

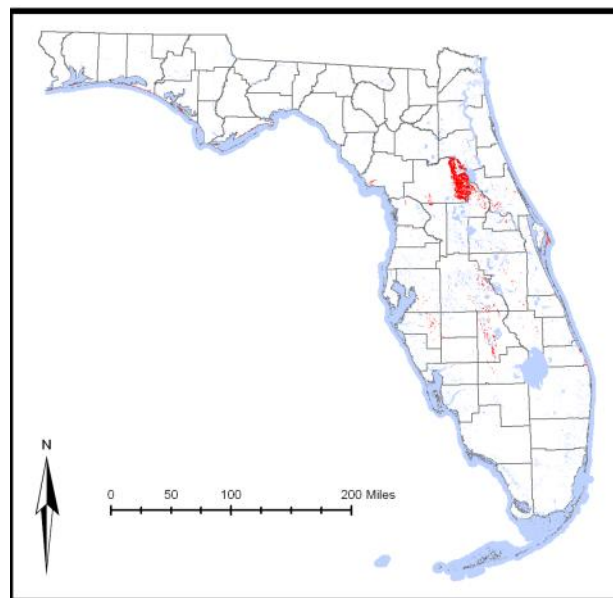
# Scrub



## Status

Current condition: Poor and declining.

According to the best available GIS information at this time (see Appendix C: GIS Data Tables), 337,458 acres (136,564 ha) of Scrub habitat exist, of which 76% (257,015 ac; 104,010 ha) are in existing protected or managed areas. Another 3% (11,311 ac; 4,577 ha) are in Florida Forever projects, while 4% (14,031 ac; 5,678 ha) are in SHCA-designated lands. The remaining 16% (55,101 ac; 22,299 ha) are other private lands.



Some habitat distributions or locations may be misrepresented on this map due to size, resolution and insufficient data sources.

## Habitat Description

**FNAI type:** Scrub

This habitat occurs on areas of deep, well-drained, infertile sandy soils that are typically white or near white. Scrub has a patchy distribution and occurs in both inland and coastal areas, from the panhandle through subtropical regions of the peninsula. The largest and most important patches of Scrub occur along the central ridge of the peninsula near Ocala and in Polk and Highlands counties. This habitat is fire-dependent; it is maintained by fires that are usually very hot or intense, but occur infrequently at intervals of 10-20 years, or more. Generally, Scrub is dominated by evergreen, or nearly evergreen, oaks and/or Florida rosemary, with or without a pine overstory. A relatively large suite of plant species is endemic to Scrub (e.g., scrub holly and inopina oak); the rarest endemic plant species are restricted to the Lake Wales area of the central ridge (e.g., pygmy fringe tree and scrub plum). Some species of wildlife also are endemic or largely restricted to Scrub habitat (e.g., Florida scrub-jay and sand skink). Several types of Scrub are recognized. Oak Scrub is a hardwood community typically consisting of clumped patches of low growing oaks interspersed with patches of bare, white sand. Pines are uncommon or absent. Oak Scrub is

dominated by myrtle oak, Chapman's oak, sand-live oak, inopina oak, scrub holly, scrub plum, scrub hickory, rosemary, scrub palmetto, and saw palmetto. Sand Pine Scrub occurs on former shorelines and islands of ancient seas. This plant community is dominated by an overstory of sand pine and has an understory of myrtle oak, Chapman's oak, sand-live oak, rusty lyonia, wild olive, scrub bay, and scrub holly. Ground cover is usually sparse to absent, especially in mature stands, and rosemary and lichens occur in some open areas. Rosemary Scrub has few or no sand pines or scrub oaks but is dominated by rosemary with scattered lichen cover, scrub hypericum, and paper nailwort. Scrubby Flatwoods, differing from Scrub by having a sparse canopy of slash pine, is addressed in the Natural Pineland habitat section. Additionally, many temporary wetlands are found throughout the Scrub landscape and are an integral part of this habitat type, providing breeding and foraging habitat for many wildlife species.

