor or fair condition, vegetation at the site consists of wiregrasses, muhly grass, and sand cordgrass. The relative percentages of annual plant production by weight are grasses and grasslikes 90 percent, woody plants and trees less than 1 percent, and forbs 10 percent. Plants that characterize this site are:

- **Grasses and grasslikes** : blue maidencane, chalky bluestem, toothachegrass, bluejoint panicum, wiregrasses, low panicums, sand cordgrass, sloughgrass, switchgrass, broomsedge bluestem, muhly species, lovegrass species, sedges, and rushes.
- **Forbs** : perennial legumes, yellow-eyed grass, red root, rattlebox, and annual forbs.
- **Trees and shrubs** : bumelia species, buttonbush, St. John's-wort, saw-palmetto, and wax myrtle.

#### *Grazing Value*

This range site has the potential for producing significant amounts of high quality forage such as blue maidencane, chalky bluestem and bluejoint panicum. Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 4,000-8,000 lb/A depending on growing conditions. Suggested stocking rates are as follows in Table 9 .

Sloughs serve as natural drainage ways during high water periods. As such, they have great value in improving water quality by natural processes. They also retain water, help slow down water flows, thereby increasing water quantity and improve water quality.

Use for rangeland has only a slight effect on the range site community if properly managed. The installation of water control practices (i.e. ditches, canals) have facilitated the use of some sloughs for improved pasture, vegetables, and citrus.

### Wildlife

This range site is productive with regard to food for bobwhite quail, deer, wading birds. Its low-growing vegetation provides poor cover for most wildlife, but this is often offset by the edge effect of this range site when it is located with flatwoods. (See Figure 10 .)

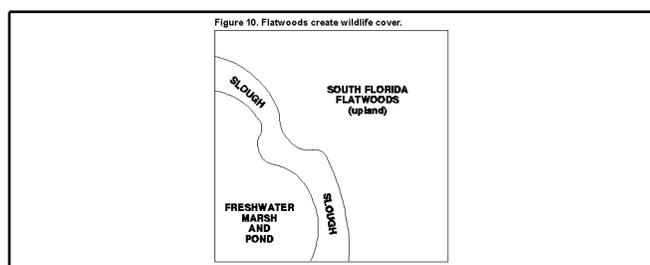


Figure 10 .

Spatially (elevation) the slough site is located above a freshwater marsh and pond and below a flatwoods site (see figure below). These three range sites interface with respect to water (drainage) and range plants (overlap between areas). Annual forage production will be greater in the freshwater marsh and pond with a trend toward lower forage production from the slough site and flatwood site. **Endangered and Threatened Plants, Animals and Species of Special Concern**

- **Mammals** : Florida panther
- **Birds** : Florida sandhill crane

## South Florida Flatwoods

### Description

This range site occurs on nearly level land. Water movement is very gradual toward natural drainage ways, swamps, marshes, and ponds. During June through September, this site may have water on or near the soil surface. It is recognizable by the topography, slash pines, and saw-palmettos. (See Figure 11 .)



Figure 11 .

**Soil** The soils are nearly level, deep, acid, poorly to somewhat poorly drained, and coarse-textured throughout or coarse-textured in the upper part and moderately coarse-textured or moderately fine-textured in the lower part. Representative soil series are: Braden, Eaton, Electra, Elred, Heights, Immokalee, Lawnwood, Myakka, Nettles, Palmetto, Pomona, Smyrna, and Waveland.

### Vegetation

The landscape position of this site affects plant-water relationships, causing slight differences in plant composition from wetter to drier areas. The natural vegetation is typically scattered pine trees with an understory of saw-palmetto, gallberry, and wiregrasses. These areas are often called prairies or dry prairies.

The relative percentages of annual vegetative production by weight for this range site in excellent condition are: grasses and grasslikes, 75 percent; woody plants and trees, 15 percent; and forbs, 10 percent. Plants that characterize this site are:

- **Grasses and grasslikes** : Chalky and creeping bluestem, lopsided indiagrass, toothachegrass, maidencane, panicum species, wiregrasses, sedges, and rushes
- **Forbs** : gayfeather, red root, partridge pea, deertongue, creeping beggarweed, perennial legumes, and annual forbs
- **Trees and shrubs** : oak species slash and longleaf pine, gallberry, wax myrtle, saw-palmetto, dwarf huckleberry, St. John's-wort, sumac, and wax myrtle

### *Grazing Value*

This range site has the potential for producing significant amounts of desirable range grasses such as creeping bluestem (1800-3600 lb/A), chalky bluestem (500-750 lb/A), lopsided indiagrass (900-1500 lb/A). Water control practices and improved management techniques have facilitated the use of some flatwoods for improved pasture, vegetables, citrus, and urban development. This is especially true in central, south, and southwest Florida.

