



United States Department of Agriculture



# FY-2018 Annual Report

## NRCS International Programs Division



IPD  
Natural  
Resources  
Conservation  
Service

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## About this Report

This annual report was prepared by the International Programs Division (IPD) of the Natural Resources Conservation Service (NRCS), which is an agency of the U.S. Department of Agriculture (USDA). The report covers the period from October 1, 2017, to September 30, 2018 (fiscal year 2018).

IPD thanks the following NRCS employees for contributing to this report: Aaron Achen, Jon Fripp, Jay Fuhrer, Charles Kome, Aaron Miller, Kenneth Spaeth, and Olga Vargas.

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## Executive Summary

NRCS IPD facilitated activities in support of U.S. agricultural and foreign policy interests that promote the advancement of science and technology, address food security, strengthen developing economies, and encourage the sustainable management of natural resources.

In fiscal year (FY) 2018, NRCS participated in **28 international engagements** (compared to 72 in FY–2017) and strengthened the bilateral relationship with **13 individual countries**.

NRCS staff undertook **28 international travel assignments** to explore and improve conservation efforts in support of USDA and agency priorities. Scientific engagement and collaboration remained strong and accounted for most trips, which included a conservation policy meeting on Lake Huron Lake Action and Management Plan with [Canada](#), participating in the World Congress of Soil Science in [Brazil](#), and influencing perspectives by speaking at conferences in [Australia](#) (soil health) and [China](#) (black soils).

Agency experts also provided technical assistance by serving as instructors during soil fertility and irrigation workshops in [Pakistan](#), building capacity in digital soil mapping in [Columbia](#), conducting a workshop on the use of digital soil mapping techniques for soil fertility management at regional and farm levels in [Switzerland](#), teaching rangeland conservation concepts in [Kazakhstan](#), and serving on multi-year residential assignments to support capacity building efforts in the [Federated States of Micronesia](#) and [Republic of Palau](#).

IPD also facilitated **30 foreign delegation visits** that enabled NRCS technical experts and senior executives to meet and engage with **163 foreign visitors**—government officials, scientists, and academics—at headquarters and field locations. Aside from bilateral meetings with [Canada](#) to strengthen regional cooperation, the majority of requests were for presentations to increase



institutional knowledge and exchange scientific information. NRCS staff conducted briefings or led discussions on specific topics. Examples include delegations from [Burma](#) (overview of NRCS and Natural Resources Inventory), [India](#) (overview of NRCS and conservation delivery system), [Japan](#) (Farm Bill Conservation Programs and implementation), [Pakistan](#) (soil quality and water conservation challenges), and [Tunisia](#) (integrated pest management). Among the requests were also opportunities to conduct presentations for two [multinational](#) delegations, visiting fellows with U.S. Soybean Export Council, and candidates from the U.S. Department of State International Visitor Leadership Program (IVLP).



## Table of Contents

About this Report.....	2
Nondiscrimination Statement.....	2
Executive Summary.....	3
Table of Contents .....	5
Acronyms and Initialisms .....	6
Introduction .....	7
Selected Country Activity Reports .....	8
Brazil.....	8
Canada .....	9
China .....	13
Columbia.....	15
Pakistan.....	16
By the Numbers.....	17
International Travel .....	17
Foreign Visitors .....	17
Foreign Country Volunteers .....	17
NRCS Employee Participation .....	17
Division Operations .....	18
Program Management .....	18
International Travel Program.....	18
Communication Products .....	18
International Programs Division Staff .....	19





On June 15, 2017, U.S. Ambassador Robert Riley (center) and NRCS resource conservationist Sharon Sawdey (right) welcome students from the 2017 Caribbean and Pacific Summer Internship Program to the U.S. Embassy in Kolonia. Sawdey, who is providing long-term technical assistance in the Federated States of Micronesia, provided information regarding food security throughout the islands. Photo courtesy of U.S. Embassy Kolonia.

