

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R4-ES-2009-0022]

RIN 1018-AX68

**Endangered and Threatened Wildlife and Plants; 12-Month Petition Finding,
Proposed Listing of Coquí Llanero as Endangered, and Designation of Critical
Habitat for Coquí Llanero**

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; 12-month finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 12-month finding on a petition to list the coquí llanero (*Eleutherodactylus juanariveroi*), an endemic Puerto Rican tree frog, as endangered under the Endangered Species Act of 1973, as amended (Act) and to designate critical habitat. After review of all available

scientific and commercial information, we find that listing the coquí llanero as an endangered species under the Act is warranted. Accordingly, we propose to list the coquí llanero as an endangered species throughout its range and designate critical habitat for the species pursuant to the Act. In total, we propose approximately 615 acres (249 hectares) of a freshwater wetland for designation as critical habitat. The proposed critical habitat is located in Sabana Seca Ward, Toa Baja, Puerto Rico. This proposed rule, if made final, would extend the Act's protections to this species. The Service seeks data and comments from the public on this proposed listing rule and the designation of critical habitat for the species.

DATES: We will consider comments received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. We must receive requests for a public hearing, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: (1) *Electronically:* Go to the Federal eRulemaking Portal: <http://www.regulations.gov>. Search for Docket No. **FWS-R4-ES-2009-0022**, which is the docket number for this rulemaking.

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: **FWS-R4-ES-2009-0022**; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042-PDM; Arlington, VA 22203.

We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the **Information Requested** section below for more details).

FOR FURTHER INFORMATION CONTACT: Marelisa Rivera, Deputy Field Supervisor, U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office, P.O. Box 491, Road 301 Km 5.1, Boquerón, Puerto Rico; by telephone, 787-851-7297, extension 206; or by facsimile, 787-851-7440. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned Federal and State agencies, the scientific community, or any other interested party concerning this proposed rule. We particularly seek comments concerning:

(1) Additional information concerning the historical and current status, range, distribution, and population size of this species, including the locations of any additional populations of this species.

(2) Any information on the biological or ecological requirements of the species, and ongoing conservation measures for the species and its habitat.

(3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species and regulations that may be addressing those threats.

(4) Current or planned activities in the areas occupied by the species and possible impacts of these activities on this species.

(5) Additional information regarding the threats to the species under the five listing factors, which are:

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

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

(c) Disease or predation;

(d) The inadequacy of existing regulatory mechanisms; and

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

(6) The reasons why areas should or should not be designated as critical habitat as provided by section 4 of the Act (16 U.S.C. 1531 *et seq.*), including the possible risks or benefits of designating critical habitat, including risks associated with publication of maps designating any area on which this species may be located, now or in the future, as critical habitat.

(7) The following specific information on:

(a) The amount and distribution of habitat for coquí llanero;

(b) What areas, that were occupied at the time of listing (or are currently occupied) and that contain the physical and biological features essential to the conservation of this species, should be included in a critical habitat designation and why;

(c) Special management considerations or protection that may be needed for the essential features in critical habitat areas, including managing for the potential effects of climate change; and

(d) What areas not occupied at the time of listing are essential for the conservation of this species and why.

(8) Information on the projected and reasonably likely impacts of changing environmental conditions resulting from climate change on the species and its habitat.

(9) Any probable economic, national security, or other relevant impacts of designating any area that may be included in the final designation; in particular, any impacts on small entities or families, and the benefits of including or excluding areas that exhibit these impacts.

(10) Whether we could improve or modify our approach to designating critical habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

(11) Information on whether the benefits of an exclusion of any particular area outweigh the benefits of inclusion under section 4(b)(2) of the Act.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that

determinations as to whether any species is an endangered or threatened species must be made “solely on the basis of the best scientific and commercial data available.”

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>. Please include sufficient information with your comments to allow us to verify any scientific or commercial information you include.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Background

Section 4(b)(3)(B) of the Act requires that, for any petition to revise the Federal Lists of Threatened and Endangered Wildlife and Plants that contains substantial

scientific or commercial information that listing a species may be warranted, we make a finding within 12 months of the date of receipt of the petition on whether the petitioned action is: (a) Not warranted; (b) warranted; or (3) warranted, but the immediate proposal of a regulation implementing the petitioned action is precluded by other pending proposals to determine whether any species is endangered or threatened, and expeditious progress is being made to add or remove qualified species from the Federal Lists of Endangered and Threatened Wildlife and Plants. In this document, we have determined that the petitioned action to list coquí llanero is warranted, and we are publishing a proposed rule to list the species and to designate critical habitat for the species.

Previous Federal Actions

On May 22, 2007, we received a petition, dated May 11, 2007, from the Caribbean Primate Research Center (CPRC) (CPRC 2007, pp. 1–29) requesting that coquí llanero be listed as endangered under the Act. The petition also requested that we designate critical habitat concurrently with listing, if listing occurs. In a letter to the petitioner dated July 23, 2007, we acknowledged receipt of the petition and also stated that (1) we would not be able to address the petition until funding became available, and (2) actions requested by this petition were precluded by court orders and settlement agreements for other listing actions that required nearly all of our listing funds for the current (2007) fiscal year.

On January 22, 2009, we received an amended petition dated and signed by the

petitioner on January 13, 2009. The amended petition included updated information on current threats to the species and its habitat (CPRC 2009, pp. 1–19). On July 8, 2009, we published in the **Federal Register** (74 FR 32510) our finding that the petition to list coquí llanero presented substantial information indicating that the requested action may be warranted, and we initiated a status review of the species.

In this document, we present our 12-month finding on the petition, and we also propose listing the species as endangered and propose to designate critical habitat for the species.

Species Information

Species Biology

Coquí llanero is an endemic Puerto Rican tree frog. Coquí llanero is the smallest and only known herbaceous wetland specialist within the taxonomic genus *Eleutherodactylus* in Puerto Rico (Ríos-López and Thomas 2007, p. 62). It has a mean snout-vent length of 0.58 inches (in.) (14.7 millimeters (mm)) in males and 0.62 in. (15.8 mm) in females. The nares (nasal passages) are prominent and a ridge connects them behind the snout tip, giving the tip a somewhat squared appearance. The species has well-developed glands throughout its body; its dorsal coloration is yellow to yellowish brown with a light, longitudinal, reversed comma mark on each side; and its mid-dorsal zone is broadly bifurcated (divided into two branches) (Ríos-López and Thomas 2007, p. 55). The species' communication call consists of a series of short, high-pitched notes with call duration varying from 4 to 21 seconds. The advertisement call has the highest

frequency among all Puerto Rican *Eleutherodactylus*, between 7.38 and 8.28 kilohertz (Ríos-López and Thomas 2007, p. 61). The calling activity starts at approximately 4:30 p.m. and decreases significantly before midnight.

Coquí llanero is insectivorous (feeds on small insects). The species has been observed to reproduce only on the plant *Sagittaria lancifolia* (CPRC 2009, p. 4). Egg clutches were found on leaf axils (21 egg clutches) or leaf surfaces (3 egg clutches) of only *S. lancifolia* (Ríos-López and Thomas 2007, p. 60) within the wetland area. Coquí llanero has the lowest reproductive output of any coquí species in Puerto Rico; egg clutches are comprised of one to five eggs and are found on leaf axils or leaf surfaces between 1.3 feet (ft) (0.4 meters (m)) and 3.9 ft (1.2 m) above water level (Ríos-López and Thomas 2007, pp. 53–62). Observers did not witness parental care in the field (CPRC 2009, p. 5).

Genetics and Taxonomy

Coquí llanero was first collected by Neftalí Ríos-López and Richard Thomas in 2005. In 2007, coquí llanero was described as a new species of the genus *Eleutherodactylus*, family Leptodactylidae. Although the coquí llanero is similar to *Eleutherodactylus gryllus*, differences in morphological ratios, body coloration, call frequency and structure, DNA, and habitat association indicate that it is a well-differentiated species (Ríos-López and Thomas 2007, pp. 53–60; CPRC 2009, p. 1). Coquí llanero is the only known herbaceous wetland specialist within the taxonomic genus *Eleutherodactylus* in Puerto Rico (Ríos-López and Thomas 2007, p. 62).

Distribution and Habitat

The habitat of coquí llanero is located within the subtropical moist forest life zone (tropical and subtropical forest ecosystems) (Ewel and Whitmore 1973, pp. 20–38). This life zone (areas with similar plant and animal communities) covers about 60.5 percent of the total area of Puerto Rico (Ewel and Whitmore 1973, p. 9). The species appears to be an obligate marsh dweller (Ríos-López 2007, p. 195). Coquí llanero has been found only in freshwater, herbaceous, wetland habitat at 55.8–ft (17–m) elevation (Ríos-López and Thomas 2007, p. 60). The National Wetland Inventory (NWI) classifies the majority of this wetland as palustrine. Palustrine wetlands are non-tidal wetlands, where the salinity due to ocean-derived salts is less than 0.5 ‰ parts per thousand (ppt) and the emergent vegetation is persistent seasonally flooded having surface water present for extended periods during the growing season. The soils of this wetland consist of swamp and marsh organic deposits from Pleistocene or recent origin or both (Ríos-López and Thomas 2007, p. 60). The species' habitat may represent a relic of an endemic seasonally to permanently flooded, herbaceous, wetland habitat type (Ríos-López and Thomas 2007, p. 63). Herbaceous vegetation in this habitat shows a species composition consisting of *Blechnum serrulatum* (toothed midsorus fern), *Thelypteris interrupta* (willdenow's maiden fern), *Sagittaria lancifolia* (bulltongue arrowhead), *Cyperus* sp. (flatsedges), *Eleocharis* sp. (spike rushes), and vines and grasses (Ríos-López and Thomas 2007, p. 60). The majority of coquí llaneros have been found perching and calling on the toothed midsorus fern and willdenow's maiden fern. At the time the species was first discovered,

all the individuals collected were perching, sitting, or calling on herbaceous vegetation, mainly on ferns.

Coquí llanero was first collected by Neftalí Ríos-López and Richard Thomas in 2005 from a freshwater, herbaceous wetland on the closed U.S. Naval Security Group Activity Sabana Seca (USNSGASS) property and the Caribbean Primate Research Center (CPRC) of Medical Sciences Campus, University of Puerto Rico, Toa Baja, Puerto Rico (PR). This wetland area is considered as the “type location” (similar location) because the species was first collected and described from this area.

At the time the frog was described, it was known to occur at the Ingenio Sector in the Sabana Seca Ward, Toa Baja, a municipality of Puerto Rico located on the northern coast, north of Toa Alta and Bayamón, east of Dorado, and west of Cataño, approximately 12 miles (mi) (20 kilometers (km)) from San Juan, PR. The coquí llanero is now documented on lands owned or managed by three entities. One area, the closed USNSGASS, is comprised of approximately 865 ac (350.1 ha). Of these 865 ac (350.1 ha), the coquí llanero has been documented on 260 ac (105 ha) of wetlands within these lands. Further, coquí llanero has been found in a wetland area that comprises approximately 258 ac (104 ha) and is currently military reservation lands adjacent to the closed military facility (Tec Inc. and AH Environmental 2008, p. 3–1). In addition, approximately 97 ac (39 ha) of wetlands owned by the University of Puerto Rico and the Puerto Rico Land Authority have coquí llanero present. Thus, at the present time, the coquí llanero is known to occur on a total of 615 ac (249 ha) (Geo-Marine 2002, pp. 2–13; Ríos-López and Thomas 2007, p. 60; Joglar 2007, p. 2; Tec Inc. and AH

Environmental 2008, p. 3–2; PR Land Authority 2011, unpublished data; Service 2011, unpublished data). The type locality (geographical location where species is known to occur) wetland where coquí llanero occurred was an area used by the USNSGASS between the late 1930s and early 1940s for military purposes during World War II (U.S. Navy 2006, p. 3–2). Since then, the habitat of coquí llanero within this area has experienced little disturbance due to restricted access of people and the limited development of military facilities (Ríos-López 2007, p. 196).

