

Catesbaea melanocarpa
(no common name)

**5-Year Review:
Summary and Evaluation**



**U.S. Fish and Wildlife Service
Southeast Region
Caribbean Ecological Services Field Office
Boquerón, Puerto Rico**

5-YEAR REVIEW
Catesbaea melanocarpa (No common name)

I. GENERAL INFORMATION

A. Methodology used to complete the review: On September 27, 2006, the Service published a notice in the *Federal Register* (71 FR 56545) announcing the 5-year review of the plant *Catesbaea melanocarpa* and requesting new information concerning the biology and status of the species. A 60-day comment period was opened. No information on *Catesbaea melanocarpa* was received from the public.

This 5-year review was prepared by a Service biologist and summarizes new information that the Service has gathered on the species since it was listed in 1999, the recovery plan was signed in 2005, and critical habitat was finalized. Very little new information regarding the species distribution and status is available. The plant has been rediscovered in two additional sites.

B. Reviewers

Lead Region: Kelly Bibb, Southeast Region, Atlanta. (404) 679-7132.

Lead Field Office: Omar Monsegur, Caribbean Ecological Services Field Office, Boquerón, Puerto Rico. (787) 851-7297, extension 217.

C. Background

1. FR Notice citation announcing initiation of this review: September 27, 2006; 71 FR 56545.

2. Species Status: 2010 Recovery Data Call: Stable. The species is currently present in four localities within Puerto Rico and the U.S. Virgin Islands. The species continues to be known from St. Croix, and from the Guánica Forest and Cabo Rojo, Puerto Rico. The Service is working with the owner of the Cabo Rojo property to protect the individuals from a proposed residential development project. In 2009, a new locality was discovered within Encarnación ward in the municipality of Peñuelas. Only one individual was located at this site. No evident increase or decline within these populations was observed in 2010. In Puerto Rico, approximately 25 adult individuals are known to occur. The number of individuals in St. Croix, which is the biggest population, has stayed at approximately 100 individuals since 1995.

3. Recovery Achieved: 1 (1=0-25%) of species' recovery objectives achieved.

4. Listing History

Original Listing

FR notice: 64 FR 13116

Date listed: March 17, 1999

Entity listed: Species
Classification: Endangered

5. Associated rulemakings: Critical habitat, August 28, 2007 (72 FR 49212)

6. Review History: The March 17, 1999 final rule (64 FR 13116), the recovery plan for *Catesbaea melanocarpa*, signed on July 15, 2005 (U.S. Fish and Wildlife Service 2005), and the designation of critical habitat for *Catesbaea melanocarpa* (71 FR 48883; 72 FR 49212) are the most recent comprehensive analyses of the species status and are used as the referenced point documents for this 5-year review.

Every year the Service reviews a species' status and incorporates the information in the Recovery Data Call. In the 2010 Recovery Data Call, we established that the status of the species was stable because we were not aware of any significant changes to distribution, abundance and amount and imminence of threats.

Recovery Data Call: 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 and 2010.

Catesbaea melanocarpa was historically known from Puerto Rico, St. Croix in the U.S. Virgin Islands (USVI), Barbuda, Antigua, and Guadeloupe (Proctor 1991). At the time of listing in 1999, the species was known from at least one individual located on the Peñones de Melones in Cabo Rojo, Puerto Rico. Since 2002, Service observations indicate that this site has experienced periodic land clearing and dirt road construction. Several survey efforts have been conducted by Service biologists and a local botanist to locate the specific site of Peñones de Melones; however, to date, this population has not been located (Foote, personal observation 2002; Axelrod, personal communication 2004; Axelrod, personal communication 2006; Oikos Environmental Services 2005). The species was also known from about 24 individuals located on one privately owned farm in Halfpenny Bay near Christiansted in St. Croix. However, a systematic survey conducted on 2002 on the St. Croix population indicates that it is composed of approximately 100 individuals. The number of individuals on Barbuda, Antigua, and Guadeloupe remains undetermined as these islands are part of the historical distribution of the species and the occurrence of the species is known only from herbarium vouchers and the literature. At the time the critical habitat was designated, the species was found in three localities: approximately 100 individuals at a privately owned farm in Halfpenny Bay (Lombard 2002), approximately 12 individuals located at El Fuerte Trail in the Guánica Commonwealth Forest (Trejo-Torres 2001, Axelrod 2004), and one individual located at the Susúa Commonwealth Forest (Trejo-Torres 2006). The individual at Peñones de Melones was considered extirpated.