Annual plant production (air dry) from all plant groups for this site in excellent condition ranges from 3,000-6,000 lb/A depending on climatic conditions. Suggested stocking rates are as follows in Table 10.

### *Wildlife*

The south Florida flatwoods range site is well-suited for deer, quail, and turkey. It is fair for squirrels and well-suited for many songbirds, particularly warblers. It is also well-suited for bobcat, skunks, opossums, and raccoons. It is poorly suited for doves.

### **Endangered and Threatened Plants, Animals and Species of Special Concern**

- **Mammals** : Florida panther, mangrove fox squirrel
- **Birds** : crested caracara, Florida grasshopper sparrow, southeastern American kestrel, red-cockaded woodpecker, bald eagle, Florida sandhill crane, burrowing owl, black-shouldered kite
- **Reptiles** : eastern indigo snake, gopher tortoise, striped newt, Miami black-headed snake, mole snake
- **Plants** : yellow squirrel-banana, Florida bear grass, wiregrass genetian, mock pennyroyal, Edison's ascyrum, fall flowering ixia, Bartram's ixia

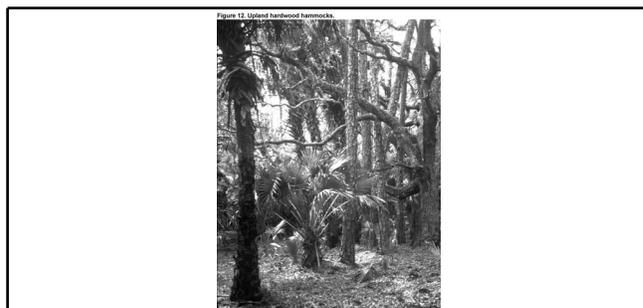
Use of prescribed burning in conjunction with roller chopping every two to four years will enhance growth and development of desirable range plants

and improve the range condition. If range is burned in February, cattle grazing should be deferred for 60 days unless a rancher wants to utilize wiregrass. Grazing of wiregrass should begin three to five weeks following a burn. Allow cattle to remove 50 percent of standing forage and then rotate to another pasture.

## **Upland Hardwood Hammocks**

### **Description**

This range site occurs on rolling terrain with nearly level to strong slopes, well drained soil area with a coarse-texture surface and fine-textured subsoils. It is recognized by the occurrence of thick stands of shade tolerant hardwoods and few pines. There is usually more organic material and litter present than on drier sites. (See Figure 12 .)



**Figure 12 .**

*Soils* The soils are nearly level to strongly sloping, deep, somewhat poorly to well drained and coarse-textured throughout or coarse-textured in the upper part with moderately coarse-textured to moderately fine-textured subsoils. Representative soil series are: Blichton, Bonneau, Flemington, Fort Meade, Gainesville, Hernando, Mabel, Millhopper, Shubuta, and Zuber.

### *Vegetation*

Annual plant production (air dry) from all plant groups for a site in excellent condition ranges from 2500-4500 lb/A depending on growing conditions. The relative percentages of annual plant production by weight for this range site in excellent condition are: grasses and grasslikes, 50 percent; woody plants and trees, 30 percent; and forbs, 20 percent. Plants which characterize this site are:

- **Grasses and grasslikes** : low panicums, switchgrass, lopsided indiagrass, chalky and splitbeard bluestem, paspalums, curtis dropseed, pinewood dropseed, broomsedge, and sedges, spike and long- leaf uniola.
- **Forbs** : grassleaf goldaster, deertongue, partridgepea, pepperweed, phlox, brackenfern.
- **Trees and shrubs** : laurel oak, live oak, water oak, pine species, greenbriar, grapevine, elderberry.

#### *Grazing Value*

The soil's moisture holding capacity and natural fertility is relatively high and good quality forages can be produced. Annual plant production (air dry) from all plant groups averages 3500 lb/A on sites in excellent range condition. Suggested stocking rates are as follows in Table 11 .

Upland hardwood hammocks are valuable for watershed protection.

#### *Wildlife*

Habitat is good for raccoons and opossums, poor for bobwhite quail, dove, and most amphibians, and fair for reptiles.