Coquí llanero's limited range may reflect a remnant population of a once widely distributed herbaceous wetland specialist whose habitat was decimated by historic land uses (Ríos-López and Thomas 2007, p. 62). During European colonization, land was extensively drained and modified for agricultural practices. A shift in the Puerto Rican economy from agriculture to industry led to land abandonment, and most of these lands were invaded by herbaceous vegetation or converted for urban development. Ríos-López and Thomas (2007, p. 63) indicated that recent surveys conducted in wetlands near the current known population of coquí llanero failed to locate the species and that, apparently, there are few or no wetlands with plant composition similar to that found in the species' type locality wetland. Ríos-López (2009, p. 4) also visited several nearby coastal palustrine wetlands in Cataño (Bacardi Factory area) to the east of the type locality wetland, all major regions of Toa Baja (within the same municipality of the type locality wetland), towards the west along several of the coastal municipalities (Dorado, Vega Alta, Manatí, Vega Baja and Camuy), and Mayagüez on the west side of the island. All of these areas were selected based on similar hydrogeological information provided

by Geographic Information System experts from the Puerto Rico Department of Natural and Environmental Resources (PRDNER). Even though some of these wetlands would seem to provide suitable habitat for the coquí llanero, the species was not detected in any of the locations. Joglar (2007, p. 1) also visited other areas outside of the known type locality wetland, including the North Tract in Sabana Seca (USNSGASS) and other localities in Toa Baja and Las Cucharillas in Cataño, all in northern Puerto Rico. Coquí llanero was not detected at any of these locations.

Using the NWI maps, EGIS, Inc. conducted a limited search for potential suitable coquí llanero habitat outside of the type locality wetland, using *Sagittaria lancifolia* as an indicator (EGIS 2007, p. 21). They selected 15 sites within the freshwater emergent and forested/shrub wetland designations. They found extensive growth of *S. lancifolia* in only one of these localities. Tortuguero Lagoon is another freshwater wetland also mentioned to contain *S. lancifolia*. Ríos-López also searched for the coquí llanero within this lagoon but found no coquí llanero activity. In addition, EGIS included in their report a herbarium list from the University of Puerto Rico that specifies 11 localities where *S. lancifolia* was found (EGIS 2007, Appendix E). Some of these localities are within coquí llanero's type locality wetland, and others have already been searched for coquí llanero activity without positive results.

Coquí llanero was estimated to occur on approximately 445 ac (180 ha) when first discovered and described. Joglar (2007, p. 2) conducted additional surveys and estimated the distribution of the species to be approximately 504.5 ac (204 ha). The Service has

estimated the palustrine herbaceous wetland area where the coquí llanero is now found to be about 615 ac (249 ha) (Service 2011, unpublished data).

Vega-Castillo (2011) conducted diurnal and nocturnal surveys in wetland areas and channels located between PR Road-867 and PR Road-165 to the north of where coquí llanero is currently found while evaluating the proposed alignment for a natural gas pipeline. These surveys were conducted during January 2011, using recorded male calling (Vega-Castillo 2011, pp. 9-12). During this period, Vega-Castillo (2011) detected at least 6 individuals of coquí llanero vocalizing at the edge of a vegetated drainage channel that is a tributary of the Cocal River. The location where these individuals were reported is located about 1.7 mi (2.7 km) northwest from the area where coquí llanero are known to currently inhabit. This area is mainly dominated by pasture (Vega-Castillo 2011, p. 12). In March 2011, Service biologists conducted several site visits to the area to confirm the report. In addition, the Service installed a recorder for a 24-hour period in March 2011, to detect individuals vocalizing in the area. However, the Service did not detect the species in this area. Based on the Service's observations, the area is highly degraded, is dominated by lands converted to pasture and burned, and is not considered in the total habitat occupied by coquí llanero.

Although the petition reports an average of 181 individuals per acre (450 individuals per hectare) (CPRC 2009, p. 5), at the present time, no current population estimates are available for the species.

Summary of Information Pertaining to the Five Threat Factors

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. A species may be determined to be an endangered or threatened species due to one or more of the following five factors described in section 4(a)(1) of the Act:

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; and
- (E) Other natural or manmade factors affecting its continued existence.

Listing actions may be warranted based on any of the above threat factors, singly or in combination. Each of these factors is discussed below.

In considering what factors might constitute threats to a species, we must look beyond the exposure of the species to a particular factor to evaluate whether the species may respond to that factor in a way that causes actual impacts to the species. If there is exposure to a factor and the species responds negatively, the factor may be a threat and, during our review, we attempt to determine how significant a threat it is. The threat is

significant if it drives, or contributes to, the risk of extinction of the species such that the species warrants listing as endangered or threatened as those terms are defined in the Act. However, the identification of factors that could impact a species negatively may not be sufficient to compel a finding that the species warrants listing. The information must include evidence sufficient to suggest that these factors are operative threats that act on the species to the point that the species may meet the definition of endangered or threatened under the Act.

Factor A: The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The coquí llanero was discovered in 2005. Additional on-the-ground surveys based upon habitat characteristics revealed no additional populations. As a result, we do not know if the historical range of the species may be different from its present, known range. Thus, we are able to present and discuss only potential factors that may affect the current habitat or range of coquí llanero in this section, including: (1) Urban development; (2) operation and possible expansion of a go-kart and motorbike race track in coquí llanero wetland habitat; (3) contamination from the Toa Baja Municipal Landfill (TBML); (4) habitat degradation for flood control projects; and (5) competition from invasive wetland plant species.

Urban Development

Coquí llanero and its habitat are threatened by large-scale residential projects that are currently planned within and around the site where the species is known to occur (González 2010, pers. comm.; Ríos-López 2010, pers. comm.). The most significant portion of this habitat falls within the southern portion of the USNSGASS. The USNSGASS land comprises approximately 2,195 ac (888 ha), which is divided into two large areas: the North and South Tracts. The North Tract accounts for approximately 1,330 ac (538 ha), with the majority of land currently leased to a local cattle farmer. The South Tract comprises approximately 865 ac (350 ha) and is where the coquí llanero is known to occur on 260 ac (105 ha).

The U.S. Navy (USNSGASS) is disposing the property in accordance with Section 2801 of the National Defense Authorization Act (NDAA) for Fiscal Year 1996 (FY1996), Public Law 104-106, 110 Stat. 186 (10 U.S.C. 2871-2885), as amended. Section 2801 of NDAA provides the authority to the Department of Defense (DOD) to work with the private sector nationwide, in order to build and renovate family housing and ancillary facilities in key areas of need. The Navy is conveying approximately 2,075 ac (840 ha) of the property to a private entity, Sabana Seca Land Management (SSLM), LLC, which is associated with the Navy's Public Private Venture partnership for military family housing (Tec Inc. and AH Environmental 2008, p. ES-1). SSLM will market and sell the closed Navy base property to non-Federal entities through Forest City Enterprises, Inc.

The environmental assessment (EA) for the transfer-disposal of USNSGASS property states that the property disposed of by the Navy would be redeveloped in a manner similar to surrounding areas (Tec Inc. and AH Environmental 2008, p. 4–1). According to the EA, the preferred alternative for the wetland area that contains occupied coquí llanero habitat is residential use (Tec Inc. and AH Environmental 2008, p. 2–2). Furthermore, the coquí llanero wetland habitat is not within the areas that would be zoned for conservation by the Toa Baja municipality, and, according to their land-use plan, they intend to zone the wetland area for residential development. Also, coquí llanero wetland habitat is not within the parcels to be conveyed to the University of Puerto Rico to be protected in perpetuity.

The ultimate reuse of the USNSGASS property would be determined by the non-Federal entities receiving the property from SSLM and Forest City Enterprises, Inc. The EA explains that the development within wetlands and the magnitude of the impacts that could occur, if such development was permitted, would be dependent upon the actual placement of new residential areas and the amount of wetland removal or alteration allowed for site development (Tec Inc. and AH Environmental 2008, p. 4–15). Possible impacts (approximately 221 ac (89 ha) of palustrine emergent wetlands (Tec Inc. and AH Environmental 2008, p. 4–16)) could occur by draining and filling these wetlands, which are occupied by coquí llanero, leaving little to no suitable habitat for coquí llanero to carry out its life-history processes. In addition, filling the wetlands for future development could require Clean Water Act (CWA; 33 U.S.C. 1251 *et seq.*) Section 404 permits from the U.S. Army Corps of Engineers (Corps). If the species is listed, and the

development would likely adversely affect the species, consultation under section 7 of the Act would be conducted between the Corps and the Service.

Nevertheless, prior to the discovery of coquí llanero, land use-history for this area has shown that urban and commercial development has adversely impacted wetland resources, and although not documented, presumably affected coquí llanero individuals and its habitat. An example of those impacts is the fill of a freshwater emergent wetland for residential housing at the western end of current coquí llanero habitat (Zegarra and Pacheco 2010, personal observation). The wetland where coquí llanero is currently known to be present was previously impacted by the construction and maintenance of Redman Road. This road was constructed in an area identified in the NWI maps as freshwater emergent and forested shrub wetlands and its construction interrupted the natural flow of water and affected the hydrology of the wetland. Further adverse effects to the same wetland habitat can be observed in the residential community that exists on the boundary of the closed USNSGASS property near the intersection of PR Road-867 and Redman Road. This community has expanded over the past 40 years and presently consists of approximately 50 houses, 20 of which are on Navy property (U.S. Navy 2000 *in* Tec Inc. and AH Environmental 2008, p. 3–4). Prior to the closure of the USNSGASS, the Navy was planning to construct a new fence on the property to eliminate further encroachment on its land holdings (Tec Inc. and AH Environmental 2008, p. 3–6).

Implementing the preferred alternative of the EA for the disposal of the USNSGASS property may result in the destruction of approximately 416 ac (168 ha) of wetlands, including coquí llanero habitat (Tec Inc. and AH Environmental 2008, p. 4–5). Additionally, implementing the preferred alternative would most likely result in new residential development (Tec Inc. and AH Environmental 2008, p. 4–6). According to the Puerto Rican Planning Board (PRPB) web site, 11 development projects are under evaluation around the southern section of the wetland currently occupied by coquí llanero, possibly impacting a total of 1,087 ac (440 ha) (<http://www.jp.gobierno.pr>, accessed online February 2010). Urban development adjacent to the wetland would fragment and directly impact coquí llanero suitable habitat and would limit the species' population expansion in the area. In addition, with the creation of new residential projects, traffic would be expected to increase, and thus, the three primary roadways surrounding the USNSGASS would likely require some improvements (Tec Inc. and AH Environmental 2008, p. 4–6). Vehicle traffic on roads within the essential habitat of amphibian species can be a direct source of mortality and, in some instances, can be catastrophic and should not be underestimated (Glista *et al.* 2007, p. 85). According to Janice Gonzáles, Director of the CPRC, approximately 30 CPRC employees drive vehicles on Redman Road daily as it is currently the main access road to the CPRC (Gonzáles 2010, pers. comm.). Any improvement of the road or increase in traffic may affect the suitability of the wetland. The biological effects to coquí llanero from the existing road network around the southern section of the wetlands are not well understood. The combination of habitat fragmentation and high vehicle use of the roads may negatively impact coquí llanero and its habitat through loss of habitat connectivity,

degradation of water quality, direct mortality, edge effect of road and wetland, and changes in hydrology.

