Table 4.2. Species-specific requirements and limiting factors for selected terrestrial species

Species	Chief Requirements or Limiting Conditions	Key References
Lower Keys Marsh Rabbit	• Require both low marsh and high marsh (buttonwood) habitat • Minimum home range is 0.3 ha of continuous habitat • Marsh rabbits require vegetative cover to successfully disperse • Chief cause of mortality is predation by feral cats (53%); one-third of mortality is due to automobile collisions	Forys and Humphrey 1994, 1996
Roseate Spoonbill	• Require mangroves for nesting. • Nesting success in Florida Bay has declined precipitously since the 1960's, primarily due to loss of mangrove habitat and changes in prey (schooling fish) availability. Because of water management practices and channelization, prey fish no longer concentrate in dry season flats in large enough numbers to support fledgling spoonbills.	J. Lorenz, unpublished data
White-Crowned Pigeon	• White-crowned pigeons nest primarily on mangrove islands, but must disperse to hardwood hammocks to meet foraging needs. • Young white-crowned pigeons show a strong preference for hardwood hammock areas 5.0 ha. or greater within the first 72 hours of fledging. After this, white-crowned pigeons generally stay within hardwood hammocks, avoiding urban areas. • White-crowned pigeons are considered critical seed-dispersers for many hardwood hammock species.	Strong and Bancroft 1994)
Silver Rice Rat	• The main threat to the silver rice rat is degradation and loss of habitat due to urbanization. • Secondary threats to the silver rice rat include habitat fragmentation, an increase in the densities of predators (especially domestic cats) and the introduction of non-native competitors (e.g., black rats).	Forys et al. 1996 USFWS 1999
Schaus' Swallowtail	• The development-driven loss of mature hardwood hammock habitat is the chief cause of rarity for Schaus swallowtail. • The survival of this species depends on the survival of sufficient stands of its primary larval host plant, torchwood, and its secondary host plant, wild lime. • Small clearings or trails seem to promote proliferation of host plant species. However, adult females apparently prefer the deep shade of hammock interiors.	Emmel 1995 a, b
Bartram's Hairstreak	• The distribution and abundance of Bartram's hairstreak is a direct function of the availability of its larval hostplant, *Croton linearis*, an herbaceous plant found primarily in frequently burned rockridge pinelands.	Emmel and Minno 1993
Florida Leafwing	• The distribution and abundance of the Florida leafwing is a direct function of the availability of its larval hostplant, *Croton linearis*, an herbaceous plant found primarily in frequently burned rockridge pinelands.	Emmel and Minno 1993
Tree Snails	• Tree snails occur in tropical hardwood hammocks of South Florida and the Florida Keys. Within the hammocks, they prefer smooth-barked trees (Emmel and Cotter 1987). • Tree snails appear to be moisture-limited, with some species (e.g., Florida tree snail) entering diapause during the dry season. Adult snails forage primarily on tamarind and other smooth-barked trees, scraping epiphytic lichens, fungi and algae from the bark. The amount of food available to foraging tree snails is largely a function of moisture. • Primary causes for rarity in the Stock Island tree snail (which is nearly extinct in its original range) and other tree snails include widespread destruction of hardwood hammock habitat and collection pressure.	USFWS 1999 Emmel and Cotter 1986

Species	Chief Requirements or Limiting Conditions	Key References
Forest Interior Birds	• Black-whiskered Vireos require a minimum of 0.2 ha of seasonal deciduous forest; 57.9% of the original habitat (pre-European colonization) in the upper Florida Keys remains and meets this requirement . • White-eyed Vireos require a minimum of 2.3 ha of seasonal deciduous forest; 50.8% of the original habitat remains and meets this requirement. • Yellow-billed Cuckoos require a minimum of 7.5 ha of seasonal deciduous forest; 44.1% of the original habitat remains and meets this requirement. • Mangrove Cuckoos require a minimum of 12.8 ha of seasonal deciduous forest; 40.1% of the original habitat remains and meets this requirement.	Bancroft, et al. 1995
Florida Prairie Warbler	• The Florida race of the prairie warbler is largely restricted to mangrove forests.	Prather and Cruz 1995
Key Largo Wood Rat	• The Key Largo woodrat requires mature, tropical, hardwood hammocks with trees of 10 to 12 inches trunk diameter, and is rarely found in young or recovering hammocks. • Species decline is due to extensive habitat destruction and fragmentation by human development. • Other threats associated with human encroachment include predation by feral cats, dumping of trash, and competition with black rats. • FWS recommends a 500-m buffer zone around areas of suitable habitat in order to insure future protection of the species. This distance is based on the use of upland areas by this species and the estimated range of domestic cats.	USFWS 1999 Humphrey 1988
Lower Keys Mud Turtle	• The Striped Mud Turtle occupies small, usually temporary, freshwater ponds that are deep enough to penetrate into the fresh ground water lens. Suitable ponds are usually found along the edge of elevated hardwood hammocks. • The turtle will only tolerate salinities below 15 ppt. • The Lower Keys Striped Mud Turtle is listed as endangered primarily due to a loss of suitable habitat from intensive development throughout the lower Florida Keys, especially the destruction of the hammock pond habitat essential for the species' survival. • Future filling of mosquito control ditches, as recommended for the management of the Key Deer, will negatively impact the Lower Keys Striped Mud Turtle if suitable natural habitat is not available in its place.	Dunson 1992
Mangrove Diamondback Terrapin	• Suitability of nesting areas is the primary limiting factor for terrapin populations.	Palmer and Cordes 1988
Rare Plants	• Key tree cactus limited to hardwood hammocks on Upper Matecumbe Key, Lower Matecumbe Key, Long Key, and Big Pine Key. Chief cause of rarity is habitat loss. • Garber's spurge is limited primarily to rockridge pineland sites that undergo frequent burns. Only known to occur at four sites in the Keys.	USFWS 1999
Keystone Plants	Red Mangrove • Development has resulted in a 15% reduction in mangrove coverage and has decreased average mangrove patch size from 67.5 ha. to 28.1 ha in the Florida Keys over the past 50 years • Impoundment and other activities that restrict water circulation can	Strong and Bancroft 1994 Odum and Johannes 1975 Emmel 1995 Nellis 1994

Species	Chief Requirements or Limiting Conditions	Key References
	harm or kill mangroves by disrupting oxygen flow through the roots. Torchwood • Torchwood is locally abundant along disturbed edges of Keys hammocks; however, Schaus' swallowtail oviposits only on torchwood growing in the hammock interior. Croton • Crotons will not survive under heavy shade. Herbaceous pineland plants are shaded out by overgrowing hardwood shrubs within 10 to 15 years in the absence of fire.	
Wading Birds	• Wading bird declines in the Florida Keys are largely influenced by direct loss of nesting habitat (mangrove forests) and increases in dry-season water depths caused by freshwater discharge. Increases in water depths decrease the birds' ability to successfully forage. • Degradation in water quality in foraging sites has been implicated as a main limiting factor on wood stork population sizes.	J. Lorenz, unpublished data USFWS 1986