## Acronyms and Initialisms

ARS	Agricultural Research Service
CIAT	International Center for Tropical Agriculture
ESD	Ecological Site Description
FAS	Foreign Agricultural Service
FY	Fiscal Year
IUSS	International Union of Soil Scientists
IPD	International Programs Division
NRCS	Natural Resources Conservation Service
NRI	National Resources Inventory
SCEP	U.S.-China Scientific Cooperation Exchange Program
USDA	U.S. Department of Agriculture
IVLP	International Visitor Leadership Program
USACE	United States Army Corps of Engineers
USAID	U.S. Agency for International Development





## Introduction

NRCS has had an international presence and involvement since the 1930s. NRCS is involved in a full range of activities that help foreign governments develop, use, and protect their natural resources, contributing to U.S. foreign policy by promoting economic stability, reducing poverty, and solving world food problems. Furthermore, U.S. domestic agriculture and the agency benefit from gaining access to new technologies, learning best practices, and developing contacts with global stakeholders. NRCS staff regularly participate in international meetings, present findings at conferences, support scientific and technical exchanges, engage in post-disaster recovery assistance, and provide short-term and long-term technical assistance.

Some of the activities of IPD over previous years included facilitating the following: deployment of more than 65 agricultural advisors to serve for up to 18 months on Provincial Reconstruction Teams in [Afghanistan](#) and [Iraq](#); presentation of papers and posters at the 21<sup>st</sup> World Congress of Soil Science in Rio De Janeiro, [Brazil](#); and participation in long-term research collaboration to study frozen desert soils in [Antarctica](#).

Additionally, agency experts regularly seek out volunteer assignments offered through nongovernmental organizations. These activities are not captured in the IPD Annual Report but do provide agency staff with additional opportunities to participate in international development projects and gain new experiences.



## Selected Country Activity Reports

### Brazil

The International Union of Soil Scientists (IUSS) held the 21<sup>st</sup> World Congress of Soil Science in Rio de Janeiro, Brazil, from August 12–17, 2018. The major theme of the meeting was “Soil Science: Beyond Food and Fuel.” The meeting focused on multiple functions of soil exemplified by such questions as: How to feed a hungry planet? How to fuel an energy-hungry planet? How to quench a thirsty planet? How to clean up our polluted planet? How to reach a balance between protection of biodiversity and sustainable land management for agriculture production? NRCS sent five employees as a part of the delegation representing USDA.

The World Congress of Soil Science serves as a platform to foster existing and new cooperation among scientists worldwide. Such cooperation is vital for maintaining the visibility that is necessary to keep the U.S. Soil Survey and soil science relevant. Participants shared solutions and ideas related to common problems in the delivery of natural resources information to the public. The meeting provided ample opportunities to present or attend talks and symposia.



Aaron Miller, soil scientist and MLRA Soil Survey Office leader, Santa Fe, New Mexico, standing next to a monolith of a classic Brazilian Oxisol. Many of the topics of the conference were based on the advancements in agriculture on these nutrient-limited soils.



