

**United States Department of the Interior
National Park Service**

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National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting property groups relating to one or several historic contexts. See instructions in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items

New Submission

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Amended Submission

A. Name of Multiple Property Listing

New Deal Era Constructions in the Forest Reserves in Puerto Rico, 1933-1942 AMENDMENT

B. Associated Historic Contexts

Civilian Conservation Corps' Constructions in the Maricao Forest Reserve

C. Form Prepared by

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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

(See continuation sheet for additional comments.)

Diana López Sotomayor

Signature and title of certifying official: Deputy State Historic Preservation Officer

Date

Puerto Rico State Historic Preservation Office

State or Federal Agency or Tribal government

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

[Signature]
Signature of the Keeper

4-27-2016
Date of Action

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Provide the following information on continuation sheets. Cite the letter and title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Fill in page numbers for each section in the space below.

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Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

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E. Statement of Historic Contexts

This amendment incorporates a new associated historic context, “**Civilian Conservation Corps’ constructions in the Maricao State Forest**” into the Multiple Property Listing “**New Deal Era Constructions in Forest Reserves in Puerto Rico, 1933-1942**”. This amendment includes the historic context on the Civilian Conservation Corps in the State Forest of Maricao, description of its property types and their requirements for listing in the National Register of Historic Places.

INTRODUCTION

The Maricao State Forest is a reserve of the Commonwealth of Puerto Rico that currently has 10,803 *cuerdas* (10,492 acres or 4,251 hectares). The reserve is located on the western end of the Central Mountain Range spread over the municipalities of San Germán, Sabana Grande and Maricao. The Department of Natural and Environmental Resources (DNER), of the Commonwealth of Puerto Rico manages the forest, while the Puerto Rico’s National Park Company runs an Ecological Park, which was previously used, as Vacation Center of the Maricao State Forest. It is an important watershed with creeks, tributaries and rivers that feed the coastal plains of Mayagüez, San Germán and Añasco. The forests contain, according to the experts, a high biodiversity of flora and fauna, in addition to the exotic species of trees planted by the CCC.¹ The State Forest is one of the key recreational areas in the southwest coast of Puerto Rico, and receives a large number of visitors who make a stop at the Observation Tower, the Hatchery and the DNER recreational facilities that offer picnic areas and a vista point.

La Inspección de Montes: Forest Conservancy in the 19th Century

The history of forest conservation in Puerto Rico, under the Spanish domination is complex and varied. In 1839 there was a short-lived Board for the Protection of Forests, Fish and Wildlife (*Junta para la Protección de Bosques, Peces y Vida Silvestre*) that ended in the hands of the municipalities and their mayors.² The Board had to contend with trespassing, theft of cattle, the illegal occupation of Royal Lands and the slash and burn practice of peasants. The Board’s efforts were not successful and cover of the Island’s forest was dwindled, despite the efforts and the formation of a corps of forest rangers. Eventually, those efforts passed to the *Inspección the Montes*.

The *Inspección de Montes* was instituted in the Island in the second half of the 19th century to stop unrestricted harvesting of the Island’s forest, but also to control the illegal trespass of local farmers into Spanish Crown lands. The agency had the difficult task of identifying forests belonging to the government, surveying the areas, demarcating the land, making inventories of trees, protecting the forests, controlling harvesting through permits of timber and firewood, and selling expendable forest land for coffee production.³

¹ Hojas de Nuestro Ambiente: Bosque Estatal de Maricao. Estado Libre Asociado, Departamento de Recursos Naturales y Ambientales. Agosto 2008. Publicación 031.

² Carlos Domínguez Cristóbal, *Panorama histórico forestal de Puerto Rico*. (San Juan: Universidad de Puerto Rico, 2000), 182-185.

³ Manuel Valdés Pizzini, *Desmontando discursos: El nuevo orden forestal en el imaginario colonial, 1898-1925*, Silvia Álvarez Curbelo, Mary Francés Gallart y Carmen I. Raffuci, ed., *Los arcos de la memoria, el 98 de los pueblos puertorriqueños* (San Juan: First Book Publishing, 1998), 80.

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The agency was also given the task of reviewing land grants made early in the century, and verifying compliance of the grant's terms and forest regulations.⁴ Hundreds of grants were reviewed and land was recovered from the cancellation of noncompliant agreements.⁵ A common practice among the landowners and farmers after many years of receiving the grants was to request a certificate of ownership from the government. The *Inspección de Montes* changed stopped this practice and started to reclaim land throughout the Island. In 1878 the *Inspección de Montes* was able to recover hundreds of hectares of land in Maricao that belonged to the Spanish Crown, and nearly a thousand hectares in the nearby forest areas of Guánica and Yauco, occupied illegally by private owners.⁶

Illegal logging and occupation of forest's lands was rather common widespread problem in the 19th century. To deal with this issue the Spanish Government instituted the Forest Police (or guard, *Guardia Forestal*) that were organized by geographical regions and barracks (*cuarteles*). The Forest Police's patrols were armed with rifles and machetes, and a division was mounted for a better coverage of the territory surveilled. The *Inspección de Montes* also counted with its own corps of armed forest rangers called *Monteros* (from the word *montes*, meaning mountains forests). The *Monteros* received a third of the fines produced by their intervention and 20% of the revenue from the firewood and timber seized and sold.⁷

Although rather small, in comparison with other units in the Island, Maricao forest was important for the Spanish government, and its protection was a major concern.⁸ One of the main concerns of the Government was the slash and burn used by local farmers and the agricultural practices of the coffee growers. Spanish Authorities tried to regulate forests usage not allowing logging in the area for many years, on the belief that neighboring farmers had enough timber (and firewood) in their own holdings.⁹ Forest fires were common in the Maricao area during the 19th century.¹⁰

In the 1880's the largest portion of the forest (Monte de Maricao Afuera) had approximately 700 *cuerdas*, most of them obtained in 1878 through a cancellation of land grants.¹¹

El Monte del Estado also contained large plots of land in the wards of Indiera Baja and Indiera Alta (to the north), as well as in Bucarabones and other wards. Portions of these wards are currently under the protected area of the forest. The total area was fragmented in the 19th century and broken by the large holdings of the coffee growers and by old land grants. In c.1890 a Spanish military cartographical expedition identified a forest in the Caín Mountain Range (*Sierra*),

⁴AHNM, Ultramar, 350, Expediente # 10. *Inspección de Montes de Puerto Rico, Memorial general del Servicio redactada por el Ingeniero primero Inspector del ramo, Don César de Guillerna, 1879*. Document provided by Carlos Buitrago Ortiz, and is available at Centro Interdisciplinario de Estudios del Litoral (CIEL).

⁵Pablo García Colón, *Tierras privadas: del reparto de terrenos baldíos al ordenamiento forestal en Puerto Rico (1778-1873)* (San Juan: Isla Negra Editores, 2009), 59.

⁶Gaceta de Puerto Rico, various years, 1876-1882 Available at The *Gaceta de Puerto Rico*, an official government publication, documented reports of illegal occupation of lands by relatively large landholders in various wards of the Maricao area. The information examined found in this publication leads us to conclude that the problem (including the illegal extraction of timber and firewood) was rather acute. Entries for the following dates were examined: September 16, 1875, July 24, 1877 and January 29, 1880.

⁷AGPR, Obras Públicas, Propiedad Pública, Asuntos Generales (Montes y baldíos), 1856-1877, Caja 312.

⁸AHNM, Ultramar, 350, Expediente # 10. *Inspección de Montes de la Isla de Puerto Rico. Memoria Correspondiente al Año Forestal de 1875-76*.

⁹AGPR, Obras Públicas, Propiedad Pública, Caja 351. *Año 1887 a 1888, Estado que comprende los aprovechamientos que esta Inspección propone en los "Montes del Estado"*.

¹⁰There is evidence of visits by *Inspección de Montes*'s officials to Maricao to investigate arson in the forest in the 19th century. AGPR, Obras Públicas, Caja 351. *Resumen de Indemnizaciones, Mes de abril de 1885*.

¹¹AGPR, Obras Públicas, Asuntos Generales (Montes, baldíos), 1880-1883, Caja 314. *Expediente promovido por la Capitanía General pidiendo se le manifiesten los terrenos que posee el Estado en esta Isla.* 22 de octubre de 1880, 18 de enero de 1881.

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between the Alto del Descanso and the Tetas de Cerro Gordo; a forest described as virgin, with dense vegetation, devoid of houses and roads.¹² Presumably, due to the lack of maps, those areas were under the control of the Spanish *Inspección de Montes*, according to our reading of various documents. There are two things that strike us about the description: (1) location of the forest camps, offices, installations and facilities, and (2) the presence of a road, perhaps a large trail, between Sabana Grande and Maricao.

Coffee in Maricao in the 19th and 20th century

As early as the 1830's coffee haciendas sprung in the wards of Montoso, Indiera and Caín Alto, while small farms with minor crops developed in Bucarabones and Río Prieto.¹³ Mayagüez was already an important economic hub and port, exporting agricultural commodities such as sugar and coffee. By 1877, Mayagüez had become the major exporter of coffee in Puerto Rico.¹⁴ In a nutshell, coffee production in 19th century Maricao became intense, capitalized and diversified, with small farms (*estancias*) planting a variety of crops and large *haciendas*. The number of mills increased and there was a symbiotic relationship between store's owners (*pulperos*) and farm owners, as the former provided foodstuffs and other commodities for the laborers, and financed production by lending money to the landholders. Coffee growers also invested in their own stores (*tienda de raya*) in which they exchanged goods for labor, in a form of credit.

Coffee production, a strong agricultural and commercial pursuit started to face difficulties with a drop in prices in 1896. After US occupation of Puerto Rico in 1898, there was widespread devastation in the coffee industry as the result of the passage of hurricane San Ciriaco in 1899. The loss of half of the harvest in Puerto Rico caused by the hurricane eroded the coffee growers' ability to repay the lenders. Another economic impact occurred in 1900 as result of the devaluation of the value of local *peso* as result of the implementation of the Foraker Act, placing the coffee growers in a precarious position. Brazil was a major producer (preferred by the US) and several countries increased the import taxes on Puerto Rican coffee making it a rather expensive commodity. By 1901 there was a dramatic drop in coffee production in the Island. As a result, a portion of the labor force of the highlands migrated to the coastal towns in search of job opportunities in the sugar cane production, urban manufacturing and harbor activities. The coffee producers adapted the best they could to the new conditions by shifting crops (sugar cane and tobacco were incorporated in many areas), adding plantains, bananas and citrus to their production, or resorting to charcoal making and timber extraction, which was the case for Maricao. By 1910 the coffee sector showed a short-lived stability that led to the seasonal return of laborers who slept in *ranchones*, or large wooden quarters during the harvest. However, economic and market instability characterized coffee production from 1900 to the 1940, despite government and private efforts to finance production through banks or to share risks through cooperatives, such as the *Cooperativa Agrícola de Maricao*.¹⁵

¹² "La zona de la Sierra de Caín comprendida entre el Alto del Descanso y las Tetas de Cerro Gordo bordeada por el camino que se describe y el que de Sabana Grande sube a Maricao forma un bosque (propiedad del estado en su mayor parte) verdaderamente virgen, y casi impenetrable por el que no cruza camino alguno y en el que no hay viviendas..." (The portion of the Sierra de Caín, located between Alto del Descanso and the Tetas de Cerro Gordo, bordered by the road described here and the one in Sabana Grande leading to Maricao compose a forest (property of the state, for the most part), mostly virgin, impenetrable, devoid of roads and houses). *Itinerario de San Germán a Maricao por la Alegría*. Código de referencia: 11.7, Fecha(s): 1888 /1892, SG.Ar.D-T.4-C.3-669. Documentación de Puerto Rico en el Archivo Cartográfico y de Estudios Geográficos del Centro Geográfico del Ejército. (España: Centro Geográfico del Ejército de Tierra, 2007).

¹³ Juan Rafael González-Mendoza, "The Parish of San Germán de Auxerre in Puerto Rico, 1765-1850: Patterns of Settlement and Development" (Ph.D. diss., State University of New York, 1989), 465-467.

¹⁴ Luis Pumarada O'Neill, *La industria cafetalera en Puerto Rico. 1736-1969* (San Juan: Antillian College Press, 1990), page 28.

¹⁵ AGPR, Oficina del Gobernador, Tarea 96-20, Municipalidades, Maricao (1938-1952) Caja 1025, *Documentos sobre la incapacidad de los productores de café para pagar sus préstamos en 1939*.

