

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Dendroica angelae

COMMON NAME: elfin woods warbler

LEAD REGION: 4

INFORMATION CURRENT AS OF: March 2003

STATUS/ACTION (Check all that apply):

New candidate

Continuing candidate

Non-petitioned

Petitioned - Date petition received: ____

90-day positive - FR date: ____

12-month warranted but precluded - FR date: ____

Is the petition requesting a reclassification of a listed species?

Listing priority change

 Former LP: ____

 New LP: ____

Latest dates species first became a Candidate: _____

Candidate removal: Former LP: ____ (Check only one reason)

A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

F - Range is no longer a U.S. territory.

M - Taxon mistakenly included in past notice of review.

N - Taxon may not meet the Act's definition of "species."

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Birds - Emberizidae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Puerto Rico

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Puerto Rico

LEAD REGION CONTACT (Name, phone number): Rick Gooch, 404/679-7124

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Boquerón, Puerto Rico Field Office, Jorge Saliva, 787/851-7297

BIOLOGICAL INFORMATION (Describe habitat, historic vs. current range, historic vs. current population estimates (# populations, #individuals/population), etc.):

The elfin woods warbler (Dendroica angelae) is about 12.5 centimeters (4.9 inches) in length, and entirely black and white. It is distinguished by the thin, white eyebrow stripe, white patches on ear-covers and neck, incomplete eye ring, and black crown. The immature bird is similar to

the adult, but black is replaced by grayish-green on the back, and yellowish-green on the head and underparts. It builds a compact cup nest, usually close to the trunk and well hidden among the epiphytes of a small tree. The breeding season extends from March to June (Raffaele 1998). The species forages in the middle part of trees, gleaning insects from leaves in the outer portion of the tree crown (Cruz and Delannoy 1984).

The elfin woods warbler was discovered in 1971 from the elfin or dwarf forest type of the Caribbean National Forest in the Luquillo Mountains. It was described by Kepler and Parkes (1972) and was initially thought to occur only in the Luquillo Mountains. It was later observed in the Sierra de Cayey and the Cordillera Central. In the Cordillera Central, it was reported from the Maricao and Toro Negro Commonwealth Forests. The elfin woods warbler was, at first, thought to occur only in the high elevation dwarf or elfin forests (640 to 1,030 meters (2,099 to 3,378 feet)), but it has since been found at lower elevation Tabonuco and Palo Colorado forest types (370 to 600 meters or 1,213 to 1,968 feet). Little information is available concerning the species' presence in the Toro Negro Forest and the Sierra de Cayey. Arroyo-Vázquez (1991) did not find the species in the Toro Negro Forest in surveys conducted following Hurricane Hugo in 1989. The elfin woods warbler has been more extensively studied in the Maricao Commonwealth Forest and the Caribbean National Forest.

The Maricao Commonwealth Forest, managed by the Puerto Rico Department of Natural and Environmental Resources, is located in western Puerto Rico in the Cordillera Central. It is approximately 4,150 hectares (ha) (10,250 acres) in size and is divided into two segments. The forest overlies serpentine derived soils, low in water holding capacity and low in fertility, resulting in a more xeric vegetation than might be expected given the amount of rainfall (2,550 cm (994 inches) annually). Vegetation types have been identified as dry slope forest, slope forest, mixed hardwood, exposed ridge woodland (dwarf forest) and *Podocarpus* mixed woodland (Department of Natural Resources 1976).

The Caribbean National Forest, managed by the U.S. Forest Service, is located in the Luquillo Mountains in eastern Puerto Rico. It is approximately 11,300 ha (27,911 acres) in size, with elevations ranging from 100 to 1,075 meters (328 to 3,526 feet). Forest types have been described as tabonuco, colorado, palm forest, and dwarf or elfin forest. The elfin forest is characterized by high rainfall, high humidity, low insolation, low temperatures, and constant winds. Found on the summits of the mountains, it is composed of dense stands of short, small diameter, twisted trees and shrubs. The plants and forest floor are covered with mosses and epiphytes. Plant species richness is low compared to other forest types in the Luquillo Mountains (Brown *et al.* 1983).

