

Red-cockaded woodpecker
Picoides borealis

This profile is a short summary of information to introduce the species and does not summarize all available information on the species.

Listing status: USFWS = Endangered
FWC = Species of Special Concern

Trend: This species has likely experienced a 97% reduction in numbers and amount of potential habitat with most of this loss occurring during the mid 1900's. The declining trend possibly continues despite some local increases on public lands. Intensive management actions have allowed for population expansions and even limited reintroductions.

Threats: Loss and degradation of habitat is the primary threat. The vast majority of RCW habitat has been subject to pine harvest which removed the old growth pine, and has been converted via development, agriculture or silviculture. RCWs require open, mature (>60 years) pine stands. Fire suppression allows hardwood and shrub encroachment into these pine stands making them unsuitable to RCWs. Most public lands are years away from having optimal RCW habitat, even where RCWs currently occur. The isolation of small fragmented populations caused by habitat loss has resulted in genetic and demographic threats, as well as the potential for catastrophic events to cause threats. Even large, relatively secure populations may be at risk to a large catastrophic event, such as a major hurricane (i.e. the RCW population on the Francis Marion NF declined by 80% after Hugo). Inbreeding has the potential to impact populations of < 40 potential breeding groups (PBG) and may impact populations of 40 – 100 PBGs; however, immigration of 2 or more individuals per year can likely reduce inbreeding (USFWS 2003), and this can be facilitated by translocation. Populations of at least 20 PBGs (with a clumped distribution) are likely to persist 20 or more years (longer with active management); populations of 40 – 100 are reasonably secure; but populations of >350 PBG may be necessary for long-term stability.

Notes: Florida contains approximately 25% of the world population. Likely 75% of Florida's population occurs in the panhandle. Translocation and the use of artificial cavities in combination with good land management that includes appropriate prescribed fire and silvicultural practices have been instrumental in perpetuating small isolated populations. Reintroduction has proven effective. All state or federal properties that contain RCWs have a role outlined in either the federal recovery plan or the state management plan.

Prioritization information:

PLCP PVA proportion of pops modeled to persist on public lands = **0.5**

PLCP PVA probability of a 50% decline on public lands = 0.00

Millsap biological score = **27.6**

Millsap supplemental score = 14

Legacy population trend = **declining**

Legacy population status = **low**

Summary: Four of the 6 parameters are triggered for this species, making this species a moderate to high priority. The probability of a 50% decline on public lands parameter may be problematic as the model did not consider the potential of a catastrophic event. As all of FL's RCWs face a significant threat from hurricanes, the score for this parameter should be used with caution. The PVA may have underestimated risk to the species due to potential weaknesses with the PVA model (described in the PVA Summary).

Life History: The RCW is a management responsive species that can be an indicator of properly managed pine stands. This species is often considered an umbrella species as many other species benefit from management designed for this species.

RCWs are cooperative breeders, with small groups composed of the breeding male and female and 0 – 4 “helpers” (usually 0-2, though up to 9 have been documented). While most helpers are young males, female helpers do occur. Each individual usually has its own cavity, and the breeder males' cavity typically becomes the nest tree. Suitable cavities are often a limiting factor. As cavity trees and old pines tend to be limiting, protection of current and potential future cavity trees should be an important management consideration. Making use of artificial cavities has proven effective as a tool in increasing local populations when combined with appropriate land management.

Nesting typically occurs April – May, with a typical nest having 3-4 eggs. Re-nesting attempts may result in eggs in the nest as late as June. Incubation is about 10 days and chicks fledge at about 27 days post hatching. Pairs with helpers tend to fledge more young than pairs without helpers. Young that do not become helpers typically disperse in the fall/winter.

Arthropods are the primary food item, though fruits and seeds are also eaten. Males tend to forage in the tree crown; females commonly forage on the trunk and lower branches.

Fire is an important aspect in RCW ecology. Fire decreases the hardwood component; and increased hardwoods favor RCW predators and competitors. Further, fire has been shown to increase the abundance of RCW prey, and may increase the nutritional value of prey.

Home range for PBG can be from 100 to 400 acres, with PBG in south FL tending to have larger home ranges. Territory size is likely influenced by the quality of the habitat, as well as the density of RCWs in the area. High quality habitat tends to have older pines stocked at an intermediate density (40-80 BA) with an open stand structure that is typically maintained by regular fire.

