

EPA Attorneys -

Hector Velez -

787 977 5850

Catarina Jordan

787 - 977 - 585

- FERL NOT INVOLVE

This line is "non-jurisdictional".

Only Corps permit makes it Federal.

PN Pending → see ^{see} ~~page~~ State DEIS in Spanish

Corps PN's will need to be monitored for this project.



US Army Corps of Engineers Jacksonville District

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DA Number - SAJ-2010-02881

Project Name - Via Verde Natural Gas Pipe Line

Project Manager - GARCIA, EDGAR

*787-729-6905
6944*

Organization - Antilles Section *x 3057*

| Start Date | Action Type | End Date | Remarks |
|-------------|-----------------------------|----------|--|
| | [[Pending Review(s)]] | | [[Data as of 9pm EST 27 Oct 2010]] <i>NOV 8th</i> |
| 20 Sep 2010 | Nationwide Permit | | The review is pending |
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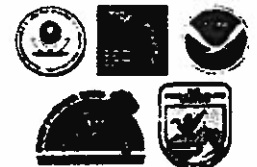
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Ferc - CP95-35-001



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FISH & WILDLIFE SERVICE
Boqueron Field Office
Carr. 301, KM 5.1, Bo. Corozo
P.O. Box 491
Boqueron, PR 00622

OCT 25 2010

Ms. Kimberly D. Rose
Secretary
Federal Energy Regulatory Commission
888 First St., N.E., Room 1A
Washington, DC 20426

FILED
SECRETARY OF THE
COMMISSION
2010 OCT 26 P 1:03
FEDERAL ENERGY
REGULATORY COMMISSION

Re: Modification Permit
Ecoeléctrica Project
FERC No. CP95-35-001

Dear Ms. Rose:

On July 08, 2008, the U.S. Fish and Wildlife Service (the Service) reviewed a Notice of Intent to prepare an Environmental Assessment for the above referenced modification. The purpose of the modification was to connect the Ecoeléctrica LNG to a proposed pipeline which the Puerto Rico Electric and Power Authority (PREPA) was proposing to build known as the "Gasoducto del Sur". The Gasoductor del Sur project would transport natural gas from the Ecoeléctrica facility to the Aguirre Power Plant in Guayama, Puerto Rico. At that time, the Service concluded that no significant effects to fish and wildlife resources under our jurisdiction were not anticipated since appropriate measures to avoid and minimize possible adverse effects to federally-listed species were incorporated into the Gasoducto del Sur project. As part of the U.S. Army Corps of Engineers permit for said project and to ensure compliance with Section 7 of the Endangered Species Act, PREPA and the Department of Natural and Environmental Resources (DNER) signed a Memorandum of Agreement (MOA) in March 2008. The agreement included measures to avoid impacts to listed plant species and minimize possible adverse effects of the pipeline on the endangered Puerto Rican nightjar and its habitat. However, in December 2008, the project was cancelled by the government.

At the present time, PREPA is proposing the construction of a 92-mile long natural gas pipeline crossing the island south to north that would transport gas from Ecoeléctrica to three power plants in northern Puerto Rico. This new project is known as the "Via Verde" project. The Service reviewed a Joint Permit Application file by PREPA for the Corps of Engineers permit and the draft Environmental Impacts Statement, and we believe that the proposed project would have adverse effects to trust resources under our jurisdiction, including federally-listed species. Enclosed please find copy of our letter providing comments and recommendations to the Corps dated October 18, 2010.

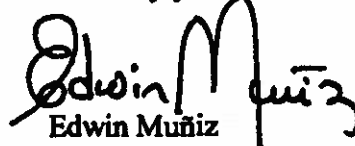
Ms. Rose

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Based on the above information and the information included in the attached letter, we have concluded that our determination to the modification to the FERC permit No. CP95-35-001 is no longer valid since the project was cancelled and replaced with a project that adversely affect fish and wildlife resources, including federally-listed species. We, therefore, recommend FERC initiate consultation under Section 7 of the ESA for the Via Verde project. Permits from at least three Federal agencies would be required, we, therefore, further recommend that the Federal agencies meet and determine the lead agency for the consultation following guidance provided in 50 CFR 402.07. Based on the magnitude of the impacts to natural resources and the human environments, we also recommend that the Federal environmental review process under NEPA be appropriately followed.