## Associated Species of Greatest Conservation Need

### **Mammals**

- |  |                              |
|--|------------------------------|
| • <i>Lasiurus borealis borealis</i>          | Red Bat                      |
| • <i>Lasiurus intermedius floridanus</i>     | Northern Yellow Bat          |
| • <i>Lasiurus seminolus</i>                  | Seminole Bat                 |
| • <i>Geomys pinetis pinetis</i>              | Southeastern Pocket Gopher   |
| • <i>Peromyscus polionotus allophrys</i>     | Choctawhatchee Beach Mouse   |
| • <i>Peromyscus polionotus leucocephalus</i> | Santa Rosa Beach Mouse       |
| • <i>Peromyscus polionotus niveiventris</i>  | Southeastern Beach Mouse     |
| • <i>Peromyscus polionotus peninsularis</i>  | St. Andrew Beach Mouse       |
| • <i>Peromyscus polionotus phasma</i>        | Anastasia Island Beach Mouse |
| • <i>Peromyscus polionotus trissyllepsis</i> | Perdido Key Beach Mouse      |
| • <i>Podomys floridanus</i>                  | Florida Mouse                |
| • <i>Sciurus niger shermani</i>              | Sherman's Fox Squirrel       |
| • <i>Mustela frenata olivacea</i>            | Southeastern Weasel          |
| • <i>Mustela frenata peninsularis</i>        | Florida Long-tailed Weasel   |
| • <i>Puma concolor coryi</i>                 | Florida Panther              |
| • <i>Spilogale putorius ssp.</i>             | Spotted Skunk                |
| • <i>Ursus americanus floridanus</i>         | Florida Black Bear           |

### **Birds**

- |                                     |                               |
|-------------------------------------|-------------------------------|
| • <i>Colinus virginianus</i>        | Northern Bobwhite             |
| • <i>Elanoides forficatus</i>       | Swallow-tailed Kite           |
| • <i>Falco sparverius paulus</i>    | Southeastern American Kestrel |
| • <i>Columbina passerina</i>        | Common Ground-Dove            |
| • <i>Athene cunicularia</i>         | Burrowing Owl                 |
| • <i>Chordeiles minor</i>           | Common Nighthawk              |
| • <i>Caprimulgus vociferus</i>      | Eastern Whip-poor-will        |
| • <i>Melanerpes erythrocephalus</i> | Red-headed Woodpecker         |
| • <i>Picoides villosus</i>          | Hairy Woodpecker              |
| • <i>Colaptes auratus</i>           | Northern Flicker              |
| • <i>Lanius ludovicianus</i>        | Loggerhead Shrike             |
| • <i>Aphelocoma coerulescens</i>    | Florida Scrub-Jay             |
| • <i>Vermivora chrysoptera</i>      | Golden-winged Warbler         |
| • <i>Vermivora cyanoptera</i>       | Blue-winged Warbler           |
| • <i>Setophaga ruticilla</i>        | American Redstart             |
| • <i>Setophaga kirtlandii</i>       | Kirtland's Warbler            |

- *Setophaga castanea*
- *Setophaga discolor discolor*
- *Cardellina canadensis*

Bay-breasted Warbler  
Prairie Warbler  
Canada Warbler

### Amphibians

- *Lithobates capito*
- *Notophthalmus perstriatus*

Gopher Frog  
Striped Newt

### Reptiles

- *Anolis carolinensis seminolus*
- *Plestiodon egregius insularis*
- *Plestiodon egregius lividus*
- *Plestiodon egregius onocrepis*
- *Plestiodon reynoldsi*
- *Rhineura floridana*
- *Sceloporus woodi*
- *Cemophora coccinea coccinea*
- *Crotalus adamanteus*
- *Drymarchon couperi*
- *Heterodon platirhinos*
- *Heterodon simus*
- *Lampropeltis extenuata*
- *Pituophis melanoleucus mugitus*
- *Tantilla coronata*
- *Tantilla relicta*
- *Virginia valeriae valeriae*
- *Gopherus polyphemus*
- *Terrapene carolina*

