

In English:

Hello!

This checked luggage has several pieces of scientific equipment. We are a group of researchers from the University of California-Berkeley, traveling to Puerto Rico in order to conduct ecological field research. Our luggage includes sensors for measuring the amount of oxygen and moisture present in forest soil, dataloggers for gathering this soil data and plastic boxes that keep the dataloggers dry out in the forest.

To verify that we are scientists, in this packet I include some explanatory material:

- Our permits to bring scientific materials in and out of Puerto Rico
- A screenshot of our lab's website (Silver Lab)

I feel confident that this equipment is a harmless material to check onto a commercial plane. I do hope that this explanation is sufficient!

Thank you very much for helping to keep our skies safe!

Sincerely,

Christine O'Connell and Heather Dang

Prof. Whendee Silver's lab group, University of California-Berkeley

En Español:

¡Hola!

Este equipaje tiene varias piezas de equipamiento científico. Somos un grupo de investigadores de la Universidad de California-Berkeley, viajando a Puerto Rico para hacer una investigación de campo sobre la ecología. Nuestro equipaje incluye sensores para medir la cantidad de oxígeno y la humedad presente en el suelo del bosque, registradores de datos para la recopilación de estos datos de suelos y cajas de plástico que mantienen los registradores de datos secos.

Para verificar que estamos científicos, incluimos un poco de material explicativo en este paquete:

- Nuestros permisos para traer materiales científicos dentro y fuera de Puerto Rico
- Una captura de pantalla de la página web de nuestro laboratorio (Silver Lab)

Estoy seguro de que este equipo es un material inocuo para llevar en un avión comercial. ¡Espero que esta explicación es suficiente!

¡Muchas gracias por ayudarnos a mantener nuestros cielos a salvo!

Atentamente,

Christine O'Connell y Heather Dang

Prof. Whendee Silver's lab group, University of California-Berkeley

United States Department of Agriculture
Animal and Plant Health Inspection Service
4700 River Road
Riverdale, MD 20737

Permit to Receive Soil
Regulated by 7 CFR 330

This permit was generated electronically via the ePermits system.

PERMITTEE NAME:	Dr. Whendee Silver	PERMIT NUMBER:	P330-14-00232
COMPANY:	University of California, Berkeley	APPLICATION NUMBER:	P525-140530-001
RECEIVING ADDRESS:	137 Mulford Hall #3114 Berkeley, CA 94720	DATE ISSUED:	08/12/2014
MAILING ADDRESS:	137 Mulford Hall #3114 Berkeley, CA 94720		
PHONE:	(510) 643-3074		
FAX:		EXPIRES:	06/25/2017

PORTS OF ARRIVAL/PLANT INSPECTION STATIONS: AK, Anchorage; AL, Huntsville; AL, Mobile; AZ, Douglas; AZ, Lukeville; AZ, Naco; AZ, Nogales; AZ, Phoenix; AZ, San Luis; AZ, Tucson; CA, Calexico; CA, El Segundo; CA, Fresno; CA, Long Beach; CA, Oakland; CA, Ontario; CA, Otay Mesa; CA, Port Huene; CA, Sacramento; CA, San Diego; CA, San Francisco; CA, San Jose; CA, San Ysidro; CA, Tecate; CO, Denver; CT, Hartford; CT, New Haven; DE, Dover; DE, Wilmington; FL, Ft. Lauderdale; FL, Ft. Myers; FL, Ft. Pierce; FL, Jacksonville; FL, Key West; FL, Miami; FL, Orlando; FL, Pensacola; FL, Port Canaveral; FL, Port Everglades; FL, Sanford; FL, Tampa; FL, West Palm Beach; GA, Atlanta; GA, Savannah; GU, Agana; HI, Hilo; HI, Honolulu; HI, Kahului; HI, Kailua-Kona; HI, Lihue; ID, Eastport; IL, Chicago; IN, Indianapolis; KY, Louisville; MA, South Boston; MD, Baltimore; MD, Beltsville; ME, Bangor; ME, Calais; ME, Houlton; ME, Portland; MI, Detroit; MI, Port Huron; MI, Romulus; MI, Sault Saint Marie; MN, Duluth; MN, Grand Portage; MN, International Falls; MN, Minneapolis; MO, Kansas City; MO, St. Louis; MP, Commonwealth of the Northern Mariana Islands; MS, Gulfport; MS, Port Bienville; MT, Raymond; MT, Roosville; MT, Sweetgrass; NC, Raleigh; NC, Wilmington; ND, Dunseith; ND, Pembina; ND, Portal; NJ, Linden; NJ, Newark; NM, Albuquerque; NM, Columbus; NM, Santa Teresa; NV, Las Vegas; NY, Albany; NY, Alexandria Bay; NY, Brooklyn; NY, Buffalo; NY, Champlain; Rouses Point; NY, Jamaica; NY, Jamaica; NY, Newburgh; OH, Ashtabula; OH, Cincinnati; OH, Cleveland; OH, Columbus; OH, Toledo; OH, Wilmington; OK, Oklahoma City; OR, Portland; PA, Allentown; PA, Harrisburg; PA, Philadelphia; PA, Pittsburgh; PA, Scranton; PR, Aguadilla; PR, Carolina; PR, Fajardo; PR, Mayaguez; PR, Ponce; RI, Warwick/Providence; SC, Charleston; TN, Memphis; TN, Nashville; TX, Austin; TX, Brownsville; TX, Corpus Christi; TX, Dallas; TX, Del Rio; TX, Eagle Pass; TX, El Paso; TX, Fabens; TX, Falcon; TX, Fort Hancock; TX, Galveston; TX, Hidalgo; TX, Humble; TX, Laredo; TX, Los Indios; TX, Pharr; TX, Port Arthur; TX, Presidio; TX, Progresso; TX, Rio Grande City; TX, Roma; TX, San Antonio; TX, Victoria; UT, Salt Lake City; VA, Dulles; VA, Norfolk; VI, St. Croix; VI, St. Thomas; VT, Berlin; WA, Blaine; WA, Oroville; WA, Port Angeles; WA, SeaTac; WA, Sumas; WI, Green Bay; WI, Milwaukee