Cruz and Delannoy (1984) stated that the present distribution of the elfin woods warbler is probably related to the habitat destruction that has occurred in the past. In the Luquillo Mountains, the species is rare in the areas of El Yunque and Mt. Britton, and more common along the Trade Winds Trail to El Toro and in the upper part of the Icacos Valley. Intermediate numbers are found along the Caimitillo Trail and along the road to El Yunque. Even where it is more abundant, the species is among the most uncommonly encountered species in the elfin woods (Waide 1995).

In the Maricao Forest, the warbler is known from elevations ranging from 650 to 900 meters (2,132 to 2,952 feet). In this area, the species is found in a variety of habitats, including those

that have been altered by humans. Population densities vary, with the highest densities being recorded from Los Viveros (20.9 individuals per 25 ha (51.6 individuals per 61.7 acres)) and significantly lower densities from Rosario Alto (3.0 individual per 25 ha (7.4 individuals per 61.7 acres)) and Campamento Santana (1.2 individuals per 25 ha (2.9 individuals per 61.7 acres)). The Los Viveros area is a Podocarpus-mixed hardwood forest with a continuous canopy at 15 to 20 meters (49.2 to 65.6 feet). The latter two areas are a mixture of plantation (Eucalyptus robusta (eucalyptus) and Calophyllum calaba (maría)) and dwarf or elfin forest on the ridges (Cruz and Delannoy 1984). Arroyo-Vázquez (1991) found similar densities in surveys conducted in 1989 and 1990. These studies also suggest that the species migrates vertically in elevation, moving towards the north facing valleys during the months of heaviest rainfall.

THREATS (Describe threats in terms of the five factors in section 4 of the ESA providing specific, substantive information. If this is a removal of a species from candidate status or a change in listing priority, explain reasons for change):

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Cruz and Delannoy (1984) stated that the elfin woods warbler was probably more widely distributed in the past, but that it had become restricted in distribution as a result of the destruction and modification of its habitat for a variety of purposes. Today, it has been documented from only four locations, two of which have little information available. Studies initiated after hurricane Hugo in Toro Negro did not reveal the presence of the species. A large portion of dwarf or elfin forest in both the Maricao Commonwealth Forest and the Caribbean National Forest has been destroyed for the construction of telecommunication towers. Any expansion of these facilities would result in the elimination of habitat for the species. Areas adjacent to the forests that were previously planted in shade coffee are now being converted to sun coffee plantations. The elimination of this overstory results in the reduction of available habitat and a corresponding reduction in habitat quality. Because the species may migrate vertically, utilizing at times lower elevation areas, conservation of these lower altitude habitats may also be important, as these areas are also under the threat of habitat destruction or alteration.

Waide (1995) suggested that areas of high pedestrian use have fewer birds. Therefore, the expansion of trail or road systems in either forest, or the increased use of those systems that are currently present, may pose a threat to the species. Timber management is not conducted in the elfin or dwarf forest, but the species also occurs at lower elevations such as in the Colorado forest in the Luquillo Mountains. Timber management may reduce overstory tree species diversity and canopy cover, characteristics that are positively associated with the density of the species (Cruz and Delannoy 1984, Waide 1995).

B. Overutilization for commercial, recreational, scientific, or educational purposes.

These factors have not been documented as threats to the species.

C. Disease or predation.

The presence of recreational and communication facilities in the Caribbean National Forest has led to a proliferation of feral animals, such as cats (Felis catus) and dogs (Canis familiaris).

These and other introduced species, such as rats (Rattus rattus), are potential nest predators of the elfin woods warbler. Native species such as the pearly-eyed thrasher (Margarops fuscatus) and the sharp-shinned hawk (Accipiter striatus) may prey on the species (Arroyo-Vázquez 1991, Waide 1995). Although there are no records of predation by arboreal reptiles on eggs, juveniles, or adults of the species, the Puerto Rican boa (Epicrates inornatus) and the green anole (Anolis cuvieri), which are found within the same habitat and are known to prey on other birds and their nests, may prey upon the species or its nests.