For these reasons, we conclude that urban development and associated infrastructure and human use is a significant threat to coquí llanero by direct mortality and due to permanent loss, fragmentation, or alteration of its habitat.

Go-kart and Motorbike Race Track

Although the Service does not have information regarding the specific date of the construction of the existing race track, we estimate that approximately 29 ac (12 ha) of freshwater emergent and forested shrub wetlands were impacted. These data were quantified using Geographic Information Systems analysis with aerial photography and the NWI layers. The Puerto Rico Department of Natural and Environmental Resources (PRDNER) provided a photograph of coquí llanero habitat that was filled by the construction of the race track (PRDNER 2007b, p. 25). It is also evident that the race track floods during heavy rain events and serves as a potential source of contamination with oil, gasoline, and other pollutants, affecting the suitability of adjacent coquí llanero habitat (PRDNER 2007b, p. 25). The possible effects of waterborne contaminants on coquí llanero are discussed under Factor E.

Comments submitted by SSLM (2009, p. 4) expressed concern when the operators of the race track removed soil to expand the parking lot. The soil was

deposited on the USNSGASS grounds, affecting coquí llanero habitat by filling part of the wetland. Joglar (2007, p. 2) identified the wetland area contiguous to the race track as occupied by coquí llanero.

Therefore, we conclude that any further expansion of the race track or its operation may potentially impact coquí llanero by permanent loss, alteration, or contamination of its habitat.

Toa Baja Municipal Landfill (TBML)

The current operation of the Toa Baja Municipal Landfill (TBML) constitutes a threat to coquí llanero. The landfill is located inland on top of a limestone hill 0.5 mi (0.8 km) south of known coquí llanero habitat. The polluted discharge or run-off waters from the continued operation of the landfill may pose a serious threat to the species because underground contaminated waters and leachates reaching the wetlands may change water quality, soils, and consequently plant composition (CPRC 2009, pp. 6–9). See discussion below under Factor E.

The legal representative for the Toa Baja Municipal Administration sent a letter to the Service dated September 8, 2009, supporting the listing of coquí llanero as endangered and supporting the PRDNER Essential Critical Natural Habitat delineation except for one 83 ac (33.6 ha) parcel necessary for the implementation of the TBML closure activities ordered by the U.S. Environmental Protection Agency (EPA).

According to a PRDNER technical assistance letter dated February 26, 2010 (PRDNER 2010, pp. 1–6), another area on the north side of the TBML is also being considered for use in the landfill closure activities. This area, identified as Area B by the Puerto Rico Environmental Quality Board (EQB), is located within the PRDNER’s designated Essential Critical Natural Habitat for the coquí llanero. Activities identified in the closure procedures will direct the TBML stormwater drainages towards the wetland. Stormwater that drains from the TBML currently flows into coquí llanero habitat and is contaminated with leachate (see Factor E discussion). In addition, the TBML closure measures would modify the hydrology of the area and could adversely affect the hydrology of the coquí llanero wetland by affecting part of the limestone hills, which supply water to the wetland and affect the suitability of habitat for the species.

Therefore, we conclude that the current operation and the possible closure measures of the TBML are a threat to the coquí llanero by potentially altering the hydrology of its wetland habitat and by contaminating the wetland with the landfill runoff.

Channel-clearing Activities for Flood Control

The municipality of Toa Baja periodically removes riparian vegetation along the main drainage channel within the wetland where the coquí llanero is known to occur. These flood control measures are implemented during the rainy season to facilitate water flow and prevent flooding of nearby communities including Ingenio, Villas del Sol, and

Brisas de Campanero. However, channel-clearing activities may facilitate drainage and drying of the wetland and accelerate colonization of invasive, herbaceous vegetation along the edges of the channel towards the wetland (Ríos-López 2009, p. 3). Preliminary studies on the reproductive biology of coquí llanero suggest that wetland areas subjected to prolonged dry periods (e.g., towards the edges of wetland) are characterized by greater vegetation cover of grasses instead of the native ferns and arrowheads that the coquí llanero depends on for reproduction and survival. These areas also have a disproportionate abundance of coquí llanero egg clutch predators, both native and exotic mollusks and insects (Ríos-López 2009, pp. 3, 11).

Therefore, we conclude that channel-clearing activities may be an indirect threat to the coquí llanero because they prolong dryer conditions along the edges of the wetland, allowing invasive plants and predators to colonize the wetland.

Invasive Wetland Plant Species

Invasive, native wetland plants such as *Typha domingensis* (Southern cattail) may invade and alter diverse native wetland communities, often resulting in plant monocultures that support few wildlife species (Houlahan and Findlay 2004, p. 1132). Southern cattail may alter the wetland attributes, including geomorphology, fire regime, hydrology, microclimate, nutrient cycling, and productivity (Woo and Zedler 2002, p. 509). Based on our previous experience in the Laguna Cartagena National Wildlife Refuge, the southern cattail colonized disturbed areas faster than other native wetland

plants, thereby excluding the other native plants. The southern cattail is currently found in patches within the coquí llanero wetland habitat (Service 2011, pers. obs.). If the southern cattail continues to spread and colonizes the coquí llanero wetland habitat, it could replace all *Sagittaria lancifolia* and the ferns that the coquí depends on for reproduction and normal behavior.

Therefore, we conclude that invasive wetland species are a threat to the coquí llanero due to changes in the wetland hydrology and plant species composition the coquí llanero needs for survival.

Summary of Factor A

Based on the best scientific and commercial information available, we consider the present or threatened destruction, modification, or curtailment of the species' habitat or range to be a high-magnitude and ongoing (imminent) threat to the coquí llanero. We believe that the species is currently threatened by urban development, by the operation of the existing race track, by activities associated with the operation and future closure of the TBML, by channel-clearing activities for flood control, and by invasive plant species. The scope of this factor is exacerbated because the only known population of coquí llanero occurs on land that is slated for development and surrounded by lands subject to urban development. Because these threats are already occurring on the extremely localized known range of the coquí llanero, they are having or are likely to have a significant impact on the species.

Factor B: Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Coquí llanero is not a commercially valuable species or a species sought after for recreational or educational purposes. However, this recently discovered tree frog species could be actively sought for scientific purposes. Forty-five coquí llanero specimens were collected for scientific purposes in 2005, to describe the species, and some specimens have been deposited in universities and private collections (Ríos-López and Thomas 2007, p. 54). In addition, an undisclosed number of eggs and individuals were collected for scientific research of the species' reproductive biology, potential captive breeding capability, and pathogen sampling. While scientific collecting had been identified as a possible contribution to the decline of other coquí species in Puerto Rico (Burrowes and Joglar 1991, p. 45), Commonwealth Law 241 and PRDNER Regulation 6766 promulgated in 2007 have prohibited collection of coquí llanero without authorization (PRDNER 2007a, p. 9). Currently, the species occurs in a closed area where access to the roads within the property is limited to Caribbean Primate Research Center (CPRC), University of Puerto Rico (U of PR), USNSGASS, and only permitted scientific research personnel (Ríos-López 2011, unpublished data).

Based on the best scientific and commercial information available, we do not consider overutilization for commercial, recreational, scientific or educational purposes to presently be a significant threat to coquí llanero. Currently, only a few researchers are

working with the species, and collection is regulated by PRDNER. Therefore, coquí llanero is not threatened by overutilization for commercial, recreational, scientific, or educational purposes.

Factor C: Disease or Predation

The pathogenic chytrid fungus, *Batrachochytrium dendrobatidis* (*Bd*), is a widespread pathogen that is hypothesized to be the cause of mass mortality in some amphibian populations (Pilliod *et al.*, 2009, p. 1260). Chytridiomycosis (disease cause by the fungus) results when *Bd* invades keratinized tissue (tissue that makes the outside of the skin tough and resistant to injury) of an amphibian, disrupting cutaneous functions, compromising the host's immune system, and affecting the amphibian's behavior (Pilliod *et al.*, 2009, p. 1260). In Puerto Rico, it appears to be endemic above 1968.5 ft (600 m), occurring from eastern Luquillo Mountains (El Yunque National Forest), throughout the Central Cordillera up to Maricao (Burrowes *et al.* 2008, p. 322); however, this range is outside of the only known location where coquí llanero occurs (see *Species Information*). Five coquí llanero individuals have been sampled for *Bd*, with negative results (Burrowes *et al.* 2008, p. 323). Although *Bd* has been detected at lower elevations in other tropical environments, the best scientific and commercial information available for coquí llanero indicates that *Bd* is not a current threat to this species nor is it likely to become so in the near future, even taking into consideration changing environmental conditions due to climate change (see discussion under Factor E).

New information submitted by Ríos-López (2009, p. 11) indicates that natural predation pressure may be strong and that interspecific competition for breeding sites may be significant. Preliminary data indicated that coquí lanero has the lowest reproductive output of any coquí species in Puerto Rico, averaging three eggs per clutch (PRDNER 2007a, p. 3; Ríos-López and Thomas 2007, p. 60; Ríos-López 2009, p. 5). Egg predation by native and exotic invertebrates was observed, with some predators consuming entire egg masses in 3 days.

We conclude that the best scientific and commercial information available indicates, at the present time, that coquí llanero is not currently threatened by any disease. However, predation is a threat to coquí llanero, particularly at the dryer edges of the wetland, and could be exacerbated by the destruction, modification, or curtailment of the species' habitat (see discussion under Factor A). The information available suggests that flooded conditions may limit predation pressure against coquí llanero. Therefore, based on the best scientific and commercial information available to us, we conclude that predation is a threat to the continued existence of the species.

Factor D: The Inadequacy of Existing Regulatory Mechanisms

Puerto Rico DNER designated coquí llanero as Critically Endangered and designated its habitat as Essential Critical Natural Habitat under Commonwealth Law 241 and Regulation 6766 in July 2007 (PRDNER 2007a and 2007b). Article 2 of Regulation 6766 includes all prohibitions and states that the designation as “critically

endangered” prohibits any person from taking the species; it prohibits harm, possession, transportation, destruction, or import or export of individuals, nests, eggs, or juveniles without previous authorization from the Secretary of PRDNER (PRDNER 2007a, p. 9). The Puerto Rico DNER also designated approximately 1,602 ac (648 ha) as “essential critical natural habitat” under Regulation 6766 (PRDNER 2007b, p. 28). Article 4.05 of this regulation specifies that an area designated as Essential Critical Natural Habitat cannot be modified unless scientific studies determine that such designation should be changed. Because coquí llanero habitat is the first to be designated as Essential Critical Natural Habitat under Commonwealth Law 241 and Regulation 6766, the effective level of protection this law will provide is unknown. SSLM brought a lawsuit against the PRDNER for the critical habitat designation process of coquí llanero. Although PRDNER’s critical habitat designation process was upheld, the ruling is currently under review by Puerto Rico’s Supreme Court. Presently, both of PRDNER’s designations are valid and in regulation.

Based on the best scientific and commercial information available and the uncertainty of the level of protection the existing laws will provide, we consider the inadequacy of existing regulatory mechanisms to be a threat to coquí llanero.

Factor E: Other Natural or Manmade Factors Affecting Its Continued Existence

In the following section we discuss the highly specialized ecological requirements of the species, as well as water and soil pollution, use of herbicides, brush fires, competition, climate change, and human use and access of the wetland area.