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The Maricao Insular Forest (1917-1932): Conservation and the Great Depression

As result of the Treaty of Paris of 1898 the public property and lands in Puerto Rico were transferred from Spain to the United States of America. Later in 1903 by act of Congress, those properties and lands that were not reserved by the President “for military, naval, court-house, as other public purposes within the island” were transferred to the Government of Puerto Rico¹⁶. In 1911 the Secretary of Agriculture, the Governor of Puerto Rico and the Board of Commissioners of Agriculture of Puerto Rico, concerned by the rapid depletion of the forest, entered an informal cooperative agreement to employ a forest expert to study the forest problems on the Island.¹⁷ The forest expert recommended “that the authority of the board [Board of Commissioners off Agriculture of Puerto Rico] be extended to cover the management of forests; and that an insular forest service, with a qualified and experienced forester in charge, be established to carry on the work”.¹⁸

The Insular Forest Service (*Servicio Forestal Insular*) was established in November 22, 1917, by Public Law No. 22 (Forestry Law) “to provide a forest service in Porto Rico”.¹⁹ In December 22, 1919 Arthur Yager, Governor of Puerto Rico, issued Administrative Bulletin No. 159 proclaiming 25,000 *cuerdas*²⁰ of public lands insular forests”.²¹ The Maricao Forest, one of the four new insular forests created by this administrative bulletin, was located in the municipalities of Maricao (Maricao Afuera and Indiera Fría Wards) and Sabana Grande (Santana and Tabonuco Wards):

Maricao Forest. Situated on the headwaters of Rio Maricao and other tributaries of Río Grande de Añasco, Río Seco, Río Susúa, and several tributaries of río Guanajibo. Comprise the slopes of Mount Cerro Gordo and adjacent slopes and ridges....Approximately 3,000 *cuerdas* surveyed by the Department of the Interior and 1,700 *cuerdas*, more or less, under process of survey.²²

After 1919 the Insular Forest Service’s primary focus in the Maricao Forest was reforesting the denuded areas:

The Maricao Forest, containing approximately 5,000 *cuerdas*, is situated in the mountainous region of the western end of the island and lies partly in each for the three municipalities of Maricao, San German, and Sabana Grande. Within the boundary of this forest is found the second largest area of original or virgin forest growth still remaining in the island. A very large percentage of the total areas, however, consist of deforested and abandoned lands. The reforestation of these lands is already under way. Aside from its practical value this project is one of the unusual scientific importance and is therefore being conducted with the greatest possible care.²³

¹⁶ Third Annual Report of the Governor of Porto Rico covering the period from July 1, 1902 to June 30, 1903 (Washington: Government Printing Office, 1903), 32. In an appendix (Report of the Commissioner of the Interior) in page 135 informs, “Under the provisions of an act of Congress, the title to a considerable quantity (estimated at about 104,000 acres) of public lands passed to the control of the insular government July 1, 1903...”.

¹⁷ Informe del Comisionado de Agricultura y Comercio, Ejercicio 1935-1936 (San Juan: Negociado de Materiales, Imprenta y Transporte, 1936), 64.

¹⁸ Louis S. Murphy, “Forests of Porto Rico: Past, Present, and Future, and their physical and economic environment”, United States Department of Agriculture, Bulletin No. 354, October 20, 1916, 1.

¹⁹ Informe del Comisionado de Agricultura y Comercio, Ejercicio 1935-1936, 64.

²⁰ A *cuerda* equals 0.9712 acre.

²¹ Report of the Governor of Porto Rico to the Secretary of War 1920 (Washington: Government Printing Office, 1920), 544.

²² Proclamation by Arthur Yager, Governor of Puerto Rico, Office of the Executive Secretary, San Juan, P.R., December 22, 1919. Administrative Bulletin No. 159. National Archives and Records Administration (N.A.R.A.), Record Group (RG) 126, Division of Territories, Box 855.

²³ Twenty-Third Annual Report of the Governor of Porto Rico for the fiscal year ended June 30, 1923 (Washington: Government Printing Office, 1920), 250-251.

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In the 1920's and 1930's the Insular Forest Service exempted Maricao Forest from harvesting its trees. This policy contrasted with the other insular forests where the leasing of land and selling of timber and woods was a source of income for the insular agency. The agency's main interest in the Maricao Forest was to experiment with planting of exotic species, and work with the adaptation of endemic species to those areas.

The Great Depression (1929) had a devastating impact in the highlands of Puerto Rico, and contributed to the bankruptcy of many *hacienda* owners. Life in the coffee farms was precarious for both, owners and laborers. The concentration of land in a few hands had the counterpart of a dispossessed mass of rural laborers and small landholders who depended on the coffee haciendas for the livelihood. The large landholders allowed the rural workers to live on their land as sharecroppers or simply as *agregados*, workers who were allowed to live on the land, and cultivate their own crops to survive, in exchange for a commitment to work in the *haciendas*. Rural laborers were paid in promissory notes (*vales*) to be redeemed at the *hacienda* stores, buying (or bartering in a truck system) foodstuffs and other consumption goods at the prices set by the owners. It was an economy in which the labor force did not have access to cash, nor to land in which to build their own houses and have a safe shelter. Workers depended on the land of the *hacendados* to produce surplus foodstuffs to sustain their families or to sell in the market place in exchange for cash or to barter them for other foodstuffs and materials.

The police records of Maricao of the late 1920's show a rural economy based on coffee production and the cultivation of "minor crops" (e.g. plantains and bananas), with a parallel set of illegal activities used by laborers and *hacendados* to survive the hardships of the Depression. Bootlegging, gambling and illegal charcoal making were the most prominent.²⁴ The illegal expansion of the limits and borders of the landholding to farm, and the use of other people's land to graze the stock was rather common.

As stated before, the *hacendados* also were in a precarious situation as the US economy on the Island favored the sugar cane producers. The market price of coffee dropped, the U.S. bought cheap coffee from Brazil and other countries in Latin America, and the local production was at the mercy of the coffee traders and lenders (*refaccionistas*) from Mayagüez and Ponce, who financed production and imposed market conditions. Many *hacendados* lost their properties to the banks and to the *refaccionistas*, land that, in some cases, ended in the hands of the Forest Service through their land acquisition program.²⁵

Similar to other regions of the Island, the social landscape of the Maricao highlands was rife with social and domestic violence, political turmoil and clashes between rural laborers and landholders. The police records show a constant flow of complaints about thefts of crops (bags of coffee, seeds, bunches of bananas, oranges), farm animals (chickens, horses) and the confrontation between farms stewards and laborers, ending in machete duels. Damage to farms, by setting fires to coffee trees or physical damage to crops and seeds were also reported. The forest reserves (insular and federal) faced their neighbors resentment, which was expressed through trespassing and illegal harvesting of wood. In Maricao, the Insular Forest was also the target of arson. In 1926 the Police reported a large fire in the Santana Ward (Sabana Grande) in which 29 acres of "a new plantation" (probably María tree) were burned with an estimated loss of \$5,000.²⁶

²⁴ AGPR, Policía de Puerto Rico, Libro de Novedades, Cuartel de Maricao. Libretas de 1926 y 1927.

²⁵ One of the benefits of the CCC-PRRA symbiosis was the availability of funds to buy land, to be annexed to the existing forest areas. See Valdés Pizzini et al, 2011, 47-51.

²⁶ AGPR, Policía de Puerto Rico, Libro de Novedades, Maricao. 12 de febrero de 1926 a 22 de abril de 1927, folio 16.

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In September 13, 1928, Hurricane San Felipe, a category five system with winds of 160 miles per hour, hit Puerto Rico. Four years later (1932), another hurricane crossed the northern coast (from Fajardo to Aguadilla). This hurricane, named San Ciprián, was a category 3 with 120 mph winds. The impact of these two hurricanes, striking only four years apart, devastated the agricultural infrastructure, eroded the meager capital invested in coffee and exposed the coffee farmers and the rural workers to dire socioeconomic conditions in the years to come. One may argue that both hurricanes wrecked the municipal economy of Maricao.²⁷ From data gathered by the local police we estimated the damages in \$1,259,359²⁸. Although everyone was vulnerable to the impact of the effects of the hurricanes, it is understandable that the poor rural workers (127 and their families) and the destitute (67 and their families) suffered immensely.

The forest was also marred with trespassing from 1920 to 1929, and 1930-31 was an unusual year with the largest number of interventions among all Insular Forests, with 77.²⁹ In fiscal year 1931-32, the Department of Agriculture reported 4,443 *cuerdas* in Maricao, and 605 of them were in plantations maria, casuarina and mahogany, among other. Also, intentional forest fires were still a major problem in the area.³⁰ Hunger, poverty, despair and labor strife was rather acute outside the borders of the forests, in the mountains, slopes, hills and coastal plains of the southwest coast.

CIVILIAN CONSERVATION CORPS IN MARICAO (1933-1942)

William Barbour's plan for the use of CCC funds included activities for the Luquillo National Forest and the Insular Forests. The first fiscal year of the CCC program (July 1933-June 1934) on the Island was intensive. William Barbour feared that the CCC was short lived since congressional authorization of the Emergency Conservation Work Act was limited to two years after its approval (until March 1935). Barbour estimated in "920 man months" the labor needed to accomplish the task, equivalent (according to his calculation) to 150 men, working 6 months (presumably, the remainder of the time-effort was devoted to supervisory activities.³¹ In his plan there were various activities outlined for Maricao:

- (a) Forest plantations over 2,000 acres of land, employing 500 man months, with seedling from the San Germán, Río Piedras and Utuado nurseries³²;
- (b) Cleaning of 1,000 acres of existing (and neglected, due to lack funds) plantations, employing 100 man-months;

²⁷ AGPR, Policía de Puerto Rico, Libro de Novedades, Maricao. Libreta del mes de septiembre de 1928.

²⁸ The sum would be equivalent to \$17,090,000 in 2015.

²⁹ Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1930-31, (San Juan: Negociado de Materiales, Imprenta y Transporte, 1936), 136-137. According to the Report of the Agriculture Commissioner, the forest was cut without pity, prior to 1898, and its utter exploitation continued until 1921. Also, the illegal use of the forest continued at a fast rate, with 83 cases documented (theft of timber and firewood, grazing) in that fiscal year.

³⁰ Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1930-31, 136-137.

³¹ N.A.R.A. Record Group 360, Box 635. Notes on Proposed Unemployment Relief Projects in Puerto Rico, by William Barbour, Forest Supervisor, April 25, 1933. Although William Barbour was supervisor and chief forester of the Luquillo National Forest, he also administered the Insular Forest Service. Since 1917, the US Forest Service and Government of Puerto Rico had a special cooperative agreement, by which the Federal officer in charge of the Luquillo National Forest would also be chief of the Insular Forest Service. Twenty-Fifth Annual Report of the Governor of Porto Rico for the Fiscal Year ended in June 30, 1925 (Washington: Government Printing Office, 1926), 600.

³² The Utuado and San Germán tree nurseries had been established in 1926 and 1927, and the latter served as a supplier of seedlings to the Maricao Forest. This an area represented in reports and photographs as denuded, for the massive reforestation efforts of the CCC and PRRA. J. A. Gilormini, "Consideraciones generales sobre los bosques en Puerto Rico," Revista de Agricultura de Puerto Rico 28, No. 1-2, (Sept-Dic 1936): 288-291.

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- (c) Improvements in thinning of the existing plantation, the clearing of wolf trees, weed trees and vines (*bejucos*, one of the key targets of the CCC efforts) and the removal of coffee trees from one farm added to the forest land; and,
- (d) Cleaning and improvement of the existing trails and building new trails.³³

In September 6, 1933 fieldwork was started in the Maricao Forest. Two camps were established in the Maricao Forest: Buena Vista and Santana. Initially, the civies, as CCC recruits were known, were housed in the nearby towns. However, shortly after the start of the program they were moved to the camps after the construction of the sleeping quarters or dormitory were completed.³⁴ The first buildings used as dormitories—one for each camp - were large buildings (each housed 150 recruits) with a kitchen and storage area, showers, latrines, and an office. At first the recruits had to bring their own hammocks, but later the CCC program furnished the buildings with beds. Recruits came from the nearby wards and towns (like Maricao, San Germán, and Sabana Grande), as well as from distant municipalities (like Las Marías and Adjuntas). Fifty recruits³⁵ were employed when the program began in September and increased until reaching 250 recruits by the end of the year. A pipeline to the camps was finished making it possible to bring fresh water from the small concrete dams built on the nearby creeks and springs.³⁶ The CCC in Maricao also worked in the following projects:

- Started the construction from the motor truck road Maricao-Las Vegas-Mayagüez that would follow the route that existed between Maricao and San Germán, crossing in the first 2.3 kilometers through the private lands and later 2.2 kilometers through the Maricao Forest until reaching the Buena Vista Camp. From here the road was continued until reaching the Santana Camp;
- Completion twenty-two kilometers of horse trails; and,
- Reforestation of 513 *cuerdas* planted, the clearing of 200, and removal of undesirable species in 170 *cuerdas*.³⁷ The presence of hundreds of men (workers, supervisors and foresters) and vehicles probably discourage the transgressions as that year showed the lowest number of interventions for the last four years, a number that kept dwindling throughout the decade.³⁸

In fiscal year 1934 (July 1933 to June 1934) the Insular Forest Service acquired land increasing the size of the Maricao Forest to 6,000 *cuerdas*.³⁹ This was the first increase in size since the forest's establishment in 1919.

