

Environmental Assessment

Determinations and Compliance Findings for HUD-assisted Projects

24 CFR Part 58

Project Information

Project ID: PR-RGRW-00408

Project Name: Criado Growers LLC

Responsible Entity: Puerto Rico Department of Housing

Grant Recipient (if different than Responsible Entity):

State/Local Identifier: Puerto Rico/Villalba

Preparer: Gabriela Rodriguez

Certifying Officer Name and Title: Permit and Compliance Officers: Sally Acevedo Cosme, Pedro De León Rodriguez, María T. Torres Bregón, Ángel G. López-Guzmán, Ivelisse Lorenzo Torres, Santa Damarys Ramírez Lebrón, Mónica M. Machuca Ríos, Janette I. Cambrelén, Limary Vélez-Marrero, and Juan Carlos Perez Bofill.

Consultant (if applicable): Tetra Tech, 251 Calle Recinto Sur, Ste. 202, San Juan, PR 00091

Direct Comments to: PRDOH (environmentcdbg@vivienda.pr.gov)

Project Location: Carr 151 km 3.3, Villalba, PR 00766

The property is 84.9-acre site located at Carr 151 km 3.3, Villalba, PR 00766 (Parcel ID: 294-000-004-36). The coordinates of the project site are 18.139541, -66.459031.

This land/farm was previously used for the sugar cane and tobacco production and is currently a vacant lot.

Description of the Proposed Project [24 CFR 58.32; 40 CFR 1508.25]:

The proposed use of grant funds is for the purchase and installation of a greenhouse, irrigation system and solar panel system.

The Scope of Work (SOW) for this project includes the purchase and installation of a greenhouse for the crop of hydroponic cilantrillo (SOW-1), an irrigation system (SOW-2), and solar power system (SOW-3). Currently this land is a vacant lot that used to be used for the growing of sugar cane and tobacco in the past.

The applicant plans to install a greenhouse (SOW-1) at coordinates 18.140374, -66.458911. The proposed greenhouse is a metal structure covered with plastic and Saran sheet that has an approximately footprint of 50-feet by 15-feet. The greenhouse will be in an available terrace of approximately 200-feet by 100-feet.

The proposal includes the installation of a PVC tubes overground irrigation system (SOW-2), to cover an approximately area of 200' x 150' at coordinates 18.139562, -66.458784.

The applicant plans to install a solar power system (SOW-3) over an incline area of approximately 100' x 50' located at coordinates 18.139079, -66.460652. This overground system will consist of 12 solar panels over metal railing. Power will be supplied with the solar system.

This project requires for the applicant to request the service and connection to the potable water distribution system.

Site photos are included in **Appendix A**. A site map (**Figure 1**) is included in **Appendix B**.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]: The Re-grow PR Urban-Rural Agriculture Program promotes and increases food security throughout the Island. It also improves and expands agricultural production related to economic revitalization and the development of activities. This farming business project is associated with the cultivation and production of hydroponic cilantrillo and will deliver with the overall objectives of the economic development program. The proposed project will promote the production of traditional crops in high demand and contribute to the food sustainability of Puerto Rico.

Existing Conditions and Trends [24 CFR 58.40(a)]: The existing area for the proposed purchase and installation of a greenhouse, irrigation system and solar panel system traditionally has been used for agricultural purposes. Therefore, there is no change in land use associated with this project and some ground disturbance will be required.

Structure of this Environmental Review Report (ERR).

This ERR discusses the Funding Information immediately below. The environmental impacts of the proposed action are discussed in the Compliance with 24 CFR 58.5 and 58.6 Laws and Authorities checklist and Environmental Factors checklist. The listing of Additional Studies Performed, and Sources, Agencies and Persons Consulted follows the checklists. The discussions of Public Outreach, Cumulative Impacts, Alternatives, and Summary of Findings and Conclusions are presented at the end of the ERR, before the listing of Mitigation Measures and Determination signatures. The appendices contain detailed information.

- Appendix A – Site Inspection
- Appendix B – Maps
- Appendix C – Additional Documentation
- Appendix D – Endangered Species
- Appendix E – SHPO Consultation

Funding Information

Grant Number	HUD Program	Funding Amount
B-17-DM-72-0001, B-18-DP-72-0001, B-19-DP-78-0002, B-18-DE-72-0001	Community Development Block Grant – Disaster Recovery (CDBG-DR)	\$11,938,162,230

Estimated Total HUD Funded Amount: \$49,814.50

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]: \$49,814.50

Compliance with 24 CFR 58.5 and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes No <input type="checkbox"/> <input checked="" type="checkbox"/>	The proposed project consists of the purchase and installation of a greenhouse, irrigation system and solar panel system. The nearest civil airport is to the southwest approximately at 58,632 feet from the proposed site. The nearest military airport is to the northeast approximately at 187,657 feet from the proposed site. The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. The project is in compliance with Airport Hazards requirements. See Figure 2 in Appendix B .
Coastal Barrier Resources	Yes No <input type="checkbox"/> <input checked="" type="checkbox"/>	This proposed project is not located in a CBRS Unit. The proposed project is located 53,133 feet to the north of the

<p>Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]</p>		<p>nearest CBRS (PR-51). Therefore, this project has no potential to impact a CBRS Unit and is in compliance with the Coastal Barrier Resources Act.</p> <p>See Figure 3 in Appendix B.</p>
<p>Flood Insurance</p> <p>Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]</p>	<p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The proposed project site is not located in a 100-year floodplain per FEMA Flood Insurance Rate Map (FIRM) 72000C1140J, effective date 11/18/2009. The proposed project will not require flood insurance.</p> <p>See Figure 4 and 5 in Appendix B.</p>
<p>STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 58.5</p>		
<p>Clean Air</p> <p>Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93</p>	<p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The proposed project site is not located in a county or air quality management district that is in non-attainment status for any criteria pollutants. The Municipio of Villaba is not listed in the EPA Green Book as being in non-attainment. The proposed purchase and installation of a greenhouse, irrigation system and solar panel system would have no impact on air quality. The project is in compliance with Clean Air Act.</p> <p>See EPA listing in Appendix C.</p>
<p>Coastal Zone Management</p> <p>Coastal Zone Management Act, sections 307(c) & (d)</p>	<p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The proposed project is located 46,909 feet from the nearest Coastal Zone Management area and does not affect a Coastal Zone as defined in the PR Coastal Zone Management Plan. The project is in compliance with the Coastal Zone Management Act.</p> <p>See Figure 7 in Appendix B.</p>
<p>Contamination and Toxic Substances</p> <p>24 CFR Part 58.5(i)(2)</p>	<p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>A site visit conducted on May 23, 2023, noted no debris, rubbish, visible signs vegetative stress, contamination, or toxic substances at the project site. The site inspection noted two empty water storage tanks (See Appendix A).</p> <p>Site contamination was evaluated through online data searches to determine if toxic sites are located within</p>

		<p>3,000-feet of the proposed project. There are no sites of environmental concern identified within 3,000 feet of the project site.</p> <p>See Figures 8 and 9 in Appendix B.</p>
<p>Endangered Species</p> <p>Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402</p>	<p>Yes No</p> <p><input checked="" type="checkbox"/> <input type="checkbox"/></p>	<p>According to EPA NEPA Assist Enviromapper, the nearest critical or proposed critical habitat is 67,493 feet to the north of the project location.</p> <p>Per the Official Species List from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website, the Puerto Rican Boa, Puerto Rican Broad-winged Hawk, Puerto Rican Parrot, Puerto Rican Harlequin Butterfly, and the Palo de Ramon can be found, but there are no critical habitats at this location. The proposed purchase and installation of a greenhouse, irrigation system and solar panel system will not involve cutting down any trees.</p> <p>A site-specific review of endangered species was conducted as part of informal consultation in accordance with the Fish and Wildlife Act (47 Stat. 401, as amended: 16 U.S.C. 661 et seq.) (See Appendix D).</p> <p>The project was found to Not Likely to Adversely Affect the listed species provided conservation measures are implemented as part of the project on October 16, 2023 The USFWS concurred with this finding on October 25, 2023. (See mitigations below and USFWS correspondence in Appendix D).</p> <p>If a Puerto Rican Boa is encountered, work will cease until it moves off the site or, failing that, the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers will be notified for safe capture and relocation of the animal, in</p>

		<p>accordance with the USFW Puerto Rican Boa Conservation Measures guidelines.</p> <p>The conservation measures for the Puerto Rican Boa, Puerto Rican Broad-winged Hawk and Puerto Rican Parrot, and information on the life cycle of the Puerto Rican Harlequin Butterfly, are provided in Appendix D.</p> <p>See Figures 10 and 11 in Appendix B and IPaC report in Appendix D. The proposed project is in compliance with the Endangered Species Act</p>
<p>Explosive and Flammable Hazards</p> <p>24 CFR Part 51 Subpart C</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The project does not include development, construction, or rehabilitation that will increase residential density.</p> <p>The project is in compliance with Explosive and Flammable Hazard requirements.</p> <p>Refer to site visit report in Appendix A.</p>
<p>Farmlands Protection</p> <p>Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The project site is not designated as prime farmland. The proposed purchase and installation of a greenhouse, irrigation system and solar panel system does not include any activities that could potentially convert agricultural land to nonagricultural use.</p> <p>Although the project includes new construction, the project is exempt from review under the Farmland Protection Policy Act (FFPA) as the project is limited to construction of on-farm structures needed for farm operations. No further review is required.</p> <p>This project is in compliance with the Farmland Protection Policy Act.</p> <p>See Figure 12 in Appendix B.</p>
<p>Floodplain Management</p> <p>Executive Order 11988, particularly section 2(a); 24 CFR Part 55</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The project is located in a Zone X, FIRM Panel 72000C1140J, effective date 11/18/2009. The site is not located in a Preliminary Firm or an Advisory Base Flood Elevation (ABFE) special flood hazard</p>

		<p>area. The project is in compliance with Floodplain management requirements.</p> <p>See Figure 5 and 6 in Appendix B.</p>
<p>Historic Preservation</p> <p>National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The project site was evaluated on September 1, 2023, by and SOI Qualified Archaeologist. Documentation with maps was subsequently submitted to SHPO on September 5, 2023. SHPO concurred with a finding of “No Historic Properties Affected” within the project’s Area of Potential on Effects on October 3, 2023.</p> <p>See Figure 13 in Appendix B and SHPO Submittal and Concurrence Documentation in Appendix E.</p>
<p>Noise Abatement and Control</p> <p>Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>HUD’s noise regulations protect residential properties from excessive noise exposure. The proposed project consists of the purchase and installation of a greenhouse, irrigation system and solar panel system.</p> <p>HUD noise regulations do not apply as the project does not include new construction for residential use or rehabilitation of an existing residential property. The proposed project is in compliance with Noise Abatement and Control.</p>
<p>Sole Source Aquifers</p> <p>Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>There are no EPA sole source aquifers in Puerto Rico. The project is in compliance with Sole Source Aquifer requirements.</p>
<p>Wetlands Protection</p> <p>Executive Order 11990, particularly sections 2 and 5</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The closest fresh-water bodies include the Río Jacaguas 1,430 feet to the north of the greenhouse proposed location, unnamed intermittent creeks are identified in the property. The NWI maps show no wetlands on the proposed project area or adjacent to the proposed project area.</p> <p>This proposed project will not impact any on or off-site wetlands and includes no</p>

		activities that would require further evaluation under Executive Order 11990. See Figure 14 in Appendix B .
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes No <input type="checkbox"/> <input checked="" type="checkbox"/>	This project is not within proximity of a National Wild and Scenic River (WSR). The distance to the nearest WSR is approximately 236,932 feet. The project is in compliance with the Wild and Scenic Rivers Act. See Figure 15 in Appendix B .
ENVIRONMENTAL JUSTICE		
Environmental Justice Executive Order 12898	Yes No <input type="checkbox"/> <input checked="" type="checkbox"/>	No adverse environmental impacts were identified in any other compliance review portion of this project that may disproportionately be high for low-income and/or minority communities. Therefore, the proposed activity complies with Executive Order 12898.

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 & 1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features, and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable, and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.

- (1) Minor beneficial impact
- (2) No impact anticipated
- (3) Minor Adverse Impact – May require mitigation
- (4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
LAND DEVELOPMENT		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	2	<p>The proposed project is located on a private farm. The proposed project consists of the purchase and installation of a greenhouse, irrigation system and solar panel system.</p> <p>The project site is zoned Agricola Productivo (A-P). The proposed action is compliant with the current land use of the project area.</p>
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	2	<p>The proposed project is in mountain terrain. The project area lies on two major types of soils: Caguabo gravely clay loam (CbF2) with 20 to 60 percent slope; eroded and Quebradillas silty clay loam (QeF2) with 40 to 60 percent slope; eroded, surrounded by secondary forest vegetation cover, 330 meters above mean sea level.</p> <p>The area of disturbance for the project is approximately 1.3 acres. Projects larger than 1 acre must comply with the CWA and develop a SWPPP with the NPDES.</p> <p>The project sites are in area is rated "low to "moderate" for landslide susceptibility (see Figure 16 in Appendix B).</p> <p>No changes in drainage or erosion are expected from this project. There will be little to no additional runoff associated with the project.</p>
Hazards and Nuisances including Site Safety and Noise	2	<p>During implementation of the project, construction activities may result in temporary elevation of ambient noise levels in immediate areas around active construction areas.</p> <p>There is no access to the project area by the public. Standard BMPs, such as construction fencing, would be applied to protect the farm residents and public from typical construction hazards.</p>
Energy Consumption	2	<p>The project site will use power generated from the solar power system. The proposed project will not require an expansion to existing power facilities.</p>

Environmental Assessment Factor	Impact Code	Impact Evaluation
SOCIOECONOMIC		
Employment and Income Patterns	2	Temporary employment of workers related to construction activities would result, but no new permanent jobs would be created as a result of this project. These workers are expected to come from the local region. However, since the project will include an economic component, it may aid in restoring some employment opportunities and increase income. The proposed project would not negatively impact employment or income patterns.
Demographic Character Changes, Displacement	2	The proposed project would not result in demographic character changes or displacement. Given the nature of the project area, no relocations or demolition of residential structures or businesses would occur as part of this project.

Environmental Assessment Factor	Impact Code	Impact Evaluation
COMMUNITY FACILITIES AND SERVICES		
Educational and Cultural Facilities	2	The project would not result in any change to regional or local area educational and cultural facilities or increase demand for them.
Commercial Facilities	2	The agricultural activity of the project property will improve. Other commercial facilities would not be impacted by the proposed project.
Health Care and Social Services	2	Health care and social services facilities would not be impacted by the proposed project. The project would not increase demand for health care and social services facilities.
Solid Waste Disposal / Recycling	2	Waste vegetation from clearing activities will either be composted on site or at regional composting centers. Soil from grading would be recycled on the farm as fill. Left over construction materials that could be reused on the farm (e.g., piping, structural materials, greenhouse covering fabrics) would be stored for later use. The remaining construction solid waste materials would be collected for transport to the local landfill. The amount of impact of solid waste resulting from the

		construction of the proposed project would be minor. During operations, the products and by-products would be agricultural, which waste would be biodegradable.
Wastewater / Sanitary Sewers	2	The proposed project would not include any bathrooms, wastewater, or sewage facilities. Current farm conditions would remain unchanged.
Water Supply	2	The applicant will request service and connection to municipal water supply. The proposed project will have minimal impact on the water supply.
Public Safety - Police, Fire and Emergency Medical	2	The proposed project would not create any new demand for emergency or health services.
Parks, Open Space and Recreation	2	The proposed project would not create or destroy any new parks, open space, or recreational activities. It also would not increase use of those facilities.
Transportation and Accessibility	2	The proposed project would not involve the creation of new roads nor any increase in long-term traffic on existing roads. There would be some minor use of the existing road during construction. All residents and businesses would retain access to their properties during and after the project.

Environmental Assessment Factor	Impact Code	Impact Evaluation
NATURAL FEATURES		
Unique Natural Features, Water Resources	2	The proposed project will be situated on an existing agriculture property and will have no impact to unique natural features or water resources.
Vegetation, Wildlife	2	The proposed project will occur in land previously used for agricultural purposes and will continue in that capacity. The proposed project will have no impact on vegetation and wildlife.
Climate Change	2	This is a small project with no measurable impact on climate change factors. With respect to climate

		change impact on the project, agricultural activities could be affected by drought. The project site was previously used for cultivation sugar cane and tobacco.
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Additional Studies Performed: None Required

Field Inspection (Date and completed by): **Carlos O. Medina, 5/23/2023**

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]:

Puerto Rico State Historic Preservation Office

FAA, National Plan for Integrated Airport Systems:

www.faa.gov/airports/planning_capacity/npas/reports/NPIAS-Report-2017-2021-Appendix-B-Part6.pdf

John H. Chafee Coastal Barrier Resources System, Puerto Rico [map](http://www.fws.gov/CBRA/Maps/Locator/PR.pdf).
www.fws.gov/CBRA/Maps/Locator/PR.pdf

National Wild and Scenic Rivers System: www.rivers.gov/puerto-rico.php

Puerto Rico Community Development Block Grant Disaster Recovery Action Plan, July 2018. www.cdbg-dr.pr.gov/en/action-plan/

Programmatic Agreement among the Federal Emergency Management Agency, the Puerto Rico State Historic Preservation Office and the Central Office for Recovery, Reconstruction and Resilience – amended to include the Puerto Rico Department of Housing.

US Environmental Protection Agency, National Ambient Air Quality Standards, Nonattainment Areas for Criteria Pollutants (Green Book):
www3.epa.gov/airquality/greenbook/anayo_pr.html

US EPA, Environmental Topics, Air Topics: www.epa.gov/environmental-topics/air-topics

US Fish and Wildlife Service, Environmental Conservation Online System:
<https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=PR&stateName=Puerto%20Rico&statusCategory=Listed>

Federal Emergency Management Agency, Flood Mapping Service:
<https://msc.fema.gov/portal/home> (compilation of numerous maps)

US Fish and Wildlife Service, National Wetlands Inventory:
www.fws.gov/wetlands/data/mapper.html (compilation of numerous maps)

Puerto Rico Coastal Zone Management Program Plan, September 2009.

US EPA, Sole Source Aquifers. Esri HERE, Garmin, NOAA, USGS, EPA.

US Geological Survey, Data Release of May Showing Concentration of Landslides Caused by Hurricane Maria,

www.sciencebase.gov/catalog/item/59de6459e4b05fe04ccd39d8

List of Permits Obtained: None Required

Public Outreach [24 CFR 58.43]:

The local community has been very proactive in the recovery process. Puerto Rico Department of Agriculture has worked closely with the agricultural community. The project includes a FONSI / NOI-RROF in compliance with NEPA regulations for HUD.