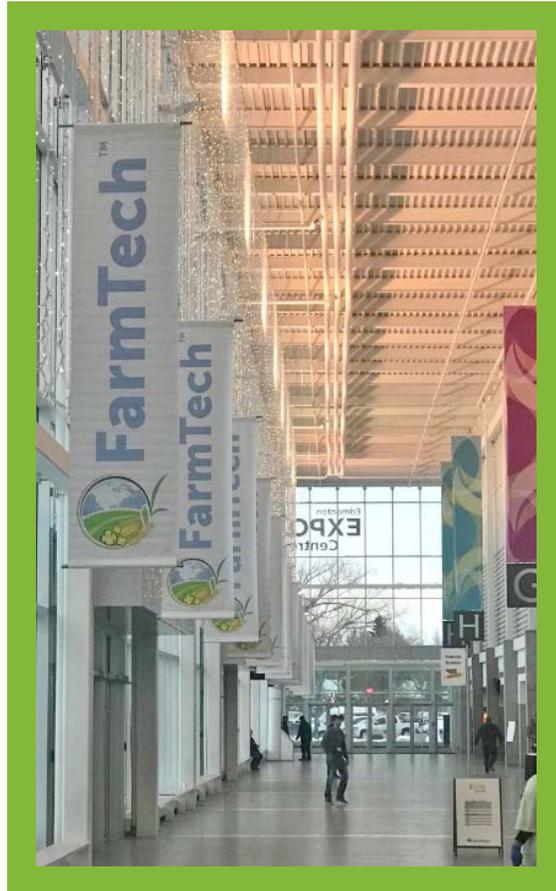
## Canada

### FarmTech 2018

An NRCS soil health specialist attended **FarmTech 2018** from January 30 through February 1, 2018, at the Edmonton Expo Centre, in Edmonton, Alberta, Canada. The event was hosted by Alberta's Canola, Wheat, Pulse and Barley Commissions and the Alberta Seed Growers Association. It attracted more than 2,000 delegates, including many of Alberta's most leading-edge farmers. FarmTech ran more than 50 one-hour-long concurrent sessions in 8 timeslots over the 3 days. Each speaker presented twice, usually on two different days.

During the planning of the event, the FarmTech group requested a topic regarding soil health and cover crops. In response, the NRCS Soil Health Specialist presented on the topic "Integrating Cover Crops and Livestock in the Northern Great Plains" on each day.

The benefits of the expo included the exchange of information regarding the integration of cover crops and livestock into cropping systems. Monitoring the soil food web and carbon impacts are two of the more important components which were shared. Information gained was shared with NRCS clients in North Dakota and others.



## Prairie Organics— Think Whole Farm Conference

An NRCS soil health specialist attended the **Prairie Organics – Think Whole Farm Conference** held February 23 and 24, 2018, in Brandon, Manitoba, [Canada](#). The event was hosted by Grain Millers, Prairie Organic Grain Initiative, OrganicBIZ, Canadian Organic Growers, and many more. It attracted hundreds of Canadian farmers and consisted of two dozen speakers over the 2-day period.



During the planning of the event, the Prairie Organic group requested a topic regarding soil health and our landscape. The NRCS Soil Health Specialist presented the keynote address **“What’s on Your Landscape?”** on Friday, February 23<sup>rd</sup>, 2018.

Benefits of the conference included the exchange of information regarding the integration of cover crops and livestock into cropping systems. Monitoring the soil food web and carbon impacts are two of the more important components which were shared. Information gained will be shared with NRCS clients in North Dakota and others.

## Upland Organics “Turning Dirt into Soil Workshop”

NRCS was represented at the **Upland Organics “Turning Dirt into Soil Workshop”** held July 25 and 26, 2018, at the Upland Organics farm, near Wood Mountain, Saskatchewan, [Canada](#). The annual event ran over a 2-day period and attracted more than 100 farmers. Each speaker presented both days and participated on various panels. An NRCS soil health specialist presented the topic **“Soil Regeneration.”** The soil health specialist also demonstrated the soil health principles in the field.

Benefits of the workshop included the exchange of information regarding the integration of cover crops and livestock into cropping systems. Monitoring the soil food web and carbon impacts are two of the more important components



which were shared. Information gained will be shared with NRCS clients in North Dakota and others.



### **Organic Connections—2018 Conference and Trade Show**

An NRCS soil health specialist attended the **Organic Connections—2018 Conference and Trade Show** held November 1–3, 2018, in Saskatoon, Saskatchewan, [Canada](#). The event, hosted by Sunrise Foods International, attracted organic farmers from across western Canada. It consisted of more than 30 speakers over the 3-day period.