#### **Endangered and Threatened Plants, Animals and Species of Special Concern**

- **Plants** : needle palm, auricled spleenwort, dwarf spleenwort, sinkhole fern
- **Mammals** : Florida panther, Florida black bear
- **Reptiles** : eastern indigo snake

#### **Wetland Hardwood Range Site**

##### **Description**

This range site is forested, nearly level with somewhat poorly to poorly drained soils. (See Figure 13 .)

##### *Soils*

Soils are nearly level, somewhat poorly and poorly drained and have loamy subsoils and sandy



**Figure 13 .**

surfaces. Representative soil series are: Aripeka, Coxville, Herod, Matmon, Megget, Nutall, Oleno Portsmouth, and Plumer.

#### *Vegetation*

In excellent condition, vegetation is dominated by eastern gamagrass, switchgrass, chalky bluestem, maidencane, blue maidencane, and longleaf uniola. When in poor or fair condition, vegetation consists of dogfennel and carpetgrass. The relative percentages of annual vegetative production by weight are: grasses and grasslikes, 40 percent; woody trees and shrubs, 40 percent; and forbs, 20 percent. Plants which characterize this site are:

- **Grasses and grasslikes** : chalky, creeping, and south Florida bluestems, Virginia wildrye, longleaf uniola, eastern gamagrass, beaked panicums, pineland threeawn, low paspalums, sedges, and rushes.
- **Forbs** : devils shoelace, perennial legumes, partridgepea, brackenfern, rabbit tobacco, annual forbs, and pepperweed.
- **Trees and shrubs** : saw-palmetto, grapevine, greenbriar, American beautyberry, dwarf huckleberry, caesarbur, live oak, persimmon, and St. John's-wort.

#### *Grazing Value*

Annual plant production (air dry) from all plant groups for this range site in excellent condition ranges from 2000-3500 lb/A depending on growing conditions. Suggested stocking rates are as follows in Table 12 .

#### *Wildlife*

Wetland hardwood hammocks are one of the most productive and diverse wildlife habitats. This range site is good habitat for wild hogs, deer, turkey, black bear, gray squirrel, woodpeckers, owls, and furbearers. It is poor for quail and dove. It is good for reptiles and amphibians, being moist most of the year.

### Endangered and Threatened Plants, Animals and Species of Special Concern

- **Plants** : adder's tongue fern, spleenwort, climbing dayflower, and cuplet fern.
- **Mammals** : Florida black bear, Florida panther.

### Definitions of Range Terms

- **Animal unit** : is a mature cow (1000 lbs), pregnant or dry, or its equivalent.
- **Animal unit month (AUM)** : forage or feed necessary to carry an animal unit for one month. (760 lbs of air dried hay=1 AUM)
- **Decreasers** : palatable range plants that decrease or disappear in number under heavy grazing. Also called desirable plants.
- **Forbs**: are not grasslike but are herbaceous and have net-like veins in the leaves and leaves are often broad. Annual or perennial though the top growth usually dies back after one year. (ex: partridgepea)
- **Grasses** : plants with jointed stems that are often hollow between the joints (nodes). Leaves are in two rows on the stem and veins in the leaves are parallel. (ex: chalky bluestem, lopsided indiagrass)
- **Grasslikes** : look like grasses but have solid stems with no nodes on the stems. Veins on the leaf are parallel as in true grasses. (ex: sedges and rushes)
- **Increasesers** : range plants which increase in number as decreaser plants are weakened and die. Usually less palatable than the decreaseers.
- **Invaders** : plants absent in undisturbed areas of the original vegetation of a range site and invade or increase following disturbance or over-grazing.
- **Range condition** : indicates how healthy a range is. Measures the current species composition and production as compared to what the range is naturally capable of producing (climax vegetation). Range in excellent condition has 76 percent or more climax vegetation, good condition 51-75 percent, fair condition 26-50 percent, and poor condition less than 25 percent.
- **Range site** : rangeland with similar soils and climate throughout which results in similar vegetation. These native areas provide grazing for cattle and different sites require different management.
- **Range trend** : measure of any definite change in range condition (i.e. excellent to poor) and is an indication of whether the range is improving, deteriorating, or remaining about the same.
- **Shrub** : plants with persistent, woody stems with the top growth living over from one year to the next. Generally a low growth habit and produces several basal shoots instead of a single bole. (ex: wax myrtle, saw-palmetto)
- **Soil series** : a subdivision of a family and consists of soils that are similar in all major profile characteristics.
- **Tree** : tall, woody plant usually with a single trunk. Plant height of 20 feet or greater at maturity.