Cumulative Impact Analysis [24 CFR 58.32]:

In accordance with 24 CFR 58.32 (Aggregation), there are no cumulative impacts associated with the proposed project. The agricultural activities at the farm would increase above current levels due to the implementation of the project. Water use would increase to a minor degree due to the installation and operation of the new greenhouse.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]

The RGRW Program's goal is to increase agricultural capacity while promoting and increasing food security island-wide. This Program seeks to enhance and expand agricultural production related to economic revitalization and sustainable development activities. The applicant submitted a proposal to develop agricultural production on their property. The proposed use of grant funds will allow the applicant to expand the cultivation, processing, and delivery of agricultural products through purchase and installation of a greenhouse, irrigation system and solar panel system. Any alternative that would involve an off-property location would not develop new agricultural production or allow for the economic development for this applicant. The actions are proposed in an area with the infrastructure to connect the new greenhouse to the potable water system. The proposed site for the greenhouse and irrigation area has been previously cleared and cultivated. Alternative locations for the greenhouse on the property would require clearing, potential grading, and be farther from the municipal water supply for the new connections. The location for the irrigation system is based on the location suitable for growing cilantro and connection to the water supply. The irrigation pipes would be above ground and not require ground disturbance. The area for the solar installation is on a southwest facing slope. Other areas would not be as efficient in collecting solar energy.

No Action Alternative [24 CFR 58.40(e)]:

Under the No Action Alternative, the applicant would not receive federal funding for the proposed project which would inhibit the economic growth opportunity that the applicant would not otherwise have under the PRDOH Re-Grow Puerto Rico program. As a result, these owners may not be able to experience the growth needed to recover and expand their agriculture activities. A provision of the grant allows for economic

development for businesses. The No-Action alternative would not allow for the economic development for this applicant.

Summary of Findings and Conclusions:

The proposed activity has no adverse effects on the environment nor is there the requirement for further consultation with federal agencies associated with the topics evaluated above. There are no environmental review topics addressed above that result in the need for additional formal compliance steps with federal agencies or the requirement for mitigations other than those listed below. There may be additional approvals or permits from local agencies. For example, the Office of Permit Management (OGPe) is responsible for granting permits, licenses, certifications, consultations, construction, and any other procedure necessary for business development and land use in Puerto Rico.

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure
Water Supply	The appropriate permits, to request the service and connection to the potable water distribution system, will be obtained before installation and operation of the proposed project.
Endangered Species	Train construction staff to identify and avoid the plant <i>Oplonia spinosa</i> which is used by the butterfly for egg laying and larval feeding. Train personnel to identify and avoid the Puerto Rican harlequin butterfly (all life stages) or its occupied host plant prickly bush (<i>Oplonia spinosa</i>) in the project areas.
Endangered Species	Work areas must be clearly delineated in the field before clearing or construction to avoid unnecessary habitat impacts. Personnel with knowledge and able to identify the Puerto Rican harlequin butterfly (all life stages) and the prickly bush, must survey the marked areas.
Endangered Species	If the Puerto Rican harlequin butterfly is found on the project site, any work activity must stop in the area where the species is present. If the Puerto Rican harlequin butterfly (adult) is found flying in the area where the prickly bush is present, project-related activities must stop in this area and a 50-meter (164 feet) buffer zone of no activity or human disturbance should be established around the prickly bush until the butterfly moves out of the project site on its own.

	<p>If the prickly bush is occupied by any life stage of the Puerto Rican harlequin butterfly, the host plant should be clearly marked with a flagging tape and a 5-meter (16.4 feet) buffer zone around the plant must be established and clearly delineated for its protection.</p> <p>Avoid cutting off the prickly bush within the project site even if no eggs, caterpillars or chrysalids are present. Works outside of the buffer zone, where no Puerto Rican harlequin butterflies are observed, may continue.</p>
Endangered Species	<p>For all Puerto Rican harlequin butterfly sightings (all life stages), the time and date of the sighting and the specific location where the butterfly was found must be recorded. All Puerto Rican harlequin butterfly sighting reports should be sent to the USFWS Caribbean Ecological Service Field Office to José Cruz-Burgos – Endangered Species Program Coordinator at Caribbean.es@fws.gov</p>
Stormwater Runoff	<p>The proposed project will require the development of a SWPPP with the NPDES to comply with the CWA.</p>

Determination:

Finding of No Significant Impact [24 CFR 58.40(g)(1); 40 CFR 1508.27]

The project will not result in a significant impact on the quality of the human environment.

Finding of Significant Impact [24 CFR 58.40(g)(2); 40 CFR 1508.27]

The project may significantly affect the quality of the human environment.

Preparer Signature:  Date: 01/17/24

Name/Title/Organization: Gabriela Rodriguez, Environmental Compliance Officer, Tetra Tech, Inc.

Certifying Officer Signature:  Date: February 1, 2024

Name/Title: Sally Z. Acevedo Cosme- Permits and Environmental Compliance Specialist

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

APPENDIX A

Site Inspection and Photos

Environmental Field Observation - Puerto Rico Department of Housing

APPLICANT INFORMATION			
Application ID	PR-RGRW-00408		
Applicant Name	Criado Growers LLC		
Property Address	Carr 151 km 3.3		
Parcel ID	294-000-004-36		
Coordinates	18.139541, -66.459031		
Inspector Name	Carlos O. Medina		
Inspection Date	05/23/2023		
Building Type	N/A		
Number of Units	0		
Number of Stories	0		
Year Built; Data Source	N/A		
ENVIRONMENTAL OBSERVATIONS (attach photos and notes, as necessary, for any YES answers)			
OBSERVATION ITEMS	YES	NO	COMMENTS
A. Is the structure in use ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B. Is structure a greenhouse ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C. Is Electricity connected ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
D. Is water connected ? (Utilities or Well)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1. Are there signs of poor housekeeping on site? (mounds of rubble, garbage, storm debris, solid waste, petroleum products, paint, pesticides, cleaning fluids, vehicle batteries, abandoned vehicles, pits, pools, ponds of hazardous substances, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Are there any 55-gallon drums visible on site? If yes, are they leaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Are there any (or signs of any) underground storage tanks on the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Are there signs of ASTs on the parcel or adjacent parcel? If yes, list approximate size and contents, if known.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Water reserve, 2000 gallons, empty Water reserve, 300 gallons, empty
5. Is there any stained soil or pavement on the parcel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6. Is a water drainage system in use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. Is a warehouse in use for storage of Fertilizer or Pesticides ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8. Are there any groundwater monitoring wells on the site or adjacent parcel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9. Is there evidence of a faulty septic system ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
10. Is there distressed vegetation on the parcel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

11. Is there any visible indication of MOLD ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12. Is there any visible evidence of asbestos, chipping, flaking or peeling paint, or hazardous materials present in or on the structure?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
13. Are any additional site hazards observed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
14. Is there any permanent standing water , such as a pond or stream, located on the site (do not include ponding from recent rain / weather events)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
15. Does the subject property have water frontage ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
16. Is there any indication of the presence of Wetlands ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
17. Are there any obvious signs of animals or birds nesting on or near the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
18. Is the applicant aware of any significant historical event or persons associated with the structure, or of it being located in a historic district/area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
19. Is a historic marker present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Notes:

Re Grow Additional Notes:

Case: PR-RGRW-00408

Project Name: Criado Growers LLC

Coordinates: 18.139542, -66.459769

Is the field graded? For what purpose the field was graded? Month, Year: field is not graded

Scope of Work: Purchase and installation of greenhouse, irrigation system, and solar system.

Land current in use for: vacant

Past Land use was: sugar cane and tobacco

The applicant plans to do: installation of a greenhouse, irrigation system and power solar system

Where the applicant plans to do the ground disturbances for the scopes of work, add the coordinates, descriptions and approximately the measurements:

Scope of work 1: 18.140374, -66.458911

Installation of a greenhouse with approximately footprint of 50' x 15'. Available terrace approximately is 200' x 100'. Greenhouse will be in metal with plastic and seran cover sheet. For the crop of hydroponic cilantrillo.

Scope of work 2: 18.139562, -66.458784

Installation of an irrigation system, consist of PVC tubes overground, to cover an approximately area of 200' x 150'.

Scope of work 3: 18.139079, -66.460652

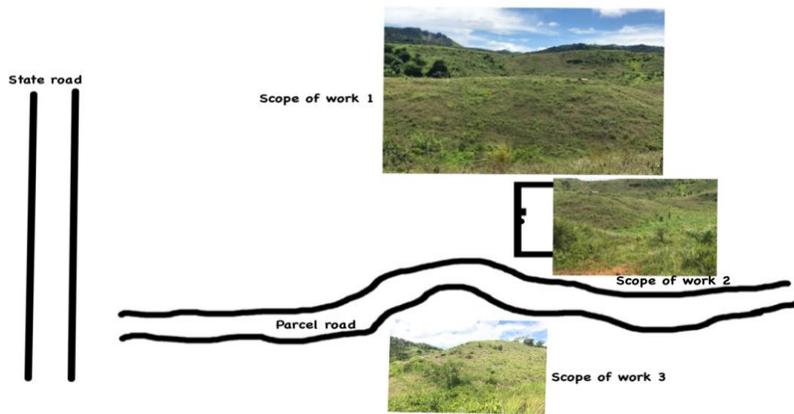
Installation of a solar power system over an incline area of approximately 100' x 50'. This system will consist of 12 solar panels over metal railing, overground.

Any new water connection or power connection?

Water, no water connection at the time of the inspection. Applicant will plan to request the service and connection.

Power, will be the connection of the solar power system.

Site Sketch



Front of Structure

Photo Direction: East



Facing Away From Front

Photo Direction: West



Side #1 of Structure

Photo Direction: North



Facing Away From Side #1

Photo Direction: South



Back of Structure

Photo Direction: South



Facing Away From Back

Photo Direction: North



Side #2 of Structure

Photo Direction: South



Facing Away From Side #2

Photo Direction: North



Streetscape #1

Photo Direction: Southwest



Streetscape #2

Photo Direction: Northwest



Address

Photo Direction: East



Structural Details

Photo Description: Architectural details

Photo Direction: East



Structural Details

Photo Description: Architectural details

Photo Direction: East



Structural Details

Photo Description: Architectural details

Photo Direction: North



Structural Details

Photo Description: Architectural details

Photo Direction: North



Structural Details

Photo Description: Architectural details

Photo Direction: Southeast



Structural Details

Photo Description: Architectural details

Photo Direction: Southwest



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Structural Details

Photo Description: Architectural details

Photo Direction: North



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Structural Details

Photo Description: Architectural details

Photo Direction: West



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Aboveground Storage Tanks

Photo Description: Tank

Photo Direction: Northeast



Aboveground Storage Tanks

Photo Description: Water tank

Photo Direction: Southeast



Scope Of Work

Photo Description: Scope of work 1: installation of a greenhouse

Photo Direction: Northeast



Scope Of Work

Photo Description: Scope of work 1: installation of a greenhouse

Photo Direction: East



Scope Of Work

Photo Description: Scope of work 1: installation of a greenhouse

Photo Direction: Northeast



Scope Of Work

Photo Description: Scope of work 2: installation irrigation system

Photo Direction: East



Scope Of Work

Photo Description: Scope of work 2: installation irrigation system

Photo Direction: Northeast



Scope Of Work

Photo Description: Scope of work 2: installation of irrigation system

Photo Direction: East



Scope Of Work

Photo Description: Scope of work 3: solar power system

Photo Direction: Southwest



Scope Of Work

Photo Description: Scope of work 3: solar power system

Photo Direction: Southwest



Scope Of Work

Photo Description: Scope of work 3: solar power system

Photo Direction: Southwest



Scope Of Work

Photo Description: Scope of work map reference

Photo Direction: North



APPENDIX B

Maps



- Legend**
-  Project Parcel
 -  Parcels

PUERTO RICO



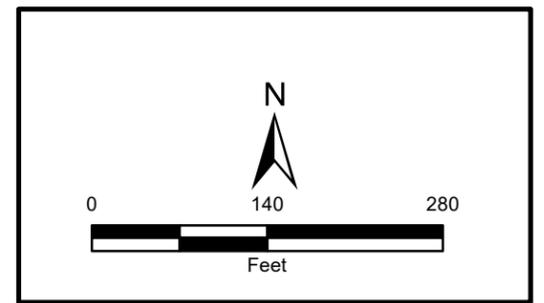
Figure 1: PROJECT LOCATION

APPLICANT ID: PR-RGRW-00408

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666

Name of Development: Criado Growers LLC

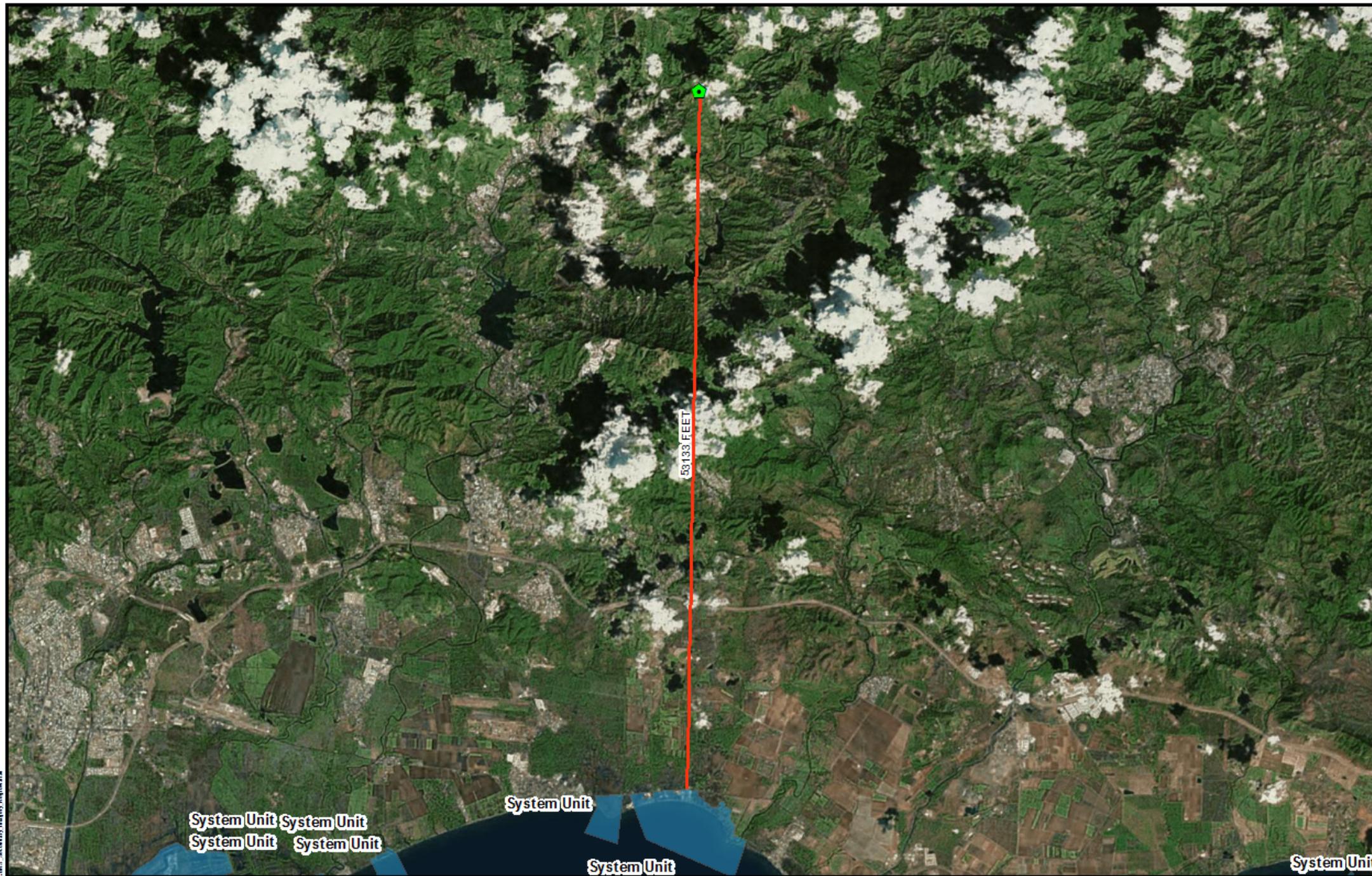
Parcel Coordinates: 18.139541 , -66.459031



Source: U. S. Fish & Wildlife Service
<https://www.fws.gov>

Author: TG Date: 6/6/2023

File Path: \\esl102\gis\100\PR\GIS\Shane\TDR\data\USPR\PR\LOC_Review_Secondary imagery.mxd



Legend

Project Parcel

Coastal Barrier Resources System Unit Type

Otherwise Protected

System Unit

Distance to Nearest Coastal Barrier Resources System in Feet: 53133 FEET

PUERTO RICO



**Figure 3: COASTAL BARRIERS IMPROVEMENT ACT
APPLICANT ID: PR-RGRW-00408**

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666

Name of Development: Criado Growers LLC

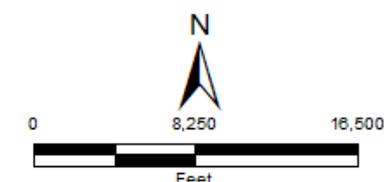
Parcel Coordinates: 18.139541, -66.459031

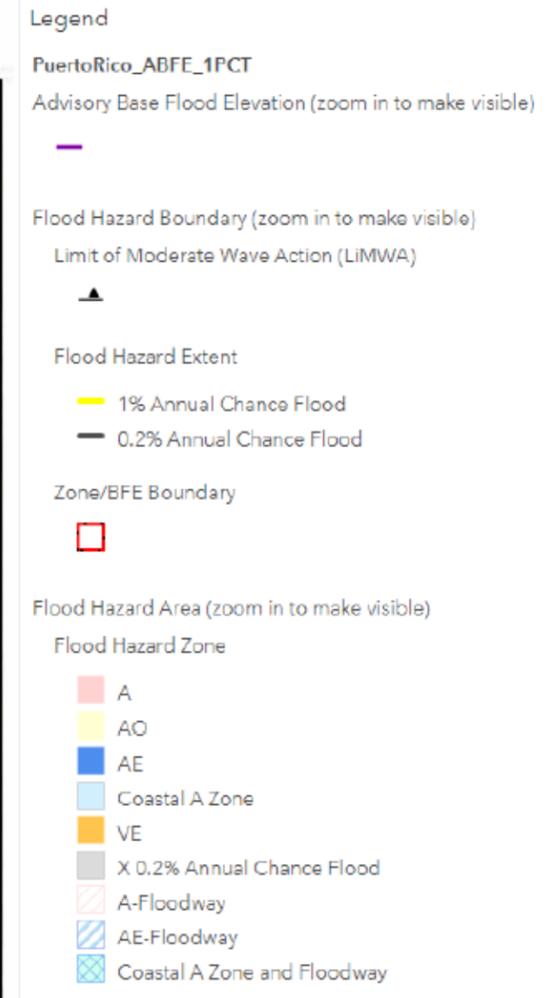


Source: U. S. Fish & Wildlife Service
<https://www.fws.gov>

Author: TG

Date: 6/5/2023





PUERTO RICO



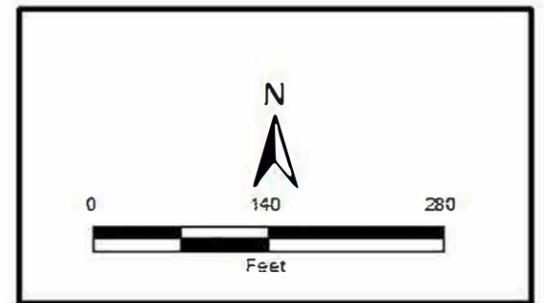
**Figure 6: ADVISORY BASE FLOOD ELEVATION
APPLICANT ID: PR-RGRW-00408**