In the fiscal year 1935 (July 1934-June 1935) the program the work force increased to 400 recruits. During this year, the success of the CCC program in the United States permitted the extension of the program funding by US Congress until 1937. The projects for that year in the Maricao Forest were:

- Construction on the hard surfaced road crossing the forest;

³³ *Notes on Proposed Unemployment Relief Projects in Puerto Rico (April 21, 1933)*, William Barbour. National Archives and Records Administration (N.A.R.A.), Record Group (RG) 126, Division of Territories, Box 855.

³⁴ Interview with Pablo Castillo, 1992. Archivo del Centro Interdisciplinario de Estudios del Litoral (CIEL), Universidad de Puerto Rico en Mayagüez.

³⁵ *Informe Anual del Departamento de Agricultura y Comercio, Ejercicio 1934-35* (San Juan: Negociado de Materiales, Imprenta y Transporte, 1935), 92.

³⁶ *Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1933-34* (San Juan: Negociado de Materiales, Imprenta y Transporte, 1935), 61.

³⁷ *Ibid.*, pages 61-62. This report also recognized the presence of a number of endemic species of flora and experimentation with cinchona (*quina*).

³⁸ *Ibid.*, page 63.

³⁹ The increase was made through the Insular Forest Service's acquisition fund that made possible the acquisition of 600 *cuerdas* (or 582.72 acres) from Mr. López Acosta's land bordering the Maricao Forest. *Ibid.*, 61.

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- Completion a network of roads (total 39 kilometers) that extended in various directions within the forest. These roads were useful for the administrative purposes and recreational uses;
- Started the construction of a road from a point in the Mayagüez-Las Vegas Road-Maricao road towards the forest, following the old Maricao-San Germán road. The new road that crossed 9 kilometer into the forest connected with the Sabana Grande-Maricao road that was, at that time, under construction. The road had a hard tarred surface. This road was considered of great importance for the forest reserve's protection, exploitation and recreational use;
- Completed the construction of two cabins;
- Started the construction of a botanical garden. Water pipes have been installed to bring water to the garden;
- Started the construction of an arboretum (tree nursery); and,
- Started the construction of a recreational area along the road that crossed the forest. This included a swimming pool and two bathhouses (one for men and another for women) located at the side of the roadway that crosses forest and;
- Construction of an observation tower of 34-feet in height with its refuge shelter located on a mountain's summit⁴⁰.

In the fiscal year 1936 (July 1935-June 1936) the CCC program invested more than \$200,000 in the Maricao Forest, employing close to 1,000 men daily. For this year the funding was used in three main projects:

1. Planting with trees in uncultivated land. Reforestation was carried out in 2,297 acres with the planting of 786,186 trees and the sowing of 3,570 pounds of seed.
2. Construction of the Sabana Grande-Maricao road. This project has progressed gradually during a period of nine months leaving less than a kilometer to finish the road; and,
3. Development of the recreational resources. Development plans were being prepared. Excursion booths, observation towers and panoramic routes were created during this year.

Work carried out by the CCC in the Maricao Insular Forest during the fiscal year 1935-1936.

Nature of work	Number of Units	Man days
Plantations	2,297 acres	16,587
Clearing the land	1,067 acres	8,506
Nurseries	-----	1,048
Forest Improvements	70 acres	1,042
Experimentation plots	20 No	87
Road construction	15 miles	105,413
Road maintenance	44.8 miles	1,159
Protecting fences	63 rolls	280
Fences for the protection from the cattle	5	204
Palisades	80	115

⁴⁰Informe Anual del Departamento de Agricultura y Comercio, Ejercicio 1934-35, 42, 92, 95.

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Ornamentation	10 acres	45
Dams, excavations	25	120
Masonry work	108	600
Facilities for storing water	7,000 gallons	91
Bathhouses	1	-----
Excursion booths	8	400
Roads	5	50
Erosion control	-----	4,064
Dormitories	3	529
Garages	1	15
Miscellaneous	-----	540

At the end of fiscal year 1936 the forest had expanded to 6,200 acres through acquisitions made by the Insular Forest Service.⁴¹

In 1937 the US Congress extended funding of the program for three years. The program (renamed Civilian Conservation Corps) had new provisions providing general education and vocational training to the recruits. In fiscal year 1937 (July 1936-June 1937) the funding for work projects in the Maricao State Forest by the CCC was complemented by funding by the Puerto Rico Reconstruction Administration's (PRRA) Forestry Division⁴². In 1937 while CCC provided \$204,029.31, PRRA funding ascended to \$43,910.23. The main projects that year in the forest were the construction of a 2 kilometers in the Maricao Road (cost of \$6,392.32 in labor and \$157.83 in materials), started the construction of a fish hatchery and construction a Biological & Administrative Station building. Reforestation was completed on two thousand *cuerdas* of lands, acquired for the Maricao Forest, at a cost of \$37,360.08 (labor \$37,349.58 and materials \$10.50)⁴³

In 1937, Forest Supervisor E. W. Hadley reported three camps in Maricao (the third one may be a station at the Fish Hatchery), and the investment of 14,225 man-days to finish the road to Sabana Grande, the Hatchery, the planting of 122 acres and conservation work in 5.9 kilometers of road.⁴⁴

In the period between fiscal year 1938 (July 1937-June 1938) and until 1941 (July 1940-June 1941)⁴⁵ CCC's efforts in the Maricao Forest concentrated in preparing the recreational areas within the forest, finalizing construction of

⁴¹ Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1935-36 (San Juan: Negociado de Materiales, Imprenta y Transporte, 1936), 72-74.

⁴² Manuel Valdés Pizzini, Michael González Cruz and José Eduardo Martínez Reyes, La transformación del paisaje puertorriqueño y la disciplina del Cuerpo Civil de Conservación, 1933-1942 (San Juan: Centro de Investigaciones Sociales, Universidad de Puerto Rico, 2011), page 99. See also Neil M. Maher, Nature's New Deal: The Civilian Conservation Corps and the Roots of the American Environmental Movement. (New York: Oxford University Press, 2008), for a general reference on the impact of the CCC in the United States.

⁴³ The PRRA's Forestry Division was created in base of Forestry Program presented in the Report of the Puerto Rico Policy Commission dated June 14, 1934. Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1935-36, 67. The combined funding ascended to \$247,939.54. By the Governor's proclamation of fiscal year 1935-36, 2,220 acres were sold to the Forest Division of PRRA so that its product of this sale could be used to acquire lands adjoining the Maricao Forest. Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1936-37, (San Juan: Negociado de Materiales, Imprenta y Transporte, 1938), 82, 85, 88.

⁴⁴ E. W. Hadley, "Reporte trimestral del Servicio Forestal Insular, Período-Julio 1 a Septiembre 30, 1937," Revista de Agricultura y Comercio de Puerto Rico, 29: 1967-168. This information may correspond to fiscal year 1938 (July 1937-June 30 1938) since the hatchery was finished early 1938.

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the fish hatchery, and improving access to the forest (road improvements and construction). Among the activities carried out in that period were:

- Implementation of recreational plan for the Maricao Forest.
 - \$110.00 (1939-40); construction in the recreation area \$3,950.69 (1940-41)
- Construction and maintenance of the following roads:
 - Hoconuco road - \$40,388.87 (1939-40); \$34,993.83 (1940-41);
 - Las Mesas road - \$4,582.09 (1939-40);
 - Sabana Grande-Maricao; - construction \$832.73, improvements \$25,482.67 (1939-40); improvement \$8,330.28 (1940-41)
 - Indiera Fria \$191.67 (1940-41);
 - Pathways - \$3,731.13 (1939-40)
- Construction of facilities
 - Residence - \$199.08 (1939-40);
 - Biology Residence in Maricao - \$184.54 (1939-40)
 - Water system – construction \$796.40 (1939-40)
 - Observation Tower –\$11,301.01 (1939-40); and improvement of land \$621.14 & construction of observation tower \$4,851.43 (1940-41).
- Completion of the Fish Hatchery, located to the southeast of the town of Maricao in two *cuerdas* area along the Maricao River. Hatchery completed early in 1938. However, additional funding (\$218.11) for construction was included in the 1939-40 report. Reforestation of the Hatchery area (1940-41).
- Reforestation – 200 *cuerdas* (1937-38); 100 *cuerdas* (1939-40);

It was in fiscal year 1940-41 that Maricao Forest started to generate income (\$263.00) for the Insular Forest Service from the lease of land and the sale of sticks, logs, stakes, posts and firewood⁴⁶.

Forest Plantations and Conservation in the Western Region: The Central Role of the Maricao State Forest

There is little that we know about the original constitution of the tropical forest in Maricao. José Marrero, forester and researcher who assessed the Forest Service reforestation work suggested that the primary forest of the area was not the rain forest type, but one more common to a dry area, with evergreen vegetation of small leaves. That type of vegetation was found in the 1940 and 1950 in small patches in the forest. The secondary forest and the data gathered from the Forest Service records and memory (we are inferring this from the text) suggested that the forest was transformed by agricultural production—a situation encountered by the *Inspección de Montes*—and by repeated fires (presumably, intentional) before the Insular Government's protection of the area in 1918.⁴⁷ However, primary sources also reveal that the forest was the target of intentional fires after 1919. Since the 1920's, through a reforestation plan, the landscape of the

⁴⁵The information is taken from the 1938, 1940 and 1941 reports of the Commissioner of Agriculture and Commerce of Puerto Rico. The report of fiscal year 1939 (July 1938-June 1939) that was not available for consultation.

⁴⁶*Informe Anual del Comisionado de Agricultura y Comercio al Honorable Gobernado de Puerto Rico Año Fiscal 1940-1941* (San Juan: Negociado de Materiales, Imprenta y Transporte, 1942), 37.

⁴⁷José Marrero, 1950, "Resultados de la repoblación forestal en los Bosques Insulares de Puerto Rico," *Caribbean Forester* 11, No. 4, (October 1950): 155-195.

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area in 2,714 acres was transformed.⁴⁸ The cultural artifacts built from 1933-1942 by the CCC, and the physical footprint of the camps served as a platform to continue the Forest Service efforts to redesign nature. An example of that is the María tree (*Calophyllum antillanum*, Britton) plantation that had in 1950 an age of 27 years. The plantation was developed in Maricao in areas denuded of trees and populated by grasses.⁴⁹ Through the joint efforts of the CCC and the PRRA a number of tree species were planted in Maricao, namely: kauri tree, a conifer (*Agathis australis*), Australian pine (*Casuarina equisetifolia*), Spanish cedar (*Cedrela mexicana*)⁵⁰, mahogany (*Swietenia macrophylla* and *S. mahagoni*), cassod tree (*Sciacassia siamea*), among others.⁵¹ In 1950 Marrero concluded that Maricao had a total of 2,714 acres of plantations, from which 74% were assessed as “well provided”, meaning that 80% of the stand of dominant species is constituted by the planted trees planted, and the stands showed a healthy condition.⁵²

The CCC and the PRRA were responsible, from 1933 to 1942, of the reforestation of denuded areas in Maricao, Susúa, and Guánica. The recuperation of the forests provided the appropriate landscape and scenery for the forging of a recreational infrastructure serving the tourists and the local population. The Forest Service, according to William Barbour, and several documents produced by the agency in those years, built the amenities (or “incidents”) to serve first and foremost the local population. Tourism was also considered, but the design of the recreational areas had the local families in mind.⁵³ No other government effort compared with the legacy of the CCC and PRRA in making the forests available to the public, for their enjoyment and aesthetic appreciation. For the tourists, the Forest Service tried to incorporate the recreational angling of Rainbow Trout, introducing the species and raising them in hatcheries, which became an important artifact (or “incident”) in Maricao, and to a lesser extent in El Yunque. The project failed its main objective, but it endured in providing seedlings to the Island reservoirs.