During the planning of the event, the Prairie Organic group requested a topic regarding soil health and our landscape. The NRCS soil health specialist



presented the soil workshop on day 1 and spoke again on day 2 with the topic “**Reducing Disturbances and Increasing Diversity on Organic Farms.**”

Benefits of the conference included the exchange of information regarding the integration of cover crops and livestock into cropping systems. Monitoring the soil food web and carbon impacts are two of the more important components which were shared. Information gained will be shared with NRCS clients in North Dakota and others.

### **North American Forest Soils Conference— International Symposium**

An NRCS resource soil scientist represented NRCS at the **North American Forest Soils Conference – International Symposium** in Quebec City, [Canada](#), on June 10–16, 2018. The conference is held every 5 years and has played a critical role in maintaining an active dialog between forest soil scientists. The conference featured presentations from 19 countries and attracted almost 200 participants, including 45 students. The conference included keynote speakers, presentations on research, and poster presentations on 6 themes: the role of forest and forest soils in climate change adaptation and mitigation; technological advances in forest soils research; management practices, land-use change, and soil-forest productivity; societal change and forest soils; fire effects on forest soils; and forest soil monitoring networks and environmental change—successes and challenges. The poster “National Cooperative Soil Survey for the USA – Updates, Revisions and New Interpretations: USDA National Forest Soil Interpretations” was displayed during the symposium.



Negative microclimate impact of lichen woodland. Lichen woodlands are expanding southward into the closed-crown conifer forest where compound disturbances are transforming dense forest stands.

The topic that came up the most was the need to have more than one **Ecological Site Description (ESD)** per soil component in areas where the soils may be the same but the climatic and hydrological conditions significantly impact vegetation and management. The U.S. Forest Service continues to collaborate with NRCS to ensure that ESDs are generated in a way that makes them useful in land management. Collaboration was another topic that dominated discussions. Various agencies are coping with dwindling resources, which is making collaboration more critical. The demand to keep NRCS engaged with its external customer base at the university and Federal levels is very evident.

NRCS participation in the symposium was a good reminder to the forest soils community that NRCS is not purely an agriculturally based agency and that our specialists engage in forest soils issues. The resource soil scientist had the



opportunity to see how the soil survey is being used by external customers and was able to receive feedback on how NRCS can ensure that our soils information is relevant and useful to our partners. The resource soil scientist was able to assist the National Interpretations staff by presenting the poster and to assist New York by making new contacts with those who are doing soils work in New York.

## China

### The U.S. China Scientific Cooperation Exchange Program (SCEP)

An NRCS-led Rangeland Research Team was invited to visit [China](#), July 23–August 5, 2018, through the U.S.-China Scientific Cooperation Exchange Program (SCEP). The program is managed and funded by USDA–Foreign Agricultural Service (FAS). The six-person team consisted of three technical experts from NRCS, one information specialist from Agricultural Research Service (ARS), and two scientists from universities (Michigan State and University of Arizona).



USDA team at the Hulunbuir Grassland Shrine.

The objective of the visit centered on establishing a cooperative exchange of technologies related to rangeland inventory and assessment. China ranks second in the world for extent of rangelands, about 400 million hectares, of which 313 million hectares can be grazed (41.7% of the land area). China's rangelands occupy about 11.8% of the world's rangelands. Degradation is widespread in China, resulting in a loss of plant-species diversity, loss of vegetation cover and production, and increased runoff and erosion. Rangeland degradation intensified in the 1960's and has been increasing by about 15% each decade.



The 406 million acres of non-Federal rangeland in the United States also have resource concerns. During the 2011–2015 National Resource Inventory rangeland field study, 25.8% of non-Federal rangeland showed moderate, moderate-to-extreme, or extreme-to-total departure from reference conditions for at least one rangeland health attribute, such as soil and surface stability, hydrologic function, and biotic integrity. The departure is a 7.5% increase over 2004–2010.



MGrass rehabilitation site where drip irrigation is applied to establish crab apple trees. Notice significant gully erosion in background. MGrass is a plant material center, living classroom, laboratory, and grassland database center.