If you have any additional question concerning this issue, please do not hesitate to contact me or Marelisa Rivera, Assistant Field Supervisor for the Caribbean Ecological Services Field Office at 787-851-7297 extension 206.

Sincerely yours



Edwin Muñiz
Field Supervisor
Caribbean Field Office

CC: Jerry Ziewitz, USFWS
Sinduldo Castillo, COE, San Juan
Carl Sodergerg, EPA, San Juan

Enclosure. Copy Letter October 18, 2010



United States Department of the Interior

FISH & WILDLIFE SERVICE

Boqueron Field Office
Carr. 301, KM 5.1, Bo. Corozo
P.O. Box 491
Boqueron, PR 00622

OCT 18 2010



Mr. Sindulfo Castillo
Chief, Regulatory Section
US Army Corps of Engineers
400 Fernandez Juncos Ave.
San Juan, Puerto Rico 00901 - 3299

**Re: Joint Permit Application
Via Verde Natural Gas Pipeline**

Dear Mr. Castillo:

The U.S. Fish and Wildlife Service (the Service or USFWS) received a courtesy copy of the Joint Permit Application (JPA) for the proposed natural gas pipeline that would be constructed from the Eco Eléctrica liquefied natural gas (LNG) Terminal in Peñuelas to the Cambalache Termoeléctrica Authority Central electric power plant in Arecibo, the Palo Seco facility in Toa Baja and a facility in San Juan. ~~Also a copy of the Draft Environmental Impact Statement (DEIS) for the proposed Via Verde project was provided to us.~~ Our preliminary comments are issued in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et. seq.), the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et. seq.), and the Migratory Bird treaty act of 1918 (16 U.S.C. 703 et seq.).

The proposed project consists in the construction and installation of a natural gas (NG) pipeline throughout approximately 92 miles crossing the island south to north. The pipeline proposed route runs through the municipalities of Peñuelas, Adjuntas, Utuado, Arecibo, Barceloneta, Manati, Vega Alta, Vega Baja, Dorado, Toa Baja, Cataño, Bayamon, and Guaynabo. Based on the information provided, the project would require a right of way of 150 ft (45.72 m) for construction, and a right of way 50 ft (15.24 m) during operation. The proposed project area consists of about 1,113.8 acres of which 738.6 acres are wetlands. Based on the information provided, the proposed project would affect about 1,115 acres of land 33% of which are wetlands, impacting Commonwealth Forests, Natural Reserves, forested volcanic and karst areas, habitat for federally listed threatened and endangered species and privately-owned lands participating in conservation programs because of their high ecological values for our trust resources.

Mr. Castillo

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The Service has evaluated the JPA and attached documents, and would like to provide the following comments:

1. Lead Federal Agency for Section 7 Consultation under the Endangered Species Act (ESA) and National Environmental Policy Act (NEPA) Compliance:

The JPA specifies that the proposed project would require several hundreds of U.S. Army Corps of Engineers (COE) Nationwide Permits, EPA Construction NPDES, and authorization from Federal Highway Administration. In addition, it is our understanding that the project would require authorization of the Federal Energy Regulatory Commission (FERC). In accordance with the Natural Gas Act (NGA), FERC coordinates the processing of authorizations required under federal law for proposed natural gas projects subject to NGA section 3 and 7. Although the Draft Environmental Impact Statement (DEIS) names the Corps as the lead Federal Agency the process of designating a lead agency should be guided by the consultation regulation as stated in 50 CFR 402.07. When two or more Federal agencies are involved in an activity affecting listed species or critical habitat, one agency is designated as the lead based on which agency has the principal responsibility for the project. Although one agency has the lead, the other agency still has to provide data for effects analyses and development of conservation measures for the project. We recommend that all Federal agencies involved in this proposed project meet and determine the lead agency for the consultation. ~~It is important to note that the original permit for the Eco Eléctrica LNG required a Federal Environmental Impacts Statement under the National Environmental Protection Act (NEPA). Since the proposed project consists in a modification to the Eco Eléctrica project, an amendment to the Federal EIS should be completed.~~ Based on the scope of the proposed project and the possible impacts to the human environments, the proposed action complies with the definition of a major construction activity as defined by NEPA and should require a Federal Environmental review.