Preferred Habitat Parameters:

- Canopy hardwoods < 10% of canopy trees
- Hardwood midstory <10% cover, and < 7' (2.1 m) high
- Native grass/forbs groundcover > 40%
- Older pines (typically > 60 years)
- Pine BA 40-80 ft²/acre

Minimum Habitat Requirement:

From PVA: populations with at least 40 females.

From Literature: Variable, depending on quality of habitat. Populations with at least 10 PBGs can be viable for the short term or longer with active management; populations with 30 - 100 PBG are moderately secure if aggregated; populations > 350 PBG are likely secure barring catastrophic events.

Best management Practices: See management & recovery plan, especially section 3 “Management Techniques” and section 8 “Management guidelines” in USFWS 2003.

Despite the challenges, fortunately there are several proven techniques to aid in RCW recovery. Prescribed fire and silvicultural practices that move the forest structure to an open structure with healthy ground cover, limited hardwoods, and a number of old pines will benefit RCWs. The use of artificial cavities allows managers to place recruitment clusters in demographically favorable locations even when the pines may not be old enough for natural cavities. Translocation can be used to move birds within or between populations, and has been very important in bolstering local demographic connectivity.

Recovery foundations: population size and trend typically are more influenced by the number of potential breeding groups rather than annual survival or reproduction; maintaining close aggregations of territories is extremely important; unoccupied habitat typically will remain unoccupied without management assistance (USFWS 2003).

Survey Methods & Monitoring Protocol:

See management & recovery plan, especially section 3A, Population Monitoring (pg 71-80) and 8C (172-174), in USFWS 2003.

Statewide PVA Summary: The Wildlife Habitat Conservation Needs in Florida project created a PVA (http://research.myfwc.com/features/view_article.asp?id=29815) for the red-cockaded woodpecker. The model used 17 km (10.56 miles) as the dispersal distance to delineate discrete populations (the USFWS recovery plan uses 5 miles as the distance to determine subpopulations). Based on this distance, the model identified 13 populations when looking at all potential habitat, and 20 when only managed lands were evaluated. It is worth noting that all populations that occur in the panhandle are modeled as one population by this model when evaluating all potential habitat. Seventy-nine percent of all modeled potential habitat occurred on public lands. For the PVA model, carrying capacity was estimated at 1.2 females per 0.7854 km² with an initial carrying capacity of 75%. One of the

assumptions of the model is that all potential habitat is equal in quality and availability. Further, all populations were estimated to have RCWs based on the model's average density and amount of potential habitat; not on actual population data. For example, in the model looking at public lands, population 9 is modeled to have a carrying capacity of 54, even though the only known RCWs in the area are those occurring at Lathrop Bayou, which only supports 1-2 potential breeding groups. Further, the initial carrying capacity of the model is several times higher than the known population level of RCWs in FL. As such, these results need to be viewed with caution.

A female only three stage model with juveniles, non-breeders, and breeders was constructed. This model resulted in a growth rate of 1.03 which provides for a 3% increase possible annually. The model was sensitive to breeder survival and fecundity of the breeder class. The model suggested adult survival to be the most influential parameter on population growth. (The literature suggests the number of potential breeding groups is the most important parameter.)

Based on this model, there was no chance of extinction in the next 100 years, and no chance of a 50 % decline in abundance. Populations with at least 40 females were modeled to persist. When evaluating all potential habitat, all 13 populations persisted for at least 80 years; however, the model evaluating only public lands modeled only 10 of 20 populations to persist for 80 years. The PVA summary suggests that smaller populations are not likely to persist without occasional dispersal.

2003 Landcover used for model:

Sandhill	Pinelands
Mixed pine-hardwood	Dry prairie

(Only when within 10 km of a known RCW occurrence. On private lands, commercial pine plantations were excluded from the model.)

FNAI Natural Communities used:

Sandhill	Upland pine forest
Mesic flatwoods	Scrubby flatwoods
Wet flatwoods	

FNAI field guide description of habitat: Inhabits open, mature pine woodlands that have a diversity of grass, forbs, and shrub species. Generally occupies longleaf pine flatwoods in north and central Florida, mixed longleaf pine and slash pine in south-central Florida, and slash pine in south Florida outside the range of longleaf pine. Forage in several forested habitat types that include pines of various ages, but prefer more mature pines.

Important Links:

FWC Management Plan: <http://myfwc.com/imperiledspecies/pdf/RCW.pdf>
USFWS Recovery Plan: http://www.fws.gov/rcwrecovery/recovery_plan.html

Pertinent Documents/Literature:

See plans above. (There is a large volume of literature about this species.)