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666
Name of Development: Criado Growers LLC
Parcel Coordinates :18.13954 1 , -66.459031

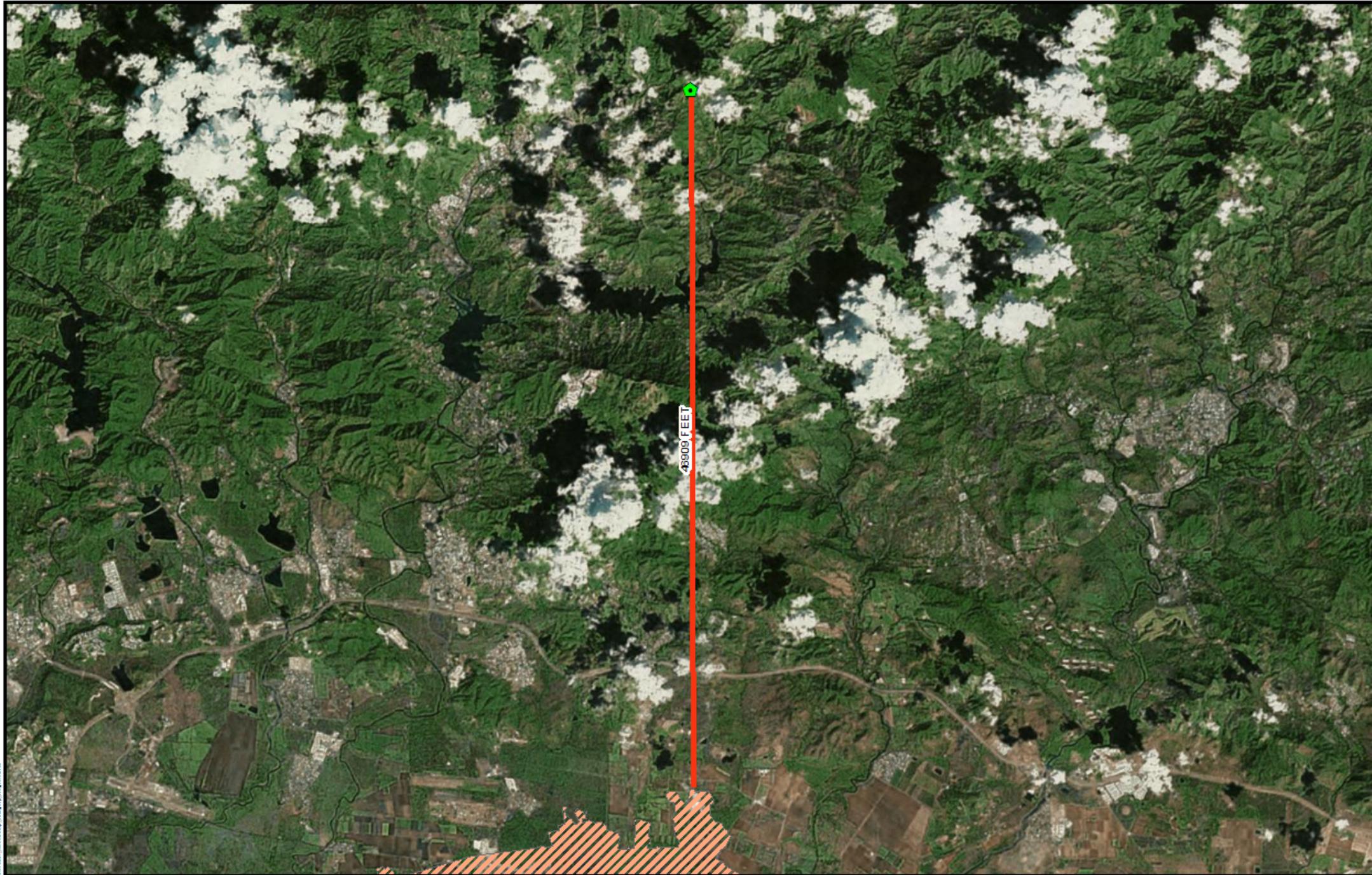


Source: FEMA
<https://gis.fema.gov>

Author: TG Date: 6/7/2023



IN THE INTEREST OF THE PUBLIC INTEREST, SECRETARIO DE AGRICULTURA



- Legend**
-  Project Parcel
 -  Coastal Zone Management Boundary

Distance to Nearest Coastal Zone: 46909 FEET

PUERTO RICO



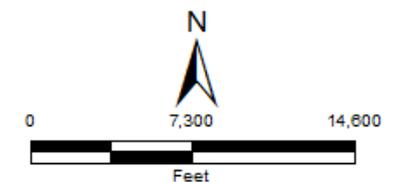
Figure 7: COASTAL ZONE MANAGEMENT

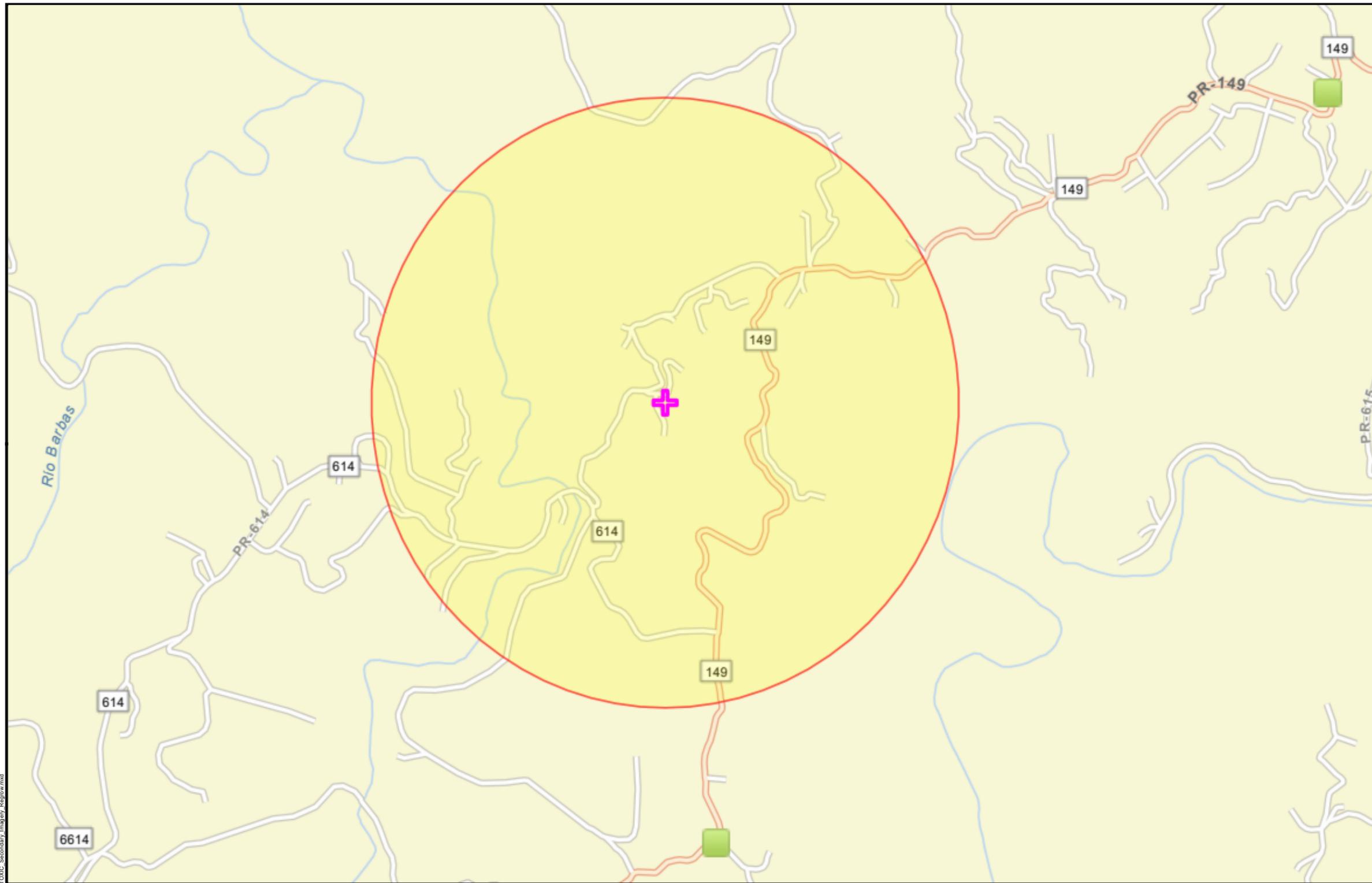
APPLICANT ID:PR-RGRW-00408

ADDRESS: Carr 151 km 3.3, Villalba, PR 00766
 Name of Development: Criado Growers LLC
 Parcel Coordinates: 18.139541, -66.459031



Source: NOAA's Ocean Service
<https://data.noaa.gov>
 Author: TG Date: 6/5/2023





Legend

- Superfund (NPL)
- Toxic Substances Control Act (TSCA)
- Toxic Releases (TRI)
- Brownfields (ACRES)
- Hazardous Waste (RCRAInfo)

PUERTO RICO



Figure 9: NEPA Assist Map

APPLICANT ID: PR-RGRW-00408

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666

Name of Development: Criado Growers LLC

Parcel Coordinates: 18.139541 , -66.459031

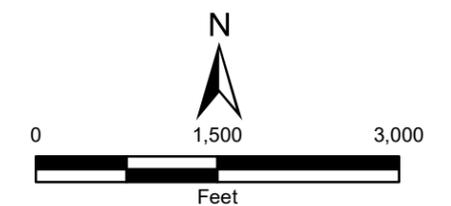


Source: E.P.A.

<https://www.epa.gov/frs/geospatial-data-download-service>

Author: JB/AK

Date: 5/18/2023





Legend
Project Parcel

PUERTO RICO



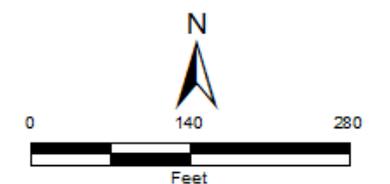
Figure 10: ENDANGERED SPECIES ACT APPLICANT ID: PR-RGRW-00408

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666
Name of Development: Criado Growers LLC
Parcel Coordinates: 18.139541, -66.459031



Source: U.S. FISH & WILDLIFE SERVICE
<https://ecos.fws.gov>

Author: TG Date: 6/1/2023





Legend

-  Project Parcel
- comname**
-  Puerto Rico harlequin butterfly

Distance to Nearest Critical Habitat in Feet: 67493 FEET

PUERTO RICO



Figure 11: CRITICAL HABITATS
APPLICANT ID: PR-RGRW-00408

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666

Name of Development: Criado Growers LLC

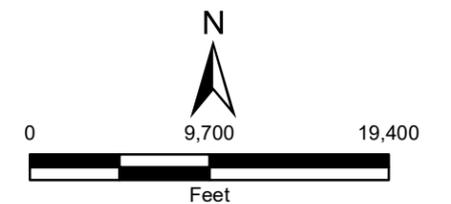
Parcel Coordinates: 18.139541, -66.459031



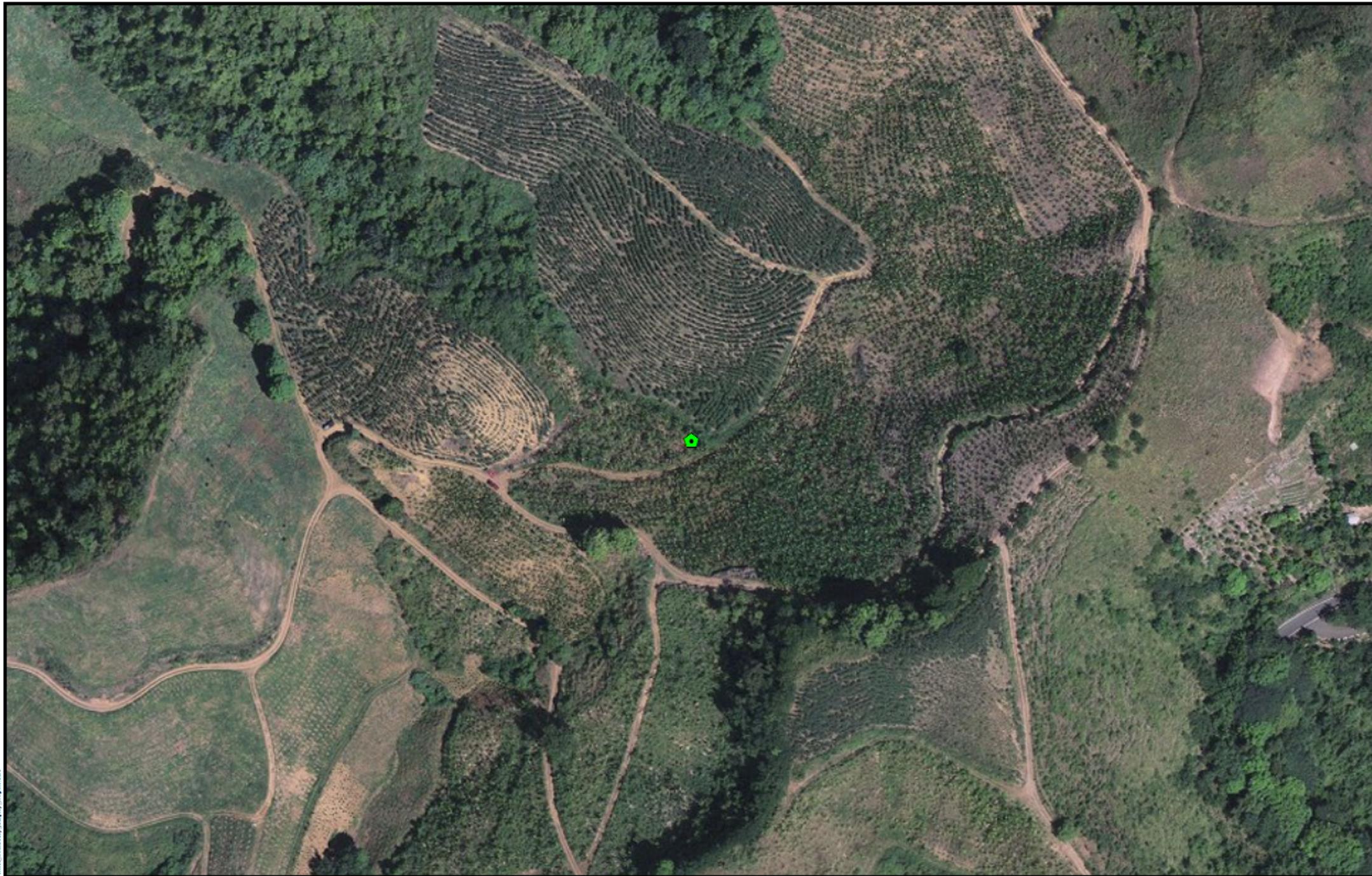
Source: U.S. FISH & WILDLIFE SERVICE
<https://ecos.fws.gov>

Author: TG

Date: 6/1/2023



File Path: \\nas1202\gis\1\CDR\PR\Acc\Shane\TDR\Map\USPRT\Fig\CRITICALHABITAT_Secondary_Imagery_Export.mxd



Legend

-  Project Parcel
- Farm Class**
-  All areas are prime farmland
-  Farmland of statewide importance
-  Farmland of statewide importance, if irrigated
-  Prime farmland if drained
-  Prime farmland if irrigated
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Prime farmland if protected from flooding or not frequently flooded during the growing season

PUERTO RICO

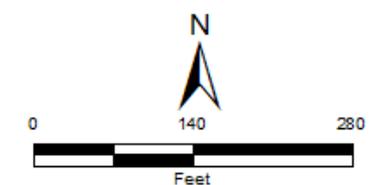


**Figure 12: FARMLAND PROTECTION
 APPLICANT ID: PR-RGRW-00408**

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666
 Name of Development: Criado Growers LLC
 Parcel Coordinates: 18.139541, -66.459031



Source: USDA
<https://websoilsurvey.sc.egov.usda.gov>
 Author: TG Date: 6/1/2023





Legend

-  Project Parcel
-  Wild and Scenic Rivers

Distance to Nearest Wild and Scenic River in Feet: 236932 FEET

PUERTO RICO



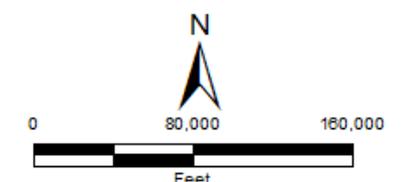
**Figure 15: WILD AND SCENIC RIVERS ACT
APPLICANT ID: PR-RGRW-00408**

ADDRESS: Carr 151 km 3.3, Villalba, PR 00766
 Name of Development: Criado Growers LLC
 Parcel Coordinates: 18.139541, -66.459031