A coastal interlude: The Fish Hatchery

In the 1930's the local fisheries were rather poor. The U.S. Government commissioned a study to Norman Jarvis who travelled throughout the coastal settlements gathering data on the social and economic characteristic of the industry.⁵⁴ In a nutshell, the study revealed that the technology was subpar, dependent on sailboats with onboard live wells to conserve the catch, and artisanal (handmade) fishing gears, mostly beach seines, gillnets and trammel nets, traps and hand lines. In the Island estuaries the most common gear was the fishweirs, an ancient technology used since aboriginal and Spanish colonial times that endured well into the twentieth century. Fishweirs caught a number of important commercial species, large predators (snappers and groupers) that moved into the shallow estuaries waters to feed, herbivores and

⁴⁸Marrero, 165. Reforested lands are calculated since 1918, with an emphasis in the 1920's due to the Clarke McNeary funds for reforestation, and the major effort from 1933 to 1942 due to the CCC and the PRRA efforts.

⁴⁹Frank H. Wadsworth, “The development of a Maria plantation on a poor site,” *Caribbean Forester* 5, No. 4, (July 1944): pages 207-211.

⁵⁰It was the most successful plantation of that species tree in the Island. The CCC added plantation acreage to the earlier Forest Service efforts.

⁵¹ José Marrero, *Op. Cit* pages 183-184

⁵² *Op. Cit.* page 184. The total amount of land forested by the CCC is difficult to assess due to the disparity in the numbers reported for each fiscal year. We estimate the amount in excess of 3,000 *cuerdas*. The *Informe del Comisionado de Agricultura y Comercio, Ejercicio 1936-37* (page 73) reports 2,000 *cuerdas* (in mahogany) and the year before 2,297. If we add the acres reported in 1936-37, the total amount in reforestation could exceed the total amount of acreage for the forest at that time. More land was purchased in the latter years of the program, but the reforestation effort was dramatically diminished, according to the reports. Most of the work in those years was devoted to maintenance, keeping the boundaries (fences and palisades), road and trail maintenance, and adding to the recreational areas.

⁵³ Valdés Pizzini et al, 2011, pages 218-222.

⁵⁴ Norman Jarvis, *The Fisheries of Porto Rico*. Investigation Report Number 13. Washington D.C., Department of Commerce, Bureau of Fisheries Publication, 1932), page 42.

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omnivores (e.g. mullets) and predators of brackish waters, such as tarpon and snook. Fishing production was “appropriate” for the existing technology but insufficient to play a major role in the sustenance of the local population. Compared to U.S. standards, it was rather low with a catch of nearly 3 million pounds, an amount that is, ironically, similar to the same amount of fish caught nowadays. Most of the population depended on saltfish imported from Canada, mostly from Newfoundland. *Bacalao*, or salted codfish, was the staple of the poor rural workers in the coffee plantations and in the tobacco and sugar cane fields. Coastal settlers had the supply of fresh fish caught by fishers (most of whom where sugar cane workers) or by fishweir operators who doubled as field stewards at the sugar cane fields.

Jarvis did not pay much attention to freshwater fisheries, except for a few lines describing the rivers and some of the species caught. Many of his observations dwelled on the critical role of fishweirs and the competing among fishermen, competition that resulted in the harmful use of dynamite to kill the run of school of fishers in the river. Norman Jarvis also noted that the Island lacked—unlike the United States—an organized recreational and sportfishing sector. Recreational angling was an important outdoor activity, and president Herbert Hoover was a strong advocate of this leisure activity, and as such, became more active in these endeavors after he left the presidency in 1933.

The following quotation summarizes Hoover’s philosophy of angling, and its spiritual value:
Fishing is the chance to wash one’s soul with pure air, with the rush of the brook, or the shimmer of the sun on blue water. It brings meekness and inspiration, from the decency of nature, charity towards tackle makers, patience toward the fish, mockery of profits and egos, a quieting of hate, a rejoicing that you do not have to decide a darned thing until next week. And it is discipline in the quality of men—for all men are equal before fish. President Herbert Hoover.⁵⁵

Angling has a special place in the American imaginary, and Hoover and his wife became promoters of the virtues of fishing for the common man, and a way of evoking a distant past, perhaps, the joy of Paradise, the Garden of Eden. Fishing was—in that context—a perfect leisure activity to enjoy in the great American outdoors, including the National Parks and the National Forests, both rebuilt (reforested) under the Civilian Conservation Corps, and FDR’s administration in the 1930’s.⁵⁶

A year after the inception of the CCC program, and the development of the Puerto Rico Emergency Reconstruction Act (PRERA), the Government of Puerto Rico commissioned a study of the potential of freshwater fisheries. Dr. Samuel F. Hildebrandt, an ichthyologist from the Washington Fisheries Bureau visited the Island to assess the potential for aquaculture activities, and the growth of exotic species (Sacarello 1945). Hildebrandt had a low-key career, but knew tropical fisheries well, based on his studies in Panama for many years, prior to his visit to Puerto Rico.⁵⁷ His fieldwork in Puerto Rico, aimed at the analysis for the potential of growing freshwater species, resulted in the publication of “An Annotated List of Fishes of the Fresh Waters of Puerto Rico”, published in *Copeia* in 1935.⁵⁸

Hildebrandt had the assistance of Luis C. Bonnet who became a few years later the head of the local fisheries bureau and a key figure in the development of the sector in those years. He also was assisted by William Barbour who was the chief forester and the architect of the implementation of the CCC program in the Island’s forests. Barbour was

⁵⁵ Quoted in the preface of the book Fishing Off-Puerto Rico, by Esteban Bird (1960), the first book on the recreational fisheries of the Island.

⁵⁶ Information on the introduction of rainbow trout in Yosemite National Park:
http://www.yosemite.ca.us/library/fishes/rainbow_trout.html, consulted on May 4, 2015.

⁵⁷ A chronology of the life and works of Samuel F. Hildebrandt is provided at the following website:
<http://people.wku.edu/charles.smith/chronob/HILD1883.htm>, consulted on May 5, 2015.

⁵⁸ Samuel F. Hildebrandt, 1935, “An Annotated List of Fishes of the Fresh Waters of Puerto Rico”. *Copeia*, 1935 (2): 49-56.

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also interested in the introduction of game fish from the continental USA, to enhance the value of the recreational experience at El Yunque (The Luquillo National Forest). Barbour played a critical role in the introduction and hatching of rainbow trout (*Oncorhynchus mykiss*, then known as *Salmo irideus*) in 1934. Rainbow trout was selected for its game characteristics, and also because it was a fish that could survive in the low temperatures of the highlands. Hildebrandt noted that in the Island “the streams, above an elevation of 1500 to 200 feet, are uninhabited by fish, though shrimp are numerous and crabs are also present”.⁵⁹

It is important to note that the first recorded scientific expedition into the Puerto Rican waters, with scientists from the United States (The Fish Hawk Expedition), led by Evermann and Marsh, concluded that the streams in the upper altitudes could support—with the available nutrients and food—some introduced species, such as the small mouth black bass (*Micropterus dolomieu*), a popular game fish that is reproduced, hatched and stocked in rivers, streams and reservoirs of the United States, for the angling experience of visitors. Evermann pointed out that the temperature in those waters (69° Fahrenheit) was probably prone to sustain the introduction of the rainbow trout, as it was done in a number of small streams in California, similar in temperature to El Yunque.⁶⁰ In summary, the experiment of “planting” those two species was “worth trying.”

The process of introduction of exotic species probably started in 1914 with two freshwater fishes from the continental USA (*Lepomis incisor*—blue gill sunfish—and *Ameiurus melas melas*—the bullhead catfish) in the Carite Reservoir, and in 1924 with the introduction of *Gambusia holbrooki* (eastern mosquitofish) for mosquito control.⁶¹ However, the most serious and concerted effort for the introduction of game species started with the CCC efforts at the Luquillo National Forest, and the development and construction of a hatchery in the outskirts of town, nearby the Maricao Insular Forest. Hildebrandt, jointly with Bonnet, Barbour and others collected the needed data (included the history of introduced species, and availability of food in those habitats) to support a concerted effort to populate a number of streams and reservoirs with Bluegill Sunfish and Catfish, and in the cooler areas of the Island (with temperatures between 65° and 67°) with Rainbow Trout.

The CCC and the PRRA reforested the landscape, protected the soils and built the recreational facilities for the leisure of visitors. It also provided education, training and capacity building activities to the participants. These programs—that worked in tandem—also required the training of scientists and technicians in those endeavors related to conservation and the provision of infrastructure and services. The plan to seed the streams with exotic species required the training of the local scientists. The local government brought ichthyologist J. Adger Smyth to replace Bonnet for two years while the latter worked on his Master of Science degree at Cornell University. Federal funding—through the CCC program—was invested in an “emergency hatchery” at El Yunque, to raise Rainbow Trout in an elevation of 1,500 feet.

The Forest Service decided to build, with CCC funding, a large hatchery operation in Maricao, that required a considerable effort, due to the number of interconnected structures and the modification of the waterways to provide the installation with fresh water for the operation. The hatchery was finished in 1938. [This report contains a description of the three large circular containers, an incubator shack, a house for the manager and watchman, ponds for raising the fish, twenty-five fish batteries (small pools), a warehouse and channels built under the CCC, as well as those added throughout the years. During the last year of the CCC, the program built four ponds for raising daphnia (a planktonic crustacean used

⁵⁹ Hildebrandt, p. 50.

⁶⁰ B. W. Evermann and M. C. Marsh. 1900, The Fishes of Porto Rico. Investigations of the Aquatic Resources and Fisheries of Porto Rico by the United States Fish Commission Streamer FISHHAWK. Bull. U.S. Fish Comm. 1:49-350.

⁶¹ *Op. Cit.* pages 11-15.

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for feed), a dam and a bridge.⁶² The hatchery is still in operation and provides fingerlings to stock the reservoirs and streams managed by the DNER.⁶³

The Washington Fisheries Bureau—where Hildebrandt was appointed—provided 100 to 200 thousand eggs per year, taking all the technical provisions for their survival during the trip. Water temperature at the Maricao hatchery was measured at a range of 64° and 70°, suitable for the survival of Rainbow Trout. This project was part of William Barbour's grand plan turn the Luquillo National Forest into an important component of the tourism strategy of the government of Puerto Rico, to attract more USA visitors into the Island. One of the steps he took was to change the name of the forest to the Caribbean National Forest, providing it with a more regional and cosmopolitan name, eliminating the more local (and indigenous) name of the mountain range: Luquillo.⁶⁴

The original plan and objective of the Maricao Hatchery did not follow through, as the operators were never able to reproduce Rainbow Trout, as the fish never adapted to the local conditions. In 1938 the project was reported as having difficulties with the high mortality of the fingerlings. However, bluegill and catfish were adapting quite well to the local conditions, and the stocking of fish in reservoirs was underway.⁶⁵ Félix Iñigo Agostini, a biologist and officer of the Fisheries Bureau (who oversaw the elimination of the fishweirs) documented the failed attempt to reproduce the fish in Puerto Rico.⁶⁶ He was also trained to work at the hatchery in the late 1930's.⁶⁷ However, the Maricao Hatchery became an important installation and base for the development of the recreational and subsistence fisheries in the years to come and, as stated before, it continues to be the source of fingerlings to stock the streams and reservoirs of Puerto Rico at the present time. The fisheries program started to work with species adapted to warm waters (bluegill and catfishes). Local officials went to Auburn University to be trained in hatchery techniques and the management of the largemouth bass (*lobina*, a popular fish for anglers).⁶⁸ These efforts led to the programs for stocking the reservoirs with game fish (peacock bass, *tucunare*) and for development of subsistence ponds stocked with tilapia and other species.⁶⁹

One may argue that the CCC hatchery project led to a more serious government response and attention to the local fisheries. The turning point was when Bonnet was appointed chief of the Bureau of Fisheries and Pisciculture. The reports of the Commissioner of Agriculture and Commerce started to have a section on that topic and effort, after 1938. Also, the Bureau aggressively pursued alternatives to the predicament of low productivity of the local fisheries, and the dependence of the Puerto Rican consumers on codfish from Newfoundland.

⁶² Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1939-40, 32.

⁶³ *"Este vivero se construyó por el Servicio Forestal con fondos del C.C.C. Es la creencia del que suscribe [Luis C. Bonnet, Jefe de División de Ornitología y Piscicultura] que ésta es la primera construcción moderna de su clase que se verifica al sur de los Estados Unidos. El vivero cubre un área aproximada de dos cuerdas y consiste de una caseta incubadora con ocho canoas; tres estanques circulares; una piscina para el desove; dos estanques de crianza; una batería dividida en veinticuatro pequeños estanques; dos charcos de crianza para peces de agua cálida; un almacén y una casa para el celador."* Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1937-38, 58.

⁶⁴ Valdés Pizzini et. al. 2011, page 205.

⁶⁵ AGPR, Fondo Oficina del Gobernador, Tarea 96-20, Correspondencia General, Caja 281. Luis Bonnet, Report on the Introduction of Trout Eggs. January 21, 1939.