Highly Specialized Ecological Requirements

Because of its highly specialized ecological requirements for reproduction, coquí llanero's vulnerability to other threats discussed in this rule is exacerbated. As mentioned in the **Background** section, coquí llanero is known to exist in only one freshwater wetland in the municipality of Toa Baja, and after several searches in other similar locations (apparently there are few or no wetlands with similar plant composition), the species was not detected. Ríos-López and Thomas (2007, p. 60) found that the breeding events of coquí llanero were limited to one plant species, *Sagittaria lancifolia*. *S. lancifolia* is an obligate wetland species indicator, and a general description of the major substrate types of the wetland where the coquí llanero currently inhabits indicates a 7.4 percent vegetation cover of *S. lancifolia* (Ríos-López 2009, p. 9). Coquí llanero may also be selecting an intermediate *S. lancifolia* size class for egg laying, which suggests further specialization (Ríos-López 2010, unpubl. data, p. 8). Also, current research by Ríos-López (2010, unpubl. data, p. 11) suggests that reproduction may not occur randomly in space, but rather seems to be limited to plants located in areas of little disturbance, in areas that are permanently flooded, and in areas that are away from the wetland's edges.

In summary, we believe that the highly specialized ecological requirements of coquí llanero exacerbate its vulnerability to other threats, such that the continued existence of the species is likely to be impacted. Characteristics of the species, such as its limited distribution (currently found in only one freshwater wetland with a distinct vegetation composition) and the fact that it has the lowest reproductive output of all coquí species in Puerto Rico heighten the effects of other threats as described in this rule. In addition, considering that coquí llanero uses only the *Sagittaria lancifolia* for reproduction, it may limit the species' ability to expand to other wetland areas.

Water and Soil Pollution

CPRC (2009, p. 6), PRDNER (2007b, p. 24), EGIS (2007, p. 4), and Joglar (2007, p. 6) identify the TBML leachates as a threat to coquí llanero. This landfill is located on the limestone hills to the south of the wetland known to be occupied by coquí llanero. CPRC submitted to EGIS a photograph of contaminated leachates draining towards the wetland habitat of coquí llanero. The leachate study submitted by EGIS describes the hydrology of the area as typical of karst (an area of limestone terrene characterized by sinks, ravines, and underground streams) zones near the coast, in which the run-off generated in the limestone hills, including at the TBML, flows at or near the surface, through a series of channels and small valleys, until the flow reaches the marshes and wetlands areas (including coquí llanero habitat) at the north (EGIS 2007, Appendix B, p. 7). The study specifies that a dark-colored leachate is currently flowing from the TBML towards the closed USNSGASS property, and that even during periods of drought, the

leachate flows continuously towards the USNSGASS property, with flows increasing during rain events (EGIS 2007, Appendix B, p. 23). The leachate study identified high levels of arsenic, cyanide, sodium, lead, and chromium, among other elements. There does not seem to be much indication of petroleum-related concerns, although sampling more strategically near the race track facility could more accurately assess this contamination impact relative to coquí llanero habitat (EGIS 2007, p. 5).

Additional analytical laboratory results at other threat zones associated with the wetland indicate elevation of certain heavy metals, coliform bacteria, chemical oxygen demand, and pesticides (EGIS 2007, p. 18). High coliform bacteria counts could be from several sources, such as septic systems or the CPRC (EGIS 2007, p. 5). Of particular concern is the possibility of bioaccumulation of toxins throughout the wetland food chain (PRDNER 2007b, p. 24). It is highly probable that the contaminated conditions represented in the soil and standing water would not be hospitable to a sensitive amphibian species such as coquí llanero that absorbs chemicals through the skin (EGIS 2007, p. 5). Such chemicals could directly affect the coquí llanero's development, cause abnormalities, or act indirectly by increasing the coquí llanero's susceptibility to other environmental stressors such as infectious disease and predation (Taylor *et al.*, 2005, p. 1497). We have no information indicating any negative response of the species to soil and water pollution; however, we consider water and soil pollution a potential threat to the species at this time.

Herbicides

CPRC (2009, p. 7) identifies the use of herbicides in the closed USNSGASS, as part of the maintenance work on the grounds, as a current threat to the species. However, SSLM (2009, p. 9) claims that it does not use herbicides on the borders of the wetland as part of maintenance work on the USNSGASS property, and that the practice of using herbicides is not in accordance with its institutional environmental policies and the activities authorized to SSLM at the USNSGASS by the Navy. During a site visit, there were no signs that herbicides are being used along Redman Road within the area where coquí llanero occurs on the USNSGASS, and a conversation with Ríos-López (2011 pers. comm.) confirmed that the practice has apparently ceased.

Nevertheless, herbicides may still be able to enter into the wetland because of possible herbicide use in the urban housing areas near coquí llanero habitat. These herbicides could cause developmental abnormalities (e.g., limb malformations) to the coquí llanero. In fact, pesticides have been known to be dispersed through precipitation and wind (Sparling *et al.* 2001, p. 1595; Fellers *et al.* 2004, p. 2176). Other research suggests that important changes in an ecological community's food web result from pesticide and herbicide exposure, which influence the susceptibility of amphibian species to contaminants (Boone and James 2003, p. 829). We have no information indicating any negative response of the species to herbicides; however, we consider the use of herbicides in the surrounding area as a potential threat to the species at this time.

Brush Fires

Brush fires have been identified as a current threat to the species (CPRC 2009, p. 6). SSLM (2009, p. 9) mentioned that the only fire incidents reported since 2007 have occurred on the North Tract of the USNSGASS and were limited to two or three incidents per year during the drought season. Coquí llanero habitat is surrounded by several developments (race track and urban housing) that facilitate exposure and invasion of any accidental or deliberate fires into the wetland footprint and adjacent forest. This could exacerbate the entrance of invasive plants such as southern cattail and change the vegetation composition of the wetland (see discussion under Factor A). In addition, these brush fires may encroach on the coquí llanero's current limited habitat. A possibly extinct coquí species in Puerto Rico (*Eleutherodactylus jasperi*) with limited distribution and highly specialized ecological requirements is known to have been adversely affected by fires in its type locality (Díaz 1984, p. 4).

Therefore, we believe that brush fires may be a threat to the coquí llanero and its habitat.

Competition

A common, and more widespread, coquí species of Puerto Rico (*Eleutherodactylus cochrae*) can utilize the same habitats as coquí llanero, specifically the *S. lancifolia* egg-laying locations, displacing and damaging coquí llanero eggs. These competitors rarely invade more permanently flooded areas of the wetland, suggesting a

synergism between hydrology alteration and competition that may result in magnified, negative biological interactions against coquí llanero (Ríos-López 2009, p. 4).

Competition is a threat to coquí llanero, particularly at the dryer edges of the wetland and this threat could be exacerbated by the destruction, modification, or curtailment of the species habitat (See discussion in Factor A). The information available suggests that flooded conditions may limit competition pressure against coquí llanero. Therefore, based on the best scientific and commercial information available to us, we conclude that competition is a threat to the continued existence of the species.

Climate Change

“Climate” refers to an area's long-term average weather statistics (typically for at least 20- or 30- year periods), including the mean and variation of surface variables such as temperature, precipitation, and wind; “climate change” refers to a change in the mean or variability or both of climate properties that persists for an extended period (typically decades or longer), whether due to natural processes or human activity (Intergovernmental Panel on Climate Change (IPCC) 2007a, p. 78). Although changes in climate occur continuously over geological time, changes are now occurring at an accelerated rate. For example, at continental, regional, and ocean basin scales, recent observed changes in long-term trends include: a substantial increase in precipitation in eastern parts of North American and South America, northern Europe, and northern and central Asia, and an increase in intense tropical cyclone activity in the North Atlantic

since about 1970 (IPCC 2007a, p. 30); and an increase in annual average temperature of more than 2 °Fahrenheit (1.1 °Celsius) across United States since 1960 (Global Climate Change Impacts in the United States (GCCIOUS) 2009, p. 27). Examples of observed changes in the physical environment include: an increase in global average sea level, and declines in mountain glaciers and average snow cover in both the northern and southern hemispheres (IPCC 2007a, p. 30); substantial and accelerating reductions in Arctic sea-ice (e.g., Comiso *et al.* 2008, p. 1); and a variety of changes in ecosystem processes, the distribution of species, and the timing of seasonal events (e.g., GCCIOUS 2009, pp. 79-88).

The IPCC used Atmosphere-Ocean General Circulation Models and various greenhouse gas emissions scenarios to make projections of climate change globally and for broad regions through the 21st century (Meehl *et al.* 2007, p. 753; Randall *et al.* 2007, pp. 596–599), and reported these projections using a framework for characterizing certainty (Solomon *et al.* 2007, pp. 22-23). Examples include: (1) It is virtually certain there will be warmer and more frequent hot days and nights over most of the earth's land areas; (2) it is very likely there will be increased frequency of warm spells and heat waves over most land areas, and the frequency of heavy precipitation events will increase over most areas; and (3) it is likely that increases will occur in the incidence of extreme high sea level (excludes tsunamis), intense tropical cyclone activity, and the area affected by droughts (IPCC 2007b, p. 8, Table SPM.2). More recent analyses using a different global model and comparing other emissions scenarios resulted in similar projections of global temperature change across the different approaches (Prinn *et al.* 2011, pp. 527, 529).

All models (not just those involving climate change) have some uncertainty associated with projections due to assumptions used, data available, and features of the models; with regard to climate change this includes factors such as assumptions related to emissions scenarios, internal climate variability, and differences among models. Despite this, however, under all global models and emissions scenarios, the overall projected trajectory of surface air temperature is one of increased warming compared to current conditions (Meehl *et al.* 2007, p. 762; Prinn *et al.* 2011, p. 527). Climate models, emissions scenarios, and associated assumptions, data, and analytical techniques will continue to be refined, as will interpretations of projections, as more information becomes available. For instance, some changes in conditions are occurring more rapidly than initially projected, such as melting of Arctic sea-ice (Comiso *et al.* 2008, p. 1; Polyak *et al.* 2010, p. 1797), and since 2000 the observed emissions of greenhouse gases, which are a key influence on climate change, have been occurring at the mid- to higher levels of the various emissions scenarios developed in the late 1990's and used by the IPCC for making projections (e.g., Raupach *et al.* 2007, Figure 1, p. 10289; Manning *et al.* 2010, Figure 1, p. 377; Pielke *et al.* 2008, entire). Also, the best scientific and commercial data available indicate that average global surface air temperature is increasing and several climate-related changes are occurring and will continue for many decades even if emissions are stabilized soon (e.g., Meehl *et al.* 2007, pp. 822-829; Church *et al.* 2010, pp. 411-412; Gillett *et al.* 2011, entire).

Changes in climate can have a variety of direct and indirect impacts on species, and can exacerbate the effects of other threats. Rather than assessing “climate change” as a single threat in and of itself, we examine the potential consequences to species and their habitats that arise from changes in environmental conditions associated with various aspects of climate change. For example, climate-related changes to habitats, predator-prey relationships, disease and disease vectors, or conditions that exceed the physiological tolerances of a species, occurring individually or in combination, may affect the status of a species. Vulnerability to climate change impacts is a function of sensitivity to those changes, exposure to those changes, and adaptive capacity (IPCC 2007, p. 89; Glick *et al.* 2011, pp. 19-22). As described above, in evaluating the status of a species, the Service uses the best scientific and commercial data available, and this includes consideration of direct and indirect effects of climate change. As is the case with all potential threats, if a species is currently affected or is expected to be affected by one or more climate-related impacts, this does not necessarily mean the species is an endangered or threatened species as defined under the Act. If a species is listed as endangered or threatened, this knowledge regarding its vulnerability to, and impacts from, climate-associated changes in environmental conditions can be used to help devise appropriate strategies for its recovery.