7. Species' Recovery Priority Number at start of review: 5. At the time of listing, *Catesbaea melanocarpa* was recognized as a species with a high degree of threat. Only three localities were known with the largest population consisting of approximately 24 individuals in a privately-owned land. Recovery potential for the species was considered to be low.

8. Recovery Plan:

Name of plan: Recovery Plan for *Catesbaea melanocarpa*.

Date issued: July 15, 2005

II. Review Analysis

A. Application of the 1996 Distinct Population Segment (DPS) policy

1. Is the species under review listed as a DPS? No.

The Act defines species to include any distinct population segment of any species of vertebrate wildlife. This definition limits listings as distinct population segments (DPS) only to vertebrate species of fish and wildlife. Because DPS policy is not applicable to this plant species, it is not addressed further in this review.

B. Recovery Criteria

1. Does the species have a final, approved recovery plan containing objective, measurable criteria? Yes. The recovery plan established downlisting and delisting criteria.

2. Adequacy of recovery criteria

a. Do the recovery criteria reflect the best available (most up-to-date) information on the biology of the species and its habitat? Yes.

b. Are all of the 5 listing factors that are relevant to the species addressed in the recovery criteria (and there is no new information to consider regarding existing or new threat)? Yes.

3. List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information.

Downlisting of the species from endangered to threatened status will be considered when: (1) the habitat known to support the two extant populations (St. Croix and Peñones de Melones) is enhanced and protected through landowner conservation agreements or easements; (2) extant populations are enhanced through the planting of additional propagated individuals to augment the number of adult individuals to at least 250; (3) at least one population within each of the following previously occupied habitat is found and/or established: Guánica Commonwealth Forest (PR), Susúa Commonwealth Forest (PR), Barbuda, Antigua, and Guadalupe; and (4) research is conducted on key biological and genetic issues, including effective propagation techniques, and number of individuals within a population and number of populations needed for the establishment of self-sustaining populations and a viable overall population.

Catesbaea melanocarpa will be considered for delisting when: (1) a number of viable populations (to be determined following the appropriate studies) are protected by long term conservation strategies; (2) viable populations (the number of which should be determined following the appropriate studies) are established in previously unoccupied but suitable habitat at Sandy Point National Wildlife Refuge (USVI), Cabo Rojo National Wildlife Refuge (PR), La Tinaja in Sierra Bermeja (Laguna Cartagena National Wildlife Refuge, PR), and any other identified suitable conservation area within the dry forest zone; and (3) the numbers of populations, their sizes, genetic makeup and distribution needed to ensure self-sustainability are determined and achieved.

A viable population is a reproducing population that is large enough to maintain sufficient genetic variation to enable it to evolve and respond to natural habitat changes. Number of adult plants and amount of suitable habitat necessary to maintain self-sustaining populations, will be determined following appropriate population dynamic studies.

At least one of the criteria has been partially met as one viable population of twelve individuals was discovered within the Guánica Forest Reserve. Furthermore, a new self sustainable population was located within a private property on Peñones de Melones. Also, Service effort has led to the identification of a single individual within the municipality of Peñuelas, Puerto Rico.

While a propagation program has not been initiated, Service biologists have transplanted seedlings founded within the Peñones de Melones population in Cabo Rojo, Puerto Rico. So far, seedlings have rooted and are producing new branches under nursery conditions, indicating that relocation of seedlings is a feasible technique.

C. Updated Information and Current Species Status

1. Biology and Habitat

a. Is there relevant new information regarding the species' abundance, population trends, demographic features, or demographic trends? Yes.