D. The inadequacy of existing regulatory mechanisms.

Although the Commonwealth of Puerto Rico has a regulation that protects threatened and endangered species, the elfin woods warbler is not currently on the Commonwealth list. Federal listing under the Endangered Species Act would provide protection, and, in accordance with the existing cooperative agreement between the Service and the Commonwealth under section 6, it would ensure the warbler's addition to the Commonwealth list. No management plan is currently available for the Maricao Commonwealth Forest. Despite its protection as a public forest, development projects continue to be proposed. Recently, an adjacent municipality initiated the construction of a road through the forest and destroyed a large tract of forested vegetation although the action was ultimately stopped.

E. Other natural or manmade factors affecting its continued existence.

Arroyo-Vázquez (1991) suggested that the warbler had a specific nesting requirement, aerial leaf litter, and that the species may be affected by the lack of availability of optimal nest sites. In addition, catastrophic events such as hurricanes may affect the abundance and distribution of the warbler. Following hurricane Hugo in 1989, Arroyo-Vázquez (1991) did not find any individuals in the Toro Negro Commonwealth Forest or in Luquillo. Waide (1995) stated that the abundance of birds in the lower elevation forests of the Icacos Valley may be a temporary response to disturbance, given the severe damage incurred by the dwarf forest during hurricane Hugo.

FOR RECYCLED PETITIONS:

- a. Is listing still warranted? ____
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? ____
- c. Is a proposal to list the species as threatened or endangered in preparation? ____
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners):

The Maricao Commonwealth Forest is managed by the Puerto Rico Department of Natural and Environmental Resources. The Caribbean National Forest is managed by the U.S. Forest Service. Adjacent areas are in private ownership.

PRELISTING (Describe status of conservation agreements or other conservation activities):

Studies of the breeding biology, foraging behavior, abundance and distribution of the species have been completed during several investigations and status surveys.

REFERENCES (Identify primary sources of information (e.g., status reports, petitions, journal publications, unpublished data from species experts) using formal citation format):

Arroyo-Vázquez, B. 1991. Comparative study of foraging behavior and habitat selection of resident wood warblers (Dendroica) in southwestern Puerto Rico. M.S. thesis, University of Arkansas. 83 pp.

Brown, S., A. E. Lugo, S. Silander, and L. Liegel. 1983. Research history and opportunities in the Luquillo Experimental Forest. U.S.D.A. Forest Service, General Technical Report SO-44. 128 pp.

Cruz, A. and C. A. Delannoy. 1984. Ecology of the elfin woods warbler (Dendroica angelae). I. Distribution, habitat usage, and population densities. Carib. J. Sci. 20: 89-96.

Department of Natural Resources. 1976. The Master Plan for the Commonwealth Forests of Puerto Rico. San Juan, Puerto Rico. 259 pp.

Kepler, C. B. and K. C. Parkes. 1972. A new species of warbler (Parulidae) from Puerto Rico. Auk 89: 1-18.

Raffaele, H., J. Wiley, O. Garrido, A. Keith, and J. Raffaele. 1998. A guide to the birds of the West Indies. Princeton University Press. Princeton, N.J. 511 pp.

Waide, R. 1995. Status and conservation of the Elfin Woods Warbler (Dendroica angelae) in the Luquillo Experimental Forest. Final Report submitted to the U.S. Fish and Wildlife Service. 25 pp.

LISTING PRIORITY (place * after number)

THREAT

Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5*
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude and Imminence:

The Elfin Woods Warbler is found within protected lands in Puerto Rico, including the Caribbean National Forest as well as several Commonwealth Forests. Threats to the species are not imminent because at least one population is found on protected lands (Caribbean National Forest) with adequate regulatory mechanisms that should prevent population declines, therefore, a Listing Priority of 5 was assigned.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Linda Kelsey March 14, 2003
Acting Regional Director, Fish and Wildlife Service Date

Concur: _____
Director, Fish and Wildlife Service Date

Do not concur: _____
Director, Fish and Wildlife Service Date

Director's Remarks:

-

-

Date of annual review: February 22, 2003

Conducted by: Jorge E. Saliva - Boquerón, Puerto Rico FO

Comments:

-

-

-