⁶⁶ Félix Iñigo-Agostini, "Desarrollo pesquero en Puerto Rico," Revista de Agricultura de Puerto Rico, 56(1), (1973):83-108.

⁶⁷ Interview with Félix Iñigo Agostini, January 25, 1989. Manuel Valdés Pizzini, interviewer. Transcript, Archivo del Centro Interdisciplinario de Estudios del Litoral (CIEL), Universidad de Puerto Rico en Mayagüez.

⁶⁸ Douglas Zehr, "The rhythms of bass," The San Juan Star, Sunday, February 12, 1995, Venue, pages 3-6.

⁶⁹ Interview with Iñigo-Agostini. January 25, 1989. Manuel Valdés Pizzini, interviewer. Transcript, Archivo del Centro Interdisciplinario de Estudios del Litoral (CIEL), Universidad de Puerto Rico en Mayagüez.

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In sum, the seminal work of the CCC and the PRRA in building and operating a fish hatchery in Maricao served its general purpose of providing game fish for the local anglers, and to support the recreational fisheries at the key protected areas: forests and reservoirs. It failed, however, in its key objective (as designed by Barbour and Hildebrandt) of reproducing, raising and stocking the streams with trout, one of the most preferred game fishes in North America and Europe; fish to be used as bait for a new class of visitors and tourists into the island. The lush tropical surroundings and the cool temperatures (enhanced architectonically by stone houses and structures with chimneys to warm in the “cold” nights) were the essential scenery for the trout fishing experience, with the elaborated set of gears and apparel that characterize this form of angling: rods, nets, creels, waders, boots, hats, vests, lures and baits. That image—foreign to the local scene—was never to be materialized for a simple technical (and biological) reason.

Maricao State Forest as a Recreational Area

Somehow, one is tempted to think that, despite the magnitude, foresters and managers visualized the Maricao State Forest as a doppelganger for El Yunque. An impressive feature in the landscape, the Caín Mountain Range (La Sierra de Caín, between Alto del Descanso and the Tetas de Cerro Gordo) can be seen from many parts of the coastal plains of the southwest. The forest has virgin vegetation at the top ridges, but the piedmont and lower areas were denuded. The birth of rivers and creeks at the top provided the landscape with water that could be used for recreation, using the water, as it was done in La Mina Recreational area at El Yunque.⁷⁰ The spectacular views of the coastal plains from many areas of the mountain ridge where Road 120 was being built, was a major asset of the forest. Foresters and managers—as shown in the pages of the reports—had great plans for the forest: an Arboretum, a Botanical Garden, and a Vacation Center. The arboretum and the botanical garden were built in Río Piedras, and the vacation center was built afterwards. However, large amount of funds and effort, in man-days, were invested in the forest, with a large portion aimed at improving the recreational infrastructure. In 1934 the CCC worked in the construction of a 34 feet observation tower (most likely in wooden poles), two cabins, a pool (finishing) and a hard surface road traversing the forest and a network of trails in all directions, for a total of 13 miles of road and 2 miles of trails.⁷¹

The Maricao Observation Tower

One of the most outstanding architectural features of the work of the CCC at the Maricao State Forest is the Observation Tower. It is located in Road 120 (built by the CCC), between the main recreational area (where the DNER has its main installations) and Camp Santana. The Tower was built on a knoll, with a base serving as a picnic shelter and a picnic area, and a stairway leading to the top. The tower was constructed with stone and masonry, similar to other CCC structures in Puerto Rico (the Maricao and El Yunque’s stone houses, for example), and an observation point at the top, emulating medieval watchtowers, with a simulated battlement with merlons. It is different from the towers at El Yunque, but in some ways similar to the Spanish structure at the Guánica State Forest, reconstructed by the CCC (Fuerte Caprón). The tower provides visual access to the west coast of Puerto Rico. One of the architectural traits of the CCC was the construction of incidents and areas that provided an enhanced visual access of the forests and the landscape: a view from afar. Nature as spectacle, a visual experience feeding the visitor’s gaze is one of the most important traits of resource management is areas used for recreation.

Most of the documentation for the CCC structures is almost non-existent, and therefore the precise date of construction, and blueprints are not available. We can infer that the tower was originally built using local timber, similar

⁷⁰ Mark R. Barnes, 2012, “El Nuevo Trato en el Bosque Nacional de El Yunque: Un legado para Puerto Rico,” *Patrimonio: Revista Oficial de la Oficina Estatal de Conservación Histórica de Puerto Rico* 4 (2012): 32-39.

⁷¹ *Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1934-35*, 42.

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to the wooden observation towers used in many forests and protected areas over the world. The original tower (34 feet) was built to take advantage of the most splendid and beautiful views in the southwestern portion of the Island.⁷² During the first years of the CCC, the Forest Service built the towers with wood (for example, at Mt. Britton), and at the latter part of the program, replaced them with more permanent stone structures. That decision made sense in order to fit architecturally in the context of the rough landscape forest design formulated by Forest Supervisor William Barbour, and the rustic stone buildings and waterworks (the pools at La Mina, at El Yunque, and the Maricao recreational area).⁷³

William Barbour designed the recreational areas at El Yunque and at Doña Juana, in Toro Negro. A cursory look at the report from La Mina shows the landscape and architectural ideas behind the project.⁷⁴ In sum, the area was dominated by the road, and the access of the public to a recreational area that simulated a primitive and rough natural environment, with dense vegetation (formed by the reforested background and stands), picnic shelters, picnic areas (with tables), fireplaces, bathing facilities (Baño de Oro and Baño Grande), trails, vista points and observation towers.⁷⁵ Barbour described the observation towers built in 1936 in the following manner: "On several peaks accessible by trails, small observation towers have been constructed. The towers are built of native poles and are just high enough to bring one above the tops of the surrounding dwarf vegetation. Each tower has at its base a picnic shelter for use in inclement weather."⁷⁶ An illustrative or pictorial map of La Mina Recreational Area shows the detail of the towers located at the peaks, built in wood.⁷⁷ This lead us to believe that the rough and impressive observation towers we see nowadays are a second generation of towers built, most likely, at the end of the CCC program. Indeed, one of the CCC recruits from Maricao confirmed that the tower was originally built in wood, and later (in 1940) in stone.⁷⁸ This information coincides with the data provided in the 1939-1940 *Report of the Commissioner* in which the third most costly item in the budget (almost 13%) was for the construction on an observation tower.⁷⁹

It appears that the Insular Forest Service designed the recreational areas using as a template the ideas of the English garden: a domesticated and embellished nature still maintaining its roughness and primeval essence.⁸⁰ According to Arleen Pabón Dávila, the structures and installations were the architectural "incidents" built to transform the forests

⁷² "Hemos construido en la cumbre de una montaña una torre de observación de 34 pies de alto, con una caseta de refugio, desde la cual se puede observar uno de los paisajes más espléndidos y hermosos de la parte oeste de la isla. Tenemos en mente construir casetas de jiras con mesas, depósitos para desperdicios y edificios para el servicio sanitario. Hemos seleccionado un sitio para la construcción de casetas de verano, habiéndose arrendado ya varios solares." *Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1934-35*, 95.

⁷³ A report from 1937 stated that recreational areas, similar to the one at La Mina, were being built in other forests, such as in Maricao. George A. Gerhart, "El Cuerpo Civil de Conservación en Puerto Rico," *Revista de Agricultura de Puerto Rico*, 1937, 28: 292-99.

⁷⁴ William Barbour, 1936 (circa), "La Mina Recreational Area: Accomplishments and Proposed Recreational Developments" Document provided by the USDA Forest Service, Caribbean National Forest. A similar report was reviewed for the Doña Juana Recreational Area. No report was found for Maricao.

⁷⁵ La Mina also had a fish rearing pool for rainbow trout that now we can attest, was going to be fed by the Maricao Hatchery.

⁷⁶ Ibid., 11.

⁷⁷ Valdés Pizzini et al, 287.

⁷⁸ "Entonces, había que poner dinamita y en una cantera que había acá. Esa torre que dieron allá arriba, yo trabajé ahí. Hay una casa de madera primero se rosada por un lado, toda de madera la casa hecha de cobijada. Después, la quitaron y la pusieron de piedra que está ahí, esta vez cobijada... la torre que se ve arriba ahí trabajé yo. En 1940." Interview with Rafael Rodríguez ("Rafita"). Lisette Fas Quiñones, interviewer. Transcripts of an interview, February 6, 2015. Maricao Forest Documentary (2015). Document kept at Cafiesencia Inc.

⁷⁹ *Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1939-40*, 32.

⁸⁰ Arleen Pabón Charneco, *La arquitectura patrimonial puertorriqueña y sus estilos* (San Juan: Oficina Estatal de Conservación Histórica, 2010). See also, Valdés Pizzini et al, 2011, 218-224.

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into artifacts for recreational and leisure enjoyment.⁸¹ Although the CCC made possible the landscape transformation of the forests, the recreational transformation of El Yunque started prior to the CCC efforts in 1933. However, the CCC and the PRRA increased the government effort in developing recreational opportunities for the public. Until recently, most people visiting the forests believe that they are in a primeval forest using ancient trails and visiting stone structures built centuries ago, without realizing that they were enjoying the legacy of the New Deal, and the CCC.

The Legacy of the CCC in Maricao

The Civilian Conservation Corp in Maricao—as for the rest of the Island—resulted in an economic blessing that improved the landscape, as well as the lives of the local population. Jointly with the PRRA, the CCC provided jobs for the rural workers, as well as supervisory positions to the *hacienda* owners and stewards who also suffered the impact of the Depression, the collapse of the coffee industry and the devastation caused by hurricanes. We speculate that life in the CCC camps of Maricao (Buena Vista and Santana) probably was a continuation of a similar pattern of seasonal labor in the highlands during the coffee harvest, except that the CCC offered a job for a longer period of time.

Although the CCC recruits remember the hard working conditions in the fields and in the camps, they also recognized that the conditions were better than those in the sugar cane or coffee fields, with feeble or non-existing property ties to the land. The CCC provided them with a steady job over a long period of time, an opportunity to learn a trade or a skill (such as driving), or to learn how to read and write. The program paid them in cash, not in the customary promissory notes (*vales*) to be redeemed at the *tienda de raya*. This apparently minor detail was the reason why many rural workers went into strike in the 1930's. The CCC also provided them with shelter and three meals a day (a new standard for the rural poor), in times of hunger and despair. The CCC was dubbed as: *casa* (housing), cash and *comida* (food) by the recruits in Puerto Rico. Arguably, the CCC brought—despite the common fights and bouts at the Camps—peaceful labor conditions to an environment teeming with political turmoil and violence.

In 1938 Blanton Winship, Governor of Puerto Rico in his annual report discussed the benefits to the recruits in the Civilian Conservation Corps in Puerto Rico,

In each camp men were provided with balanced rations approved by the Home Economics Department of the University Puerto Rico; steel cots, mattresses, clean sheets and blankets; complete medical care, including monthly examinations; and educational, vocational and athletic programs under competent instructors. Each man, in addition to a thorough physical examination, received the Wasserman test, typhoid inoculations [sic], smallpox vaccinations and was fingerprinted for the civilian files of the Department of Justice. In the educational field an average of 516 men attended classes 4 times each week. Vocational classes included carpentry, gardening, masonry, automobile mechanics, blacksmithing, shoe repair, cooking and the use of road machinery. Special classes for illiterates taught 282 grown men to read and write. A safety program, constantly driven home, reduced the lost time accidents to an average of .98 per 10,000 man-days worked, a rate well below the average for the camps in the States⁸².

⁸¹ Arleen Pabón Charneco, "Taking the *Fiesta* to the Forest: The Civilian Conservation Corps and Puerto Rico Interpretative Analysis of Guánica's Camp Borinquen and Fort Capron". Report prepared for The UMA Group presented to the Puerto Rico's State Historic Preservation Office, 1999.

⁸² Thirty-eight annual report of the Governor of Puerto Rico, Honorable Blanton Winship 1938 (San Juan: Bureau of Supplies, Printing and Transport, 1938), 49.

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The CCC program, jointly with the PRRA, reforested large tracts of land in Maricao, built recreational structures and facilities (the observation tower and the amenities surrounding the pool area), and developed a unique project: the fish hatchery. Trails were open, old roads refurbished and maintained and the long road to the town of Sabana Grande (State Road 120) started with CCC labor. By day one of the CCC, the Maricao State Forest had 5,500 *cuerdas*, and by the end, through the land acquisition program, the forest had 9,577.95 *cuerdas*. In order to gauge the magnitude of that effort, the reader needs to consider that the forest only increased by 1,225 *cuerdas* in the last seventy-three years.