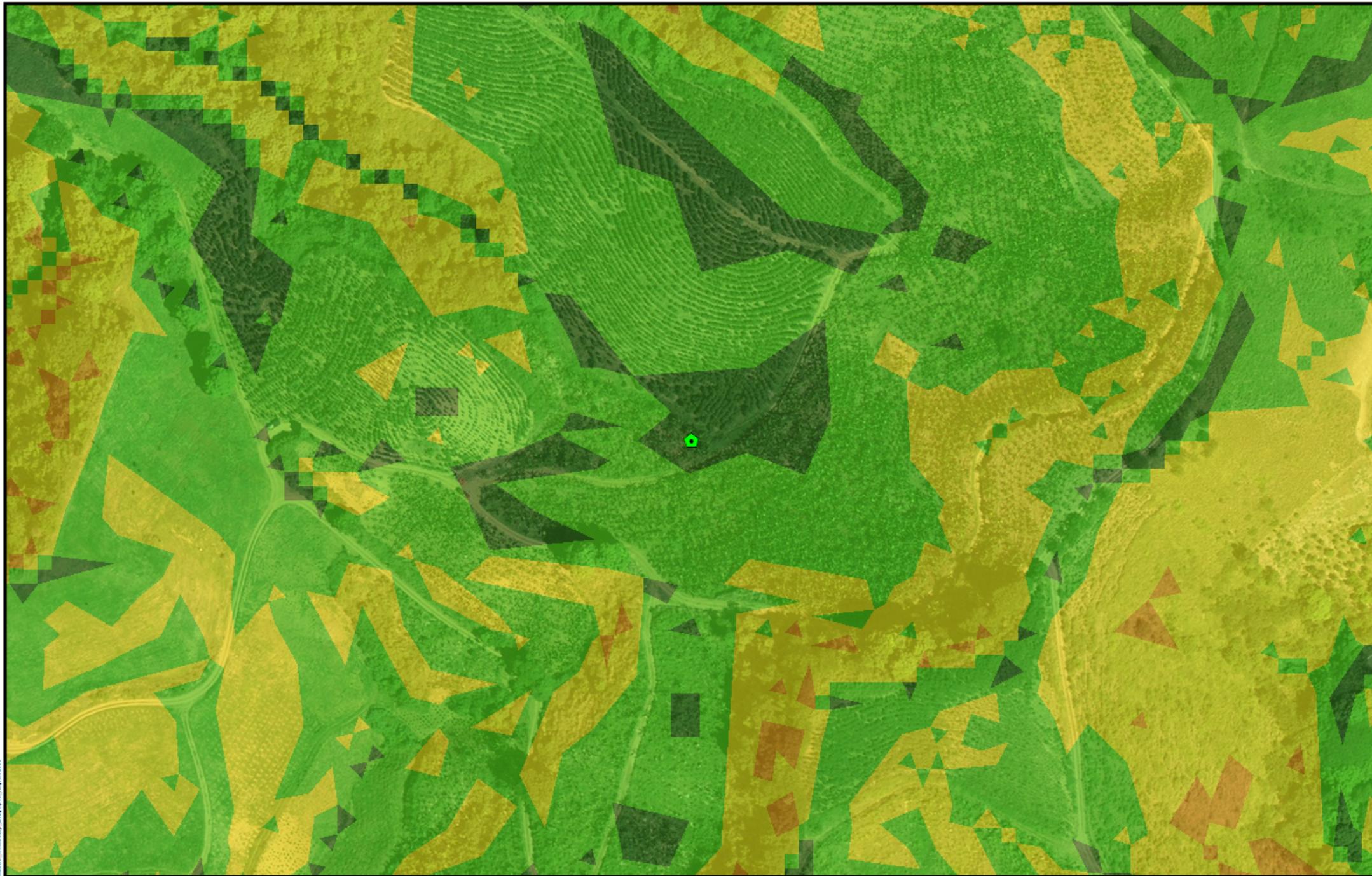


Source: U. S. Forest Service
<https://www.fs.usda.gov>

Author: TG Date: 6/1/2023



File Path: \\net01\geogis\GIS\PROJECTS\2023\18139541\18139541_00408\Figure 15: WILD AND SCENIC RIVERS ACT.aprx



- Legend**
- Project Parcel
- Landslide Susceptibility**
- Extremely High
 - Very High
 - High
 - Moderate
 - Low

PUERTO RICO



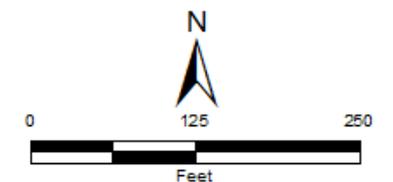
<http://www.mdt.gov/pr/transportation/infrastructure/secondary/interstates>



Source: PRDOH
<http://www.usgs.gov/maps/aerial>
<http://www.esri.com/arcgis/info/about/arcgis/arcgis.html?ti=10506ec07f15491daee17647f19248ee>
 Author: TG Date: 6/1/2023

**Figure 16: SLOPE AND EROSION
 APPLICANT ID: PR-RGRW-00408**

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666
 Name of Development: Criado Growers LLC
 Parcel Coordinates: 18.139541, -66.459031



APPENDIX C

Additional Information



You are here: EPA Home > Green Book > >National Area and County-Level Multi-Pollutant Information >Puerto Rico Whole or Part County Nonattainment Status by Year Since 1992 for all Criteria Pollutants

Puerto Rico Whole or Part County Nonattainment Status by Year Since 1992 for all Criteria Pollutants

Data is current as of April 30, 2023

Listed by State, County, NAAQS (W=Whole County,P=Partial County designated nonattainment as of report date)
 The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m³) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:

Important Notes

Download National Dataset: [dbf](#) | [xls](#) | [Data dictionary \(PDF\)](#)

PUERTO RICO		92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
County	NAAQS																																	
Arecibo Municipio	Lead (2008)																					P	P	P	P	P	P	P	P	P	P	P		
Bayamon Co	Sulfur Dioxide (2010)																											P	P	P	P	P	P	
Catano Co	Sulfur Dioxide (2010)																											W	W	W	W	W	W	
Guaynabo Co	PM-10 (1987)	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P														
Guaynabo Co	Sulfur Dioxide (2010)																												P	P	P	P	P	P
Salinas Municipio	Sulfur Dioxide (2010)																											P	P	P	P	P	P	
San Juan Municipio	Sulfur Dioxide (2010)																											P	P	P	P	P	P	
Toa Baja Co	Sulfur Dioxide (2010)																											P	P	P	P	P	P	

Important Notes

Discover.

Connect.

Ask.

Follow.

2023-04-30

APPENDIX D
Endangered Species



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Bayamón | Mayagüez | Maricao | Rio Grande | St Croix
P.O. Box 491
Boquerón, Puerto Rico 00622



In Reply Refer to:
FWS/R4/CESFO/72149-Gen

Submitted Via Electronic Mail: jcperez@vivienda.pr.gov

Juan Carlos Pérez-Bofill, PE, MEng.
Director – Disaster Recovery CDBG-DR Program
Puerto Rico Department of Housing
P.O. Box 21365
San Juan, P.R 00928-1365

Re: CDBG-DR PR-RGRW-00408 Criado
Growers LLC, Villalba, Puerto Rico

Dear Mr. Pérez-Bofill

Thank you for your letter dated October 16, 2023, requesting comments on the above referenced project. As per your request, our comments are provided under the Endangered Species Act (Act) (87 Stat. 884, as amended; 16 United States Code 1531 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The Puerto Rico Department of Housing (PRDOH) on behalf of Criado Growers LLC (the Applicant) is proposing the installation of a 200 feet by 100 feet metal framed greenhouse (18°08'22.4"N 66°27'32.5"W) with plastic and saran cover sheet. An irrigation system will be installed above ground (18°08'22.4"N 66°27'31.6"W) and also, a solar power system consisting of 12 solar panels over metal railing will be installed (18°08'22.4"N 66°27'38.4"W). The project will be located at PR-151, Km. 3.3 in the municipality of Villalba, Puerto Rico.

Using the Information for Planning and Consultation (IPaC) system the proponent has determined that the proposed project lies within the range of Puerto Rican boa (*Epicrates inornatus* now known as *Chilabothrus inornatus*), Puerto Rican parrot (*Amazona vittata*) and Puerto Rican broad-winged hawk (*Buteo platypterus brunnescens*), Puerto Rican harlequin butterfly (*Atlantea tulita*) and palo de ramón (*Banara vanderbiltii*).

Based on the nature of the project, scope of work, information available, and analysis of the IPaC lists together with field direct observations of the area where the project will be developed, the proponent has determined that the proposed project may affect, but is not likely to adversely affect the Puerto Rican boa, Puerto Rican parrot, Puerto Rican broad-winged hawk, Puerto Rican harlequin butterfly and palo de ramón, since the land was used in the past to farm sugar cane and tobacco, now the land is still cleared with small ground vegetation. Conservation measures for

the Puerto Rican boa and bird species will be implemented. Since there are no conservation measures available for palo de ramón and Puerto Rican harlequin butterfly, construction staff will be trained to identify and avoid palo de ramón as well as *Oplonia spinosa* which is the host plant for the Puerto Rican harlequin butterfly.

We have reviewed the information provided in your letter and our files, and concur with your determination that the proposed project may affect, but is not likely to adversely affect the above mentioned species with the implementation of the conservation measures. As per the conservation recommendations, please note that if a Puerto Rican boa is encountered during the project activities, it should not be captured. If a boa needs to be moved out of harm's way, the Puerto Rico Department of Natural and Environmental Resources (PRDNER) should be contacted for safe capture and relocation of the animal. If immediate relocation is not an option, project-related activities in the area where the boa is found must stop until it moves out of harm's way on its own.

With regards to the Puerto Rican harlequin butterfly, the Service recommends the Applicant and its contractor to adopt the implementation of the below conservation measures for the proposed actions.

1. The contractor must inform all personnel about the potential presence of the Puerto Rican harlequin butterfly or its occupied host plant prickly bush (*Oplonia spinosa*) in the project areas. A pre-work meeting should inform all project personnel about the need to avoid harming this butterfly and its occupied host plant. Educational material (e.g., posters, flyers or signs with photos or illustrations of all the life stages of the Puerto Rican harlequin butterfly (i.e., eggs, caterpillar, chrysalids and adult, and its host plant) should be prepared and available to all personnel for reference.
2. Prior to starting any project activity, including removal of vegetation and earth movement, the boundaries of the work area must be clearly delineated in the field to avoid unnecessary habitat impacts. Once the project areas are clearly marked, and prior to any work activity, including site preparation, personnel with knowledge and able to identify the Puerto Rican harlequin butterfly (all life stages) and the prickly bush, must survey the areas where the work will be performed for the presence of the species and its host plant. It is important to note that all life stages of the Puerto Rican harlequin butterfly can be observed year-round, thus, oviposition (egg-laying) may occur at any time during the year.
3. If the Puerto Rican harlequin butterfly is found on the project site, any work activity must stop in the area where the species is present. If the Puerto Rican harlequin butterfly (adult) is found flying in the area where the prickly bush is present, project-related activities must stop in this area and a 50-meter (164 feet) buffer zone of no activity or human disturbance should be established around the prickly bush until the butterfly moves out of the project site on its own. Do not disturb the butterfly. Adult butterflies are often observed flying in the vicinity of the host plant as part of its mating behavior and laying eggs. If the prickly bush is occupied by any life stage of the Puerto Rican harlequin butterfly, the host plant should be clearly marked with a flagging tape and a 5-meter (16.4 feet) buffer zone around the plant must be established and clearly delineated for its protection. Eggs are mostly found on the newly grown and more tender branches of the prickly bush and the caterpillars feed only on prickly bush. However, avoid cutting off the prickly bush

within the project site even if no eggs, caterpillars or chrysalids are present. Works outside of the buffer zone, where no Puerto Rican harlequin butterflies are observed, may continue.

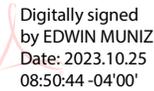
4. For all Puerto Rican harlequin butterfly sightings (all life stages), the time and date of the sighting and the specific location where the butterfly was found must be recorded. Data should also include a photo of the butterfly (if possible) and the habitat where it was observed, site GPS coordinates, and comments on how the butterfly was detected and its behavior. All Puerto Rican harlequin butterfly sighting reports should be sent to the USFWS Caribbean Ecological Service Field Office to José Cruz-Burgos – Endangered Species Program Coordinator at Caribbean_es@fws.gov.

In view of this, we believe that requirements of section 7 of the Endangered Species Act (Act) have been satisfied. However, obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner that was not previously considered; (2) this action is subsequently modified in a manner not previously considered in this assessment; or, (3) a new species is listed, or critical habitat determined that may be affected by the identified action.

Thank you for the opportunity to comment on this project. If you have any questions or require additional information, please contact us via email at caribbean_es@fws.gov or by phone at (786) 244-0081.

Sincerely yours,

EDWIN
MUNIZ

A digital signature consisting of a red scribble over the text "EDWIN MUNIZ".

Digitally signed
by EDWIN MUNIZ
Date: 2023.10.25
08:50:44 -04'00'

Edwin E. Muñiz
Field Supervisor

drr

Edwin E Muñiz
Field Supervisor
U.S. Fish and Wildlife Service
PO Box 491
Boquerón, Puerto Rico 00622
Email: caribbean_es@fws.gov

Dear Mr. Muñiz:

Subject – Endangered Species Concurrence for NLAA Determination for PR-RGRW-00408

Puerto Rico Department of Housing (PRDOH) is requesting informal consultation under Section 7 (a)(2) of the Endangered Species Act (Act) (87 Stat. 884, as amended; 16 United States Code 1531 et seq.), and in accordance with the Fish and Wildlife Coordination Act (47 Stat. 401, as amended; 16 U.S.C. 661 et seq.) for the proposed project PR-RGRW-00408, located at Carr 151 km 3.3 in the Municipality of Villalba, Puerto Rico (Parcel ID # 294-000-004-3). The proposed project sites are located north and west of the of the residence at 18.139541, -66.459031.

The proposed installation of a greenhouse with an approximate footprint of 50-feet by 15-feet with a terrace approximately is 200-feet x 100-feet. The greenhouse will be metal framed with plastic and saran cover sheet, and will be located at 18.140374, -66.45891. The proposed work also includes installation of an irrigation system to cover approximately 200' x 150'. The irrigation system will be made of PVC piping and will be an above ground irrigation system, and will be located at 18.139562, -66.458784. Lastly the proposed scope of work installation of a solar power system over an incline area of approximately 100' x 50' located at coordinates 18.139079, -66.460652. This overground system will consist of 12 solar panels over metal railing, power will be supplied with the solar system. This project requires for the applicant to request the service and connection to the potable water distribution system.No water or power connections needed for the project

The 76.35-acre site located at Carr 151 km 3.3 in the Municipality of Villalba, Puerto Rico, the proposed project site within the parcel will be approximately 0.15 Acres. This land is currently vacant, in the past the land was used to farm sugar cane and tobacco. Before the land was used as a farm it was a vacant lot, review of historic imagery shows the land is frequently disturbed and was cleared in 2010 & 2017. Imagery from 2022 shows that most of the land is still cleared, with small ground vegetation growing back. The National Wetlands Inventory (NWI) indicated that no wetlands are located within the parcel.

Using the Information for Planning and Consultation (IPaC) system, we have determined that the proposed project scope is located within the range of the following federally listed species:

Species	Status
Puerto Rican Broad-winged Hawk (<i>Buteo platypterus brunnescens</i>)	Endangered
Puerto Rican Parrot (<i>Amazona vittata</i>)	Endangered
Puerto Rican Boa (<i>Chilabothrus inornatus</i>)	Endangered
Puerto Rican Harlequin Butterfly (<i>Atlantea tulita</i>)	Threatened
Palo De Ramon (<i>Banara vanderbiltii</i>)	Endangered

No Critical Habitats for any species were noted within the parcel. Upon review of iNaturalist.org, no sightings of the within 3 miles of the proposed project area. Based on the nature of the project, previous site disturbance, scope of work, information available, and a careful analysis of the Project Site, and IPaC species list, we have made the following effects determinations:

Species	Effect Determination	Conservation Measures to be implemented (if needed)
Puerto Rican Broad-winged Hawk (<i>Buteo platypterus brunnescens</i>)	Not Likely To Adversely Affect (NLAA)	Conservation Measures for the Broad-winged hawk 2023
Puerto Rican Parrot (<i>Amazona vittata</i>)	Not Likely To Adversely Affect (NLAA)	Conservation Measures for the Puerto Rican Amazon 2023
Puerto Rican Boa (<i>Chilabothrus inornatus</i>)	Not Likely To Adversely Affect (NLAA)	USFWS Puerto Rican Boa Conservation Measures 2020
Puerto Rican Harlequin Butterfly (<i>Atlantea tulita</i>)	Not Likely To Adversely Affect (NLAA)	No conservation measures listed – see below
Palo De Ramon (<i>Banara vanderbiltii</i>)	Not Likely To Adversely Affect (NLAA)	No conservation measures listed – see below

Given the current and previous land use and lack of sightings of the listed species within the immediate vicinity, it has determined that the project is not likely to adversely affect the listed species provided the attached Conservation Measures are implemented as part of the proposed project as well as training construction staff to identify and avoid the plant *Oplonia spinosa*, of which the Puerto Rican Harlequin Butterfly uses for egg laying and larval feeding. Construction staff should also be trained to identify and avoid the species Palo De Ramon.

In order to complete the informal consultation process, we are requesting your concurrence for the NLAA determinations included in this letter. Attached to this letter, we are including the documents used to reach our effect determinations for the listed species. If more information is required, please contact **Point of Contact** at **Email address and phone number**.

Attachments:

IPaC Resource List

Site Photos

Project Location Map

Area of Potential Effect Map

Wetland Map

USFWS Puerto Rican Boa Conservation Measures 2020

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Villalba County, Puerto Rico



Local office

Caribbean Ecological Services Field Office

☎ (787) 834-1600

📠 (787) 851-7440

✉ CARIBBEAN_ES@FWS.GOV

MAILING ADDRESS

Post Office Box 491
Boqueron, PR 00622-0491

PHYSICAL ADDRESS

Office Park I
State Road #2 Km 156.5, Suite 303
Mayaguez, PR 00680

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
<p>Puerto Rican Broad-winged Hawk <i>Buteo platypterus brunnescens</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5512</p>	Endangered
<p>Puerto Rican Parrot <i>Amazona vittata</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3067</p>	Endangered

Reptiles

NAME	STATUS
<p>Puerto Rican Boa <i>Chilabothrus inornatus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6628</p>	Endangered

Insects

NAME	STATUS
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Puerto Rican Harlequin Butterfly *Atlantea tulita* Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/9005>

Flowering Plants

NAME

STATUS

Palo De Ramon *Banara vanderbiltii*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8113>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The [data](#) in this location indicates there are no migratory [birds of conservation concern](#) expected to occur in this area.