Southern Green Anole  
Cedar Key Mole Skink  
Blue-tailed Mole Skink  
Peninsula Mole Skink  
Florida Sand Skink  
Florida Wormlizard  
Florida Scrub Lizard  
Florida Scarletsnake  
Eastern Diamond-backed Rattlesnake  
Eastern Indigo Snake  
Eastern Hog-nosed Snake  
Southern Hog-nosed Snake  
Short-tailed Snake  
Florida Pinesnake  
Southeastern Crowned Snake  
Florida Crowned Snake  
Eastern Smooth Earthsnake (Highlands Co.)  
Gopher Tortoise  
Eastern Box Turtle

### Invertebrates

- *Praticolella bakeri*
- *Geolycosa escambiensis*
- *Geolycosa xera*
- *Lycosa ericeticola*
- *Sosippus placidus*
- *Phidippus workmani*
- *Latrodectus bishopi*
- *Floridobolus penneri*
- *Melanoplus adelogyrus*
- *Melanoplus forcipatus*
- *Melanoplus gurneyi*
- *Melanoplus indicifer*
- *Melanoplus nanciae*
- *Melanoplus ordwayae*
- *Melanoplus pygmaeus*
- *Melanoplus scapularis*
- *Melanoplus tequesta*
- *Schistocerca ceratiola*
- *Telamona archboldi*
- *Keltonia robusta*
- *Keltonia rubrofemorata*
- *Cicindela highlandensis*

Ridge Scrubsnail  
Escambia Wolf Spider  
McCrone's Burrowing Wolf Spider  
Rosemary Wolf Spider  
Lake Placid Funnel Wolf Spider  
Workman's Jumping Spider  
Red Widow Spider  
Florida Scrub Millipede  
Volusia Grasshopper  
Broad Cercus Scrub Grasshopper  
Gurney's Spurthroat Grasshopper  
East Coast Scrub Grasshopper  
Ocala Claw-cercus Grasshopper  
Ordway Melanoplus Grasshopper  
Pygmy Sandhill Grasshopper  
Lesser Fork-tailed Grasshopper  
Tequesta Grasshopper  
Rosemary Grasshopper  
Archbold's Treehopper  
Conradina Mirid Bug  
Scrub Wireweed Mirid Bug  
Highlands Tiger Beetle