After 1940 the CCC program coincided, by design and the confluence of many political factors, with the onset of WWII. In Maricao the CCC program also participated in a number of defense's related works. Although the range of the CCC defense related activities in the Island were many and varied (camouflage work, transportation of supplies emergency constructions and repairs, and the preparation of stocks of lumber, among others), at Maricao most of the activities of the CCC concentrated in the preparation of the Santana Air Warning Station, similar to the one being built at El Yunque Peak at the same time. The information provided indicates that CCC recruits cleared the area near the Santana Camp, set the fences, built masonry steps, camouflaged planting of the surrounding area, and transported workers and materials.⁸³

In sum, the CCC provided a much needed economic opportunity to the population of the highlands that helped mitigate the adverse impact of the Depression, the collapse of the coffee industry and the devastation of hurricanes. The observation tower and the fish hatchery are an architectural testimony of deeds of the New Deal, aimed at the salvation of the rural areas, the denuded forests and the hungry bodies and souls of the rural folk. Today, Puerto Ricans and visitors from other countries enjoy access to the forests, and are able to spend leisure time at the beaches (in the case of Guánica), picnic areas and hiking trails. Maricao is an example of the CCC legacy in the Island.

⁸³ Correspondence, February 11, 1941, between L. B. Wilby, Captain Corps of Engineers, Executive Assistant at the War Department, US Engineer Office, Puerto Rico District, to E. W. Hadley, General Superintendent of Forests, U.S. Forest Service. NARA Box 635, Porto Rico.

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F. Associated Property Types

(Provide description, significance, and registration requirements.)

Transportation network of roads

Property Type Description

The Maricao State Forest's has three asphalted roads with a significant length totaling 11.5 kilometers (7.4 miles)⁸⁴.

- One is a significant CCC-built portion of State Route 120, an access route from Maricao town to the main part of the reserve, with a total of 9 km or 5.6 miles (within reserve limits, 6.7 km or 4.2 miles) that runs along the *Tetas de Cerro Gordo* on the Central Mountain Range. This road is on the highest point of the reserve (2,897 feet or 883 meters above sea level) and crosses the central and eastern sections of the reserve. This road, as a panoramic route, serves as access to the town of Maricao, to adjacent resources (*Monte del Estado* Vacation Center, the Observation Tower or *Torre de Piedra*, Police Radio Tower, WORA Radio Tower; among others), and as connector to other roads (SR 363, Road leading to Buena Vista Camp, and the SR 105) within the reserve.
- The SR 363, with a length in its significant portion of 0.8 km (0.5 miles) was the road built by the CCC to the Santana Camp. It was subsequently extended (in the 1960s) to the south in a total additional distance of 5 km within the Reserve's limits, eventually continuing to State Route 2, the Mayagüez to Ponce road. The extended portion of this road connects with the Guamá trail.
- Also, a road (SR 401) was built by the CCC to the southwest of the urban core of Maricao to provide access to the Maricao Fish Hatchery. It runs parallel to the river for a length of 1.7 km or 1.1 miles, mostly through private lands.

These roads are almost entirely constructed by cutting and filling through the existing slopes on the higher portions of the mountains. Besides the road's geometry, there exist several retaining walls. Significant in their scale and technique are those located in present-day kilometer posts 5.9, 7.0, 9.9 and 14.9 of SR120. These have drainage systems integrated with them. In the case of bridges on the public roads, the only one over the Maricao River on SR 401 was destroyed and substituted for a modern concrete-beam bridge. There are two other concrete slab bridges over the Maricao River within the Fish Hatchery (but not on the public road), which retain their original features.

The old Mayagüez-Las Vegas-Maricao road (now SR 105) was built before 1920 by the Puerto Rico Department of the Interior to link the town of Maricao to the coast. It passes through the western parts of the reserve.

Property Type Significance

The work on the transportation network of roads was very important to make the CCC program viable. The movement of men, equipment and materials required for the reforestation projects and the development of recreational areas within the forest reserve required good vehicle roads. The reserve's steep terrain made it necessary the construction of permanent and durable roads. Secondary roads and horse trails built prior to 1933 provided difficult access to the reserve's areas and could not support the traffic requirements for the CCC projects. In the case of the SR 410 there were no roads prior to 1933 that would provide access to the area where the Fish Hatchery was constructed in 1938. The area of significance for the roads would be transportation and conservation for it opened the reserve to the public and because it was essential for

⁸⁴ Length data is given from the Commissioner of Agriculture and Labor Annual Reports, as quoted in SHC, nomination, pp. 6/26 – 7/26 of this form.

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the reforestation efforts. The significance of the roads rest primarily with Criterion A in association with the events that have made a significant contribution to the broad patterns of our history. The level of significance would be at State because it was part of the CCC program in the Forest Reserves in Puerto Rico.

Property Type Registration Requirements

The road considered for inclusion must retain integrity of location, design, setting, materials, workmanship, feeling and association. For a road to be considered it must be close to the original alignment as designed and built by the CCC. As a resource within a Forest Reserve it needs to retain as close as possible those natural features of its setting. Replacement of materials in the roads due to maintenance would not exclude the property from being listed.

After field review and verification of maps and charts, it has been determined that there have been no alterations to the original alignments of these roads. On the segments crossing the Reserve, there have been few modern encroachments that affect the visual perception of the landscape that it crosses: mostly modern safety barriers and signage, only lightly intrusive. The only significant visual intrusion is the cluster of communication antennas located about kilometer mark 13.8.

Recreational facilities and Associated Resources

Property Type Description

As an important aspect of the CCC program was the development of recreational facilities in the forest reserves. The recreational facilities built by the CCC in the Maricao State Forest included an observation tower, a swimming pool, bathhouses, excursion booths and four hiking trails. In the third year of the program the Insular Forest Service prepared a recreational plan for the reserve to systematically build recreational facilities in the Maricao State Forest.

The first recreational facilities begun by the CCC were:

- A swimming pool was built in concrete on the access road to Buena Vista camp, and just outside and to the north of the camp's limits. This is in Barrio Guamá, San Germán, south of the state road 120. This pool was irregularly shaped, some 60 feet in its greatest dimension and it roughly followed the contours of the land, damming the water that came from a nearby natural spring. Two bathhouses were built adjacent to it. The pool is presently filled up with earth and used as a parking lot. Only some parts of the structure are visible, which makes additional field data gathering difficult. No buildings with the characteristics of bathhouses are visible nearby, which means that these were demolished in the past.
- The first version of the observation tower, a 34-foot-high structure made out of wooden posts and beams. It was located in the site of the present one, built in concrete.
- Excursion booths adjacent to the swimming pool on the access road to Buena Vista camp. There is no further detail on the characteristics of these booths, but it is evident that the existing picnic sheds are modern, built with concrete floors, simple wooden benches and corrugated-metal roofs supported on a wooden roof frame and lally columns.

Four hiking trails were developed by the CCC from 1933-1942 for the Maricao State Forest. According to the reports, these were the Alto del Descanso, Descanso or Bajo del Descanso (Vereda del Descanso in the topographic maps),

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Helechal and Hoconuco trails⁸⁵. The Civilian Conservation Corps adapted existing trails for hiking. These are located in three northern wards (Rosario Alto, Rosario Peñon and Hoconuco Alto) of the San Germán Municipality and the Montoso ward of Maricao. The trails have dirt pathways without special surfacing; all of them were originally bridle paths not usable by wheeled vehicles. These are located west of Camp Buena Vista and extend to the western part of the Forest.

Helechal Trail, particularly, is located about 6 kilometers west of the Observation Tower in Barrio Rosario Alto while the two Descanso trails go west from the elevation known as Alto del Descanso and diverge reaching two different points close to State Route 119. The Helechal Trail connects the western ends of both.

Only the Hoconuco Trail beyond Camp Santana was later paved and converted in a motor road (State Road 362) in the 1960s, for a length of some 5 km within Reserve limits. It is no longer a hiking trail.

There are other trails dedicated to service and maintenance, which require further investigation though they also seem to be adaptations of previously existing paths, like the four aforementioned cases.

The trails are pathways opened and maintained by the personnel of the Puerto Rico Department of Natural and Environmental Resources (*Departamento de Recursos Naturales y Ambientales*).

Property Type Significance

The opening of trails by the CCC was important in the effort to change the perception of the populace of the forest reserves as closed off government enclaves. They were a vital part in the accessibility and recreational value of the Forest. The trails are significant locally in the area of entertainment/recreation under Criterion A.

The built structures such as the Observation Tower in its two iterations – above all the present one with picnic sheds integrated to the building, the swimming pool and bathhouses, and the excursion booths near Buena Vista camp, are all important because they encouraged the use and enjoyment of the amenities of the Forest, and they provided alternatives to recreation to make the experience of visiting more diversified. This meant that visitors could enjoy greater comforts and more varied ways of using the Forest and its resources, not merely “roughing it” in trail hiking. These structures are significant locally, like the trails, in the area of entertainment/recreation under Criterion A.

All these elements are also significant at the State level as they, along with contemporaneous installations at El Yunque and elsewhere, served as a model for recreational amenities that have been installed in other forest reserves.

Property Type Registration Requirements

The trails opened from 1933-1942, must follow the original alignment made by the Civilian Conservation Corps. Considering that they are basically pathways opened into the reserve, they can be eligible for inclusion if they retain integrity of location, setting, materials, feeling and association. The trails must retain those natural features of the historic setting. Improvements in this case should be minimal and more related with conservation and upkeep, more so than changes to their visual and material characteristics.

⁸⁵ The existence of the trails was verified by revision with the USGS topographic maps, Maricao Quadrangle, 1960 edition as photo revised 1972.

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CCC Work Camps

Property Type Description

Two two CCC camps, Buena Vista and Santana, were constructed south of the SR 120 in the Maricao State Forest. The Buena Vista Camp, built over 725 meters above sea level, is located in the Hoconuco Alto and Caín Alto Wards of San Germán Municipality. The camps were an important component of the program so it was built in the first year of the CCC program. Each camp had various buildings including, as per the Commissioner on Agriculture's reports⁸⁶:

- One large wooden dormitory that could lodge 200 men.
- Kitchen
- Showers and latrines
- Office (a single story wood frame building, similar to a house and adaptable for lodging of camp supervisors)

The camps were abandoned after the CCC program was closed in 1942. Cartographic documentation perused for this project shows, however, a larger quantity of structures in the Buena Vista area, which indicates that several other buildings were apparently built over the years. A total of nine marks denoting buildings can be seen on the Buena Vista emplacement in the 1947 topographic map, but some of the marks could be the picnic pavilions or the bathhouses of the pool. Only two building marks are seen in the Santana camp, which implies it was smaller, and by that time it had only the basic buildings as listed above.

No concrete information has been obtained about the demolition of the original camp buildings and structures, but the extant buildings in the emplacement date from the 1960s, so that the original buildings were most likely demolished before the beginning of that decade.

Information on the specific buildings extant by 1942 in each camp has not been precisely determined because of the difficulty in obtaining graphic records, but it is assumed that these buildings remained during the period of use as work camps. None of the structures survive, being replaced in later years with reinforced-concrete buildings with flat roofs that were used for maintenance and upkeep of the forest. Fragments of floors, walls, footings, steps and remnants of the kitchen's concrete sinks are visible among the newer structures.

The site of Camp Buena Vista is now an administrative area for the Maricao State Forest, which includes a balconied building that houses both the Ranger Station and the office of the forest superintendent, one building for public restrooms, another reinforced concrete house within its own fenced-in lot, and two sheds used for storage. These buildings, as previously mentioned, are not historically significant, but relatively modern, all but the sheds are made out of reinforced concrete with flat roofs. However, they at least retain a scale appropriate for the context of the surrounding forest.

The so-called Casa de Piedra or Stone House was located to the east of Buena Vista camp. It is a one-story residence with a raised floor and a symmetrical, T-shaped layout, about 60 feet (18.3 m) wide and about 40 ft. (12.2 m) deep. It has a center front porch, living space in the middle and two bedrooms on either side with kitchen and bath installations located towards the rear. The house has stone walls bound with cement and a concrete floor, a working fireplace and indoor plumbing. It had a wooden cross-gable roof of which barely some vestiges exist. It is to all knowledge the only stone-

⁸⁶ See the Commissioner of Agriculture and Labor Annual Reports, as quoted in SHC, nomination, pp. 6/26 of this form.

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walled building within the camp. Its design follows the U.S. Forest Service's style handbook for forest structures using the so-called "Alpine" style⁸⁷. It is located at San Germán's Caín Alto ward.

Property Type Significance

The work camps were habitats designed for regimentation of the CCC volunteers' daily life while at their assigned duties. They were the built framework for specific forms of conduct and communal living. A manifest purpose of the camps was to reform the ways of their participants and instill in them specific values of discipline and a rigorous "work ethic". The "camp" model, with the isolation of the individual from "distractions" like family, friends and traditional modes of leisure, was conceived to reform men into diligent and, in a way, subservient workers whose categorization as such was the basis for their self-worth.