There may be migratory birds in your project area, but we don't have any survey data available to provide further direction. For additional information, please refer to the links above for recommendations to minimize impacts to migratory birds or contact your local FWS office.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Front of Structure

Photo Direction: East



Facing Away From Front

Photo Direction: West



Side #1 of Structure

Photo Direction: North



Facing Away From Side #1

Photo Direction: South



Back of Structure

Photo Direction: South



Facing Away From Back

Photo Direction: North



Side #2 of Structure

Photo Direction: South



Facing Away From Side #2

Photo Direction: North



Streetscape #1

Photo Direction: Southwest



Streetscape #2

Photo Direction: Northwest



Address

Photo Direction: East



Structural Details

Photo Description: Architectural details

Photo Direction: East



Structural Details

Photo Description: Architectural details

Photo Direction: East



Structural Details

Photo Description: Architectural details

Photo Direction: North



Structural Details

Photo Description: Architectural details

Photo Direction: North



Structural Details

Photo Description: Architectural details

Photo Direction: Southeast



Structural Details

Photo Description: Architectural details

Photo Direction: Southwest



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Structural Details

Photo Description: Architectural details

Photo Direction: North



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Structural Details

Photo Description: Architectural details

Photo Direction: West



Structural Details

Photo Description: Architectural details

Photo Direction: Northeast



Aboveground Storage Tanks

Photo Description: Tank

Photo Direction: Northeast



Aboveground Storage Tanks

Photo Description: Water tank

Photo Direction: Southeast



Scope Of Work

Photo Description: Scope of work 1: installation of a greenhouse

Photo Direction: Northeast



Scope Of Work

Photo Description: Scope of work 1: installation of a greenhouse

Photo Direction: East



Scope Of Work

Photo Description: Scope of work 1: installation of a greenhouse

Photo Direction: Northeast



Scope Of Work

Photo Description: Scope of work 2: installation irrigation system

Photo Direction: East



Scope Of Work

Photo Description: Scope of work 2: installation irrigation system

Photo Direction: Northeast



Scope Of Work

Photo Description: Scope of work 2: installation of irrigation system

Photo Direction: East



Scope Of Work

Photo Description: Scope of work 3: solar power system

Photo Direction: Southwest



Scope Of Work

Photo Description: Scope of work 3: solar power system

Photo Direction: Southwest



Scope Of Work

Photo Description: Scope of work 3: solar power system

Photo Direction: Southwest



Scope Of Work

Photo Description: Scope of work map reference

Photo Direction: North



Scope of work 1:
Installation of a greenhouse
18.140374, -66.458911

Scope of work 2:
Installation of irrigation system
18.139562, -66.458784

Scope of work 3:
Installation of a solar power
system
18.139079, -66.460652





- Legend**
-  Project Parcel
 -  Parcels

PUERTO RICO



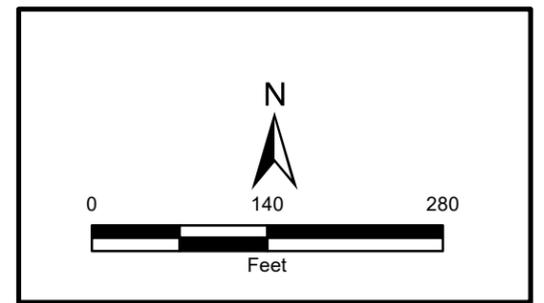
Figure 1: PROJECT LOCATION

APPLICANT ID: PR-RGRW-00408

ADDRESS: Carr 151 km 3.3, Villalba, PR 007666

Name of Development: Criado Growers LLC

Parcel Coordinates: 18.139541 , -66.459031



Source: U. S. Fish & Wildlife Service
<https://www.fws.gov>

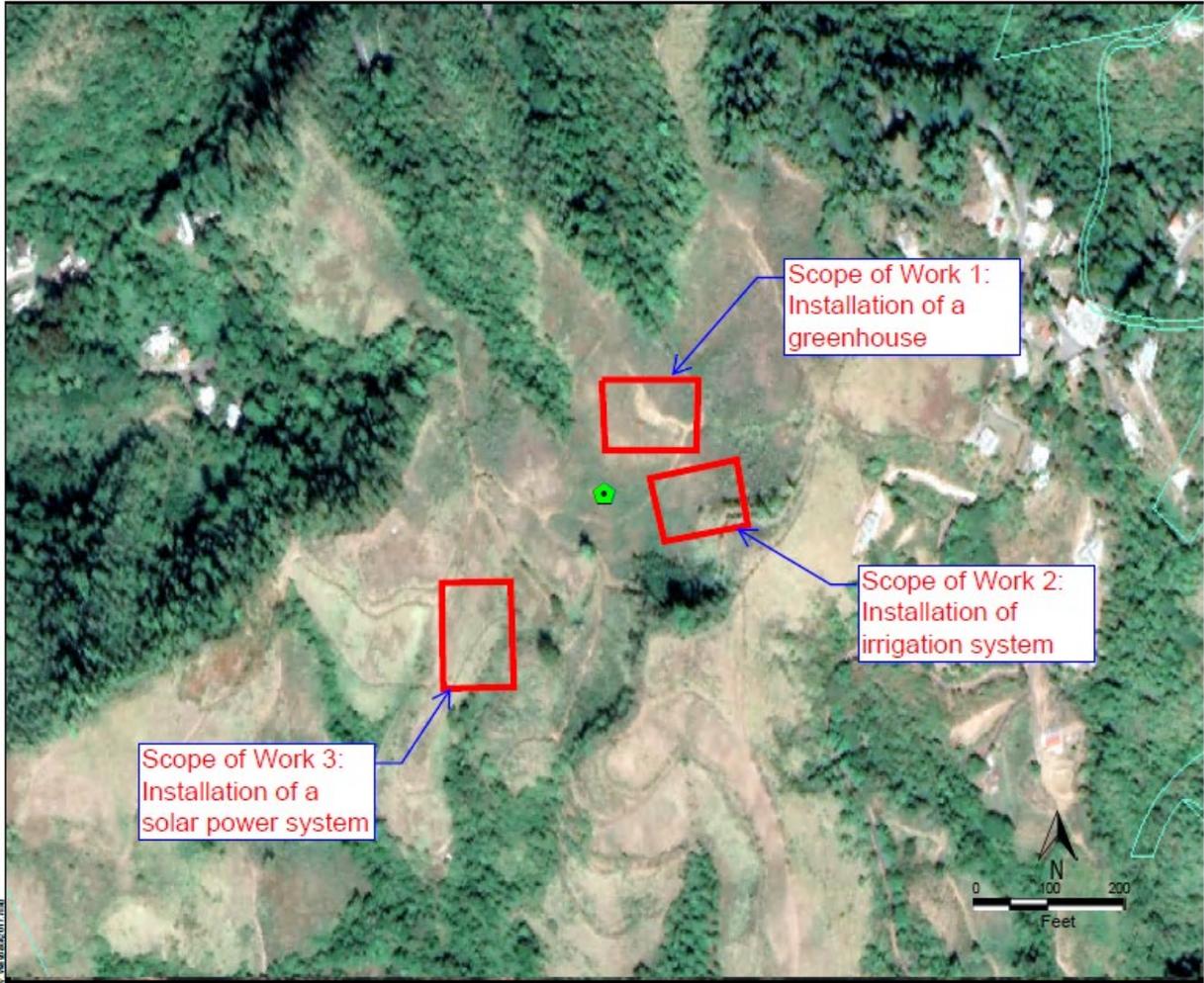
Author: TG Date: 6/6/2023

File Path: \\esl1206\gis\100\PR\GIS\Shane\TDR\data\USPR\PR\LOC_Review_Secondary imagery.mxd

Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba



TETRA TECH

Source: CRIM

Author: TG Date: 10/7/2022

Legend

-  Tier 2 Site
-  Area of Potential Effect
-  Parcelario



Project (Parcel) Location - Aerial Map



Legend

Project Parcel

WETLAND TYPE

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

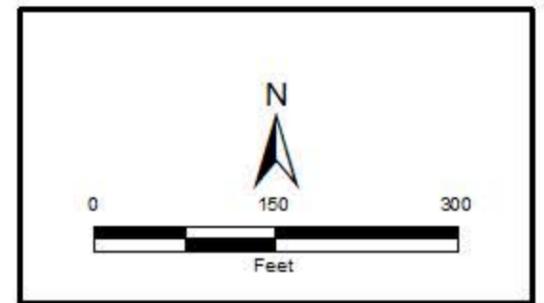
PUERTO RICO



Figure 14: WETLANDS
APPLICANT ID: PR-RGRW-00408
 ADDRESS: Carr 151 km 3.3, Villalba, PR 007666
 Name of Development: Criado Growers LLC
 Parcel Coordinates: 18.139541, -66.459031



Source: U. S. Fish & Wildlife Service
<https://www.fws.gov>
 Author: TG Date: 6/1/2023

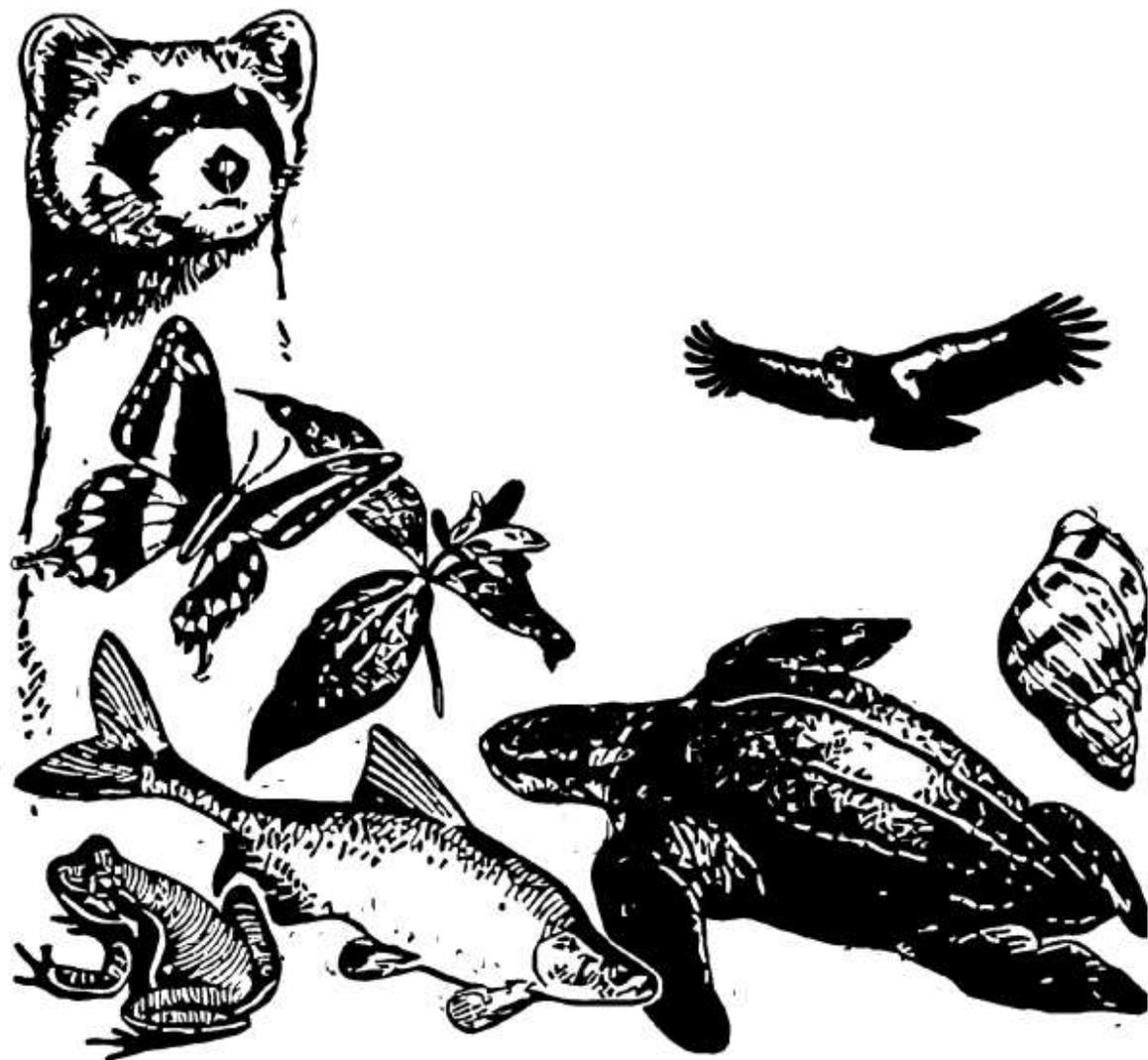


IN THIS DOCUMENT, UNLESS OTHERWISE SPECIFIED, ALL UNITS ARE IN METERS.

USFWS Puerto Rican boa Conservation Measures

Puerto Rican Boa

Generated August 21, 2023 01:53 PM UTC, IPaC v6.96.0-rc4





U.S. FISH AND WILDLIFE SERVICE CARIBBEAN ECOLOGICAL SERVICES FIELD OFFICE

Conservation Measures for the Puerto Rican boa (*Chilabothrus inornatus*)

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a Puerto Rico boa is subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species.

The endangered Puerto Rican (PR) boa (*Chilabothrus inornatus*, formerly *Epicrates inornatus*) is the largest endemic snake species that inhabits Puerto Rico. The PR boa is non-venomous and does not pose any life threatening danger to humans, but some individuals may try to bite if disturbed or during capture or handling. Its body color ranges from tan to dark brown with irregular diffuse marking on the dorsum, but some individuals lack marking and are uniformly dark. Juveniles may have a reddish color with more pronounced markings. In general, as they mature, their body color tends to darken.



The Puerto Rican boa was federally listed in 1970. Currently, the species has an island-wide distribution and occurs in a wide variety of habitat types ranging from wet montane to subtropical dry forest, and can be found from mature forest to areas with different degrees of human disturbance like roadsides or houses, especially if near their habitat in rural areas. This boa is considered mostly nocturnal, remaining less active, concealed or basking under the sun during the day.

The Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the PR boa and its habitat. These recommendations may be incorporated into new project plans and under certain circumstances into existing projects. Depending on the project, additional conservation measures can be implemented besides the ones presented in this document.

Conservation Measures:

1. Inform all project personnel about the potential presence of the PR boa in areas where the proposed work will be conducted. A pre-construction meeting should be conducted to inform all project personnel about the need to avoid harming the species as well as penalties for harassing or harming PR boas. An educational poster or sign with photo or illustration of the species should be displayed at the project site.
2. Prior to any construction activity, including removal of vegetation and earth movements, the boundaries of the project and areas to be excluded and protected should be clearly marked in the project plan and in the field in order to avoid further habitat degradation into forested and conservation areas.
3. Once areas are clearly marked, and prior to the use of heavy machinery and any construction activity (including removal of vegetation and earth movement), a biologist or personnel with experience on this species should survey the areas to be cleared to verify the presence of any PR boa within the work area.
4. The PR boa is considered more active at night. Thus, in order to maximize its detection, the species should be searched at nights prior to habitat disturbance.
5. Once the area has been searched for PR boas, vegetation should first be cleared by hand to the maximum extent possible. Vegetation should be cut about one meter above ground prior to the use of heavy machinery for land clearing. Cutting vegetation by hand will allow boas present on site to move away on their own to adjacent available habitat. Any stone walls or naturally occurring rock piles must be carefully dismantled by hand as these are refuges for the snake. This will allow any boas present to vacate the site without injury.
6. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. PR boa data should also include a photo of the animal (dead or alive), site GPS coordinates, the time and date, and comments on how the animal was detected and its behavior.

7. If a PR boa is found within any of the working or construction areas, activities should stop at that area and information recorded (see #6). **Do not capture the boa.** If boas need to be moved out of harm's way, designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #: ((787) 724-5700, (787) 230-5550, (787) 771-1124). If immediate relocation is not an option, project-related activities at this area must stop until the boa moves out of harm's way on its own. Activities at other work sites, where no boas have been found after surveying the area, may continue.
8. If a PR boa is captured by the PRDNER, record the name of the PRDNER staff and information on where the PR boa will be taken. This information should be reported to the Service.
9. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal (see #7). If not possible, the animal should be left alone until it leaves the vehicle on its own.
10. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future.
11. If a dead PR boa is found, immediately cease all work in that area and record the information accordingly (see #6). If the PR boa was accidentally? killed as part of the project actions, please include information on what conservation measures had been implemented and what actions that will be taken to avoid further killings. A dead boa report should be sent by email (see contacts below) to the Service within 48 hours of the event.
12. Projects must comply with all state laws and regulations. Please contact the PRDNER for further guidance.

If you have any questions regarding the above conservation measures, please contact the Service:

- Marelisa Rivera, Deputy Field Supervisor
 - Email: marelisa_rivera@fws.gov
 - Office phone (786) 244-0081 or mobile (305) 304-1814
- José Cruz-Burgos, Endangered Species Coordinator
 - Email: jose_cruz-burgos@fws.gov
 - Office phone (786) 244-0081 or mobile (305) 304-1386

Conservation Measures for the Broad-winged hawk (*Buteo platypterus brunnescens*)

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a Puerto Rico broad-winged hawk is subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species.

The Puerto Rican broad-winged hawk is a small hawk with dark chocolate-brown upperparts, heavily streaked rufous breast, and a broadly banded black and white tail. Adult male and female are similar in appearance, but the female is slightly larger. This species occurs in elfin woodland, sierra palm, caimitillo-granadillo, and tabonuco forest types of the Río Abajo Commonwealth Forest, Carite Commonwealth Forest, and El Yunque National Forest as well as within hardwood plantations, shade coffee plantations, and mature secondary forests. The Puerto Rican broad-winged hawk population is estimated at about 125 individuals island-wide.



The broad-winged hawk was federally listed in 1994. The broad-wing prefers to hunt from a perch under the forest canopy for a better view of potential prey in a forest clearing, trail or river below. Each hunting pair requires a range of 40 hectares (98 acres). The Broad-wing builds a nest of sticks in February and March, laying 2 to 4 white/brown-spotted eggs. The female incubates the eggs for almost a month while the male searches for food. The young fledge around April or May about 1 month after hatching and can fly about 6 weeks after hatching. The parents feed the young for a few weeks after they leave the nest. The voice is a high-pitched whistle.

The hawk is an uncommon and local resident in the El Yunque National Forest, the Río Abajo State Forest, and the Toro Negro State Forest.

The US Fish and Wildlife Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the hawk and its habitat. These recommendations may be incorporated into new project plans and under certain circumstances into existing projects. Depending on the project, additional conservation measures can be implemented besides the ones presented here.

1. For any project activity that involves construction or tree-disturbing activities, all construction workers will be required to participate in environmental awareness training. The training will educate workers on: (a) special-status species that may occur in the work area, (b) procedures

to follow in the event a species is observed, and (c) other environmental BMPs and emergency spill response protocols.

2. All non-emergency work activities will be confined to daylight hours (i.e., sunrise to sunset), unless necessary for assessing or protecting biological resources.
3. Whenever possible, impacts to native nesting birds will be avoided by not conducting Project activities that involve clearing of vegetation, generation of mechanical noise, or tree disturbance during the typical breeding season for this hawk (February and March), if the hawk is determined to be present.
4. If Project activities must be conducted during the nesting bird season, the Contractor will conduct surveys for nesting birds within a 1,000-ft radius of the construction area. If nests are detected, the Contractor will notify the USFWS and establish buffers around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Buffers around active nests will be a minimum of 250 feet, unless a qualified biologist determines that smaller buffers would be sufficient to avoid impacts to nesting birds. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until young have fledged or the nests become inactive.
5. If a broad-winged hawk is found within any of the working or construction areas, activities should stop at that area and information recorded. Designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for additional directions (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124).
6. Designated critical habitat within the vicinity of project activities will be identified. All Proposed Project actions will be designed to avoid direct and indirect adverse modifications to these areas. Minimization measures, such as establishing and maintaining buffers around areas of designated critical habitat will be implemented in the event that avoidance is not feasible.
7. If critical habitat may be adversely modified by the implementation of Proposed Project actions, the area to be modified will be evaluated by a qualified biologist to determine the potential magnitude of the project effects (e.g., description of primary constituent elements present and quantification of those affected) at a level of detail necessary to satisfy applicable environmental compliance and permitting requirements. This information shall be submitted to the PRDNER as shown in Number 5 above.
8. Projects must comply with all state laws and regulations. Please contact PRDNER for further guidance.