- *Cicindela nigrrior* Autumn Tiger Beetle
- *Cicindela scabrosa* Scrub Tiger Beetle
- *Aethecerinus hornii* Horn's Aethecerinus Long-horned Beetle
- *Aneflomorpha delongi* Delong's Aneflomorpha Long-horned Beetle
- *Enaphalodes archboldi* Archbold Scrub Long-horned Beetle
- *Plesioclytus relictus* Florida Relictual Long-horned Beetle
- *Romulus globosus* Round-necked Romulus Long-horned Beetle
- *Typocerus fulvocinctus* Yellow-banded Typocerus Long-horned Beetle
- *Selonodon archboldi* Archbold Cebrioid Beetle
- *Ischyryus dunedinensis* Three Spotted Pleasing Fungus Beetle
- *Triplax alachuae* Alachua Pleasing Fungus Beetle
- *Peltotrupes profundus* Florida Deepdigger Scarab Beetle
- *Peltotrupes youngi* Ocala Deepdigger Scarab Beetle
- *Chelyoxenus xerobatis* Gopher Tortoise Hister Beetle
- *Pleotomodes needhami* Ant-loving Scrub Firefly
- *Mycterus marmoratus* Marbled Mycterus Beetle
- *Odontotaenius floridanus* Archbold Bess Beetle
- *Anomala eximia* Archbold Anomala Scarab Beetle
- *Aphodius troglodytes* Gopher Tortoise Aphodius Beetle
- *Copris gopheri* Gopher Tortoise Copris Beetle
- *Diplotaxis rufa* Red Diplotaxis Beetle
- *Geopsammodius fuscus* Dark Tiny Sand-loving Scarab
- *Geopsammodius morrissi* Morris' Tiny Sand-loving Scarab
- *Geopsammodius relictillus* Relictual Tiny Sand-loving Scarab
- *Geopsammodius withlacoochee* Withlacoochee Tiny Sand-loving Scarab
- *Haroldiataenius saramari* Sand Pine Scrub Ataenius Beetle
- *Hypotrichia spissipes* Florida Hypotrichia Scarab Beetle
- *Onthophagus aciculatulus* Sandyland Onthophagus Beetle
- *Onthophagus polyphemi polyphemi* Punctate Gopher Tortoise Onthophagus Beetle
- *Onthophagus polyphemi sparsisetosus* Smooth Gopher Tortoise Onthophagus Beetle
- *Phyllophaga elizoria* Elizoria June Beetle
- *Phyllophaga elongata* Elongate June Beetle
- *Phyllophaga okeechobea* Diurnal Scrub June Beetle
- *Phyllophaga panorpa* Southern Lake Wales Ridge June Beetle
- *Polyphylla starkae* Auburndale Scrub Scarab Beetle
- *Serica frosti* Frost's Silky June Beetle
- *Serica pusilla* Pygmy Silky June Beetle
- *Trigonopeltastes floridana* Scrub Palmetto Flower Scarab Beetle
- *Onychomira floridensis* A Comb-clawed Beetle
- *Caupolicana floridana* Giant Scrub Plasterer Bee
- *Dorymyrmex flavopectus* Bi-colored Scrub Cone Ant
- *Dasymutilla archboldi* Lake Wales Ridge Velvet Ant
- *Photomorphus archboldi* Nocturnal Scrub Velvet Ant
- *Hesperia attalus slossonae* Seminole Skipper
- *Callophrys gryneus* Olive Hairstreak
- *Ministrymon azia* Gray Ministreak
- *Idia gopheri* Gopher Tortoise Noctuid Moth
- *Asaphomyia floridensis* Florida Asaphomyian Tabanid Fly
- *Eurosta lateralis* A fruit fly

## Conservation Threats

Threats to Scrub habitat that were also identified for multiple other habitats are addressed in Chapter 7: Multiple Habitat Threats and Conservation Actions. These threats include:

- Conversion to agriculture
- Conversion to commercial and industrial development
- Conversion to housing and urban development
- Conversion to recreation areas
- Incompatible fire
- Incompatible forestry practices
- Incompatible recreational activities
- Incompatible resource extraction: mining/drilling
- Invasive animals
- Invasive plants
- Roads

Threats specific to Scrub habitat include Incompatible forestry practices because this habitat supports Florida scrub-jays, which are not tolerant of dense pine stands adjacent to or within Scrub sites. Habitat-specific threats from mining includes habitat loss both when areas are mined and when dredge spoil is deposited on Scrub and mitigation activities that result in small, fragmented areas rather than more contiguous areas of this habitat. Military base closure threatens potential loss of protection of Scrub.

The following stresses and sources of stress threaten this habitat:

<b>Stresses</b>		<b>Habitat Stress Rank</b>
A	Fragmentation of habitats, communities, ecosystems	Very High
B	Insufficient size/extent of characteristic communities or ecosystems	Very High
C	Altered community structure	High
D	Altered fire regime	High
E	Habitat destruction or conversion	High
F	Altered soil structure and chemistry	High
G	Altered species composition/dominance	High
H	Altered landscape mosaic or context	High

The sources of stress, or threats, were used to generate conservation actions.

