NRCS Caribbean Area
2019 Annual Report
Greetings from the NRCS Family!

As we celebrate the new year and get ready for our upcoming endeavors, it is my pleasure as the Caribbean Area Director to present the NRCS Caribbean Area Annual Report. Our employees and partners are committed to protecting and conserving the natural resources in the Caribbean and it shows in this report. In 2019, we implemented over 35,000 acres of conservation practices, planted over 6,000 trees, impacted communities through emergency relief and provided technical assistance to 11,000 clients. This assistance has been crucial in reducing soil erosion, improving water quality and mitigating floods, directly impacting watersheds and communities throughout the region. With an agency workforce of 59 employees, some of our accomplishments would not be possible without the help of all our valuable partners. Included in this report are some examples of our partnerships and the work that they are doing with us to reach more customers, develop new tools and increase overall conservation on the ground. We invite you to learn about the different groups, what they do and to get involved.

To close, I want to issue a conservation challenge. After two years of recovering from hurricanes, recent earthquakes and other extreme weather events, our agency is committed to increasing climate resiliency for our farmers and rural communities. The most effective way to do this is by applying the Four Principles of Soil Health: minimizing disturbance, maximizing soil cover, increasing biodiversity and providing a continuous living root. For the Caribbean Area, applying these principles can mean more available water for crops, better water infiltration, better weed suppression, and boost the natural nutrient cycle. We invite you to join us on this journey, to learn about the topic, to experiment and help us increase Soil Health in our islands.

If you are interested in participating in our programs on your farm or in your community, or if you have a project where NRCS can help, please feel free to contact me at the NRCS Caribbean Area State Office, 654 Muñoz Rivera Ave., Suite 604, Hato Rey, PR 00918-4123; 787-766-5206, or luis.cruz-arroyo@usda.gov.

Yours in Conservation,
Luis A. Cruz-Arroyo, Director, NRCS Caribbean Area
Emergency Conservation Assistance

To help farmers recover from storm damage and rebuild existing EQIP conservation practices damaged by the hurricanes, NRCS continued equitable relief (ER) assistance through the Environmental Quality Incentives Program (EQIP). NRCS processed over 2,300 EQIP applications from farmers in Puerto Rico and the USVI in fiscal year 2019: for obstruction removal, roofs and covers construction, and clearing and snagging of debris in waterways; to repair or reapply failed or destroyed practices installed through a previously-completed EQIP contract; or from applications deferred from previous years.

By the end of the fiscal year, NRCS obligated 511 EQIP contracts worth over $11 million to Puerto Rico and USVI farmers to help improve resiliency and recover from storm damage on over 17,000 acres; paying over $12 million to producers.

- 35,392 acres of conservation practices applied.
- 20,160 acres of conservation planning completed.
- 6,143 acres of cropland conservation applied to improve soil health.
- 17,149 acres of conservation applied to improve water quality.
- 1,833 acres of conservation applied to improve irrigation efficiency.
- 11,335 acres of grazing land conservation applied.
- 1,156 acres of conservation applied to improve fish and wildlife habitat.

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Joint Chiefs Landscape Restoration Partnership

NRCS and partners delivered over 6,000 trees to PR farmers throughout 2019 as part of our first Joint Chiefs Landscape Restoration Partnership Initiative (JCI) project. The project began in Dec. 2017 in the wake of the devastation wrought by hurricanes Irma and María and is in year two of its three-year project period. The initiative focuses on establishing biological corridors and restoring ecosystem functionality post-hurricane in the central mountain range of western Puerto Rico, including the Río Grande de Añasco, Guanajibo, Culebrinas, Guajataca, Camuy and Río Grande de Arecibo watersheds. Partners include US Forest Service, US Fish and Wildlife Service, PR DNER, Envirosurvey, Para La Naturaleza, Protectores de Cuencas, Cafiesencia PR, Conservation Districts and others. Accomplishments to date include 20 farms with NRCS conservation contracts; 6 completed and 4 in-progress stewardship management plans; 6,069 native trees delivered and planted; and project implementation monitoring plans completed for 24 farms for three years, to begin January 2020.

Emergency Watershed Protection

NRCS is providing technical and financial assistance through the Emergency Watershed Protection Program (EWPP) to repair watershed damage from hurricanes Irma and María. Immediately after the storms, NRCS teams assessed over 1,000 potential EWPP project sites. Of those, 413 sites were selected for exigency funding to remove debris from waterways and 2 as non-exigency sites to repair erosion to watershed dams for an estimated cost of over $29 million. Of these 415 sites, NRCS has completed recovery work on 182 and 150 were completed by other agencies and no longer require EWPP assistance. Afterwards 203 sites were also identified as needing exigency debris removal (76) and non-exigency work (127) for erosion control and restoration of hydrologic conditions. We continue to work with local sponsors to complete approved sites.
**Partnerships & Agreements**

NRCS invested over $588,000 in grants and cooperative agreements to assist our farmers and field offices, including:

- U.S. Fish & Wildlife Service agreement to assist four field offices under the Joint Chiefs Initiative;
- U.S. Forest Service agreement for National Historic Preservation Act consultations;
- Two Conservation Innovation Grants to develop new conservation practices to benefit our farmers; and
- Para la Naturaleza agreement to propagate and distribute native trees to PR farmers to install or replace agroforestry practices in areas impacted by the 2017 hurricanes.

In 2019 we sought to increase participation of Culebra and Vieques farmers in our Farm Bill Programs. We held a Soil Health Workshop on Vieques and partnered with Culebra NGO, Mujeres de Islas, to identify potential farmers and demonstrate selected conservation practices. As a result, eight farmers registered with FSA, the first program participation in Culebra in over 20 years.