The Casa de Piedra, on the other hand, is significant because it embodies the then-current design philosophies for as isolated forest dwelling conceived for forest managers of a higher hierarchy. It evidences the use of the so-called "Alpine" style as a fitting and proper form for this kind of dwelling even in the natural context of a tropical mountain forest.

These properties are significant as institutional and residential (both individual and collective) installations at the State level under Criterion A.

Property Type Registration Requirements

The work camps, because of their severe alteration, are not eligible directly for inclusion as they have lost integrity. However, the remaining vestiges of Buena Vista camp, interspersed with more modern elements in its former emplacement, can and should be reinterpreted as vestiges. These will require a criterious process of selection and interpretation of these fragments, complemented with adequate explanatory texts and graphics. Because access to the Santana camp has been limited, no recommendations for that emplacement are presented at this time.

The Casa de Piedra shows, nevertheless, sufficient integrity of location, setting, materials, feeling and association to merit registration. Any work made to re-roof the structure or otherwise recondition it from its actual state, especially as usable interior space, must be realized with great care and following the Secretary of the Interior's Standards for the Treatment of Historic Properties, as amended.

Research/ Conservation/ Administration

Property Type Description

Of the installations dedicated to these functions, the most important of the extant ones is the Fish Hatchery, located south of the town of Maricao on the end of State Road 401. This is a district comprising several buildings and structures, most of them contributing to its significance and integrity. Another possible place known as *La Quinina* has been located, but further field research is required.

The Fish Hatchery

Most of the original portion of the Hatchery is located in a 65870 sq. ft. (6122 square meters, 1.51 acres) plot of land

⁸⁷ W. Ellis Groben, "The Use of Acceptable Building Plans", *Acceptable Plans [for] Forest Service Administrative Buildings*. Prepared by Division of Engineering, T.W. Norcross, Chief (n.l. [Washington], USFS, 1938, [illustrated typescript with Photostat images] (unnumbered page at beginning), [l. 2].

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adjacent to the Maricao River on the southern (right) bank, at a road distance of 1.7 kilometers (1.1 miles) southeast of the town, in the Maricao Afuera ward. It is organized so that fish breeding follows the flow of the river: the nursery with breeding trays is located at the west end of the grounds; this is where fish eggs are hatched, and from where the hatchlings were first held in three 20-foot (6.10 m) diameter circular tanks. From there the fish were put in a three-channel raceway tank to finally be sent to two holding tanks. All the mentioned tanks are built out of concrete. Other species were bred in a 24-compartment stepped battery type tank, also built of concrete and located on a higher portion of the premises to the south. The growing fish, grown to fingerling size, were held on three spawning ponds dug out inside the earth, sharing a common water supply. Finally, the 1943 USGS topographic map of the Maricao Quadrangle, which represents conditions in 1942, shows four ponds located on the north (left) bank of the river. These ponds could refer to the four ponds constructed for raising daphnia. These ponds, have been somewhat altered through the years by exchanging the clay used to cover the bottom and sides of the ponds to control the lost of water, with plastic liners. Kettles and valves were added as well as electrical pedestals on the kettles, and railing at each walkway. Still, we consider the ponds conserve enough integrity as to be part of the district.

On an elevation to the southeast of the property there is the house of the resident custodian, a rectangular, one-story, reinforced concrete house with parapet walls and a flat concrete roof.

The water supply comes from a dam built upstream during the major reconstruction of 1998-2000 according to Mr. Irving Villa, who worked as a biologist at the Hatchery from 1970 to 2010⁸⁸, and to a 2012 internal report of the Department of Natural and Environmental Resources of Puerto Rico called “Maricao Fish Hatchery Operations and Maintenance”⁸⁹. The water supply is then sent on underground tubes to the Hatchery, where it flows between the different tanks finally flowing into the ponds, and from there it is returned to the Maricao River. The different portions of the Hatchery are connected by means of concrete pathways and steps. There is a landscape treatment using ornamental plantings, trees, and the open channels through which water for the tanks and ponds flows through. This includes a small ornamental pond, which serves as a water distributor, and some channel segments that come from the upper part of the grounds are stepped or zigzagged so as to control water flow speed, besides their ornamental appearance.

Besides the laboratory (a replacement, and therefore, noncontributing building) and the caretaker's house, now used as the main office of the Hatchery, there are three other buildings, all noncontributing: two laboratories (one for quarantine, adjacent to the former house; the other one is for temperature and photo-period testing) and a restroom building. These were built or greatly altered in the 1998-2000 renovation. The bridge coming from the public road, crossing the Maricao River from the parking lot, has been also included as part of the District, likewise the segment of road that follows the river's south bank, passing between the spawning ponds.

Some elements adjacent to the part of the Hatchery designated as a district require further evaluation. The bridge that gives access to the four ponds north of the river seem to be significantly altered and modernized; it is difficult to assess its integrity nowadays. Therefore, for the time being it will be included as noncontributing resource of the district nomination. The same applies to the growth pond located immediately east of the District and on the same (southern, right) bank of the river. The warehouse structure next to the four north-bank ponds, as well as the retaining walls and berms on both banks of the river – which are a major intrusion inside the nominated district – are more recent, dating from the 2000-2002 major overhaul of the facilities. They do not contribute to the historic value of the District.

⁸⁸ Interview with Mr. Irving Villa, December 15, 2015, Lisette Fas Quiñones, interviewer. Transcript, Archivos Cafiesencia.

⁸⁹ Maria de Lourdes Olmeda. Maricao Fish Hatchery Operations and Maintenance Report. Department of Natural and Environmental Resources of Puerto Rico. 2012: p.1.

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Comparison has to be made with the other known fish hatchery in Puerto Rico, which was located in the La Mina section of the Caribbean National Forest (El Yunque) located in the municipality of Río Grande in the northeast of the island. Little information is known about the actual state of that property though 1930s descriptions are available. This was a more elemental, temporary facility, oriented to experimentation with one or two species at a time, and with a capacity noticeably smaller than Maricao's.

Interview with Félix Iñigo Agostini, January 25, 1989. Manuel Valdés Pizzini, interviewer. Transcript, Archivo del Centro Interdisciplinario de Estudios del Litoral (CIEL), Universidad de Puerto Rico en Mayagüez.

La Quinina

The parcel known as La Quinina is located in State Route 120 to the west of the main entry to the Maricao State Forest (former site of Buena Vista Camp). The visible remains are a deteriorated concrete floor and a chimney. According to information received, this may have been a research facility for experimenting with the cultivation of the cinchona (*Cinchona officinalis*) tree, whose bark is the source of the drug quinine. Some of the trees are visible in the vicinity, though much secondary forest growth has obscured them. Even after interviewing our sources, little additional information has been recovered about the characteristics or purpose of the structure(s) that stood in this area on the north side of the highway. Therefore, the information received to date has not been validated and no specific recommendations for eligibility are being proposed for this parcel which is by estimation less than one acre in size.

Dam and Water System for the Fish Hatchery

The Fish Hatchery gets its water supply for the tanks and ponds from the dam built during 1998-2000 located about one kilometer upriver, which dams the waters of the Maricao River into an underground tube that ends in the western end of the original (historically significant) portion of the Hatchery. The original dam constructed by the CCC was replaced recently by the new one according to Mr. Irving Villa.

Arboretum, Botanical Garden and Nursery

These installations, though mentioned in the Commissioner's Reports, have not been found. Reportedly the Arboretum and Botanical Garden were unfinished or unbuilt, at least on the Maricao State Forest site and built in Rio Piedras. The Nursery located at Buena Vista camp was eliminated after the abandonment of the same.

Biological Station and Administration Building, Biologist and Forest Ranger Residences

No buildings with this description have been found, at least under these names, in field research. These terms may be synonymous with other structures that were built, either extant (like the Casa de Piedra) or removed/demolished at an uncertain date.

Property Type Significance

Both the Fish Hatchery and La Quinina were constructed during the period of 1933-1942 by the CCC. The Hatchery construction started in 1938 and finished in 1942. The Hatchery was developed with the intent of conservation (fish hatchery), research to study the adaptation of species (and recreation). The construction of the Hatchery follows the trend of training the laborers in concrete work and introducing urban building construction techniques in the rural areas. The installations dedicated to research, conservation and administration that remain to this day are fundamentally those related to the Fish Hatchery, plus a possible vestige of an experiment with the cinchona tree and its medicinal byproduct, quinine.

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Therefore, the research done was mostly of a zoological nature, oriented to the adaptation of game fish which were to spawn a new type of recreational activity: fishing for pleasure and for having a communicant experience with nature. The supplying of fresh waterways with fish was not seen as a way to diversify the peasant diet, but rather as a prize for a sporting activity which would be indulged by those with the sufficient means. The effort was made to stuff rivers and lakes with North American native species that could withstand the cooler tropical highlands: rainbow trout, largemouth bass (lobina), bullhead catfish, and bluegill sunfish (chopa). Only the trout failed the adaptation process; the others have been widely diffused in reservoirs, broader rivers and freshwater ponds in Puerto Rico. Yet locally-fished and imported marine fishes, above all the codfishes, remained an essential part of the local diet.

The Fish Hatchery can be classified both in the Agriculture (which includes Fisheries) and Recreational areas of significance, at the State level. This includes the dam upriver on the Maricao River, which is essential for providing the water supply that makes this installation function to this day.

The "La Quinina" cannot be as yet classified as more evidence has to be obtained about the hypothesis that has been presented above.

Property Type Registration Requirements

The Historic Context for this Property type is CCC properties on the Puerto Rico Forest Reserves, specifically those on the Maricao State Forest. Both the fish Hatchery and La Quinina demonstrate period of significance (1933-1942); cultural association (CCC constructed) and geographic, built in a State Forest.

The Fish Hatchery complex, including the dam that guarantees its water supply, is being at present nominated for inclusion because of the large quantity of information available about its historic significance, and also because of its relatively high level of integrity, at least in the 1.5-acre portion that has been identified as part of the original Hatchery complex. There is considerable integrity of location, materials, feeling and association, even if the setting includes noncontributing (new or drastically altered) elements adjacent to the district. However, the original district is coherent and easily comprehensible.

The other as yet identified site, La Quinina, requires further research to determine its definite historic significance, however it shows a relatively low physical integrity of materials and little concrete information about its evolution as a site of possible scientific research.

The other sites mentioned as possible Research/Conservation/Administration facilities seem to be nonexistent or fully lacking in integrity according to our investigations, or the places may be synonymous with other installations in the Forest complex.

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G. Geographical Data

The geographical area encompasses the Maricao State Forest located in municipalities of San Germán, Sabana Grande and Maricao.

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H. Summary of Identification and Evaluation Methods

(Discuss the methods used in developing the multiple property listing)

The following list of known CCC properties from the Maricao State Forest in the Commonwealth of Puerto Rico was the result of a project (February-July 2015) to nominate the *Torre de Piedra* (Rock Tower) and *Vivero de Peces de Maricao* (Maricao Fish Hatchery) to the National Register of Historic Places. The project was conducted by Manuel Valdes Pizzini, Carlos Carrero Morales, Daniel Cuevas, Jorge Ortiz Colom and Lisette Fas-Quñones under the auspices of Puerto Rico State Historic Preservation Office and Caf   Cultura Puertorrique  a, Inc. The amendment to the MPS New Deal Era Construction in the Forest Reserves in Puerto Rico, 1933-1942 provides information on the Maricao State Forest and its CCC resources. Manuel Valdes Pizzini organized information for the amendment and two individual nominations. The property types and integrity requirements were modified from those that were prepared in the MPS New Deal Era Construction in the Forest Reserves in Puerto Rico.

Category	Property Name	Status
Transportation network of roads	Maricao-Sabana Grande Road (former No. 81, now No. 120)	Needs further evaluation
	SR 410 to Fish Hatchery	Needs further evaluation
	Maricao-Las Vegas-Mayag��ez (No. 105)	Needs further evaluation
	Indieria F��a Road (No. 366)	Needs further evaluation
	Las Mesas Road	Needs further evaluation
Recreation Facilities and Associated Resources	Torre de Piedra (Observation Tower)	National Register eligible
	Swimming pool	Needs further evaluation
	Bathhouse (for men)	Needs further evaluation
	Bathhouse (for women)	Needs further evaluation
	Excursion booths	Needs further evaluation
	Alto Descanso Trail	Needs further evaluation
	Descanso trail	Needs further evaluation
	Helechar trail	Needs further evaluation
CCC Work Camps	Hoconuco trail	Needs further evaluation
	Buena Vista	Needs further evaluation
	Casa de Piedra (Camp Buena Vista supervisor's residence)	Needs further evaluation
Research/ Conservation/ Administration	Santana	Needs further evaluation
	Biological Station and Administration Building	Need further evaluation
	Water system	Needs further evaluation
	Residence for biologist	Needs further evaluation
	Forest ranger residence	Needs further evaluation
	Botanical Garden	Needs further evaluation
	Camp Buena Vista Tree and plant nursery	Needs further evaluation
	Arboretum	Needs further evaluation
	Maricao Fish Hatchery	National Register eligible
	"La Quinina"	Needs further evaluation

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(List major written works and primary location of additional documentation: State Historic Preservation Office, other State agency, Federal agency, local government, university, or other, specifying repository.)