When the recovery plan was approved in 2005, the number of individuals was estimated at approximately one hundred plants in the island of St. Croix (USFWS 2005) and one individual in the Susúa Forest. The latter was based on the misidentification of material of *Machaonia portoricensis* by Carlos Trejo. As part of the field work for the designation of the critical habitat of the species, a population of 12 individuals was located within the Guánica Forest in Puerto Rico. Further work led to the discovery of 12 adult individuals and 7 seedlings on Peñones de Melones in Cabo Rojo. Furthermore, technical assistance provided to the Puerto Rico Electric and Power Authority (PREPA) during the evaluation of Gasoducto del Sur led to discovery of an individual on the municipality of Peñuelas.

According to the information available at our office as of January 2011, the total number of populations in Puerto Rico and St. Croix is estimated to be at least four. Based on the data currently available at our office, the number of individuals is estimated at 132 plants (adults and seedlings).

b. Is there relevant new information regarding the species' genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.)? No.

c. Is there relevant new information regarding taxonomic classification or changes in nomenclature? No.

d. Is there relevant new information regarding the species' spatial distribution, trends in spatial distribution, or historic range? Yes.

The natural distribution of the species that included the Susúa Forest is currently questionable. The last analysis of the data available at our office indicates that the Susúa Forest report was based on the misidentification of material from *Machaonia portoricensis*. Also, a specimen from the Susúa Forest that was misidentified as *Catesbaea melanocarpa* was later identified as *Catesbaea parviflora*. These imply that the distribution of *C. melanocarpa* is restricted to the subtropical dry forest life zone.

Service efforts have also led to the identification of a new population within the municipality of Peñuelas. This site was located along the proposed route for the Gasoducto del Sur. The habitat conditions on this site are similar to the site at the Guánica Forest and Peñones de Melones. Since this area, as well as the Guánica Forest, had little agricultural value and have remained relatively undisturbed, the occurrence of further individuals and/or populations within private properties in Guayanilla is anticipated.

e. Is there relevant new information addressing habitat or ecosystem conditions? No.

2. Five Factor Analysis (threats, conservation measures, and regulatory mechanisms)

(a) Present or threatened destruction, modification, or curtailment of its habitat or range;

When the species was listed in 1999, the Service identified habitat destruction and modification as important factors affecting the species. Deforestation for residential and tourist development may pose imminent threats to the survival of the species. In Puerto Rico, a single individual was reported on a privately-owned land known as Peñones de Melones. This locality was threatened with a proposed high density residential/tourist development. Although the residential/tourism project has not been developed yet, on

March 2006, we visited the site and documented that the area has been subjected to land clearing activities with heavy equipment.

Subsequent visits to the area of Peñones de Melones on 2008 let to the identification of a new population of at least 12 individuals. Further visits by Service biologist Carlos Pacheco suggest that these individuals may no longer exist as deforestation and fires associated with human activity continue within this area. However, this observation has not been confirmed. The individual recently discovered at Peñuelas is also threatened by possible dirt road expansion or realignment of the natural gas pipeline if the government decides to continue with the proposed “Gasoducto del Sur” (gas pipeline). Therefore, about 20 of the wild individuals occurring in Puerto Rico are currently threatened by habitat destruction or modification. Only the 12 individuals occurring within the boundaries of the Guánica Forest are not threatened by this factor.

In St. Croix, approximately 100 individuals are present in a privately-owned land. This population is subject to impacts from grazing activities. Also, the development of a golf course has been proposed for the site. Therefore, this listing factor continues to threaten the species in St. Croix.

(b) Overutilization for commercial, recreational, scientific or educational purposes;

In the final rule, this was not a factor in the decline of the species. At present time, we are not aware that overutilization for commercial, recreational, scientific or educational purposes constitutes a limiting factor for the species.

(c) Disease or predation;

In the final rule, this was not a factor in the decline of the species. At present time, we are not aware that disease or predation constitutes a limiting factor for the species.