If you have any questions regarding the above conservation measures, please contact the Service:

- Marelisa Rivera, Deputy Field Supervisor
Email: marelisa_rivera@fws.gov
Office phone (786) 244-0081 or mobile (305) 304-1814
- José Cruz-Burgos, Endangered Species Coordinator
Email: jose_cruz-burgos@fws.gov
Office phone (786) 244-0081 or mobile (305) 304-1386

Conservation Measures for the Puerto Rican Amazon (Parrot) (*Amazona vittata*)

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a Puerto Rican Parrot is subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species.

The Puerto Rican amazon (*Amazona vittata*), also known as the Puerto Rican parrot (Puerto Rican Spanish: cotorra puertorriqueña) or iguaca, is the only extant parrot endemic to the archipelago of Puerto Rico and belongs to the Neotropical genus *Amazona*. Measuring 28–30 cm (11.0–11.8 in), the bird is a predominantly green parrot with a red forehead and white rings around the eyes.



The parrot was federally listed as endangered in 1967. The parrot reaches sexual maturity at between three and four years of age. It reproduces once a year (between the months of February to June) and is a cavity nester. Once the female lays eggs, she will remain in the nest and continuously incubate them until hatching (about 24 to 28 days). The chicks are fed by both parents and will fledge 60 to 65 days after hatching. This parrot's diet is varied and consists of flowers, fruits, leaves, bark and nectar obtained from the forest canopy.

The species is the only remaining native parrot to Puerto Rico and has been listed as critically endangered by the World Conservation Union since 1994. Once widespread and abundant, the population declined drastically in the 19th and early 20th centuries with the removal of most of its native habitat; the species has completely vanished from Vieques and Mona Island. Conservation efforts commenced in 1968 to save the bird from extinction. The habitat of the parrot is generally identified as

the Palo Colorado, Palma de Sierra, and Tabonuco forests types of the upper zones of the Luquillo Mountains within the El Yunque National Forest.

The US Fish and Wildlife Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the hawk and its habitat. These recommendations may be incorporated into new project plans and under certain circumstances into existing projects. Depending on the project, additional conservation measures can be implemented besides the ones presented here.

1. For any project activity that involves construction or tree-disturbing activities, all construction workers will be required to participate in environmental awareness training. The training will educate workers on: (a) special-status species that may occur in the work area, (b) procedures to follow in the event a species is observed, and (c) other environmental BMPs and emergency spill response protocols.
2. All non-emergency work activities will be confined to daylight hours (i.e., sunrise to sunset), unless necessary for assessing or protecting biological resources.
3. Whenever possible, impacts to native nesting birds will be avoided by not conducting Project activities that involve clearing of vegetation, generation of mechanical noise, or tree disturbance during the typical breeding season for this parrot (January to July), if the parrot is determined to be present. The parrot selects a large, deep tree cavity, usually in a Palo Colorado tree. The parrot normally does not build its own nest but, many times, parrot biologists do build artificial cavities that are accepted by the parrot. A check with DNER should occur if large Palo Colorado trees are in the general construction area.
4. If Project activities must be conducted during the nesting bird season, the Contractor will conduct surveys for nesting birds within a 1,000-ft radius of the construction area. If nests are detected, the Contractor will notify the DNER and establish buffers around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Buffers around active nests will be a minimum of 250 feet, unless a qualified biologist determines that smaller buffers would be sufficient to avoid impacts to nesting birds. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until young have fledged or the nests become inactive.
5. If a parrot is found within any of the working or construction areas, activities should stop at that area and information recorded. Designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for additional directions (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124).
6. Designated critical habitat within the vicinity of project activities will be identified. All Proposed Project actions will be designed to avoid direct and indirect adverse modifications to these

areas. Minimization measures, such as establishing and maintaining buffers around areas of designated critical habitat will be implemented in the event that avoidance is not feasible.

7. If critical habitat may be adversely modified by the implementation of Proposed Project actions, the area to be modified will be evaluated by a qualified biologist to determine the potential magnitude of the project effects (e.g., description of primary constituent elements present and quantification of those affected) at a level of detail necessary to satisfy applicable environmental compliance and permitting requirements. This information shall be submitted to the PRDNER as shown in Number 5 above.
8. Projects must comply with all state laws and regulations. Please contact PRDNER for further guidance.

If you have any questions regarding the above conservation measures, please contact the Service:

- Marelisa Rivera, Deputy Field Supervisor
Email: marelisa_rivera@fws.gov
Office phone (786) 244-0081 or mobile (305) 304-1814
- José Cruz-Burgos, Endangered Species Coordinator
Email: jose_cruz-burgos@fws.gov
Office phone (786) 244-0081 or mobile (305) 304-1386

Puerto Rican harlequin butterfly (hereafter, PRHB).

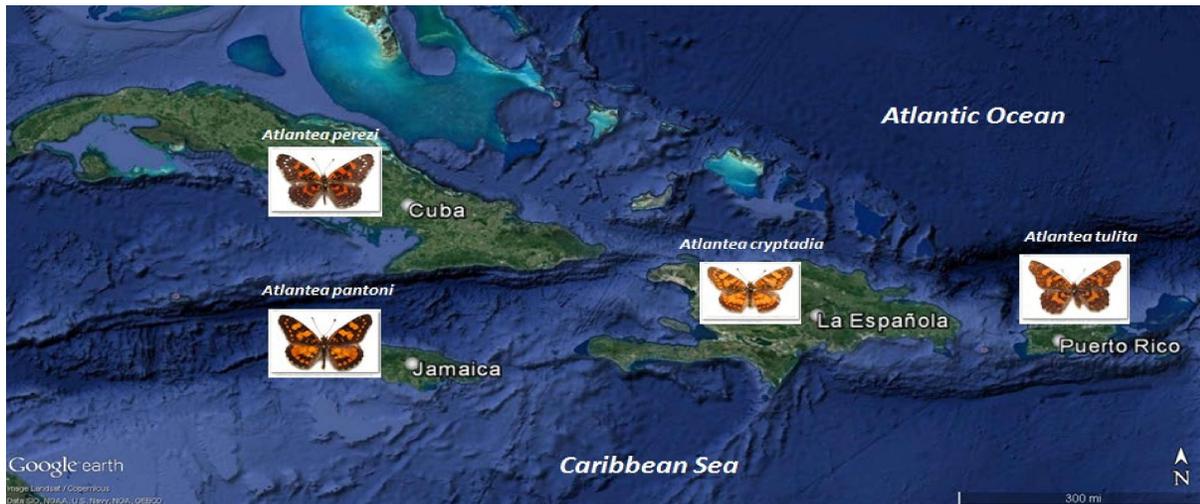


Figure 2-1. Map showing the distribution of the genus *Atlantea* through the Caribbean Region.

2.2 Species Description

The PRHB is a medium size butterfly. The species has a wingspan of about 5.1 to 6 centimeters (cm) (2 to 2.5 inches (in)) wide and is characterized by its orange, brownish-black and beige coloration patterns (Figures 2-2 and 2-3). The butterfly is brownish-black at the thorax area with deep orange markings. The male's abdomen is brownish-black on the dorsal side and has orange and brown bands on the ventral side. The female's abdomen is brownish-black with white bands. Wings are largely brownish-black with sub-marginal rows of deep orange spots and beige cells. The dorsal view of the forewings and the hind-wings, the outer margins are brownish-black. The coastal margin is deep orange with brownish-black markings. The inner margin is brownish-black with some deep orange markings at the half basal wing. The hind wing has a wide black border enclosing a set of reddish-bronze sub-marginal points. As a member of the checker-spot butterfly group, rows of deep orange dots (or cells) is a typical pattern on the species' brownish-black wings. The ventral sides of the forewings are similar to the dorsal sides of the forewings, and ventrally the hindwings are brownish-black with orange basal spots, a complete postdiscal beige band with a band of reddish spots distally, and sub-marginal white half-moons.

The chrysalis (pupa from which the butterfly (adult, or imago) emerges) of the PRHB is black, with orange and white dashes, and yellow pimples (Biaggi-Caballero 2009, p. 4) (Figure 2-4). Chrysalis size is around 3 cm (1.2 in).

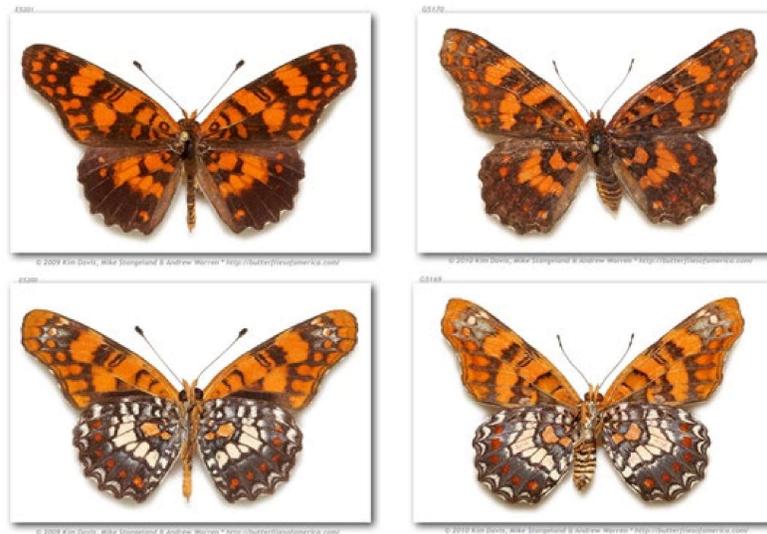


Figure 2-2. Photos showing the dorsal (top) and ventral (bottom) coloration patterns observed in *Atlantea tulita* (Dewitz 1877). Male (left) and female (right). Photo downloaded from <https://www.butterfliesofamerica.com>.



Figure 2-3. Male (left) and female (right) *A. tulita*. The abdomen of the male is a deep orange color with bands, and the abdomen of the female is white with black bands. Source: Carlos Pacheco, Service.

The PRHB caterpillar (larva) is dark orange with a brownish-black to black, thin sub-lateral line, over a thin line of white intermittent dots crossing the body from the head to anal plate (Figure 2-5). The larva is less than 4.76 millimeter (mm)(0.19 in) in first instar (growth stage

between molts) and about 55.8 mm (2 in) in the fifth instar (C. Pacheco, Service, 2018, personal observation). The body of the larva has spines with hairs in each body segment (Figure 2-5).



Figure 2-4. Chrysalis of *Atlantea tulita*. Photos by C. Pacheco, Service.

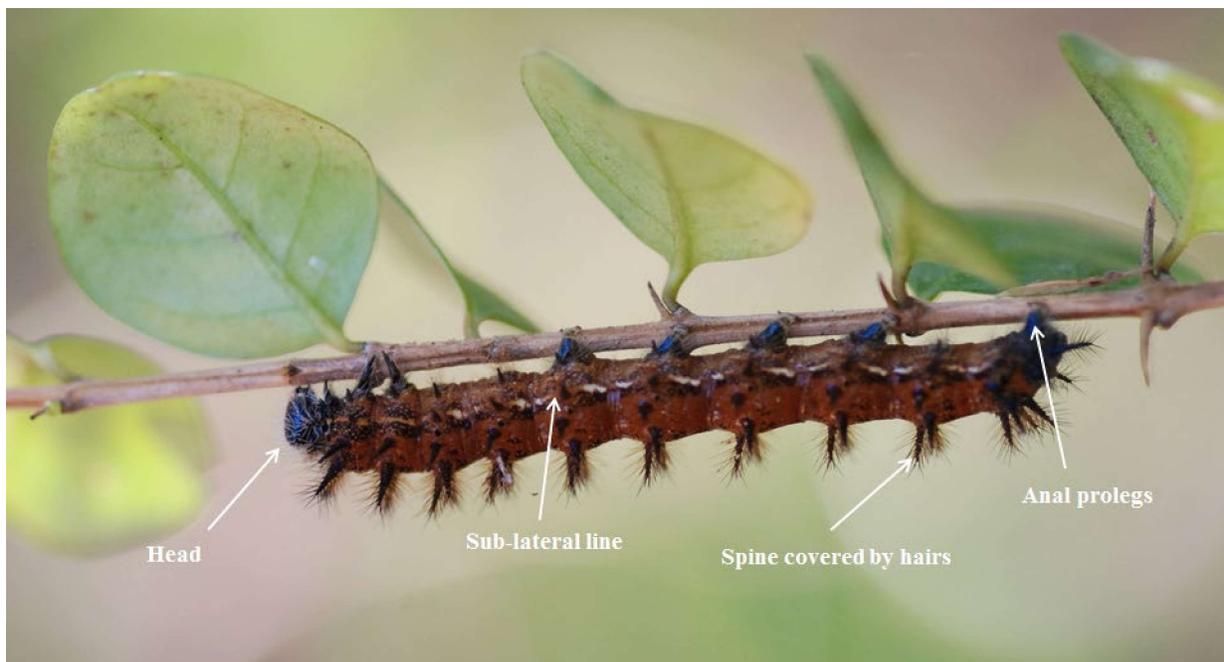


Figure 2-5. *Atlantea tulita* caterpillar. Photo by C. Pacheco, Service.

The eggs of the PRHB are greenish oily spheres, with a yellowish incipient crown (Figure 2-6).

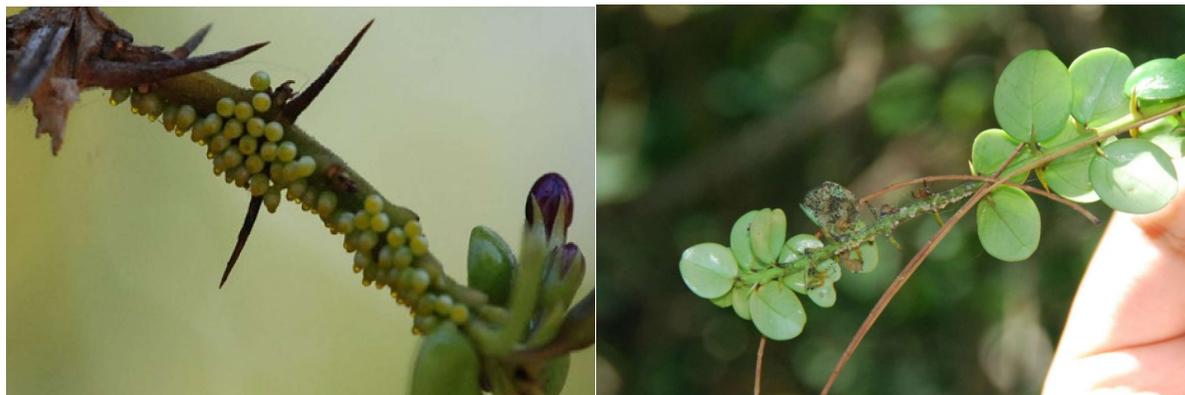


Figure 2-6. Photo (left) showing the yellowish crown on the eggs laid by *Atlantea tulita* on *Oplonia spinosa*. Photo (right) showing the first instars of the *Atlantea tulita*. Photo by C. Pacheco, Service, 2011.

2.3. Life History

Most of what is known about PRHB life history, demography and behavior comes from field observations, information gathered from other species from the same family, and expert opinions.

2.3.1 Life Cycle

The life cycle of the PRHB includes four distinct anatomical stages: egg, larva (caterpillar, with several size phases called instars), chrysalis, and imago (adult). It is a general consensus among the species' experts (A. Morales and E. Estremera, Liga Ecológica Quebradillana; H. Torres, former Assistant Professor from the University of Puerto Rico, Mayagüez Campus; and C. Asencio, former professor Universidad Católica de Ponce) that the life cycle of the PRHB (Figure 2-7) from egg to imago in the wild may take around 125 days (Second Technical Meeting Puerto Rican Harlequin Butterfly Working Group, November 3, 2018). These experts also agree that the length of the life cycle can be affected by factors such as temperature and humidity, particularly at the caterpillar stage.

2.3.2 Dispersal, Mating, and Food Sources

PRHB dispersal and mating behavior has not been thoroughly studied. The butterfly flies slowly and is weak and fragile; thus, the species is considered a poor disperser (Carrión-Cabrera 2003, p. 51). However, Monzón (2007, p. 42) found that the butterfly can disperse up to 1,026 meters (m) (3366.1 feet (ft)), approximately 1 kilometer (km) (0.6 mile (mi)) from one breeding site to another. Additionally, the species has specific ecological requirements for reproduction and its dispersion is apparently limited by the monophagous habit of the first instar of the larvae, which feeds only on prickly bush (*Oplonia spinosa*) (Carrión-Cabrera 2003, p. 40; Biaggi-Caballero 2009, p. 4). Mating behavior has been rarely documented. For other species in the family Nymphalidae, the male grasps the female in flight and brings her to a surface, such as a leaf (Figure 2-8) or the ground, where mating occurs. Carrion-Cabrera (2003, p. 60) estimated the sex ratio of the PRHB as 2.67 males per female. It is not well known if the PRHB mates during a

particular month of the year or year-round. However, all life stages of the PRHB are observed year-round, suggesting that mating and oviposition may occur at any time during the year (Figure2-9).

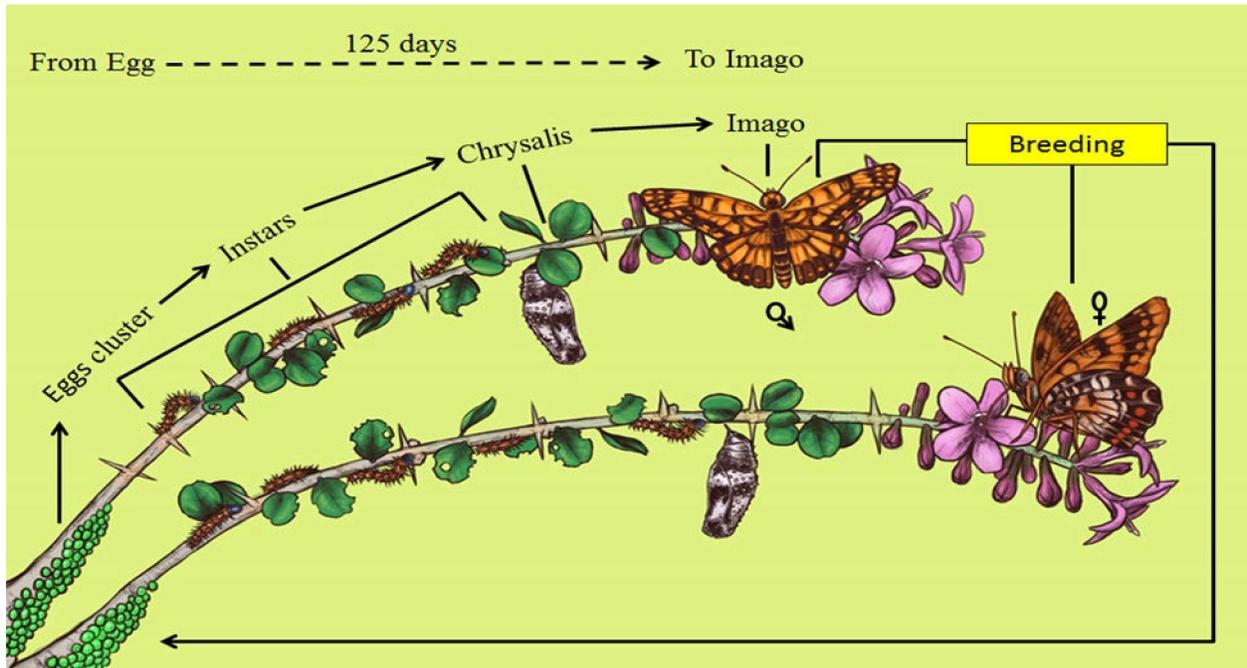


Figure 2-7. Conceptual diagram of the Puerto Rican harlequin life cycle.