2. Use of Nationwide Permits:

The applicant is requesting several hundreds of permits invoking the use of Nationwide Permits 12, 18, and 33 to cover the construction of the pipeline. The Nationwide Permit program is based on the fact that the activity cause only minimal adverse environmental effects when performed separately, and cause only minimal cumulative adverse effects on the aquatic environment. While the regulations state that for linear projects each river crossing can be considered a separate and complete project, these do not pass the independent utility test, since the entire project needs to be constructed to be functional. In addition, the cumulative impacts of these 238 individual Nationwide Permits are more than minimal. While the application states that temporary stream crossings will be removed and restored, it is questionable how the applicant will maintain the 50 ft wide permanent Right of Way (ROW) throughout waters of the United States without

Mr. Castillo

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permanent impacts. The conservation statements made in the JPA seem to be in conflict with the long term maintenance of the project. The JPA form in section 18 does not include the effects to Estuaries and State Natural Reserves. In addition, the JPA do not comply with the Nationwide Permit General Condition 4. The document failed to identify and avoiding impact to migratory bird breeding areas, particularly in wetland areas.

3. Calculation of Environmental Impacts:

The JPA does provide conflicting information regarding the expected effects of the project. The following are specific comments regarding this issue:

- A. The document states that a 150 ft wide right of way is to be used. It states that this ROW will be cleared of all vegetation during construction, but in other areas it states that a 100 ft construction right of way will be used. We recommend that all calculations regarding environmental impacts use the 150ft initial construction right of way dimensions.
- B. The acres and number of water crossing vary throughout the various documents, the Jurisdictional Determination (JD) included in the DEIS has 79 water crossing in one section and 59 in another, the JPA has about 100 water crossings, the final number and acreage of wetland impacts should be the same throughout all the documents.
- C. In addition, the various sections of the document state that once construction is finalized, 100 ft of the ROW can be reforested or with the authorization of PREPA, a land owner can develop. This leaves a 50 ft wide area or about 500 acres as the permanent right of way. The DEIS state that 33% of the project is located in wetlands; however, it is not clear whether the non forested ROW will apply to these areas. If it is included about 165 wetland acres will be loss. If we subtract the wetlands impacts that leaves some 335 acres of permanent upland impacts, across the island of Puerto Rico.
- D. To avoid impacts to forested wetland areas in the Sabana Seca area, the applicant is proposing to use directional drilling. However, it is not clear how this will coincide with the 50 ft no root zone that is the permanent ROW. Will forested wetlands be cut to eliminate roots impacting the proposed pipe, or will the pipe be placed deep enough to be out of the root zone of the forested wetlands?
- E. The submitted environmental studies are largely Geographical Information System (GIS) based. Site-specific discussion regarding direct and indirect to trust resources found in the area is absent. Since they have estimated 100 stream crossings, there should have been a discussion of impacts to native stream fauna where the stream bed will be altered as in the Type 2 and Type 3

Mr. Castillo

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crossings. Native stream fauna migrate from the estuary to the high mountain streams and could be impacted by alteration of the stream beds in these mountain streams.

4. Impacts to federally-listed and imperiled species:

Based on information gathered from our files and the documents provided, the proposed project falls within the range of 32 listed species, including the endangered Puerto Rican Nightjar (*Caprimulgus noctitherus*); the endangered Puerto Rican parrot (*Amazona vittata*), the threatened Puerto Rican crested toad (*Peltophryne lemur*), Puerto Rican boa (*Epicrates inornatus*), Puerto Rican sharp-shinned hawk (*Accipiter striatus venator*), Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*), and Puerto Rican plain pigeon (*Patagioenas inornata wetmorei*); and the listed plant species *Auerodendron pauciflorum*, palo de Ramón (*Banara vanderbiltii*), diablito de tres cuernos (*Buccus vahli*), *Cordia bellonis*, *Daphnopsis helleriana*, palo de rosa (*Ottoschulzia rhodoxylon*), *Myrcia pagani*, chupacallos (*Pleodendron macranthum*), *Schoepfia arenaria*, erubia (*Solanum drymophilum*), *Tectaria estremerana*, *Thelypteris verecunda*, *Thelypteris yaucoensis*, *Thelypteris inabonensis*, *Chamaecrista glandulosa*, Cobana negra (*Stahlia monosperma*), *Polystichum calderoense*, nogal (*Juglans jamaicensis*), *mitracarpus polycladus*, *mitracarpus maxwelliae*, *Cordia rupicola*, *Catesbaea melanocarpa*, *Eugenia woodburyana*, Bariaco (*Trichilia triacantha*), and St. Thomas prickly ash (*Zanthoxylum thomasianum*).