HAND CARRY: Yes

Under the conditions specified, this permit authorizes the following:

Quantity of Soil per Shipment and Treatment

Over 3 lbs - Your facility MUST be inspected and approved to receive this soil

SPECIAL INSTRUCTIONS TO INSPECTOR

See permit conditions below

Permit Number P330-14-00232

THIS PERMIT HAS BEEN APPROVED ELECTRONICALLY BY THE
FOLLOWING PPQ HEADQUARTER OFFICIAL VIA EPERMITS.

Mark A. Stull

Mark A. Stull

DATE

06/25/2014

WARNING: Any alteration, forgery or unauthorized use of this Federal Form is subject to civil penalties of up to \$250,000 or 5 years or both, or punishable by a fine of not more than \$10,000, or imprisonment of not more than 5 years, or both (18 U.S.C.s 1001)

OUR ENVIRONMENT AT BERKELEY

DEPARTMENT OF ENVIRONMENTAL SCIENCE, POLICY, AND MANAGEMENT

Whendee Silver



Education

- PhD Ecosystem Ecology Yale University, 1992
- MS Forest Science Yale School of Forestry and Environmental Studies, 1987
- B.I.S. Environmental Studies School for International Training, 1982

Research Interests

Ecosystem ecology, biogeochemistry

Research Description

My research interests are in the field of ecosystem ecology, and include biogeochemical cycling in the plant-soil-atmosphere interfaces, the effects of disturbance on nutrient cycling, and the relationships among nutrient cycling, land-use, and biodiversity. My lab group works on themes linking climate, plant community characteristics, and biogeochemical cycling in tropical forests, as well as the effects of changing cover types at local and regional scales. Some of the mechanisms we use to study the relationships between climate and ecosystems are to determine the impact of spatial and temporal variability in rainfall, temperature, and relative humidity on plant productivity, ecosystem nutrient dynamics, and soil C, nutrient, and gas fluxes. A second focus of our research concerns the effects of natural and human induced disturbances on forest ecosystems, and the impacts of different rehabilitation or reforestation strategies on biogeochemical cycling. We are interested in determining how long the biogeochemical signal of

disturbance events persists, and how species composition alters long term patterns in the flow of carbon and nutrients through ecosystems.

Current Projects

Climate Impacts on Tropical Forest Productivity and Biogeochemical Cycling Systematic climate changes along elevation gradients offer convenient surrogates for climate change. We are currently working along elevation gradients in the Luquillo Experimental Forest (LEF), Puerto Rico, to identify linkages among climate and biogeochemical processes, and to determine any direct or indirect plant and soil responses to soil oxygen availability, temperature, and light. In wet tropical forests, we have found that soil oxygen availability is inversely related to rainfall, and can reach very low levels in non-flooded humid environments. We are measuring the effects of low oxygen levels on biogeochemical processes such as methane production and emission, nitrogen cycling, and P availability. Tropical forest productivity appears to be highly sensitive to very small changes in temperature (19-21 oC). Our research group is working to identify the mechanisms responsible for this apparent temperature sensitivity.

Nitrogen Cycling: Dissimilatory Nitrate Reduction to Ammonium Tropical forests are the largest natural source of nitrous oxide production, a radiatively important greenhouse gas. The general conditions under which nitrous oxide is produced (low soil oxygen, high carbon and available nitrate) also facilitate a less studied process called dissimilatory nitrate reduction to ammonium (DNRA). Our lab, in collaboration with the Firestone lab group, has documented high rates of DNRA in tropical forests. We have shown that DNRA effectively conserves nitrogen in the ecosystem, and is likely to limit nitrous oxide production. We are now exploring other ecosystems for DNRA and determining the factors that favor DNRA over trace gas production. Our work is expanding to temperate forests, grasslands, and boreal forests in systems where redox fluctuates.

Carbon Dynamics in Disturbed and Recovering Tropical Forests The storage of carbon in soils and biomass in tropical forests plays an important role in the global carbon cycle. High rates of tropical deforestation have prompted growing concern about the loss of carbon storage capacity, and increasing rates of carbon emissions to the atmosphere. Considerable recent efforts have focused on documenting the effects of deforestation and land use change on plant and soil carbon pools. Much less research has explored possible mechanisms to help offset carbon losses through reforestation of pasture and agricultural land. In Puerto Rico, we are determining the rate of new carbon accumulation in soils and plants following forest reestablishment. Our preliminary results suggest that carbon allocation patterns among species are likely to affect the rate of ecosystem carbon accumulation and the relative distribution of carbon between plants and soils.

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Inbox (12) - oconnell08@...Google Calendar - MonthStaff | Silver Lab | University of California, Berkeley1-3-5 for today | Trello

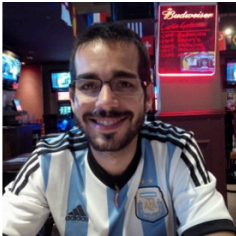
https://nature.berkeley.edu/silverlab/?post_type=staff

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Silver Lab | University of California, Berkeley

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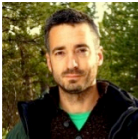
PhD student



Gavin McNicol

PhD Candidate


Postdoctoral Researcher



Justine Owen


Postdoctoral Researcher


PhD student




Christine Sierra O'Connell

Post- Doctorate Researcher







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