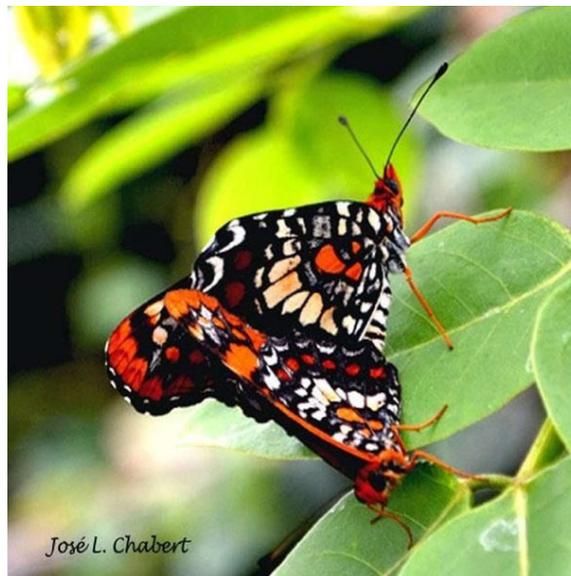


Figure 2-8. Photo of Puerto Rican Harlequin butterfly mating. Photo by José Chabert (President of “Fundación EL Pastillo”) at El Pastillo in the municipality Isabela.

Females are multivoltine ovipositors (they produce several broods in a single season) (Biaggi-Caballero 2009, p. 2; 76 FR 31282, May 31, 2011, p. 31283). Eggs and larvae have been found

almost exclusively on prickly bush (*Oplonia spinosa*) (Figures 2-10 and 2-11). The female lays the eggs in rows singly or in pairs, on the underside of tender twigs of the host plant. The species uses the tender vegetative branches of new growth of the host plant for bearing its eggs and feeding during the larval stages (Carrion-Cabrera 2003, p. 40; Biaggi-Caballero and Lopez 2010, p. 2). New growth of *O. spinosa* is observed a few days after rain events, being more abundant during the wet season (from April to November). The female of the PRHB can lay between 50 to 140 eggs in about 45 minutes (Carrion-Cabrera 2003, p.38; Biaggi-Caballero 2009, p. 4). During this process the female appears to be undisturbed by the presence of humans or any other threats (Barber 2018, p. 2).

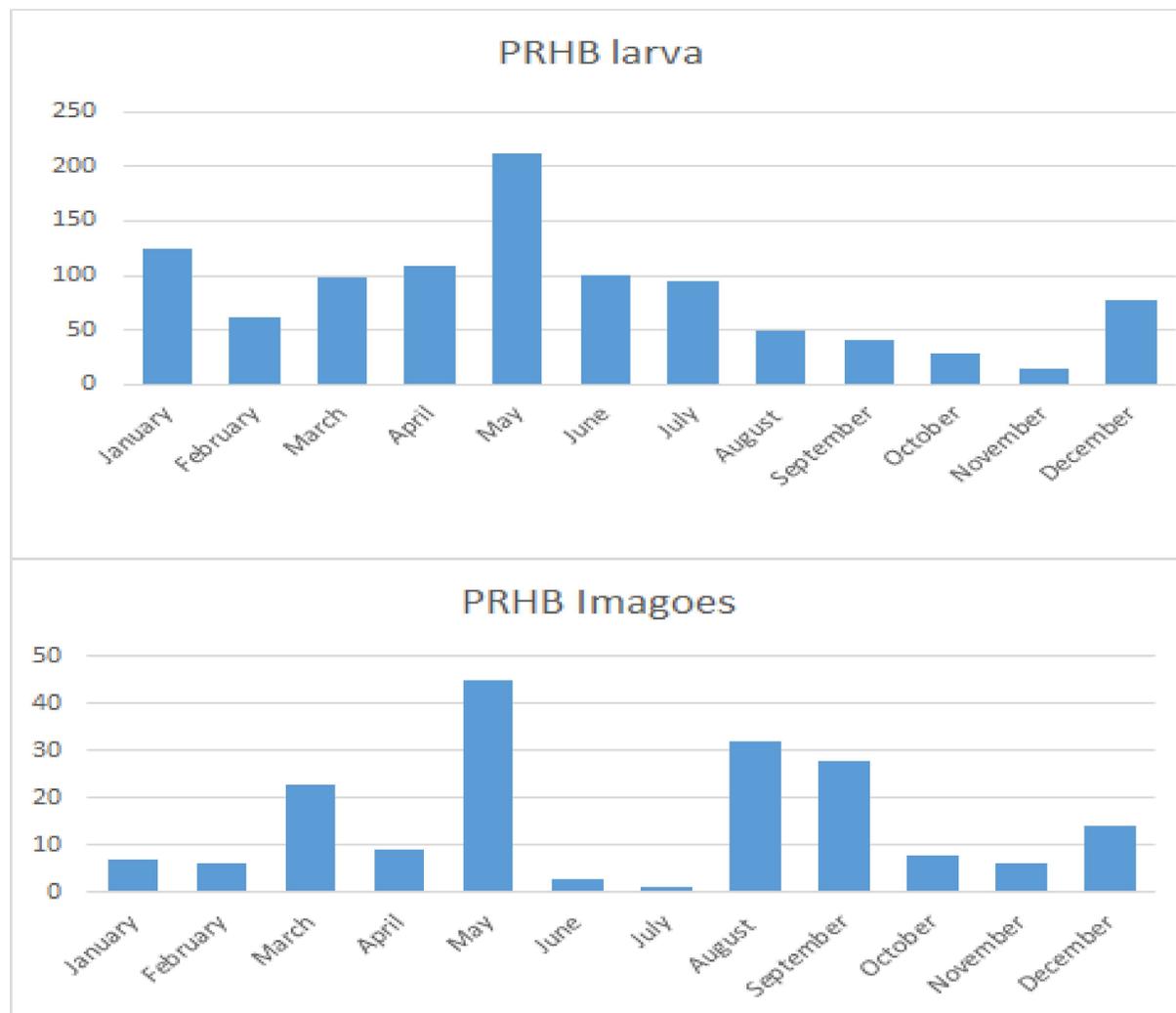


Figure 2-9. Number of observed PRHB larvae (top) and imagoes (bottom) per month throughout the year. Based on information provided by Carrion-Cabreear 2003, Monzon 2007, Biaggi-Caballero 2010, and Barber 2018.

Broods of the PRHB generally contain 50 to 150 eggs, with an average of 102 eggs per brood (Carrion-Cabrera 2003, p.38). The time to egg eclosion and viability (hatching success) rate have not been determined. After egg eclosion, the first instars devour the egg shells and then begin feeding from the most tender parts of the host plant (Biaggi-Caballero and López 2010, p.2). As

the first instar matures, PRHB larvae crawl to the older and woody part of the host plant eating any new growth, including leaves and stems.

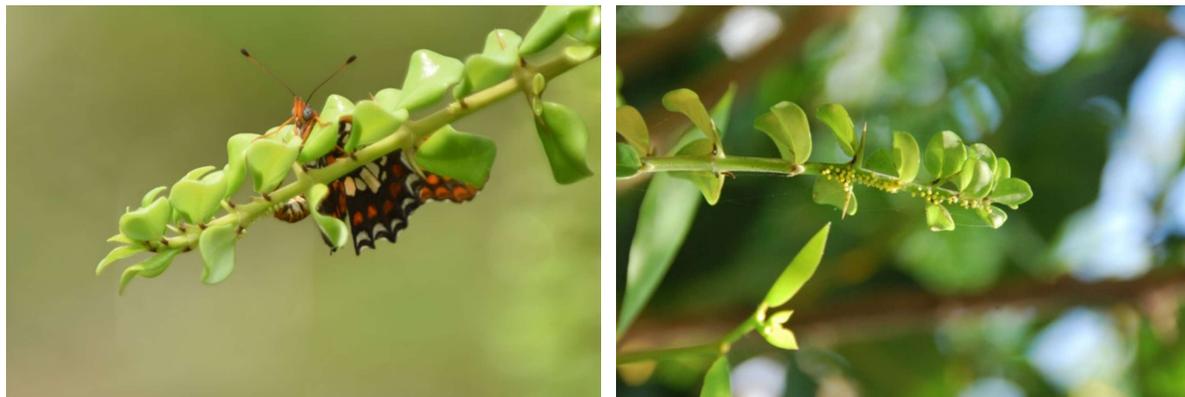


Figure 2-10. Left: female *Atlantea tulita* laying eggs on the host plant, prickly bush (*Oplonia spinosa*). Right: eggs of *Atlantea tulita* laid on the new growth (tender part) of *O. spinosa* branches. Photo by José Vargas, 2018.



Figure 2-11. Prickly bush (*Oplonia spinosa*) (left), Family Acanthaceae; endemic to several Caribbean islands and widely distributed in Puerto Rico. Eggs (right) found on prickly bush Source: Willie Hernandez, Liga Ecológica Quebradillana, 2009.

Although the PRHB is believed to be a specialist because of its monophagous habit of feeding only on *O. spinosa*, recently Barber (2016, p. 9) documented a PRHB larva feeding on *Odontonema cuspidatum* (commonly known in Puerto Rico as “coral de jardín”) in Quebradillas (Figure 2-12). Like *O. spinosa*, *O. cuspidatum* is in the family Acanthaceae, but it is native to Mexico and has been introduced to the West Indies as an ornamental shrub (Axelrod 2011, p. 50). In addition, Morales and Estremera (2018, unpublished data) found that the PRHB caterpillar also feeds on *Justicia mirabiloides* (commonly known as West Indian water-willow; or in Spanish as papayo montuno). *Justicia mirabiloides*, which is also in the family Acanthaceae, is a perennial herb native to Puerto Rico and the Virgin Islands. These rare observations of the PRHB caterpillar feeding on plants other than *O. spinosa* were of later instars (possibly 4th or 5th instar). Therefore, it is not known whether the first instar can use other plant species as a food source. Regardless, given the paucity of observations of feeding on other plant species, *O. spinosa* is an essential PRHB food source.

APPENDIX E

Section 106 Consultation



GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE

Executive Director | Carlos A. Rubio-Cancela | carubio@prshpo.pr.gov

October 3, 2023

Lauren Bair Poche

HORNE

10000 Perkins Rowe, Suite 610, Bldg G
Baton Rouge, LA 70810

SHPO 09-27-23-14 SECTION 106 NHPA EFFECT DETERMINATION SUBMITTAL:
PR-RGRW-00408- CRIADO GROWERS, LLC- CARR. 151, KM 3.3, VILLALBA,
PUERTO RICO

Dear Ms. Bair,

Our Office has received and reviewed the above referenced project in accordance with 54 U.S.C. 306108 (commonly known as Section 106 of the *National Historic Preservation Act*) and 36 CFR Part 800: *Protection of Historic Properties*.

Our records support your finding of no historic properties affected for this undertaking.

Please note that should you discover other historic properties at any point during project implementation, you should notify the SHPO immediately. If you have any questions regarding our comments, please do not hesitate to contact our Office.

Sincerely,


pr Carlos A. Rubio-Cancela
State Historic Preservation Officer

CARC/GMO/MB



September 27, 2023

Carlos A. Rubio Cancela
State Historic Preservation Officer
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá (Tercer Piso)
San Juan, PR 00902-3935

Puerto Rico Disaster Recovery, CDBG-DR Re-Grow PR Urban-Rural Agricultural (Re-Grow PR) Program

Section 106 NHPA Effect Determination Submittal: PR-RGRW-00408 – Criado Growers LLC – Carr 151 Km 3.3, Villalba, Puerto Rico – *No Historic Properties Affected*

Dear Architect Rubio Cancela,

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, HORNE is providing information for your review and requesting your concurrence regarding the above-referenced projects on behalf of the Puerto Rico Department of Housing (PRDOH). On February 9, 2018, an allocation of Community Development Block Grant - Disaster Recovery (CDBG-DR) funds was approved by the United States Department of Housing and Urban Development (HUD) under the Federal Register Volume 83, No. 28, 83 FR 5844, to assist the Commonwealth of Puerto Rico in meeting unmet needs in the wake of Hurricanes Irma and Maria. On August 14, 2018, an additional \$8.22 billion recovery allocation was allocated to Puerto Rico under the Federal Register Volume 83, No. 157, 83 FR 40314. With these funding allocations, the Puerto Rico Department of Housing (Housing) aims to lead a comprehensive and transparent recovery for the benefit of Puerto Rico residents.

On behalf of PRDOH and the subrecipient, the Puerto Rico Department of Agriculture, HORNE is submitting documentation for activities proposed by Criado Growers LLC at Carr 151 Km. 3.3 in the municipality of Ponce. The proposed activities for PR-RGRW-00408 includes the purchase and installation of a greenhouse for the crop of hydroponic cilantrillo, an irrigation system, and solar power system. The proposed greenhouse is a metal structure covered with plastic and saran sheet that has an approximately footprint of 50' x 15'. The greenhouse will be in an available terrace of approximately 200' x 100'. The proposal includes the installation of a PVC tubes overground irrigation system, to cover an approximately area of 200' x 150'. The applicant also plans to install a solar power system over an incline area of approximately 100' x 50'. This overground system will consist of 12 solar panels over metal railing. Power will be supplied with the solar system. This project requires the applicant to request the service and connection to the potable water distribution system. The field is not graded. Currently this land is a vacant lot that used to be used for the growing of sugar cane and tobacco in the past.

Based on the submitted documentation, the Program requests a concurrence that a finding of no historic properties affected is appropriate for this proposed project.

Please contact me by email at lauren.poche@horne.com or phone at 225-405-7676 with any questions or concerns.

Kindest regards,

A handwritten signature in blue ink that reads 'Lauren B. Poche'.

Lauren Bair Poche, M.A.

Architectural Historian, Historic Preservation Senior Manager

Attachments

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM REGROW PUERTO RICO PROGRAM Section 106 NHPA Effect Determination		
Subrecipient: Criado Growers LLC		
Case ID: PR-RGRW-00408		City: Villalba

Project Location: Carr 151 km 3.3	
Project Coordinates: 18.139541, -66.459031	
TPID (Número de Catastro): 294-000-004-36	
Type of Undertaking: <input type="checkbox"/> Substantial Repair <input checked="" type="checkbox"/> New Construction	
Construction Date (AH est.): n/a	Property Size (acres): 84.9

SOI-Qualified Architect/Architectural Historian: n/a
Date Reviewed: n/a
SOI-Qualified Archaeologist: Roberto G. Muñoz-Pando, PhD
Date Reviewed: September 1, 2023

In compliance with Section 106 of the National Historic Preservation Act (NHPA), the Program is responsible for identifying historic properties listed in the NRHP and any properties not listed that would be considered eligible for listing that are located within the geographic area of potential effects (APE) of the proposed project and assessing the potential effects of its undertakings on these historic properties.

Project Description (Undertaking)

The Scope of Work (SOW) for this project includes the purchase and installation of a greenhouse for the crop of hydroponic cilantro (SOW-1), an irrigation system (SOW-2), and solar power system (SOW-3). Currently this land is a vacant lot that used to be used for the growing of sugar cane and tobacco in the past.

The applicant plans to install a greenhouse (SOW-1) at coordinates 18.140374, -66.458911. The proposed greenhouse is a metal structure covered with plastic and seran sheet that has an approximately footprint of 50' x 15'. The greenhouse will be in an available terrace of approximately 200' x 100'. The proposal includes the installation of a PVC tubes overground irrigation system (SOW-2), to cover an approximately area of 200' x 150' at coordinates 18.139562, -66.458784. The applicant plans to install a solar power system (SOW-3) over an incline area of approximately 100' x 50' located at coordinates 18.139079, -66.460652. This overground system will consist of 12 solar panels over metal railing. Power will be supply with the solar system. This project requires for the applicant to request the service and connection to the potable water distribution system. The field is not graded.

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM REgROW PUERTO RICO PROGRAM Section 106 NHPA Effect Determination	 <small>GOVERNMENT OF PUERTO RICO DEPARTMENT OF HOUSING</small>
Subrecipient: Criado Growers LLC	
Case ID: PR-RGRW-00408	City: Villalba

Area of Potential Effects

As defined in 36 CFR §800.16(d), the area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist. Based on this definition and the nature and scope of the Undertaking, the Program has determined that the direct APE for this project are the three scopes of work described in the Project Description (undertaking) section of this form with a 15-meter buffer to allow for variation due to ground conditions. The visual APE is the viewshed of the proposed project.

Identification of Historic Properties - Archaeology

Existing information on previously identified historic properties has been reviewed to determine if any such properties are located within the APE of this undertaking. The review of this existing information, by a Program contracted Historic Preservation Specialist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61), shows that the project area contains one previously identified archaeological site called "Llano del Sabino", its id number is VL-5 and it is a precolonial Indigenous residuary site located approximately 0.24 miles northwest of the project area. No other archaeological sites have been previously identified within a 0.5 miles radius of the APE.

Onne cultural resource survey has been conducted within a 0.5 miles radius of the APE. It is called "Relocalización Tramo PR 562," was authored by Harry Alemán Crespo in the year 2000 under the direction of the "Autoridad de Carreteras y Transportación." It was a phase 1A and 1B study, with ID numbers EAP 6672 and ICP/CAT-VL-00-04-03. The results were positive for a precolonial site. It is located approximately 0.28 miles north of the APE. The project area lies on two major types of soils: Caguabo gravely clay loam (CbF2) with 20 to 60 percent slope; eroded and Quebradillas silty clay loam (QeF2) with 40 to 60 percent slope; eroded. These terrains make the probability of finding further intact archaeological materials low to moderate.

Identification of Historic Properties - Architecture

Existing information on previously identified historic properties has been reviewed to determine if any such properties are located within the APE of this undertaking. The review of this existing information, by a Program contracted Historic Preservation Specialist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61), shows that the project area is **not** within the boundaries of a National Register of Historic Places (NRHP)-

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM REgROW PUERTO RICO PROGRAM Section 106 NHPA Effect Determination	 GOVERNMENT OF PUERTO RICO DEPARTMENT OF HOUSING
Subrecipient: Criado Growers LLC	
Case ID: PR-RGRW-00408	City: Villalba

eligible or listed Traditional Urban Center or Historic District. Additionally, there are **no** NRHP-listed historic properties within the quarter mile buffer zone from the APE.

No permanent structures are present within the APE nor are any located within the parcel containing the APE.