**Recruitment / Earth Team**

NRCS hired 3 new employees: the State Biologist, State Engineer and a Soil Resource Specialist. We participated in 3 Job Fairs in Mayagüez, PR, and St. Croix, USVI, to promote careers in agriculture and natural resources, interacting with over 190 students. We also led a Pathways Program workshop for 15 UPR-Mayagüez student interns about understanding USAJobs notices and the USDA recruitment process. As a result, we recruited one summer intern for the Ecological Sciences Division who then transferred to the national Pathways Program. NRCS Earth Team volunteers also provided invaluable assistance, contributing 1,667 hours in the Arecibo, Caguas, Mayagüez, San Sebastián and Utuado field offices. Finally, we were supported by over 20 NRCS employees from across the U.S. who were detailed to the Caribbean Area to assist EWP and Emergency EQIP implementation for hurricane recovery.

**Outreach**

In 2019 NRCS provided Conservation Technical Assistance to over 11,000 clients and media outreach to over 1.5 million residents through over 115 separate activities and contacts. Over 95% of the financial assistance we provided went to beginning, limited-resource or socially-disadvantaged farmers, and 13% of our FY 2019 participants were women, 4% were black and 92% were Hispanic.

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<tr>
<th>637 Personal contacts</th>
<th>137 Newspaper, 660 radio and 200 television ads reaching over 1 million people</th>
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<tbody>
<tr>
<td>20 Newspaper &amp; blog articles</td>
<td>98 Public notice mailings &amp; e-blasts to over 3,250 recipients</td>
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<tr>
<td>17 Trainings &amp; workshops</td>
<td>3 Job fairs and presentations reaching over 190 people</td>
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<tr>
<td>55 Public meetings</td>
<td>42 Conference presentations and fair exhibits</td>
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<td>25 Publications</td>
<td>469 Social media notices reaching over 7,200 clients and partners</td>
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Engineering

Our conservation engineering staff includes civil engineers and civil engineering technicians located across the Islands to support our Field Offices and clients with technical advice, design and certification of NRCS Engineering Practice Standards. Over 1,450 Engineering practices were certified in FY 2019. The top practices were Obstruction Removal (74%), Roofs and Covers (7%), Irrigation Systems (micro-irrigation, 3%), Clearing and Snagging (2.5%), Roof Runoff Structure (2.5%), Watering Facility, Livestock Pipeline and Pumping Plants. In 2019 our Engineering staff assisted several special projects including Coloso Valley, Juana Díaz, and Santa Isabel, all providing irrigation system conservation practices for vast land areas serving several farms.

The **Juana Díaz project** began in 2011 to assist five farmers on 930 acres and was completed in 2019. NRCS partnered with the Caribe Soil & Water Conservation District (SWCD), PR Land Authority (PRLA), and the PR Department of Agriculture (PRDA) to install 3 irrigation water reservoirs (below right); 2 sediment and runoff control basins; 5,846 linear feet of grassed waterway (below left); 2.5 miles of irrigation pipes (below center); 3 heavy use area pads; 5,440 linear feet of exclusion fencing; and 20.5 acres of clearing.

The **Santa Isabel project** began in 2012 in partnership with the Caribe SWCD, PRLA and PRDA. The project assists 11 farmers improving 2,101 cuerdas of prime farmland. During 2019 NRCS helped complete 3 Irrigation water reservoirs; 2 Sediment and water control basins (left), 5,800 linear feet of Irrigation pipeline; 1 sediment and water control basin and 1 water control structure.

The **Coloso Valley project** (right), is also a partnership with Oeste SWCD, PRLA and PRDA. It began in 2013 to serve seven farmers on 417 acres. In 2019 NRCS assisted with water control structures (left), irrigation pipelines (right), and roofs and covers for the pumping plant (Photos by Oeste SWCD).
Soil Science and Health

NRCS provides Technical Soil Services (TSS) to customers in the Caribbean Area. TSS includes wetlands and HEL (highly erodible land) determinations for regulatory compliance, onsite conservation planning assistance, training and soil education activities, promoting soil health systems and helping the public obtain and use soils data available through the Web Soil Survey, eFOTG and other web applications. During Fiscal Year 2019, over 6,000 clients received technical soil services benefitting over 127,100 acres in the Caribbean Area. Over 175 TSS requests were reported for about 600 hours of work.

The Soils team led a variety of activities to train staff and partners to address soil health resource concerns and identify solutions, including:

- **Four Soil health and conservation on steep farmlands workshops** promoting conservation practices for small farms or home gardens to reduce erosion, sedimentation and other environmental impacts to natural resources. Over 150 participants learned soil health principles and how to establish conservation practices using artisanal tools.

- **Soil health training** taught basic concepts of soil ecosystems, soil biology, and soil functions to NRCS and Conservation District staff during a week-long training (top right). Participants learned how to evaluate and compare management practices to limit physical and chemical disturbance; conduct soil health field assessments in different management systems and prepare soil health management plans for tropical agroecosystems.

The Soils team refreshed tabular and spatial data for 8 soil survey areas in the official soil survey database, added two new regional interpretations and revised four national interpretations. The team also initiated two new cooperative agreements to develop a soil mass movement potential soil survey interpretation and identify spatial distribution of coastal lowlands acid sulfate soils in the Caribbean Area.

In FY 2019, Caribbean Area NRCS collaborated with the National Climate and Water Center to gather information on our 10 Soil Climate Analysis Network (SCAN) stations (left) and order equipment needed to repair hurricane damage. SCAN sites monitor soil moisture content at several depths, air temperature, relative humidity, solar radiation, wind speed and direction, liquid precipitation and barometric pressure.