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Additional Documentation

(Figures, Maps, Appendices, and other materials. Please include a list of all included additional materials. Reduce file size to 300kb or less for each individual image.)



Figure 1: Hatchery ponds in 1940. Biblioteca Digital de la Universidad de Puerto Rico, Río Piedras. Agricultural Extension Service, University of Puerto Rico; Photo by Antonio Atilas, No. 4280, *El Mundo*.

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Figure 2: Pond and house of the watchman in the hatchery.
Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1939-40.



Figure 3: Battery for catfish. Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1937-38.

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Figure 4: Battery for catfish. March 20, 2015, Lisette Fas Quiñones, NW to SE



Figure 5: Pond for trout in 1940. Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1939-40

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Figure 6: Pond for trout (used for other species) June 4, 2014, Lisette Fas Quiñones, N to S



Figure 7: Original Entrance Marker to Hatchery. April 6, 2014. Lisette Fas Quiñones, NE to SW

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Figure 8: Instructors and Participants of the 1955 Tropical Forestry Short Course in front of the Observation Tower. 1955, US Forest Service.



Figure 9: Oblique view of the front of the Observation Tower, March 20, 2015. Lisette Fas Quiñones, NE to SW

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Figure 10: View of one of the lateral wings of the Observation Tower, March 20, 2015. Lisette Fas Quiñones, E to W

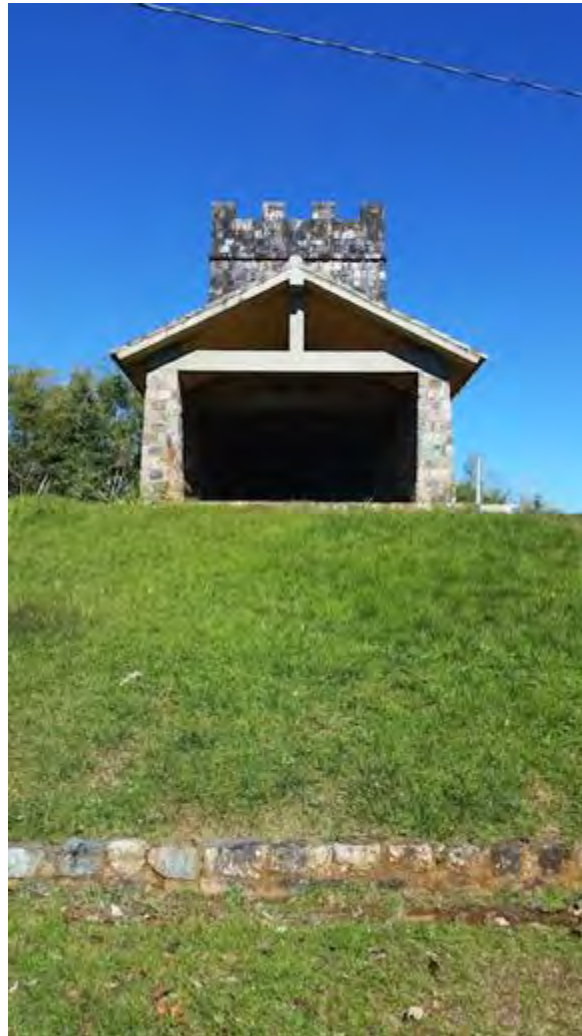


Figure 11: Side view of tower showing stone curb. March 20, 2015. Lisette Fas Quiñones, E to W

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Figure 12: Full top view of roof of side wings of Tower. March 20, 2015, Lisette Fas Quiñones, S to N



Figure 13: Camp Buena Vista. USDA Forest Service

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Figure 14: Oblique view of current Maricao State Forest Manager's Office in what used to be the area of Camp Buena Vista.
Edwin Avila, November, 2015, NE to SW



Figure 15: Camp Santana. USDA Forest Service.

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Figure 16: Dining Shelter at Camp Santana, USDA Forest Service



Figure 17: Detailed view of stone curbs at entrance of Maricao State Forest. April 4, 2014.
Lisette Fas Quiñones, SW to NE

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Figure 18: Pool area at Maricao. Photostream in Flickr, Posted by Tom Lehmann. <https://m.flickr.com/#/photos/tlehman/386584579/>

Boy's camp--swimming at the Bosque Insular de Maricao, May 27-30, 1949. Photo # 1049, by Robert Ebey.



Figure 19: Façade of Stone House. June 4, 2014. Lisette Fas Quiñones, S to N

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Figure 20: View of Chimney at Stone House. June 4, 2014. Lisette Fas Quiñones, SE to NW

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Figure 21: Side view of Stone House, March 17, 2014. Lisette Fas Quiñones, E to W



Figure 22: Unpaved road east of Stone Tower. February 20, 2014. Lisette Fas Quiñones, W to E

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Figure 23: Chimney at La Quinina Site, Lisette Fas Quinones, April 6, 2014, SE to NW



Figure 24: Top of retaining wall at PR SR 120. March 20, 2015. Lisette Fas Quiñones, SE to NW

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Figure 25: Map of the CCC at the southwest forestry districts.
Informe Anual del Comisionado de Agricultura y Comercio, Ejercicio 1933-34.

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Figure 26: Illustrative Map of La Mina Recreational Area at El Yunque, 1936. Manuel Valdés Pizzini, Michael González Cruz and José Eduardo Martínez Reyes, 2011, *La transformación del paisaje puertorriqueño y la disciplina del Cuerpo Civil de Conservación, 1932-1942*. San Juan, Centro de Investigaciones Sociales, Universidad de Puerto Rico, Recinto de Río Piedras, page 287.

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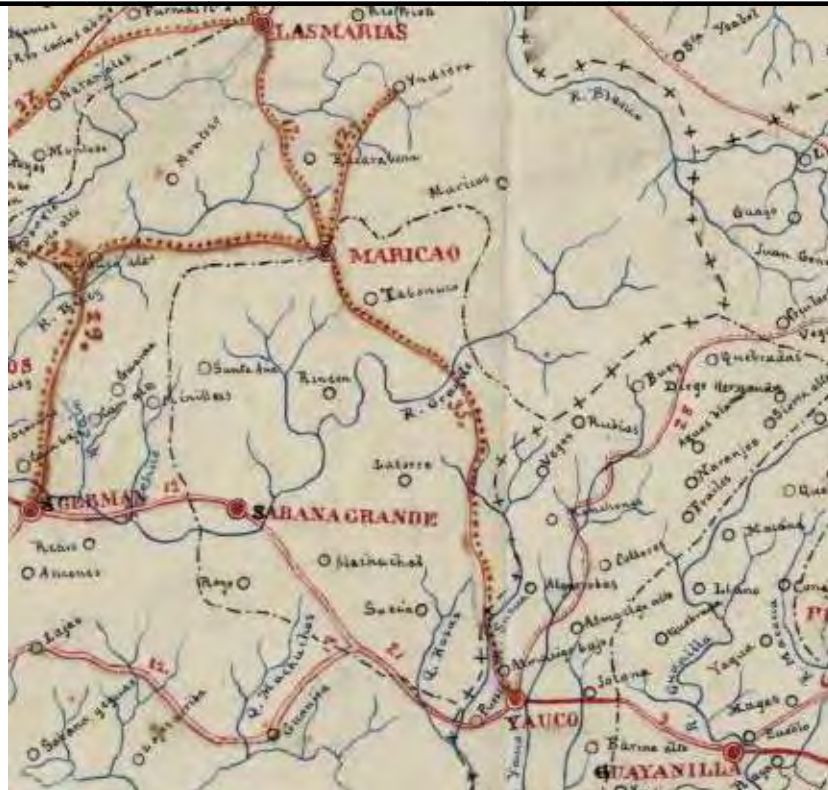


Figure 27: Juan Camo's Puerto Rico Island Map and close up of area - 1881.



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Figure 28: 1900 Map of the Island of Porto Rico, Brigadier Gen. A. W. Greely Map and Close up of Maricao Forest Area.

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Figure 29: Close ups of USGS Topographic map of the Maricao Quadrangle, 1943, of the areas impacted by the CCC.

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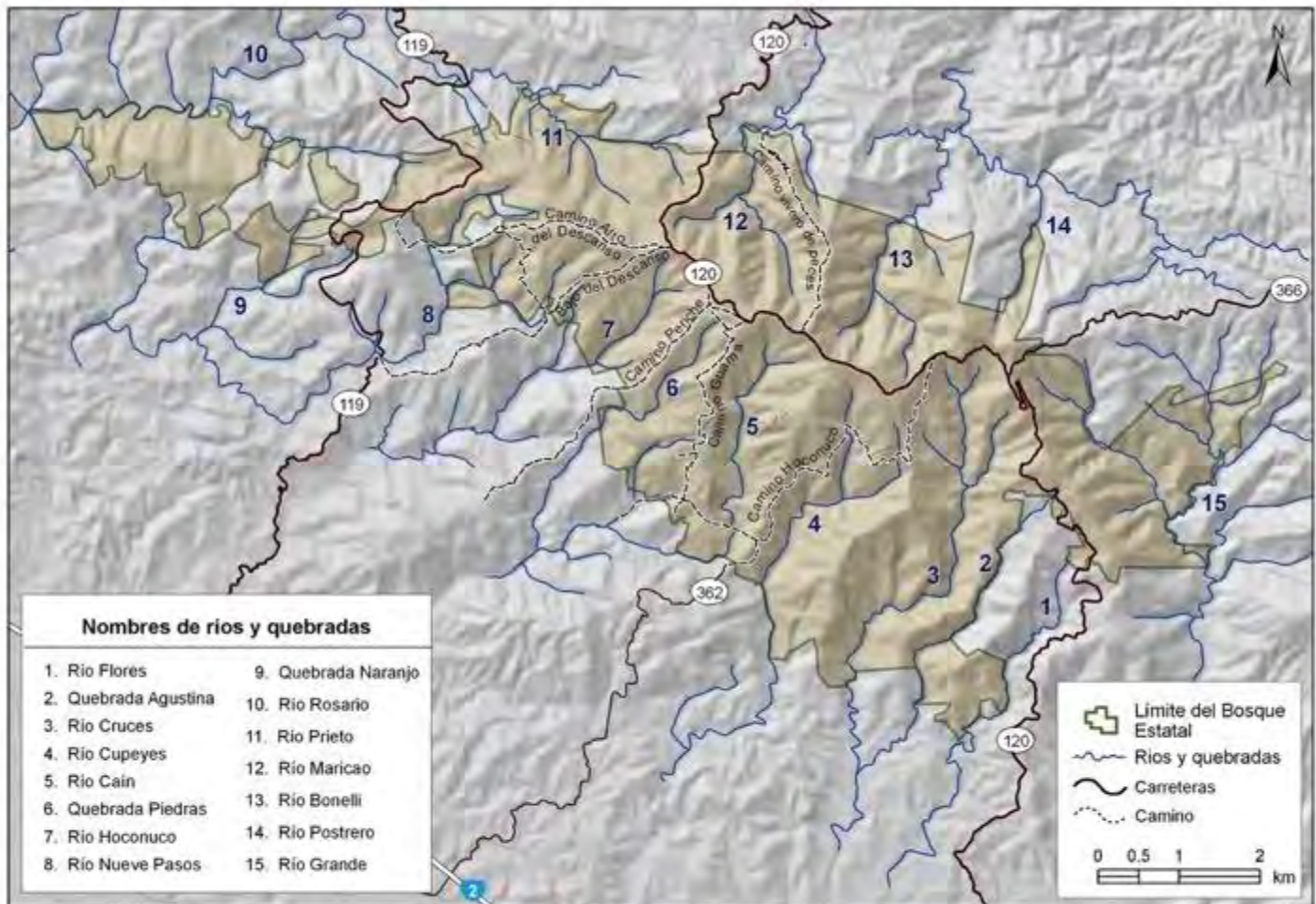


Figure 30: Current Map of the Maricao State Forest with trails and water bodies. USDA Forest Service.

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Figure 31: Aerial Photo of Maricao State Forest pointing out the Fish Hatchery and Observation Tower, with inserted maps of its location in Puerto Rico.