While projections from global climate model simulations are informative and in some cases are the only or the best scientific information available, various downscaling methods are being used to provide higher-resolution projections that are more relevant to the spatial scales used to assess impacts to a given species (see Glick *et al.* 2011, pp. 58-

61). The effects of climate change on coastal wetlands could be significant if sea level rises. Changes in precipitation patterns and warmer temperatures can likewise have detrimental effects on wetland function (Mitsch and Gosselink 2007, p. 313). Climate-linked amphibian population declines in Puerto Rico have been explained by a possible synergistic interaction between drought and the pathological effect of the chytrid fungus (Burrowes *et al.* 2004, p. 141) (see Factor C discussion). While we do not have specific information for coquí llanero and its habitat, information in the literature suggests that changes in environmental conditions that may result from climate change can influence the spread of nonnative, invasive species, fire, and precipitation levels, thereby potentially impacting coquí llanero.

Human Access or Use

Although we currently do not have any information on the visitor use of the wetland where coquí llanero is known to occur, Ríos-López (2009, p. 3) suggests that visitation for educational, research, or recreational purposes may have significant impact on the unique vegetation assemblage of the wetland. These activities could result in vegetation destruction from the development of research transects and observation trails. Up to a 4-month delay of vegetation regeneration was documented after a transect was established for these activities and up to an 8-month delay of vegetation regeneration after a helicopter hovered approximately 30 ft (9 m) above a section of the wetland. Afterwards, short-term results included reduced calling by male coquí llanero and invasion by an edge-associated species, *Eleutherodactylus antillensis*, another species of

coquí, in the bent vegetation, which had formed a raft-like area (Ríos-López 2009, p. 3). However, because the wetland area is generally closed to visitor access, and research is by permit only and limited, human impact from these activities is expected to be minimal.

Therefore, we conclude that human access or use is currently not a significant threat to coquí llanero and its habitat.

Summary of Factor E

In summary, coquí llanero may be threatened by a variety of natural and manmade factors that may affect the continued existence of the species. The primary natural or manmade factors affecting the species are its highly specialized ecological requirements, which exacerbate the threats posed by other factors to coquí llanero, and competition with other coquí species for egg-laying sites. Other potential threats that may affect the species are landfill leachate pollution, the use of herbicides, the threat of fire to the species' habitat, and changes in environmental conditions resulting from climate change. We determined that human access or use is not currently a significant threat to coquí llanero and its habitat. Based on the best available information, we conclude that coquí llanero may be threatened by other natural or manmade factors affecting its continued existence. Factors including coquí llanero's highly specialized ecological requirements, landfill leachate pollution, the use of herbicides, brush fires, competition, and environmental effects resulting from climate change are potential

threats that may be expected to increase in the future depending on activities surrounding the species' habitat, placing coquí llanero at risk.

Finding

As required by the Act, we conducted a review of the status of the species and considered the five factors in assessing whether the coquí llanero is endangered or threatened throughout all or a significant portion of its range. We examined the best scientific and commercial information available regarding the past, present, and future threats faced by the coquí llanero. We reviewed the petition, information available in our files, and other available published and unpublished information, and we consulted with recognized coquí llanero experts and other Federal and State agencies.

The identified threats to the coquí llanero are attributable to Factors A, C, D, and E identified in section 4(a)(1) of the Act. The primary threat to the species is from habitat modification (Factor A) in the form of urban development and ongoing threats of habitat destruction and modification. Coquí llanero is endemic to Puerto Rico and has only been observed at one area, despite extensive survey efforts made by several researchers. Available information indicates that coquí llanero habitat may represent a relic of an endemic habitat type. The only known population is threatened by a variety of factors that are expected to persist indefinitely and impact, or have the potential to impact, remaining coquí llanero and their habitat. Additionally, predation may also present a current threat to coquí llanero, particularly at the dryer edges of the wetland,

and its isolation makes it particularly susceptible to disease or predation (Factor C). The inadequacy of existing regulatory mechanisms is a threat due to the uncertainty of the level of protection the existing laws will provide (Factor D), and other natural or manmade factors affecting its continued existence, particularly its specialized ecological requirements, also may be threats to the species (Factor E). In general, the majority of the factors mentioned in the five-factor analysis may adversely affect the only known population of coquí llanero. Depending on the intensity and immediacy of such threats, these factors—either by themselves or combined—are operative threats that act on the species and its habitat.

Based on our evaluation of all scientific and commercial information available regarding the past, present, and future threats faced by coquí llanero, we have determined that the continued existence of coquí llanero is threatened by urban development and associated activities, changes in hydrology, surface and ground water pollution, use of herbicides, invasion of nonnative species, predation, climate change, brush fires, competition, and inadequate regulatory mechanisms. Because the species faces these threats throughout its extremely limited range, we find that coquí llanero is warranted for listing throughout its range.

Status Evaluation

The Act defines an endangered species as any species that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one

that is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. Based on our evaluation of the best available scientific and commercial information related to the extremely restricted range of the species, significant threats to it and its habitat, and future potential threats, we have determined the species is in danger of extinction throughout all of its range. Because the range of the species comprises a single occurrence location, and we have determined that the species is in danger of extinction in that location, we do not need to further analyze whether there may be a significant portion of the range of the species. As a result, we find that coquí llanero meets the definition of an endangered species. Because the species is in danger of extinction now, as opposed to in the foreseeable future, coquí llanero meets the definition of an endangered species rather than a threatened species.

On the basis of our careful evaluation of the best available scientific and commercial information regarding the past, present, and future threats to the species as discussed above relative to the listing factors, we have determined that listing is warranted, and we propose to list coquí llanero as an endangered species throughout its range.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public

awareness and conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act requires the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed, preparation of a draft and final recovery plan, and revisions to the plan as significant new information becomes available. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. The recovery plan identifies site-specific management actions that will achieve recovery of the species, measurable criteria that determine when a species may be downlisted or delisted, and methods for monitoring recovery progress.

Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (comprised of species experts, Federal and State agencies, nongovernment organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (<http://www.fws.gov/Endangered>), or from our Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribal, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may also occur on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

If this species is listed, funding for recovery actions will become available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, under section 6 of the Act, the Commonwealth of Puerto Rico would be eligible for Federal funds to implement management actions that promote the protection

and recovery of the coquí llanero. Information on our grant programs that are available to aid species recovery can be found at: <http://www.fws.gov/grants>.

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include Federal activities that may affect coquí llanero including, but not limited to, the carrying out or the issuance of permits for discharging fill material on wetlands for road or highway construction; installation of pipelines; development of residential, tourism, and commercial facilities; farming; channeling or stream alterations; discharge of contaminated waters; wastewater

facility development; and renewable energy projects. Additional detail is provided below:

- (1) Actions that would significantly alter the structure and function of the wetland.

Such actions or activities could include, but are not limited to, the filling or excavation of the wetland. The filling or excavation of the wetland would alter the hydrology of the site and would destroy the vegetation where coquí llanero spends all of its life stages. The filling or excavation of wetlands could result in the direct mortality of the species because it will destroy the only known population and locality where coquí llanero is found.

- (2) Actions that would significantly alter the vegetation structure in and around the wetland. Such actions or activities could include, but are not limited to, vegetation cutting for expanding or maintaining roads, construction of new roads, development of new residences and commercial establishments. The alteration of the vegetation structure may change the wetland characteristics by changing the microhabitat (e.g., change in temperature and humidity levels) and could result in direct mortality of individuals and egg clutches through desiccation from sun exposure.

- (3) Actions that may alter the natural flow of water. Such actions or activities could include, but are not limited to, changes in the limestone hills located to the south of the wetland. The alteration of these limestone hills may affect the integrity of the wetland (e.g. change in hydrology, replenishment of water, sedimentation deposition or erosion). These activities could reduce the wetland composition

including the vegetation and could result in direct or cumulative adverse effects to the species.

- (4) Actions that would significantly degrade water quality (for example, contaminants and excess nutrients). Such actions or activities could include, but are not limited to landfill discharges, heated effluents into surface water or connected groundwater, and the spill of petroleum-based products by the nearby go-kart race track. These activities could alter water conditions that can consequently alter the plant composition in the wetland by exposing the species to more competition and result in direct or cumulative adverse effects to the species and their life cycles.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. The prohibitions of section 9(a)(2) of the Act, codified at 50 CFR 17.21 for endangered wildlife, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import, export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. Under the Lacey Act (18 U.S.C. 42-43; 16 U.S.C. 3371-3378), it is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered and threatened wildlife species under certain circumstances. Regulations

governing permits are codified at 50 CFR 17.22 for endangered species, and at 17.32 for threatened species. With regard to endangered wildlife, a permit must be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within the range of the species proposed for listing. The following activities could potentially result in a violation of section 9 of the Act; this list is not comprehensive:

(1) Unauthorized collecting, handling, possessing, selling, delivering, carrying, or transporting of the species, including import or export across State lines and international boundaries, except for properly documented antique specimens of these taxa at least 100 years old, as defined by section 10(h)(1) of the Act;

(2) Introduction of nonnative species that compete with or prey upon the coquí llanero, such as the introduction of competing, nonnative species to Puerto Rico;

(3) The unauthorized release of biological control agents that attack any life stage of this species;

(4) Unauthorized modification of the vegetation composition or hydrology or violation of any discharge or water withdrawal permit that results in harm or death to any

individuals of this species or that results in degradation of its occupied habitat to an extent that essential behaviors such as breeding, feeding, and sheltering are impaired;

(5) Unauthorized destruction or alteration of their habitats (such as unpermitted channelization, or discharge of fill material) that impairs essential behaviors, such as breeding, feeding, or sheltering, or results in killing or injuring coquí llanero; and

(6) Unauthorized discharges or dumping of toxic chemicals or other pollutants into the wetlands supporting coquí llanero that kills or injures or otherwise impairs essential life-sustaining requirements, such as breeding, feeding, or sheltering.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Requests for copies of the regulations concerning listed animals and general inquiries regarding prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Endangered Species Permits, 1875 Century Blvd., NE, Atlanta, GA 30345 (telephone 404-679-7313; facsimile 404-679-7081).

If coquí llanero is listed under the Act, the Commonwealth of Puerto Rico's Commonwealth Law 241 and Regulation 6766 (PRDNER 2007a and 2007b) is automatically invoked, which would also prohibit take of these species and encourage conservation by Puerto Rico government agencies. Further, Puerto Rico may enter into agreements with Federal agencies to administer and manage any area required for the conservation, management, enhancement, or protection of endangered species

(Commonwealth Law 241 and Regulation 6766). Funds for these activities could be made available under section 6 of the Act (Cooperation with the States). Thus, the Federal protection afforded to these species by listing them as endangered species will be reinforced and supplemented by protection under State Commonwealth law.

Critical Habitat

Background

It is our intent to discuss below only those topics directly relevant to the designation of critical habitat for coquí llanero in this section of the proposed rule.

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species; and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner seeks or requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

For inclusion in a critical habitat designation, the habitat within the geographical area occupied by the species at the time it was listed must contain physical and biological features that are essential to the conservation of the species and which may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological constituent elements (primary constituent elements) within an area that are essential to the conservation of the species (such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type). Primary constituent elements are the elements of physical and biological features that, when laid out in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, are essential to the conservation of the species.

We can designate critical habitat in areas outside the geographic area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographic area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation

actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions of section 9 of the Act if actions occurring in these areas may affect the species. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species; or (2) such designation of critical habitat would not be beneficial to the species.