### See the following tables for common and scientific names:

- Table 13. Grasses and Grasslikes
- Table 14. Forbs
- Table 15. Trees and Shrubs

**Table 1.**

<b>Table 1.</b>				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/animal unit	4 to 7	6 to 12	11 to 16	15+

**Table 2.**

<b>Table 2.</b>				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acre/animal unit	4 to 7	6 to 12	11 to 16	15+

**Table 3.**

<b>Table 3.</b>				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/animals unit	12 to 20	18 to 28	25 to 35	33+

**Table 4.**

Table 4.				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	3 to 6	5 to 10	9 to 14	13+

**Table 5.**

Table 5.				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/animal unit	10 to 20	18 to 30	28 to 40	35+

**Table 6.**

Table 6.				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	5 to 8	7 to 13	12 to 18	17+

**Table 7.**

<b>Table 7.</b>				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	3 to 7	6 to 12	11 to 16	15+

**Table 8.**

<b>Table 8.</b>				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	7 to 11	10 to 15	14 to 18	17+

**Table 9.**

<b>Table 9.</b>				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	4 to 7	6 to 12	11 to 16	15+

**Table 10.**

Table 10.				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	4 to 7	6 to 12	11 to 16	15+

**Table 11.**

Table 11.				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	4 to 7	6 to 12	11 to 16	15+

**Table 12.**

Table 12.				
	Range Condition Classes			
	Excellent	Good	Fair	Poor
Acres/ animal unit	8 to 12	12 to 19	18 to 24	23+

Table 13.

<b>Table 13. Grasses and Grasslikes</b>	
<b>Common Name</b>	<b>Genus and Species</b>
Creeping bluestem	<i>Schizachyrium stoloniferum</i>
Chalky bluestem	<i>Andropogon virginicus</i> L. <i>Vac. glaucus</i> Heck
South Florida bluestem	<i>Schizachyrium rhizomatus</i>
Lopsided indiagrass	<i>Sorghastrum elliotii</i>
Switchgrass	<i>Panicum virgatum</i>
Toothachegrass	<i>Ctenium aromaticum</i>
Wiregrass	<i>Aristida stricta</i>
Panicums	<i>Panicum</i> spp.
Sedges	<i>Cyperus</i> spp.
Rushes	<i>Juncus</i> spp.
Cutthroat grass	<i>Panicum abscissium</i>
Maidencane	<i>Panicum hemitomom</i>
Low panicums	<i>Panicum</i> spp.
Paspalums	<i>Paspalum</i> spp.
Saltmarsh windmillgrass	<i>Estachys glauca</i>
Dropseed spp.	<i>Sporobolus</i> spp.
Sawgrasses	<i>Cladium jamaicense</i>
Little blue maidencane	<i>Amphicarpum muhlenbergianum</i>
Clubhead cutgrass	<i>Leersia hexandra</i>
American cupscale	<i>Sacciolepis striata</i>
Purple bluestem	<i>Andropogon virginicus</i> var. <i>glaucopsis</i>
Broomsedge bluestem	<i>Andropogon virginicus</i>
Smooth cordgrass	<i>Spartina alterniflora</i>

Table 13.

Big cordgrass	<i>Spartina cynosuroides</i>
Marshhay cordgrass	<i>Spartina patens</i>
Seashore saltgrass	<i>Distichlis spicata</i>
Seashore dropseed	<i>Sporobolus virginicus</i>
Seashore paspalum	<i>Paspalum vaginatum</i>
Shoregrass	<i>Monanthochloe litoralis</i>
Whorted dropseed	<i>Sporobolus virginicus</i>
Gulfdune paspalum	<i>Paspalum monostachyum</i>
Beaked panicum	<i>Panicum anceps</i>
Lovegrasses	<i>Eragrostis</i> spp.
Sand cordrass	<i>Spartina bakeri</i>
Gulf muhly	<i>Muhlenbergia filipes</i>
Bluejoint panicum	<i>Panicum tenerum</i>
Sloughgrass	<i>Scleria</i> spp.
Muhly spp.	<i>Muhlenbergia</i> spp.
Splitbeard bluestem	<i>Andropogon ternarius</i>
Curtis dropseed	<i>Sporobolus curtissii</i>
Pinewood dropseed	<i>Sporobolus junceus</i>
Spikeleaf uniola	<i>Chasmanthium laxum</i>
Longleaf uniola	<i>Chasmanthium sessiliflorum</i>
Virginia wildrye	<i>Elymus virginicus</i>
Eastern gamagrass	<i>Tripsacum dactyloides</i>
Low paspalums	<i>Paspalum</i> spp.