It is important to also mention that the Commonwealth-listed species coqui llanero (*Eleutherodactylus juanariveroi*) is known from the Toa Baja area. Wetlands to be affected in Toa Baja may harbor the species and surveys should be conducted by qualified and experienced personnel to determine presence or absence of the species. Although the species is not currently protected by the ESA, at present time the Service is reviewing the status of the species to determine if federal listing is warranted. We recommend that if species is determined to be present, the project is modified to avoid possible effects to the species and its habitat.

The methodology used to survey for listed species was mostly transects throughout some areas of the proposed route. Although this approach may be useful for flora and fauna inventories to describe common species in a particular area, this method is not appropriate to determine presence/absence of federally listed species in an area. Furthermore, the surveys conducted for listed species did not cover the entire project area and were not appropriately conducted. In our letter dated June 30, 2010, providing preliminary technical assistance to the applicant our office recommended that transects not be used for surveying federally listed plants species. It is our experience that rare plants show a patchy distribution and it is highly probable that populations of federally listed plants are missed if a systematic survey is not conducted. It was our recommendation that the areas with high quality habitat were systematically surveyed. However, the provided information shows that forested areas with high quality habitat

Mr. Castillo

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were not surveyed or are underrepresented. Furthermore, it is our opinion that the surveys were not specific. Therefore, our office has serious concerns regarding the possibility that the proposed route has adverse effects on our federally listed plants species. Enclosure 1 includes additional comments and recommendations regarding listed plants.

Based on the above, it is not a surprise for the Service that no individuals of federally-listed plant species were detected. It was our experience with the Gasoducto del Sur that when flora and fauna inventories were conducted, no endemic nor federally listed species were found (see page 3-2 DIA-P Gasoducto del Sur). However, when the applicant contracted qualified and experienced personnel and conducted the Endangered Species Field Study for the development of the Biological Assessment, three federally-listed plant species were detected, including over 300 individuals of one of the species. In addition, nightjar surveys were appropriately conducted during the breeding season and 55 male nightjars were detected.

The information provided in the JPA mentions that the construction may impact the endangered Puerto Rican nightjar (*Caprimulgus noctitherus*), Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*), Puerto Rican sharp-shinned hawk (*Accipiter striatus venator*), and the Puerto Rican boa (*Epicrates inornatus*). However, the surveys conducted to generate the data for the biological evaluation were not designed to detect these species nor determine possible direct and indirect effects to the species. In our letter dated June 30, 2010, we provided recommendations to develop appropriate methodologies for such surveys. We acknowledge that the applicant contracted species experts to visit the areas and determine suitable habitat within the proposed route. These species experts recommended conducting site-specific surveys during breeding season. Those recommendations are consistent with our previous recommendations to the applicant. Although the Service did not originally identify the Puerto Rican crested toad within the proposed route area, the JPA includes a section on the species. We acknowledge the applicant efforts to include the species in the analysis. We concur with the applicant that the proposed project is located within the range of the species. Enclosure 2 includes additional comments and recommendations regarding the PR crested toad.

In conclusion, the biological evaluation failed to appropriately design survey methodologies to maximize detection of federally-listed plants, did not include site-specific habitat characterization, and did not include appropriate survey methods to collect data on listed species (e.g. survey methods, season of surveys, time of the day for surveys, frequency of surveys, size of sampling, site-specific habitat characterization). It is important to mention that we recommended bird surveys during breeding season because it is the appropriate season to conduct surveys and determine nesting territories to be affected by the project.