Our regulations (50 CFR 424.12(a)(2)) further state that critical habitat is not determinable when one or both of the following situations exist: (1) Information sufficient to perform required analysis of the impacts of the designation is lacking, or (2) the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat.

As we have discussed above under the Factor B analysis, there is currently no imminent threat of take attributed to collection (for scientific or educational purposes) for this species. Moreover, there is no information to indicate that identification of critical habitat is expected to create such a threat to the species.

Critical habitat designation identifies those physical and biological features of the habitat essential to the conservation of coquí llanero that may require special management and protection. Accordingly, this designation will provide information to individuals, local and Commonwealth governments, and other entities engaged in activities or long-range planning in areas essential to the conservation of the species. Conservation of coquí llanero and essential features of its habitat will require habitat management, protection, and restoration, which will be facilitated by knowledge of habitat locations and the physical and biological features of the habitat. Based on this information, we believe critical habitat would be beneficial to this species. Therefore, we have determined that the designation of critical habitat for coquí llanero is prudent. Delineation of critical habitat requires identification of the physical and biological habitat features that are essential to the conservation of the species. We have reviewed the

available information pertaining to the known distribution of coquí llanero and the characteristics of the habitat currently occupied. This and other information represent the best scientific and commercial data available and lead us to conclude that, although limited, available information is sufficient to identify specific areas that meet the definition of critical habitat. Therefore, we have found that critical habitat is determinable for coquí llanero.

We have done a preliminary evaluation to determine if the designation of critical habitat for coquí llanero is prudent and determinable at this time. On the basis of that evaluation, we have determined that the designation of critical habitat is prudent and determinable for this species.

Physical or Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;

- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derive the specific physical and biological features required for coquí llanero from studies of this species' habitat, ecology, and life history as described below.

Unfortunately, little is known of the specific habitat requirements for coquí llanero other than it requires a palustrine herbaceous wetland and a specific vegetation composition. To identify the physical and biological needs of the species, we have relied on current conditions at locations where the species exists and the limited information available on this species.

Space for Individual and Population Growth and for Normal Behavior

Coquí llanero is currently known from palustrine herbaceous wetlands located on both Commonwealth and Federal lands in the Sabana Seca Ward, municipality of Toa Baja (see description above under the "Distribution and Habitat" section). The Service has estimated the palustrine herbaceous wetland area occupied by the species to cover approximately 615 ac (249 ha).

These wetland areas are within the subtropical moist forest life zone (Ewel and Whitmore 1973, p. 72). The variables used to delineate any given life zone are mean annual precipitation and mean annual temperature. The life zones and associations of

which they are composed only define the potential vegetation or range of vegetation types that might be found in an area (Ewel and Whitmore 1973, p. 5). The mean annual precipitation for Puerto Rico is about 55 to 65 in (21.7 to 25.6 cm) a year (NOAA website 2009, http://www.srh.noaa.gov/sju/?n=climo_annual01) and the temperature is 79.4 °F (26.3 °C) (Geo-Marine 2002, p. 2–1). The palustrine herbaceous wetland is where the non-tidal water regime may be seasonal to permanently flooded (NWI Maps, Cowardin *et al.* 1979, pp. 10–22) and found at low elevations up to approximately 56 ft (17 m) (Ríos-López and Thomas 2007, p. 61). It appears that coquí llanero is an obligate marsh-dwelling species because it has not been found in areas outside the marsh (Ríos-López and Thomas 2007, p. 62).

The current herbaceous vegetation in these wetlands consists of *Blechnum serrulatum* and *Thelypteris interrupta* (ferns), *Sagittaria lancifolia* (bulltongue arrowhead), *Cyperus* sp. (flatsedges), *Eleocharis* sp. (spike rushes), and vines and grasses. Although several of these plants have been documented at other sites in Puerto Rico, the vegetation composition (combination and abundance of each plant) is a unique ecosystem not found in other places in Puerto Rico (PRDNER 2007b, p. 11). Studies indicate that coquí llanero perch, sit, or call on or from the herbaceous vegetation and mainly on the ferns (Ríos-López and Thomas 2007, p. 60; PRDNER 2007b, p. 9). Wetlands are maintained by water quantity, channel slope, and sediment input to the system through periodic flooding. Changes in one or more of these parameters can result in changes in the wetland function and vegetation composition, with serious effects to coquí llanero. In addition, hydrology (the occurrence, circulation, and distribution of

waters) is also an important factor to the wetland because it will connect areas that are separated by roads and other structures, hence making available nearby habitats for coquí llanero.

Hydrology connects the areas of currently known habitat of the species. Although the areas have several manmade drainage ditches used for agricultural purposes in the past, this has not modified the watershed boundaries (G.L. Morris Eng. 2007, p. 3; PRDNER 2007b, p. 19). The topography of the Sabana Seca – Ingenio area, in general, has an east to west inclination where the surface and ground water from the limestone hills found south of PR Road–867 discharges into the wetland, which goes north and northwest connecting to Caño Campañero, and then to Cocal River, and ends at the Atlantic Ocean (PRDNER 2007b, p. 15). Factors that might threaten the water quality or the water flow of these drainages may affect the currently known population of coquí llanero.

Hydrologic conditions are important for the maintenance of a wetland structure and function. Hydrology includes the transport of energy (water) and nutrients to and from wetlands through pathways such as precipitation, surface run-off, groundwater, tides, and flooding rivers. This could affect species composition and richness, primary conductivity (salinity), organic accumulation, and nutrient cycling within the wetlands (Mitsch and Gosselink 2007, p. 107). Wetlands are sometimes referred to as “the kidneys of the landscape” because they filter the downstream waters and waste received from natural and human sources (Mitsch and Gosselink 2007, p. 4). Polluted waters that enter

the wetland through its hydrology may affect the habitat of coquí llanero. For example, an increase in the current polluted waters from the continued operation of the landfill pose a threat to the species and its habitat because underground contaminated waters and leachates may change water quality, soils, and consequently plant composition in the wetland. In addition, nonpoint source run-off from adjacent land surfaces (for example, pesticides, herbicides, fertilizers, and sediments), and random spills or unregulated discharge events (for example, petroleum base substances from the nearby go-kart race track) may threaten the species and its habitat (see discussion under Factor A above). This could be particularly harmful during drought conditions when water flows are low and pollutants are more concentrated.

On the basis of the information above, the palustrine herbaceous wetland located in the Sabana Seca – Ingenio area provides space for normal behaviors of coquí llanero. In addition, hydrology is essential to the maintenance, structure, and function of the wetland. The water quality and water flow that discharges onto the wetland allows the growth of the required vegetation composition on which coquí llanero depends for normal behavior, growth, and viability during most of its life stages. Therefore, we have identified the palustrine herbaceous wetland, and particularly the hydrology and vegetation of this area, to be physical or biological features for this species.

Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

Although the life history of coquí llanero has not been studied, the life histories of other amphibians in the *Eleutherodactylus* genus indicate that amphibians are opportunistic feeders where diets reflect the availability of food of appropriate size (Duellman and Trueb 1994, p. 229; Joglar, 2005, p. 73). The wetland provides a variety of food sources (insects) for coquí llanero. Food availability might be affected by water quality and contamination of the wetland. Contaminated waters may change water quality, soils, and consequently plant composition in the wetland. These changes can open an opportunity to other species (plants or animals) to overshadow the current species present in the wetland, making coquí llanero compete more for the available food sources or move the species to other, less competitive sites.

Therefore, based on the information above, we identify food availability provided by the palustrine herbaceous wetland to be a physical or biological feature for this species.

Cover or Shelter

Coquí llanero appears to be an obligate marsh-dwelling species because it has not been found in areas outside the marsh (Ríos-López and Thomas 2007, p. 62). The palustrine herbaceous wetland provides cover and shelter for coquí llanero. The vegetation found in the palustrine wetland consists of herbaceous emergent vegetation characterized by erect, rooted herbaceous hydrophytes usually dominated by perennial plants (Cowardin *et al.* 1979, p. 19), like ferns, *Sagittaria lancifolia*, flatsedges, spike

rushes, vines, and grasses (Ríos-López and Thomas 2007, p. 60; PRDNER 2007b, p. 9). Studies on the species show normal behavior (for example, perching, sitting, or calling) occurs on the herbaceous vegetation (Ríos-López and Thomas 2007, p. 60; PRDNER 2007b, p. 9) (see “Space for Individual and Population Growth and for Normal Behavior”).

Therefore, based on the information above, we identify the vegetation (plant species, structure, and composition) of the palustrine herbaceous wetland located in the Sabana Seca – Ingenio area to be a physical or biological feature for this species.

Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

Callings or sound production by animals is a method of advertising the presence of one individual to others of the same species. It is common in animals that have low density dispersal and in animals that jump or fly. Anurans (any amphibian of the Order Anura, comprising the frogs and toads) have well-developed vocal structures capable of producing sounds that serve to attract mates, advertise territories, or express distress (Duellman and Trueb 1994, p. 87). It has been documented that coquí llanero uses the herbaceous vegetation in the wetland, especially the ferns, as calling areas.

In addition, it has been determined that the species deposits their egg clutches only in the leaf axis of *Sagittaria lancifolia*, and it appears that the species does not provide parental care (Ríos-López and Thomas 2007, p. 60; PRDNER 2007b, pp. 5, 9).

Also, coquí llanero has direct development (embryos do not have an intermediate phase like tadpoles or aquatic larvae) where they develop directly to terrestrial amphibians (miniatures of the adults); hence the vegetation provides the only protection that egg clutches and the offspring might receive.

Therefore, based on the information above, we identify the herbaceous vegetation, especially *Sagittaria lancifolia* and the ferns of the palustrine wetland, to be an important physical or biological feature for this species.

Habitats Protected from Disturbance or Representative of the Historical, Geographical, and Ecological Distributions of the Species

The palustrine herbaceous wetland area where coquí llanero currently exists consists of lands previously managed by the U.S. Naval Security Group Activity (NSGA) and areas owned by the Commonwealth of Puerto Rico (University of Puerto Rico, PR Land Authority). The area previously managed by the NSGA had restricted access to people; thus, coquí llanero had experienced little disturbance from the military operations. The NSGA was managed as a high-frequency, direction-finding facility, and to the facility provided communications and related support, including communications relay, communications security, and communication manpower assistance, to components of the U.S. Navy and other Department of Defense elements (Geo-Marine 2002, p. 1–3). All DOD installations have to complete and implement an integrated natural resources management plan (INRMP) to ensure that all natural resources are

managed on the site. However, the NSGA ceased operations in 2005, when technological advances and changes eliminated the need to continue the operations at the site. The area is no longer managed as a military base, and the INRMP implementation does not apply anymore. At present time, the area is proposed for transfer or disposal or a combination of both, and is currently leased to a private party for selling the area for private development (see **Exemptions** below).

In 2007, the Puerto Rico DNER (PRDNER) designated Essential Critical Natural Habitat for coquí llanero that includes the palustrine herbaceous wetland and the limestone hills found south of the wetland area. As part of the designation process, PRDNER conducted a hydrological evaluation of the area and concluded that the limestone hills located south of the palustrine wetland contribute to the hydrology that maintains the wetland (PRDNER 2007b, p. 28). The limestone hills are important for the water supply of the wetland; however, they are not the only water source feeding the wetland. The hills do not provide habitat for the coquí llanero. The hills, although important for contributing to the hydrology of the wetland, are not essential for the conservation of the species. In addition, the hills are conservation lands protected in perpetuity and managed by the University of Puerto Rico because other Federal and Commonwealth-designated threatened and endangered species are found there.