Table 14.

Table 14. Forbs	
Common Name	Genus and Species
Gayfeather	<i>Liatris gracillis</i>
Deertongue	<i>Trilisa odoratissima</i>
Grassleaf goldaster	<i>Pityopsis graminifolia</i>
Creeping beggarweed	<i>Desmodium incanum</i>
Aeschynomene	<i>Aeschynomene</i> spp.
Red root	<i>Lachnanthes caroliniana</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Spanish needles	<i>Bidens bipinnata</i>
Yellow-eyed grass	<i>Xyris</i> spp.
Pickerelweed	<i>Pontederia cordata</i>
Pennyroyal	<i>Piloblephis rigida</i>
Smartweed	<i>Polygonum</i> spp.
Dayflower	<i>Commelina</i> spp.
Marsh pink	<i>Sabatia</i> spp.
Aster	<i>Aster</i> spp.
Duck potato	<i>Sagittaria latifolia</i>
Cattail	<i>Typha</i> spp.
Rattlebox	<i>Crotalaria</i> spp.
Begger-ticks	<i>Bidens</i> spp.
Sensitive briar	<i>Schrankia</i> spp.
Devil's shoelace	<i>Tephrosia</i> spp.
Partridge pea	<i>Cassia</i> spp.
Braken fern	<i>Pteridium aquilinum</i>

**Table 14.**

Sea purslane	<i>Sesuvium</i> spp.
Glasswort	<i>Salicornia</i> spp.
Sea blite	<i>Suaeda</i> spp.
Sea lavender	<i>Limonium carolinianum</i> (common)
Lemon bacopa	<i>Bacopa caroliniana</i>
Pepperweed	<i>Ampelopsis arborea</i>
Phlox	<i>Phlox</i> spp.
Rabbit tobacco	<i>Gnaphalium</i> spp. esp. <i>G. obtusifolium</i>

**Table 15.**

<b>Table 15. Trees and Shrubs</b>	
Common Names	Genus and Species
Cabbage palm	<i>Sabal palmetto</i>
Oak	<i>Quercus</i> spp.
Gallberry	<i>Ilex glabra</i>
Fetterbush	<i>Lyonia lucida</i>
Saw-palmetto	<i>Serenoa repens</i>
Tarflower	<i>Befaria racemosa</i>
Waxmyrtle	<i>Myrica cerifera</i>
Dwarf huckleberry	<i>Vaccinium myrsinites</i>
St. Johns-wort	<i>Hypericum</i> spp.
South Florida slashpine	<i>Pinus elliotii</i> var. <i>densa</i>
Greenbriar	<i>Smilax</i> spp.
Buttonbush	<i>Cephalanthus occidentalis</i>

Table 15.

Willow	<i>Salix</i> spp.
Cypress	<i>Taxodium</i> spp.
Persimmon	<i>Diospyros virginiana</i>
Maple	<i>Acer</i> spp.
Longleaf pine	<i>Pinus palustris</i>
Turkey oak	<i>Quercus laevis</i>
Gopher apple	<i>Licania michauxii</i>
Prickly pear	<i>Opuntia</i> spp.
Live oak	<i>Quercus virginiana</i>
Slash pine	<i>Pinus elliotii</i>
Bushy seaoxeye	<i>Borrchia</i> spp.
Black mangrove	<i>Avicennia germinans</i>
Matrimony vine	<i>Lycium carolinianum</i>
Bigleaf sumpweed	<i>Iva frutescens</i>
Lynoaia spp.	
Stagger-bush	<i>Lyonia feruginea and Lyonia mariana</i>
Fetterbush	<i>Lyonia lucida</i>
Rusty	<i>Lyonia ferruginea</i>
Scrub cypress	<i>Taxodium distichum</i>
Sea myrtle	<i>Baccharis halimifolia</i>
Bulmelia spp.	<i>Bulmelia lanuginosa</i>
	<i>Bulmelia tenax</i>
	<i>Bulmelia clastrina</i>
Sumac	
Poison sumac	<i>Toxicodendron vernix</i>

**Table 15.**

Winged sumac	<i>Rhus copallina</i>
Laurel oak	<i>Quercus laurifolia</i>
Water oak	<i>Quercus nigra</i>
Grape vine	<i>Vitis</i> spp.
Elderberry	<i>Sambucus</i> spp.
American beautyberry	<i>Callicarpa americana</i>
Caesarbur	<i>Urena lobata</i>