Mr. Castillo

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Therefore, we believe that the determination of effects for listed species is not supported by the best information. At this time, the Service cannot concur with such determinations. Furthermore, without this information the service cannot accurately evaluate the impact of the proposed construction on the federally-listed species.

Since we believe that the proposed project should be considered a major construction activity under NEPA, a Biological Assessment should be appropriately developed for the project and site-specific surveys be designed and conducted appropriately. We strongly recommend that surveys be conducted appropriately and all aspects of the project be carefully evaluated to determine direct, indirect, interdependent and interrelated effects on listed species. Once this information is available, site-specific and species-specific measures can be developed to avoid or minimize possible adverse effects. Since the project is mostly a ROW that can be moved, if species are found, we strongly recommend the ROW be moved away from the areas where listed species are found. Avoiding impacts to species and their habitat should be the first approach instead of mitigation.

The Service's experience with the implementation of the mitigation for the Gasoducto del Sur requires us to re-evaluate our position, should the same approach is proposed or considered for this second pipeline project. The area proposed for the mitigation of the Gasoducto del Sur was not avoided for this new project, and the nightjar habitat within the area identified for the mitigation would be affected. This needs to be carefully analyzed by the COE. Compliance with previous permit conditions should be assured prior to considering any new permit actions. Impacts to the mitigation area for the Gasoducto del Sur should be avoided.

In summary with the information presented as of today, it could be foreseen that construction of the NG pipeline throughout endangered species habitat may result in "take" as defined by the ESA. Section 9 of the Endangered Species Act prohibits take of an endangered species. Take is identified as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

5. Migratory Birds:

The current project goes through upland and wetland areas where migratory birds winter, and nest during breeding season. The Migratory Bird Treaty Act prohibits attempt to take, take, capture or kill any migratory bird, part, nest or egg. The JPA do not mention or take in consideration the migratory birds. The project should provide a list of the migratory birds (e.g., Peregrine falcon (*Falco peregrinus*), Yellow-billed Cuckoo (*Coccyzus americanus*), White Ibis (*Eudocimus albus*), etc...) that winter or breed on the project site and how they will avoid or minimized any impact to the species.

Mr. Castillo

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6. Aquatic Resources:

Several waters of the United States (wetlands, rivers, creeks, channel crossing, and estuaries) and aquifers would be impacted by the proposed NG pipeline. Major wetland areas identified in the JPA and DEIS are underground hydrological systems, wetlands associated with the Puerto Rico north coastal zone. Although mitigation measures are provided, measures are not specific enough to evaluate the overall impact of the project on wetland systems. Moreover, portions of the project will cross through forested wetlands for which Horizontal Directional Drilling is being proposed (HDD) this method however will require a larger footprint in the herbaceous wetlands adjacent to the forested wetlands. This additional temporary workspace will accommodate the drill rig and pipe assembly. Additionally, we could not find within the JPA and DEIS a discussion of potential wetland mitigation measures. Our office cannot evaluate wetland impacts without knowing the actual wetland acreage that would be affected by the proposed project.

A copy of the project DEIS was included in the JPA. We recommend that for Annex 3.2 a GIS layer showing hydric soils (including the % of the hydric unit) and highly erodible lands (HEL) be developed in order to facilitate the environmental evaluation along the proposed route. Also the Natural Resources Conservation Service soil surveys should be used in addition to the US Geological survey topographic maps to identify stream crossings. Both should be incorporated into the hydrology maps of the route. The Service is concerned that clearing all vegetation in highly erodible or unstable lands will cause excessive erosion and sedimentation that could adversely impact adjacent water bodies. In addition there are some areas that are extremely steep in which trenching may not be possible; there is no discussion of how these areas will be traversed.

7. Potential Impacts from Directional Drilling:

Directional drilling is being proposed to cross larger rivers and streams, wetlands, roads and other areas. The process of directional drilling will consist of an initial bore, plus reaming to enlarge the bore hole to the desired size of the pipeline. This involves the use of bentonite clay (as drilling muds) to lubricate and stabilize the borehole. While this is a naturally occurring substance and usually considered non toxic, micro particles of the clay can clog the gills of aquatic organisms. While there is a discussion regarding steps to take in the event of a frac-out, the Service is concerned with the use of this method in karst topography.