Primary Constituent Elements for the Coquí Llanero

Under the Act and its implementing regulations, we are required to identify the physical and biological features essential to the conservation of coquí llanero in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the elements of physical and biological features that, when laid out in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements specific to coquí llanero are:

(1) Primary Constituent Element 1– *Palustrine herbaceous wetland*. Palustrine emergent persistent wetlands that are seasonally to permanently flooded. Ocean-derived salts need to be less than 0.5 ‰ parts per thousand (ppt) salinity.

(2) Primary Constituent Element 2– *Vegetation and vegetation composition of the palustrine herbaceous wetland*. Emergent vegetation characterized by erect, rooted herbaceous hydrophytes usually dominated by perennial plants like ferns, *Sagittaria lancifolia*, flatsedges, spike rushes, vines, and grasses. In addition to the combination of vegetation, at least 25 percent of the vegetation should be ferns and *S. lancifolia*.

(3) Primary Constituent Element 3– *Hydrology*. A hydrologic flow regime (the pathways of precipitation, surface run-off, groundwater, tides, and flooding of rivers and

canals (manmade ditches)) that transports water to and from and maintains the palustrine herbaceous wetland.

With this proposed designation of critical habitat, we intend to identify the physical or biological features essential to the conservation of the species, through the identification of the appropriate quantity and spatial arrangement of the primary constituent elements sufficient to support the life-history processes of the species. The proposed unit to be designated as critical habitat is currently occupied by coquí llanero and contains essential physical and biological features composed of the primary constituent elements in the appropriate quantity and spatial arrangement sufficient to support the life-history needs of the species.

Special Management Considerations or Protections

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features which are essential to the conservation of the species, which may require special management considerations or protection.

We find that the essential features within the area occupied at the time of listing may require special management consideration or protection due to threats to coquí llanero and or its habitat. The proposed unit is adjacent to roads, homes, or other manmade structures in which various activities in or adjacent to the critical habitat unit

may affect one or more of the primary constituent elements. The features essential to the conservation of this species may require special management considerations or protection to reduce the following threats or potential threats that may result in changes in the composition and abundance of vegetation inside the wetland: fill of wetlands for development projects, degradation of water quality from underground contaminated waters and leachates from the nearby landfill, residential uses (e.g., use of pesticides and fertilizers), and road maintenance (e.g., use of herbicides).

Management activities that could ameliorate these threats or potential threats include but are not limited to: establishing permanent conservation easements or land acquisition to protect the species on private lands; establishing conservation agreements on private and Federal lands to identify and reduce threats to the species and its features; minimizing habitat disturbance, fragmentation, and destruction; preventing the destruction of the limestone hills that supply water to the wetland; minimizing water quality degradation of the wetland; and minimizing the effects of fires and droughts.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. We review available information pertaining to the habitat requirements of the species.

We have defined occupied critical habitat as palustrine emergent persistent wetland with an herbaceous vegetation composition dominated by perennial plants like ferns, *Sagittaria lancifolia*, flatsedges, spike rushes, vines and grasses occupied by the coquí llanero at the time of listing. We used information from site visits to the area, researchers, reports prepared the DNER, and consultants to identify the specific locations occupied by coquí llanero. All occurrence records of coquí llanero were plotted on maps in geographic information system as points and polygons. Once we determined which area of the wetland was occupied, we focused on aerial photographs of the area and the NWI maps to delineate the palustrine emergent persistent wetlands used by coquí llanero. We estimated the area using the limits of the boundaries of the palustrine emergent persistent wetland.

In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we consider whether designating additional areas—outside those currently occupied as well as those occupied at the time of listing—are necessary to ensure the conservation of the species. Our evaluation of areas outside the geographic area currently occupied by coquí llanero did not result in locating any areas essential for the conservation of the species. For instance, we stayed within the boundaries of the palustrine emergent wetland because the coquí llanero has extremely limited dispersal ability due to lack of habitat connectivity and does not occur in nearby closed canopy forests (Ríos-López 2009, p. 5). Therefore, we are not currently proposing to designate any areas outside the geographical area occupied by the species because occupied areas are sufficient for the conservation of the species.

In summary, we propose designating critical habitat in one area that we determine is occupied and contains sufficient and all primary constituent elements to support the life history functions essential to the conservation of the species and that require special management.

When determining proposed critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features for coquí llanero. The scale of the map we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger a section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We are proposing for designation of critical habitat lands that we have determined are occupied at the time of listing and contain sufficient elements of physical or biological features to support life-history processes essential for the conservation of the species.

Proposed Critical Habitat Designation

We are proposing one unit as critical habitat for coquí llanero. The critical habitat area we describe below constitutes our current best assessment of the areas that meet the definition of critical habitat for coquí llanero. The one area we propose as critical habitat is Sabana Seca, and it is occupied by coquí llanero.

TABLE 1. Proposed critical habitat unit for coquí llanero.

Area estimates reflect all land within the critical habitat unit boundary.

Critical Habitat Unit	Land Ownership by Type	Size of Unit in Acres (Hectares)
Sabana Seca Unit	Commonwealth of Puerto Rico (University of PR and PR Land Authority)	97 ac (39 ha)
	Department of Defense (closed NSGA Sabana Seca and open Navy property)	518 ac (209 ha)
Total		615 ac (249 ha)

Note: Area sizes may not sum due to rounding.

We present a brief description of the unit, and reasons why it meets the definition of critical habitat for coquí llanero. State Plane NAD 83 coordinates and a more precise legal description of the unit are provided in the **Proposed Regulation Promulgation** section.

Sabana Seca Unit, Toa Baja Puerto Rico

The unit includes approximately 615 ac (249 ha) located south of State Road PR–867, west of Ramón Ríos Román Avenue, east of José Julián Acosta Road, and north of the limestone hills located north of Highway PR–22 in the municipality of Toa Baja, Puerto Rico. This unit contains a palustrine herbaceous wetland with emergent vegetation that includes ferns, *Sagittaria lancifolia*, flatsedges, spike rushes, vines, and grasses. This unit is known to be occupied at the time of listing (Ríos-López and Thomas 2005; PRDNER 2007b; Service 2011, unpublished data). All the essential physical and biological features are found within the unit, and the presence of the species and the physical and biological features at the site were confirmed by the Service during site visits conducted in January and March of 2011.

The essential features within this unit may require special management considerations or protection to insure maintenance or improvement of, and to address any changes that could affect, the existing palustrine herbaceous wetland, such as filling in of the wetland to develop the land; water diversion or water withdrawal; alteration of water hydrology or degradation of water quality; and changes in vegetation composition that might be caused by changes in hydrology or development, inappropriate management practices on the farmlands, and contamination from the underground polluted waters and leachates from the landfill.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, or are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are

identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action;

(2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction;

(3) Are economically and technologically feasible; and

(4) Would, in the Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency’s discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions

for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Application of the “Adverse Modification” Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for coquí llanero. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a federal agency, should result in consultation for the coquí llanero. These activities include, but are not limited to:

(1) Actions that would significantly alter the structure and function of the wetland. Such actions or activities could include, but are not limited to, the filling and/or excavation of the wetland. The filling or excavation of the wetland could alter the hydrology of the site and destroy or remove the vegetation where the only known population of coquí llanero is found. The filling or excavation of wetlands could result in elimination or alteration of coquí llanero habitat necessary for all life stages of the species.

(2) Actions that would significantly alter the vegetation structure in and around the wetland. Such actions or activities could include, but are not limited to, removing or cutting the vegetation for expanding or maintaining roads, construction of new roads, development of new or maintenance of residences, and commercial establishments. The alteration of the vegetation structure may change the wetland characteristics by changing the microhabitat (e.g., change in temperature and humidity levels) and thereby negatively affect whether the coquí llanero is able to complete all normal behaviors and necessary life functions and/or allow invasion of competitors or predators.

(3) Actions that may alter the natural flow of water to the wetlands occupied by coquí llanero. Such actions or activities could include, but are not limited to, changes in the limestone hills located to the south of the wetland. The alteration of these limestone

hills may affect the integrity of the wetland (e.g., change in hydrology, replenishment of water, sedimentation deposition or erosion). These activities could reduce the natural cycling and functioning of the wetland; change its composition, including the vegetation types the species depends on; and result in direct or cumulative adverse effects to the species from the alteration of the wetland's hydrology.

(4) Actions that would significantly degrade water quality (for example, actions that would add contaminants and excess nutrients). Such actions or activities could include, but are not limited to, landfill discharges or leachates from landfill, heated effluents into surface water or connected groundwater, or the spill of petroleum-based products at the nearby go-kart race track. These activities could alter water conditions that can consequently alter the plant composition in the wetland and result in less suitable habitat for coquí llanero and the opening of the wetland to coquí llanero competitors.

Exemptions

Application of Section 4(a)(3) of the Act

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates

implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- (1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- (2) A statement of goals and priorities;
- (3) A detailed description of management actions to be implemented to provide for these ecological needs; and
- (4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

Approximately 865 ac (350 ha) of the proposed critical habitat resides in a closed military installation formerly managed by the NSGA, and the land had an INRMP (Geo-Marine 2002, pp. 1–5-4), which provided for the conservation of the natural resources inside the installation. The property was declared excess to the Navy in 2001, and the installation ceased operations in 2005, before the discovery of the species. Currently, the land is being leased to a private entity by the Military Housing Privatization Initiative as part of the National Defense Authorization Act for Fiscal Year 1996, Public Law 104-106, Section 2801, 110 Stat. 186 (10 U.S.C. 2871-2885), as amended. Currently there is no INRMP in place that would provide a benefit to coquí llanero occurring in habitats within or adjacent the closed NSGA of Sabana Seca. Thus, there are no Department of Defense lands with a completed INRMP within the proposed critical habitat designation.

Based on the above, we have determined that the identified lands are not subject to the exemptions under section 4(a)(3) of the Act.

Exclusions

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary must designate or make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an

area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, we may exclude an area from designated critical habitat based on economic impacts, impacts on national security, and any other relevant impacts. In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise his discretion to exclude the area only if such exclusion would not result in the extinction of the species.

Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we are preparing an analysis of the economic impacts of the proposed critical habitat designation and related factors.

On the basis of the development of our proposal, we have identified certain sectors and activities that may potentially be affected by a designation of critical habitat for coquí llanero. These sectors include commercial development and urbanization, along with the accompanying infrastructure associated with such projects such as road, storm water drainage, bridge and culvert construction and maintenance. We recognize that not all of these sectors may qualify as small business entities. However, while recognizing that these sectors and activities may be affected by this designation, we are collecting information and initiating our analysis to determine (1) which of these sectors or activities are or involve small business entities and (2) to what extent the effects are related to coquí llanero being listed as an endangered species under the Act (baseline effects) or whether the effects are attributable to the designation of critical habitat (incremental). We believe that the potential incremental effects resulting from a designation will be small. However, we will be conducting a thorough analysis to determine if this may in fact be the case. As such, we are requesting any specific economic information related to small business entities that may be affected by this designation and how the designation may impact small businesses.

We will announce the availability of the draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at <http://www.regulations.gov>, or by contacting the Caribbean Ecological Services Field Office directly (see **FOR FURTHER INFORMATION CONTACT** section). During the development of a final designation, we will consider economic impacts, public

comments, and other new information, and areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where a national security impact might exist. In preparing this proposal, we have determined that some of the lands within the proposed designation of critical habitat for the coquí llanero are lands being disposed of by the U.S. Navy, and therefore, we anticipate no impact to national security. Consequently, the Secretary does not propose to exert his discretion to exclude any areas from the final designation based on impacts on national security.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors, including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look

at any tribal issues, and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this proposal, we have determined that there are currently no HCPs or other management plans for coquí llanero, and the proposed designation does not include any tribal lands or trust resources. We anticipate no impact on tribal lands, partnerships, or HCPs from this proposed critical habitat designation. Accordingly, the Secretary does not propose to exert his discretion to exclude any areas from the final designation based on other relevant impacts.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our determination of status for this species and critical habitat designation is based on scientifically sound data, assumptions, and analyses. We have invited these peer reviewers to comment during this public comment period on our specific assumptions and conclusions in this proposed listing determination and designation of critical habitat.