The team visited the Chinese Academy of Agricultural Sciences (Beijing), Hulunbuir Agricultural Reclamation Group (Hulunbuir), and Inner Mongolia Academy of Agricultural and Animal Husbandry (Hohhot). The team gave presentations on the USDA–NRCS National Resources Inventory (NRI) rangeland protocols, the Rangeland Hydrology and Erosion Model, soil survey in the USDA, interpreting indicators of rangeland health, and the use of ecological sites in rangeland planning. Our Chinese counterparts gave overviews of their rangeland inventory and assessment activities. Our Chinese hosts agreed that it would be propitious to collaborate on joint efforts to study rangeland health, rill and gully erosion, and rangeland plant diversity trends. Work is ongoing to establish a joint U.S and Asian commission to study erosion prevention and remediation of gully erosion, invasive plants, and desertification.



Open grassland where lack of open water resulted in light grazing pressure on the rangeland.



## Columbia

The United States is the largest global consumer and importer of cacao, the key raw material used in chocolate production. Cacao is not grown on a commercial scale in the United States. Cacao trees have specific ranges of soil types, as well as temperature and moisture regimes, that limit their geographic distribution. Cacao for Peace is a collaborative initiative sponsored by the U.S. Agency for International Development (USAID) through the U.S. Department of Agriculture's Foreign Agricultural Service (USDA–FAS) and implemented by the Natural Resources Conservation Service, Pennsylvania State University, and International Center for Tropical Agriculture (CIAT). The objective of this pilot project is to build capacity through public-private partnerships that increase quality cacao production in selected indigenous communities within the Sierra Nevada de Santa Marta region in [Colombia](#).



The role of NRCS is to build capacity by providing technical assistance and training in digital soil mapping at resolutions suitable for management at the farm level. Higher resolution soil maps will better delineate areas suitable for cacao production. The maps will be used to promote natural resources conservation and land use sustainability and thereby meet established soil and food security goals. Under the auspices of the Cacao for Peace project, NRCS staff will apply established digital soil mapping practices and standards in collaboration with Pennsylvania State University, CIAT, and local Colombian scientists and growers. They will develop higher resolution soil maps to refine the cacao suitability assessments in project focus areas.

Soil and Plant Science Division staff in collaboration with Pennsylvania State University faculty will also provide training to build the necessary local capacity to



support the continuation and expansion of cacao cultivation efforts. Through these efforts, NRCS will help build local capacity in digital and traditional soil mapping technologies. Field observations, as well as laboratory data, will be used to create high resolution maps and a soils information system that includes interpretations that meet the needs of individual farmers, land owners, policy makers, and other interested parties.

## Pakistan

Agriculture is a major sector of Pakistan's economy. Water is a limiting factor to both economic development and food security in [Pakistan](#). Rapid population increase, infrastructure issues, and climate fluctuations and changes have resulted in water becoming a critical issue. The goals of the temporary duty travel were to provide a water quality testing-and-evaluation workshop, provide an advanced workshop in cooperation with USACE partners, and plan for future efforts in support of the Gomal Zam Dam command area for inventorying irrigation management and development needs and ongoing projects. The workshop with USACE demonstrated the Hydrologic Engineering Center's River Analysis System (HECRAS).

The U.S.–Pakistan Soil Fertility Project, known as “**Improving Soil Fertility through Extension**,” continued in 2018. The project focuses on building capacity in the public sector and mobilizing the private sector to improve soil fertility. The project promotes improving soil health and the 4Rs of nutrient management (Right nutrient in the Right amount at the Right time with the Right placement).

Another project, “**The U.S.–Pakistan Water Dialogue: Diffusion and Adoption**,” works through partnerships and action to promote the best watershed rehabilitation, irrigation practices, and technologies to help rural farmers.