Karst by its nature tends to have void spaces in the rock matrix, sometimes these spaces lead directly to the aquifer, by passing the natural filtration found in a porous aquifer. A frac-out in this type of terrain could simply disappear. The discharge of drilling muds could result in the contamination of underground water (stream, aquifers), and could adversely affect humans, unique subterranean fauna, and commerce.

Mr. Castillo

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8. Impacts to Landowner Incentive Programs:

The present project goes throughout properties under the Service's USFWS's Partners for Fish and Wildlife Program (PFWP). The PFWP provides technical and financial assistance to private landowners who are willing to work with the Service and other partners on a voluntary basis to help meet the habitat needs of our Federal Trust Species (e.g., migratory birds, threaded and endangered species). For over 15 years the PFWP has been helping private landowners restore wetlands and other important fish and wildlife habitats. We have identified that at least three properties under a current Conservation Agreement with the Service may be adversely affected by the proposed project: Hacienda Pellejas in Adjuntas, Hacienda Esperanza in Manatí, and the US Navy Radio Station in Toa Baja. Current efforts at these highly ecologically valuable properties include restoration of forest, riparian habitat and restoration of wetland areas. The Service has invested close to \$130,000.00 of federal funds on restoration activities. We recommend that the project is modified to avoid impacts to restoration areas.

Based on the above, we believe that the proposal to use o several hundreds of NWP's is not protective of the environment and does not allow an adequate review of the cumulative, direct and indirect impacts of the project. Furthermore, the determinations of effects for federally-listed species included in the biological evaluation cannot be supported with the data provided and do not comply with Section 7 of the Endangered Species Act. This project is one of the largest infrastructure projects being undertaken in Puerto Rico in decades, a corridor of permanent and temporary impacts along the 92 mile route will cross karst, mountain, and coastal habitats. Impacts to federally-listed and imperiled species, aquatic resources, forested lands in both volcanic and karst regions in Puerto Rico, ecologically sensitive areas and Commonwealth forests and reserves are not well documented and evaluated. Furthermore, the effects related to how the sensitive areas will be maintained after construction as right of ways were not evaluated. We recommend that the COE exercise its discretionary authority and require an individual permit with public notice for this project. In addition the Corps as the lead Federal Agency designated in the applicant's DEIS should exert jurisdiction over the entire project and investigate the need for a Federal Environmental Impact Statement.

We acknowledge the efforts of the applicant for looking for alternatives for the use of fossil oils as energy source and appreciate their efforts to protect habitat for our trust resources. Nevertheless, this should not come at the expense of other important resources. It is our mission to work with others, to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of our people.

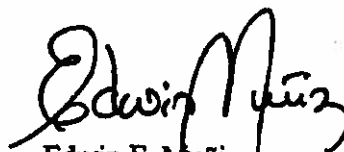
If you have any additional question concerning our comments, please do not hesitate to contact Marelisa Rivera, Assistant Field Supervisor for the Caribbean Ecological Services Field Office at 787-851-7297 extension 206.

Mr. Castillo

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You may also visit our website <http://www.fws.gov/caribbean> for additional information on threatened and endangered species under jurisdiction and the programs to conserve them.

Sincerely yours,



Edwin E. Mufiz
Field Supervisor
Caribbean Field Office

Enclosures

CC:
PREPA
FERC, DC
EPA, San Juan
EPA, R2
DNER
JCA
JP

Enclosure 1. Comments / recommendations regarding listed plants.

Specifically we have the following comments regarding federally listed plant species.