We will consider all comments and information we receive during this comment period on this proposed rule during our preparation of a final determination.

Accordingly, the final decision may differ from this proposal.

Public Hearings

The Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Required Determinations

Regulatory Planning and Review — Executive Order 12866

The Office of Management and Budget (OMB) has determined that this rule is not significant and has not reviewed this proposed rule under Executive Order 12866 (Regulatory Planning and Review). OMB bases its determination upon the following four criteria:

(1) Whether the rule will have an annual effect of \$100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies' actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (5 U.S.C. 801 *et seq.*), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

On the basis of the development of our proposal, we have identified certain sectors and activities that may potentially be affected by a designation of critical habitat for coquí llanero. These sectors include commercial development and urbanization along with the accompanying infrastructure associated with such projects such as road, storm water drainage, bridge and culvert construction and maintenance. We recognize that not all of these sectors may qualify as small business entities. However, while recognizing that these sectors and activities may be affected by this designation, we are collecting information and initiating our analysis to determine (1) which of these sectors or activities are or involve small business entities and (2) what extent the effects are related to coquí llanero being listed as an endangered species under the Act (baseline effects) or whether the effects are attributable to the designation of critical habitat (incremental). We believe that the potential incremental effects resulting from a designation will be small. As a consequence, following an initial evaluation of the information available to us, we do not believe that there will be a significant impact on a substantial number of small business entities resulting from this designation of critical habitat for coquí llanero. However, we will be conducting a thorough analysis to determine if this may in fact be the case. As such, we are requesting any specific economic information related to small business entities that may be affected by this designation and how the designation may impact their business.

Upon completion of the draft economic analysis, we will announce the availability of the draft economic analysis of the proposed designation in the **Federal Register** and reopen the public comment period for the proposed designation. We will

include with this announcement a more thorough evaluation of potential effects of this designation on small businesses and, as appropriate, a revised certification statement.

Energy Supply, Distribution, or Use—Executive Order 13211

On May 18, 2001, the President issued an Executive Order (E.O. 13211) on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. We do not expect the designation of this proposed critical habitat to significantly affect energy supplies, distribution, or use. The proposed Sabana Seca unit is located approximately 1.4 mi (2.3 km) away from the proposed alignment of a natural gas pipeline project. Thus, possible construction and operation of the proposed energy project will not be affected by the proposed designation of critical habitat. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required. However, we will further evaluate this issue as we conduct our economic analysis, and review and revise this assessment as warranted.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This rule would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, tribal governments, or the private sector and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)-(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above on to State governments.

(2) We do not believe that this rule would significantly or uniquely affect small governments because it will not produce a Federal mandate of \$100 million or greater in any year, that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments. In addition, adjacent upland properties are owned by private entities or State partners. Therefore, a Small Government Agency Plan is not required. However, we will further evaluate this issue as we conduct our economic analysis and revise this assessment if appropriate.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for coquí llanero in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this proposed designation of critical habitat for coquí llanero does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with Executive Order 13132 (Federalism), the proposed rule does not have significant Federalism effects. A Federalism impact summary statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this proposed critical habitat designation with appropriate State resource agencies in Puerto Rico. The designation of critical habitat in areas currently occupied by the coquí llanero imposes no additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The critical habitat designation may have some benefit to this government because the areas that contain the

physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the Act. This proposed rule uses standard property descriptions and identifies the elements of physical

or biological features essential to the conservation of the coquí llanero within the designated areas to assist the public in understanding the habitat needs of the species.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with listing a species as endangered or threatened under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA) in connection with designating critical habitat under

the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994, (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

The commonwealth of Puerto Rico does not harbor any tribal lands. Therefore, we are not proposing to designate critical habitat for coquí llanero on tribal lands.

References Cited

A complete list of all references cited in this rulemaking is available on the Internet at <http://www.regulations.gov> and upon request from the Deputy Field

Supervisor, Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this package are staff members of the Caribbean Ecological Services Field Office (see **FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245;
Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.11(h) by adding an entry for “Coquí llanero” to the List of
Endangered and Threatened Wildlife in alphabetical order under AMPHIBIANS to read
as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate	Status	When listed	Critical habitat	Special rules
Common name	Scientific name		population where endangered or threatened				

AMPHIBIANS

Coquí llanero	<i>Eleutherodactylus</i>	U.S.A. (PR)	Entire	E		17.95(d)	NA
	<i>juanariveroi</i>						

3. In § 17.95, amend paragraph (d) by adding an entry for “Coquí llanero (*Eleutherodactylus juanariveroi*),” in the same alphabetical order that the species appears in the table at § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(d) *Amphibians.*

* * * * *

Coquí llanero (*Eleutherodactylus juanariveroi*)

(1) One critical habitat unit is depicted for Toa Baja, Puerto Rico, on the map below.

(2) Within this area, the primary constituent elements of the physical and biological features essential to the conservation of coquí llanero consist of three components:

(i) *Palustrine herbaceous wetland*. Palustrine emergent persistent wetlands that are seasonally to permanently flooded. Ocean-derived salts need to be less than 0.5 ‰ parts per thousand (ppt) salinity.

(ii) *Vegetation and vegetation composition of the palustrine herbaceous wetland*. Emergent vegetation characterized by erect, rooted herbaceous hydrophytes usually dominated by perennial plants like ferns, *Sagittaria lancifolia*, flatsedges, spike rushes, vines, and grasses. In addition to the combination of vegetation, at least 25 percent of the vegetation should be ferns and *S. lancifolia*.

(iii) *Hydrology*. A hydrologic flow regime (the pathways of precipitation, surface run-off, groundwater, tides, and flooding of rivers and canals (manmade ditches)) that transports water to and from and maintains the palustrine herbaceous wetland.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) Critical habitat unit map. Data layers defining the map unit were created by delineating habitats that contained at least one or more of the primary constituent elements defined in paragraph (2) of this entry, over a base of USGS digital topographic map quadrangle (Bayamón) and a USDA 2007 digital ortho-photo mosaic, in addition to

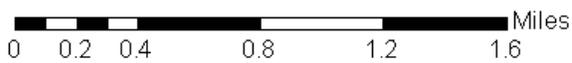
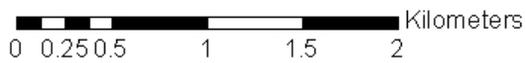
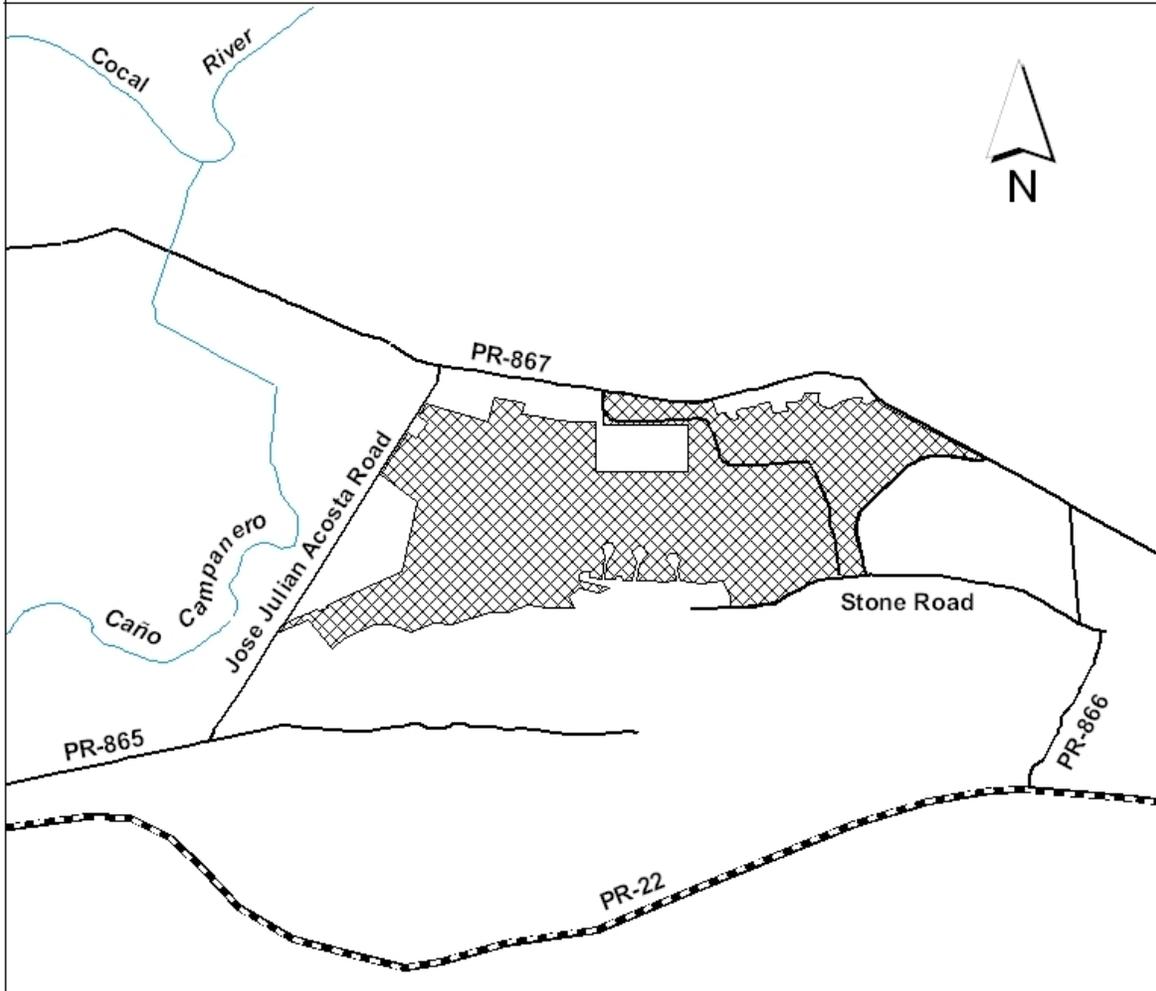
the National Wetland Inventory Maps. The resulting critical habitat unit was then mapped using State Plane North American Datum (NAD) 83 coordinates.

(5) Sabana Seca Unit, Toa Baja, Puerto Rico.

(i) *General Description:* The Sabana Seca Unit consists of approximately 615 ac (249 ha) located south of State Road PR-867, west-southwest of Ramón Ríos Román Avenue, east of José Julián Acosta Road, and north of the limestone hills located north of Highway PR-22 in the municipality of Toa Baja, Puerto Rico.

(ii) *Note:* Map of Sabana Seca Unit, critical habitat for coquí llanero (*Eleutherodactylus juanariveroi*), Toa Baja, Puerto Rico, follows:

Map of Sabana Seca Unit, critical habitat for coquí llanero (*Eleutherodactylus juanariveroi*), Toa Baja, Puerto Rico



-  Coquí llanero Critical Habitat
-  Roads
-  Highway
-  Rivers and Ravines

* * * * *

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Michael J. Bean

Acting Assistant Secretary for Fish and Wildlife and Parks

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