## By the Numbers

### International Travel

NRCS employees participated in **28 international travel assignments** in FY–2018, taking them to **13 different countries**. The most trips were to [Canada](#) (5) and [Brazil](#) (5), followed by [China](#) (4) and [Mexico](#) (2). Two employees also remained posted overseas on multi-year residential assignments in the [Federated States of Micronesia](#) and [Republic of Palau](#). One employee started a yearlong detail to [Iraq](#) with the U.S. Army Corps of Engineers.

These 28 assignments primarily provided NRCS employees the opportunity to engage in the exchange of scientific information. They participated in 14 conferences and 1 bilateral meeting. Participation in one exchange program provided employees with a more in-depth learning experience.

### Foreign Visitors

In FY–2018, IPD supported **15 requests** for NRCS employees to meet with **163 foreign visitors**. These engagements were primarily for presentations and sharing of scientific and technical information as part of speaker requests or in support of specific programs.

The agency maintains an outstanding international reputation and is continually sought out by foreign officials for guidance and information. Requests for presentations and scientific cooperation were submitted on behalf of 21 foreign countries, with the majority of visitors coming from [China](#) (56), [Ecuador](#) (13), [Japan](#) (13), and [North Korea](#) (13). NRCS subject matter experts also supported presentation requests for multinational delegations, providing assistance to IVLP and the U.S. Soybean Export Council.

### Foreign Country Volunteers

In FY–2018, NRCS also supported requests to host **two volunteers** from foreign countries. The cooperative arrangement allowed foreign nationals to gain valuable field experience in conservation, while providing the agency numerous hours of service in return. The volunteers were from [Germany](#) and [Vietnam](#).

### NRCS Employee Participation

In total, **20 employees** traveled to support the **28 international travel assignments**. Six of the employees traveled for NRCS for the first time. In FY–2018, 17 employees traveled once, one employee traveled twice, one employee traveled four times, and one employee traveled five times.

The **15 foreign visits** were supported by **50 NRCS employees** throughout the United States. Of those visits, 28 were for presentations or were otherwise educational in nature. This allowed 15 technical experts to serve as the sole presenter on 17 occasions and reach 139 foreign visitors. The remaining visits had multiple NRCS speakers.



## Division Operations

### Program Management

Throughout FY–2018, IPD evaluated policies and procedures to improve the overall efficiency and management of the agency's international activities. This included ongoing coordination to synchronize operations with FAS, other sister agencies of USDA, and interagency partners. Additionally, IPD provided agency staff with new or updated guidance and hosted two webinars to further increase awareness about international activities.

### International Travel Program

IPD's International Travel Program provides support functions that enable agency employees to conduct official U.S. Government business in foreign countries. This support includes obtaining official passports and visas to undertake travel, requesting country clearances from U.S. embassies, and providing guidance on additional topics, such as traveling with electronic devices, medical evacuation policy, mandatory security training, and inoculations.

### Communication Products

Eight national bulletins were prepared and released in FY–2018:

- International Assignment Candidates Database ([NB 280-18-1 INC](#))
- Meeting with Foreign Visitors ([NB 280-18-2 INC](#))
- Engagement with Cuba ([NB 280-18-3 INC](#))
- International Programs Division FY 2017 Annual Report ([NB 280-18-4 INC](#))
- Webinar on Improving Soil Health Globally ([NB 280-18-5 INC](#))
- Webinar on Taking Government Mobile Devices on Foreign TDYs ([NB 280-18-6 INC](#))
- Webinar on Providing International Technical Assistance After Retirement ([NB 280-18-7 INC](#))
- Updated Information on International Travel Procedures ([NB 280-18-8 INC](#))

Two editions of the biannual IPD Newsletter were distributed during FY–2018. The publications covered July-December 2017 and January-June 2018.



## International Programs Division Staff

- Lillian Woods Shawver Director
- Herby Bloodworth Program Analyst (retired 8/31/18)
- Marita McCree Program Analyst
- Sascha Dixon Program Analyst (transferred 9/28/18)
- Linda Risdén Program Assistant





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