Determination

The following historic properties have been identified within the APE:

- Direct Effect:
 - N/A
- Indirect Effect:
 - N/A

The project area is not located within the boundaries of a National Register of Historic Places (NRHP)-eligible or listed Traditional Urban Center or Historic District. Based on the results of our historic property identification efforts, the Program has determined that no previously identified historic properties are located within or adjacent to the parcel that contains the proposed Area of Potential Effect. In addition, our background research shows that the project area has no previously identified archaeological sites within an 0.5-mile radius of the APE. However, one previously conducted cultural resource survey was identified that noted the presence of pre-Colonial cultural materials approximately 0.28 miles north of the proposed project location. The slope of the project terrain makes the probability of finding intact archaeological materials low to moderate. With the information gathered in the Archaeology Research Section of this form, it is our position that no Historic Properties will be affected by the proposed project.

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM REGrow PUERTO RICO PROGRAM Section 106 NHPA Effect Determination	 GOVERNMENT OF PUERTO RICO DEPARTMENT OF HOUSING
Subrecipient: Criado Growers LLC	
Case ID: PR-RGRW-00408	City: Villalba

Recommendation

The Puerto Rico Department of Housing requests that the Puerto Rico SHPO concur that the following determination is appropriate for the undertaking (Choose One):

- No Historic Properties Affected
- No Adverse Effect
 Condition (if applicable):
- Adverse Effect
 Proposed Resolution (if applicable)

This Section is to be Completed by SHPO Staff Only

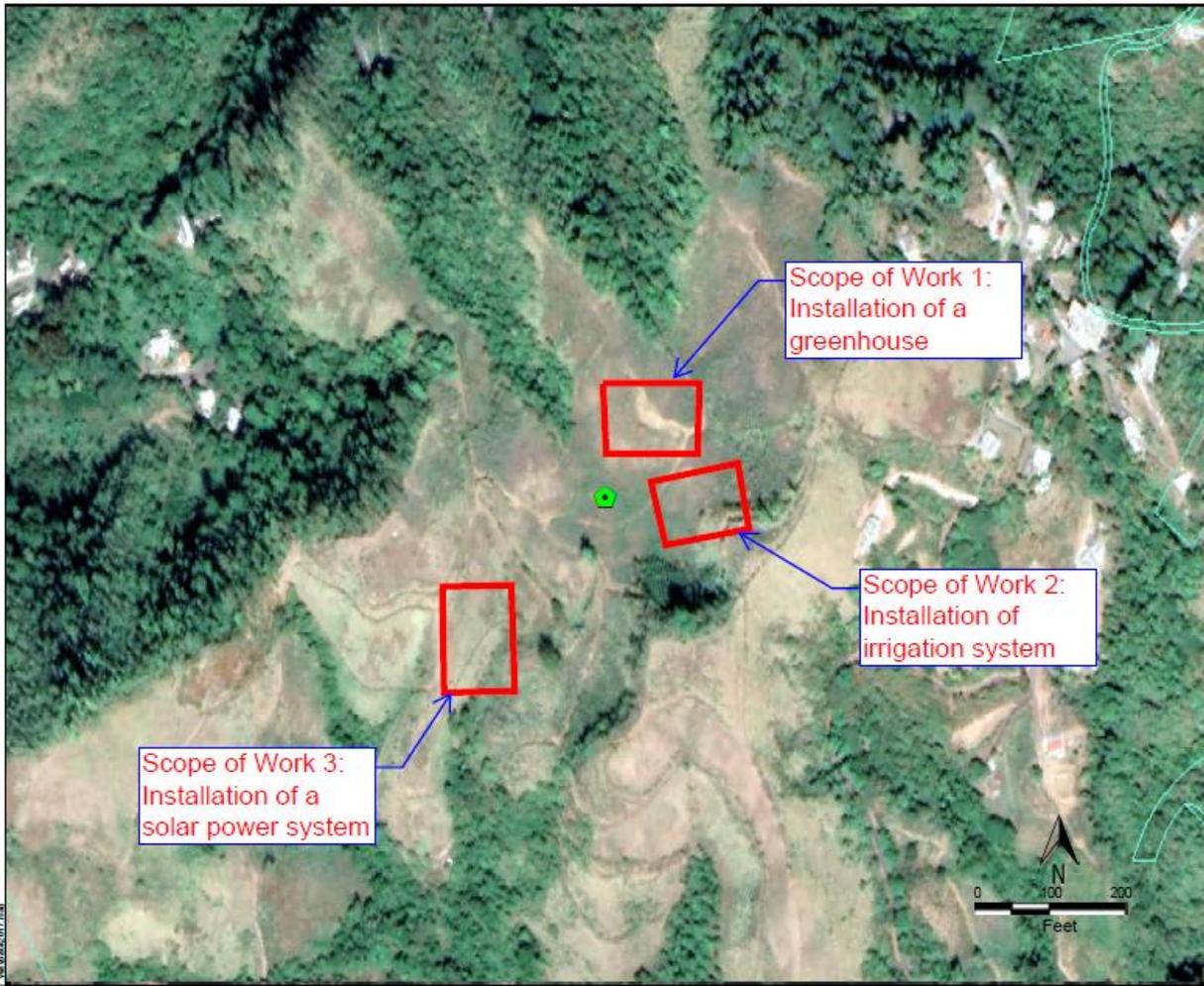
The Puerto Rico State Historic Preservation Office has reviewed the above information and: <input type="checkbox"/> Concurs with the information provided. <input type="checkbox"/> Does not concur with the information provided.	
Comments: 	
Carlos Rubio-Cancela State Historic Preservation Officer	Date:

Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba

Project (Parcel) Location – Area of Potential Effect Map (Aerial)



File Path: Z:\Mapa\SPS\Tetra\SE_Antibond\Mapa_Secundaria_Villalba2017.mxd



TETRA TECH

Source: CRIM

Author: TG

Date: 10/7/2022

Legend

-  Tier 2 Site
-  Area of Potential Effect
-  Parcelario



Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba

Project (Parcel) Location - Aerial Map



TETRA TECH

Source: CRIM

Author: TG

Date: 10/7/2022

Legend

-  Tier 2 Site
-  Historic Comunidades
-  Traditional Urban Centers
-  Cultural Resource District Polygon
-  Parcelario



Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba

Project (Parcel) Location - USGS Topographic Map



TODOS LOS DERECHOS RESERVADOS. TODOS LOS DERECHOS RESERVADOS. TODOS LOS DERECHOS RESERVADOS.



TETRA TECH

Source: USGS

Author: TG

Date: 9/29/2022

Legend

-  Tier 2 Site
-  Historic Comunidades
-  Traditional Urban Centers
-  Cultural Resource District Polygon



Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba

Project (Parcel) Location – Soils Map



TETRA TECH

Source: USDA

Author: TG

Date: 9/30/2022

Legend



Tier 2 Site



Parcelario

Soil Type



CbF2; Caguabo gravelly clay loam, 20 to 60 percent slopes, eroded



QeF2; Quebrada silty clay loam, 40 to 60 percent slopes, eroded

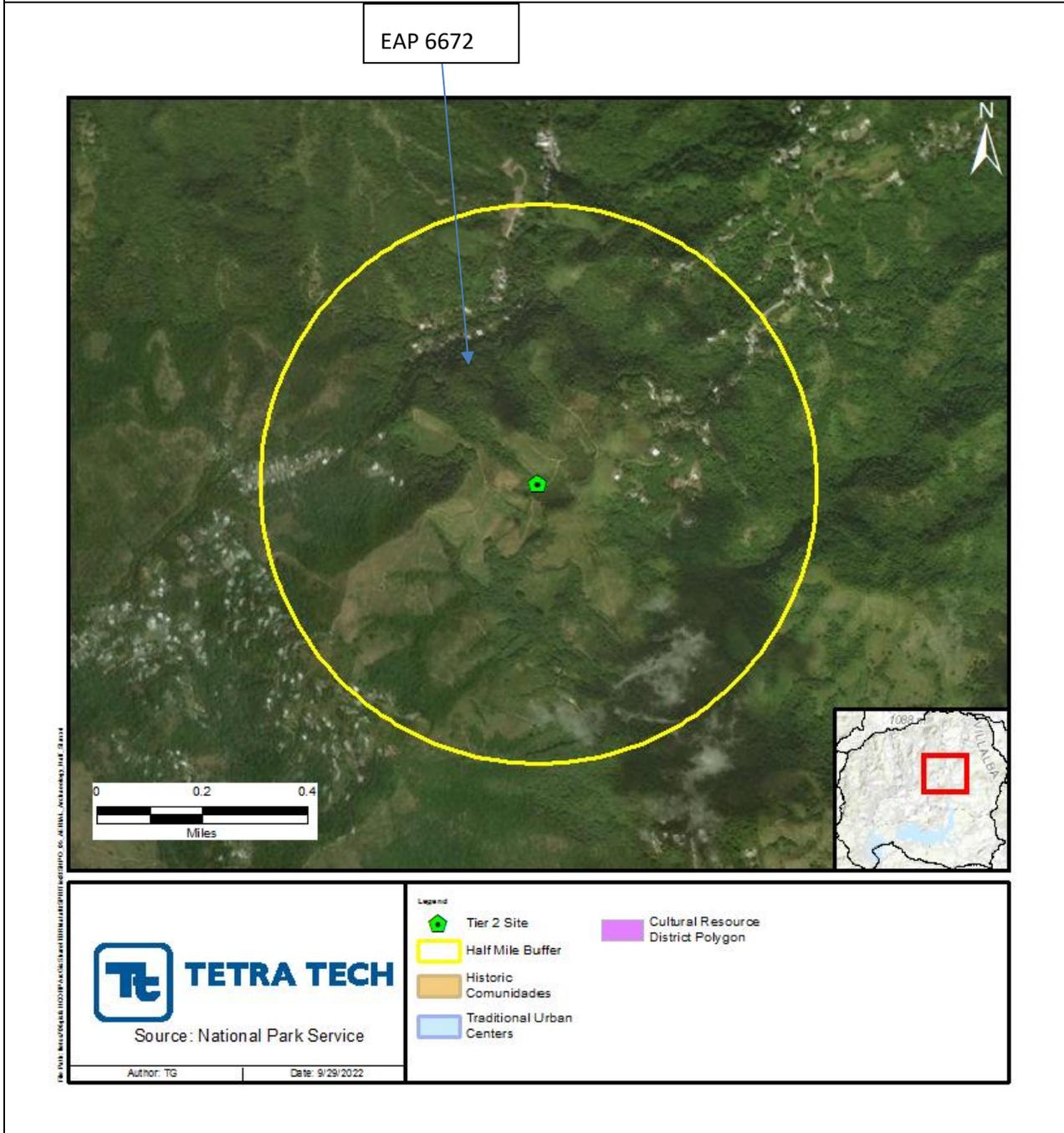


Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba

Project (Parcel) Location with Previous Investigations - Aerial Map



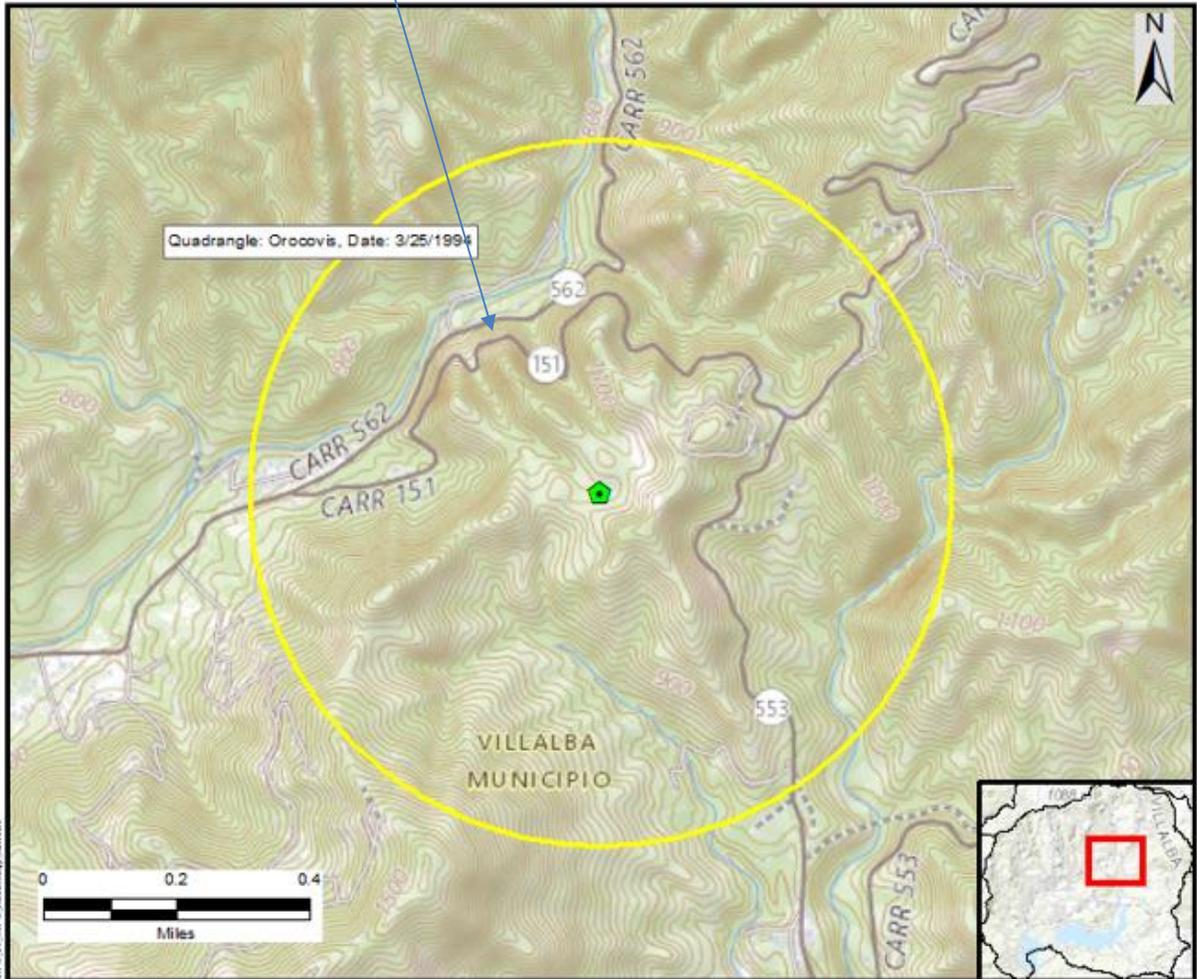
Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba

Project (Parcel) Location with Previously Recorded Cultural Resources USGS Topographic Map

EAP-6672



Source: National Park Service

Author: TG

Date: 9/29/2022

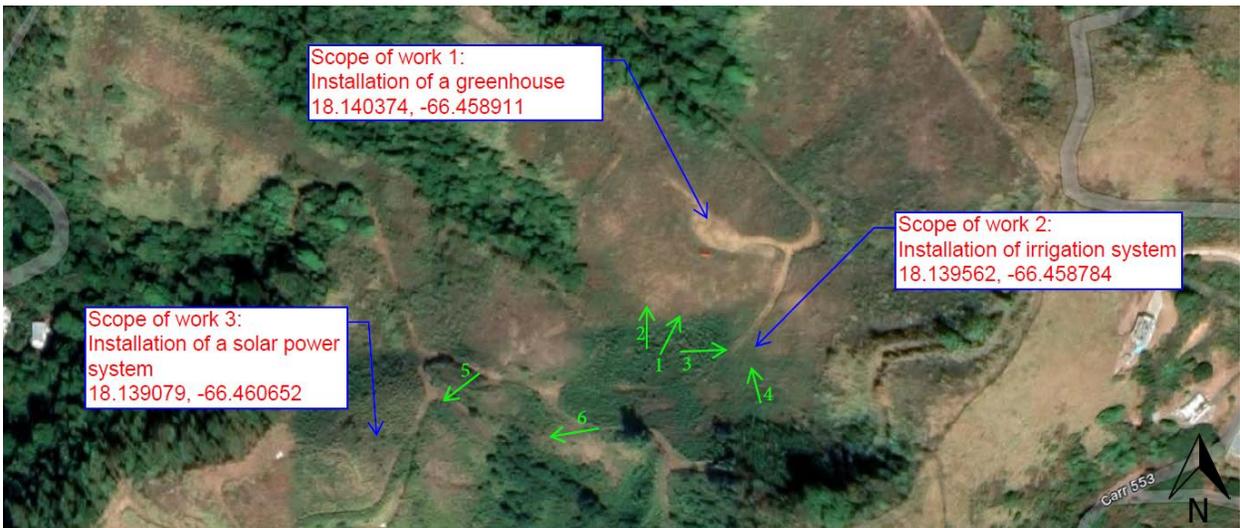
- Legend
-  Tier 2 Site
 -  Half Mile Buffer
 -  Historic Comunidades
 -  Traditional Urban Centers
 -  Cultural Resource District Polygon

Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba

Photograph Key



Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba



Photo #: 1

Description (include direction): View to the Northeast

Date: 5/23/2023

Scope Of Work 1: Installation of a Greenhouse



Photo #: 2

Description (include direction): View to the North

Date: 5/23/2023

Scope Of Work 1: Installation of a Greenhouse

Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba



Photo #: 3

Description (include direction): View to the East

Date: 5/23/2023

Scope Of Work 2: Installation of an irrigation system



Photo #: 4

Description (include direction): View to the Northeast

Date: 5/23/2023

Scope Of Work 2: Installation of an irrigation system

Subrecipient: Criado Growers LLC

Case ID: PR-RGRW-00408

City: Villalba



Photo #: 5

Description (include direction): View to the Southwest

Date: 5/23/2023

Scope Of Work 3: Installation of a solar power system



Photo #: 6

Description (include direction): View to the Southwest

Date: 5/23/2023

Scope Of Work 3: Installation of a solar power system



October 20, 2022

Arch. Carlos A. Rubio Cancela

Executive Director

State Historic Preservation Officer

Cuartel de Ballajá Bldg.

San Juan, Puerto Rico

Re: Authorization to Submit Documents

Dear Arch. Rubio Cancela:

The U.S. Department of Housing (HUD) approved the allocations of Community Development Block Grant (CDBG-DR) funds on February 9, 2018. It also approved the allocation of Community Development Block Grant Mitigation (CDBG-MIT) funds on January 27, 2020. The purpose of these allocations is to address unsatisfied needs as a result of Hurricanes Irma and Maria in September 2017; and to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses.

To comply with the environmental requirements established by HUD, the Department of Housing of Puerto Rico (PRDOH) contracted Horne Federal LLC to provide environmental registry review services, among others, that will support the objectives of the agenda for both CDBG-DR and CDBG -MIT Programs.

In line to expedite the processes, Horne Federal LLC, is authorized to submit to the State Historic Preservation Officer, documentation of projects related to both the CDBG-DR and CDBG-MIT on behalf of PRDOH.

Cordially,

A handwritten signature in blue ink, appearing to be 'JB', is written over the printed name of the signatory.

Juan C. Pérez Bofill, P.E. M.Eng

Director of Disaster Recovery

CDBG DR-MIT