<b>Sources of Stress</b>		<b>Habitat Source Rank</b>	<b>Related Stresses</b> (see above)
1	Incompatible fire	Very High	A, C, D, E, G, H
2	Conversion to housing and urban development	Very High	A, B, D, E, H
3	Roads	Very High	A, B, D, E, H
4	Incompatible forestry practices	Very High	A, C, D, E, F, G, H
5	Incompatible resource extraction: mining/drilling	Very High	A, B, E, F, H
6	Conversion to agriculture	Very High	A, B, E, H
7	Conversion to commercial and industrial	Very High	A, B, D, E, H

Sources of Stress		Habitat Source Rank	Related Stresses (see above)
	development		
8	Management of nature – stormwater facilities	High	A, E, F, H
9	Management of nature – dredge spoil deposition	High	A, E, F
10	Conversion to recreation areas	Medium	A, D, E
11	Invasive animals	Medium	C, D, E, G
12	Incompatible recreational activities	Medium	A, C, E
13	Military activities	Medium	A, B, D, E, H
14	Invasive plants	Medium	C, G
15	Incompatible agricultural practices	Medium	F
16	Incompatible grazing and ranching	Low	C
<b>Statewide Threat Rank of Habitat</b>		<b>Very High</b>	

## Conservation Actions

Actions to abate the threats to Scrub that were also identified as statewide threats (conversion to agriculture, conversion to commercial and industrial development, conversion to housing and urban development, conversion to recreation areas, incompatible fire, incompatible forestry practices (also see actions below), incompatible recreational activities, incompatible resource extraction: mining/drilling (also see actions below), invasive animals, invasive plants, roads) are in Chapter 7: Multiple Habitat Threats and Conservation Actions.

Actions to abate specific threats that were identified for Scrub are below. These actions were designed to reduce the impacts of adjacent incompatible forest management, mining and mine mitigation, habitat loss from public facility siting, and potential management or loss on Avon Park Air Force Range.

### *Incompatible Forestry Practices*

Overall Rank	Planning and Standards	Feasibility	Benefits	Cost
L	Promote importance of bird viability in management decisions on public lands where silvicultural management is in conflict with maintaining viable populations of imperiled grassland and scrub birds.	M	L	L

### *Incompatible Resource Extraction: Mining/Drilling*

Overall Rank	Economic and Other Incentives	Feasibility	Benefits	Cost
H	Encourage preservation of large contiguous patches of scrub and other sensitive upland habitats in lieu of current practice of protecting habitat piecemeal.	H	H	H
M	Create voluntary incentives to avoid loss of, and impacts to, SHCAs and sensitive habitats from mining, particularly wet and dry prairie, scrub, and bat caves.	H	M	H

Overall Rank	Planning and Standards	Feasibility	Benefits	Cost
L	Develop a coalition of groups to identify local restoration projects where spoil material can be used.	M	L	L

**Management of Nature – Stormwater/Wastewater Facilities**

Overall Rank	Policy	Feasibility	Benefits	Cost
M	Promote the importance of scrub habitat and encourage placement of county or municipal water treatment facilities in other areas when imperiled species utilize proposed scrub sites.	M	M	L

**Military Activities**

Overall Rank	Capacity Building	Feasibility	Benefits	Cost
H	Establish a permanent consultative group of multi-agency wildlife and habitat professionals that work with USDOD on development of any statewide plans for base expansion, increased usage, and growth or closure needs to enhance positive, or minimize any negative impacts on wildlife and conservation lands.	M	H	M
Overall Rank	Land/Water Protection	Feasibility	Benefits	Cost
VH	Work to develop partnerships to encourage conservation of significant habitats on lands encompassed by federal/state base closures.	H	VH	VH
Overall Rank	Land/Water/Species Management	Feasibility	Benefits	Cost
H	Support a collaborative effort among the USFWS, Avon Park Air Force Range, Archbold Biological Station, and the FWC to develop and implement a mitigation and management plan to accommodate military needs and maintain habitat and species viability.	VH	M	VH
M	Create a cooperative program to ensure consistent implementation of management plans on USDOD lands with sufficient capacity for conservation management of wildlife and habitats on military lands in Florida (e.g., prescribed fire, invasive species control, monitoring).	M	M	M
Overall Rank	Planning and Standards	Feasibility	Benefits	Cost
M	Work to develop partnerships to encourage implementation of comprehensive management and mitigation plans that protect high quality habitats and natural resources.	H	M	M