1. The dry limestone forest between Ponce and Guayanilla harbor suitable habitat for several listed species (*Buxus vahlii*, *Catesbaea melanocarpa*, *Cordia rupicola*, *Eugenia woodburyana*, *Mitracarpus maxwelliae*, *Mitracarpus polycladus*, *Ottoschulzia rhodoxylon* and *Trichilia triacantha*). Due to the soil conditions the majority of the area that surrounds the Peñuelas landfill was not used for intensive agriculture. As the case of the Guánica Forest, these areas were primary used for charcoal production and native vegetation was allowed to recover. Therefore, these areas serve as a refuge for our listed and rare species. For example, *Buxus vahlii* was historically known from a few localities that include the Municipalities of Rincon, Isabela and Bayamon, and the island of St. Croix. However, recent specific surveys during the evaluation for the project "Gasoducto del Sur", let to the discovery of a new population that is considered the biggest known within the main island of Puerto Rico. Further evaluation for that same project also let to the discovery of populations of *Catesbaea melanocarpa*, *Eugenia woodburyana* and *Trichilia triacantha*, none of these species were detected during the initial field surveys. These limestone hills are also recognized by the presence of *Cordia rupicola*, a species considered by the Service as candidate to be federally listed. The best scientific data indicate that *Catesbaea melanocarpa*, *Cordia rupicola*, *Mitracarpus maxwelliae*, *Mitracarpus polycladus* and *Trichilia triacantha* are almost restricted to dry limestone forest. All these examples emphasize the need to protect and minimize any impact on the habitat of these species.
2. The Central Mountain Range between Adjuntas and Utuado harbors suitable habitat for *Juglans jamaicensis*, *Polystichum calderoense*, *Thelypteris inabonensis*, *Thelypteris yaucoensis* and *Thelypteris verecunda*. As evidenced from the available information in our office these mountains harbors extensive forests of "palma de sierra" "*Prestoea acuminata*" and some areas have been under regeneration for more than sixty years. This kind of forest harbors suitable conditions for the previously mentioned species. Four of the previously mentioned species are ferns, a group of vascular plants that are especially difficult to identified and maybe confused with widespread species. Based on the provided information as part of the Joint Permit Application and the DEIS, none of these forested areas were sampled and the few transects that were established were located adjacent to existing roads. Furthermore, the available information in our office indicates that this area harbors individuals of the Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*). This old secondary forest may also provide the necessary foraging and nesting habitat for the Puerto Rican parrot (*Amazona vittata*). The U.S. Fish and Wildlife Service (Service) and the Department of Natural and Environmental Resources (DNER) has a vigorous program to establish a self sustainable population of the Puerto Rican parrot. Based on the above we recommend that the "sierra palm forest are systematically surveyed for plants species and alternative are considered to minimize impacts to the habitat of the Puerto Rican broad-winged hawk. Ferns species require special

attention since they are hard to identify and typically require trained botanist to identify their key characters.

3. The propose route will impact a chain of mogotes within the municipality of Manati. These mogotes harbor suitable habitat for the following listed plant species, *Auerodendron pauciflorum*, *Banara vanderbiltii*, *Buxus vahlii*, *Cordia bellonis*, *Daphnopsis helleriana*, *Myrcia paganii*, *Ottoschulzia rhodoxylon*, *Shoepfia arenaria*, *Solanum drymophilum*, *Tectarea estremerana* and *Zanthoxylum thomasianum*. Again, these areas were not systematically surveyed and our office has concerns about the impacts to federally listed species. The information available in our office indicates that even smallest isolated mogotes within these areas have the potential to harbor endangered plant species such as palo de rosa "*Ottoschulzia rhodoxylon*". Furthermore, the land clearing of these mogotes may have adverse impacts on the Puerto Rican boa "*Epicrates inornatus*". We have the same concerns regarding the route that runs along Highway PR 10 between Arecibo and Utuado. Specifically, sinkholes areas may have potential habitat for *Cordia bellonis*, *Daphnopsis helleriana*, *Solanum drymophilum* and *Tectarea estremerana*. The sinkholes along Highway PR 10 have been recovering for the previous decade. Although, the project description does not specified the extent of the impacts to these areas.

The DEIS indicates that if federally listed species are going to be affected the individuals will be transplanted to a suitable area. Based in our experience with endangered plants we do not recommend the asexual propagation and the transplant of individuals as an appropriate conservation measure. The propagation by cuttings may result in the development of a poor root system that can lead to a low survival of transplanted individuals and their possible uprooting by tropical storm. In addition, the document does not indicate a post transplant monitoring period to ensure the survival of the planted individuals. In that case it will be a concern since transplanted individuals might represent part of a viable reproductive population that engages several forested areas outside the area of the propose project. Therefore, we cannot discard the genetic exchange with individuals located in the surrounding private properties that have not been surveyed. Individuals located within the propose route might represent an important component of the genetic diversity of the species. This is stressed by the fact that some endangered species are dioecious, with female and male flowers located in different trees. Therefore, we consider that the lost of a single adult individual can adversely affect a functional and self sustainable population. Based on the above, we encourage the applicant to conduct specific surveys for federally listed species and to consider alternatives to avoid or minimize impacts to these species and its habitat.