(d) Inadequacy of existing regulatory mechanisms; and

In the final rule, the inadequacy of existing regulatory mechanisms to protect the species was identified as a threat. In 1999, the Commonwealth of Puerto Rico approved the Law # 241 known as the “Nueva Ley de Vida Silvestre de Puerto Rico” (New Wildlife Law of Puerto Rico). The purpose of this law is to protect, conserve and enhance both native and migratory wildlife species; declare property of Puerto Rico all wildlife species within its jurisdiction, regulate permits, regulate hunting activities, and regulate exotic species among others. The Puerto Rico Department of Natural and Environmental Resources approved in 2004 the “Reglamento para Regir el Manejo de las Especies Vulnerables y en Peligro de Extinción en el Estado Libre Asociado de Puerto Rico” (Regulation 6766 to regulate the management of threatened and endangered species in the Commonwealth of Puerto Rico). *Catesbaea melanocarpa* has been included in the list of protected species and designated as “critically endangered”. This regulation under Article 2.06 prohibits collecting, cutting, removing, among other activities, listed plant individuals within the jurisdiction of Puerto Rico. Following the listing of this species, the U.S. Virgin Islands

Department of Planning and Natural Resources also began protecting this species through its local law known as the Virgin Islands' Indigenous and Endangered Species Act (Act No. 5665).

The Service has signed Cooperative Agreements with both Commonwealth and Territorial governments under section 6 of the ESA to support vigorous endangered species programs for all federally-listed species within their jurisdictional areas. Based on the presence of Commonwealth and other Federal laws and regulations protecting this species, we believe that inadequacy of existing regulatory mechanisms should no longer be considered a threat.

(e) Other natural or manmade factors affecting its continued existence.

Limited distribution of the species was also identified as an important factor affecting the species. Catastrophic natural events, such as hurricanes, may dramatically affect forest species composition and structure, felling large trees and creating numerous canopy gaps. Breckon and Kolterman (1993) documented the loss of individuals in St. Croix following the passing of Hurricane Hugo in 1989. Fire may also be a threat to the known population on the island of St. Croix. Fire is not a natural component of subtropical dry forest in Puerto Rico and Virgin Islands. Species found in this type of forest are not fire adapted. The St. Croix location is adjacent to an existing road and human-induced fires may affect the long term survival of these individuals.

3. Synthesis

Catesbaea melanocarpa is currently known from seven areas: the Guánica Commonwealth Forest in Puerto Rico, two privately owned localities in Puerto Rico (Peñones de Melones and Encarnación), one privately-owned locality in St. Croix in the U.S. Virgin Islands, Barbuda, Antigua, and Guadeloupe. At least 132 individual (including seedlings) are known from four localities within the U.S. Caribbean. The species is currently threatened by habitat destruction and modification in St. Croix, and natural and human-induced catastrophic events due to its limited distribution. The St. Croix population is the population with the greatest number of individuals (100 plants). The majority of the individuals within Puerto Rico are located within privately owned areas subject to urban development. The Service designated an area in Halfpenny Bay near Christiansted in St. Croix as critical habitat for the species in 2007.

III. RESULTS

A. Recommended Classification:

 X No, no change is needed.

IV. RECOMMENDATIONS FOR FUTURE ACTIONS

Initiate propagation efforts and establish new populations in protected areas.

V. REFERENCES

- Breckon, G. and D. Kolterman. 1993. Final Report for Cooperative Agreement No. 14-16-0004-92-970. Unpublished report submitted to the U.S. Fish and Wildlife Service. 115 pp.
- Oikos Environmental Services. 2005. Environmental Studies Villas de Bahía Boquerón Project. Report submitted to Gregory L. Morris Engineering, San Juan, Puerto Rico. 83pp.
- Proctor, G.R. 1991. Status report on *Catesbaea melanocarpa* Krug & Urban. Unpublished report submitted to the U.S. Fish and Wildlife Service. 7 pp.
- U.S. Fish and Wildlife Service. 2005. Recovery Plan for *Catesbaea melanocarpa*. Atlanta, Georgia, 32pp.

U.S. FISH AND WILDLIFE SERVICE
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Current Classification Endangered

Recommendation resulting from the 5-Year Review

 X No change is needed

Review Conducted By: Omar Monsegur, Caribbean Ecological Services Field Office

FIELD OFFICE APPROVAL:

Edwin E. Muñiz, Lead Field Supervisor, U.S. Fish and Wildlife Service

Approve Edwin Muñiz Date 12 Apr 2011

REGIONAL OFFICE APPROVAL:

Cynthia Dohner, Lead Regional Director, Fish and Wildlife Service

for Approve Cynthia Dohner Date 4/26/11