Enclosure 2. Specific comments and recommendations regarding the Puerto Rican crested toad (*Peltophryne lemur*).

1. We have identified two areas with highest probability of finding the PRCT within the project area. The two areas are the Guayanilla and Peñuelas and from Manatí to Bayamón. According to the information submitted, the applicant identified only the Peñuelas area as possible habitat for the sapo concho. However, the historical record of the species located the species at the northern karst between Bayamón and Manatí. The methodology used for the fauna study does not address appropriately the possible presence of the species at those areas. The dry limestone forest between Ponce and Guayanilla, and the stack hills between Manatí and Bayamón harbor suitable habitat for the crested toad. Due to the soil conditions the majority of the area that surrounds the Peñuelas landfill and at the stack hills were not disturbed for agriculture, by land movements for contouring, or mining, maintaining the structural complexity (crevices, caves, limestone walls, etc.).
2. Page 37. (1.8.3. Impacts minimization for the PRCT) and Page 60 (6.4 Puerto Rican crested toad protection plan). The applicant proposed the following conservation measures to avoid or minimize impact on crested toads.
 - A. *During the initial establishment and clearing of the construction right-of-way, two biologists will conduct daily sampling for detecting the concho toad in every area of construction before the work begins. We believe that it is not an appropriate conservation measure to avoid affect individuals of the crested toad. The cryptic behavior of the species makes it difficult to be detected, especially during day light. The presence or absence of the species should be determined before the project begins. Although surveys on the species had not detected, initial vegetation removal should be conducted by hand (machete, chainsaw, and trimmers) to provide time to the sapo concho, if present, to move away from the project area.*
 - B. *Monitoring activities will be carried out daily and will be focused on cover areas (cracks in rocks and tree species) that are regularly used by the species. The sapo concho utilize crevices in the limestones, under rocks, holes in limestone walls, and holes in dead wooden trunks as shelter. Due to the cryptic behavior of the species we recommend that surveys be conducted by experienced biologist to determine presence or absence of the species and its habitat within the right-of-way of the proposed project. The project area should be clearly marked in accordance with the project layout.*
 - C. *All monitoring events will be incorporated into and will be carried out in coordination with the work plan of the contactor; daily changes to these work plans shall be considered in planning the work. A log book for daily events should be carried out by the person in charge of the monitoring for the species.*

- D. *Monitoring events will be carried out between 5:00 am and 7:30 am on days when major equipment will be in operation within the limits of the construction right-of-way. We believe this is not an appropriated conservation measure to avoid take on the species. Detect sapo concho during the day light is not easy. The sapo concho is more active during the night time from 8:30 pm to 11:30 pm and during the rainy season. We recommend that surveys to detect the species should be conducted during the night before at the mentioned time and increase search efforts during the rainy events.*
 - E. *When an individual is detected, established capture and relocation protocols will be implemented. Be aware that no relocation protocol had been developed for the sapo concho. The sapo concho is site specific for reproduction. Relocation to other places is not recommended. The joint application permit indicates that if the crested toad is detected and could be affected by the project, the individuals will be translocated to another suitable area. We recommend developing a translocation protocol which includes procedures to capture, manage and relocation. The relocation site should be previously identified on a map. The protocol should be submitted to the Services for approval.*
 - F. *All collections, relocations and data transmission will be coordinate with appropriate local, state, federal regulatory agencies. If the species is detected, the Service should be notified immediately to provide further assistance.*
3. Page 42. (4.1.1. *Peltophryne lemur* – (Sapo concho). The applicant suggests that if *conservation measures to reduce any potential impacts associated with clearing and construction of the proposed project are in place, a "may affect, but not likely to adversely affect" determination is recommended.* The proposed project fall within the historical range of the sapo concho. We may concur with their determination if the applicant provides adequate conservation measures. At this point, this information has not been provided.

