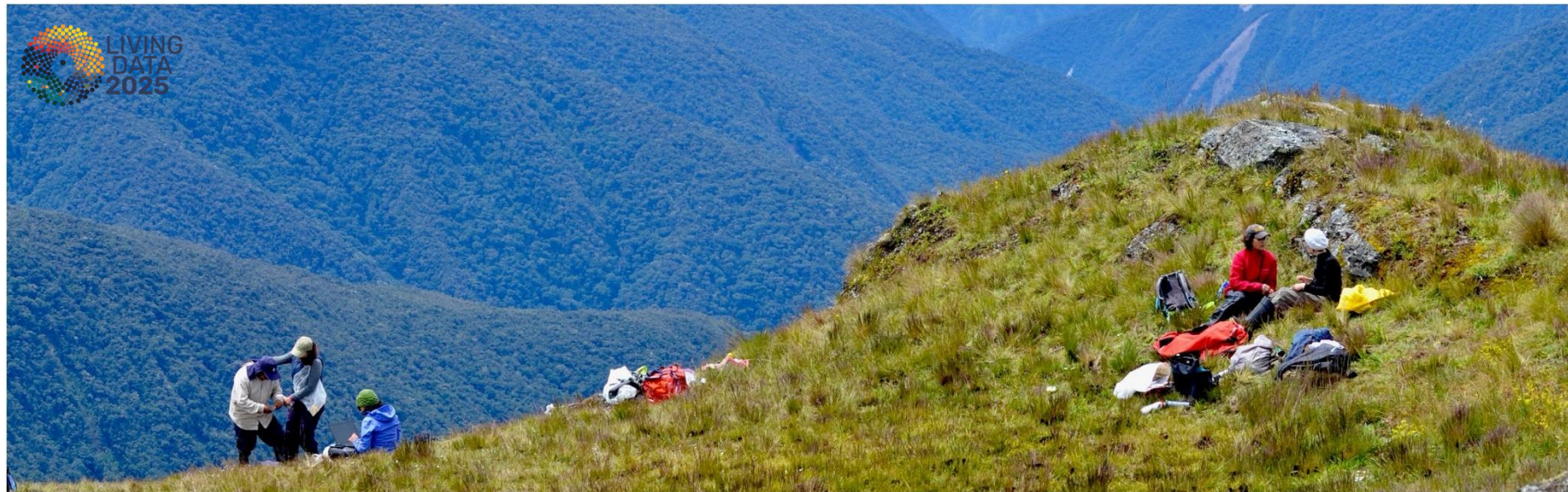




Building capacity in open and reproducible science for the next generation of ecologists through the International Plant Functional Traits Courses

Aud H. Halbritter, Brian Enquist, Brian S. Maitner, Sean Michaletz, Richard J. Telford, and Vigdis Vandvik



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Introduction

- **Global change** threatens biodiversity, ecosystems, and livelihoods
- Understanding **ecological mechanisms** is crucial for developing nature-based solutions
- **Develop capacity** by educating good scientists
- **Open Science**



International Plant Functional Trait Courses (PFTC)

- Hands-on training course in trait-based ecology
- Collaborate with local scientists, prioritize local students
- Active learning approach: **how to be a scientist**

Svalbard



Scandes



Himalaya



Andes



Drakensberg



Collect high quality research data

- Participate in research project
- Trait wheel: learn different leaf measurements
- Become an expert, teach others
- Students become teachers on the next course



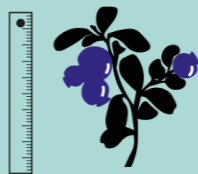
Best practice data processing, managing, and publishing

Scientific Process

Plan



Collect



Process

Digitize



Curate



Validate



Share



Use / re-use



Standardized data collection

GDK3074

COLLECTION DAY: 22/07/12

SITE: LIA

ELEVATION: m a.s.l.

GENUS: CORAX

SPECIES: NORVEGICA

PROJECT: Trait 250 Sean Drone

EXPERIMENT:

PLOT_ID: 1-70MIN7

INDIVIDUAL_NR: 1

PLANT_HEIGHT (cm): 67

BULK - NR. LEAVES: 1 LENGTH (cm):

WET_MASS (g): 0.0198

LEAF_SCANNED: 2

LEAF_THICKNESS (mm): 1.024 0.180 0.175

DRYMASS (g): 0.0062

DATA ENTERED: K

Code-based data processing



Publish data papers

scientific data

OPEN DATA DESCRIPTOR

Plant traits and associated data from a warming experiment, a seabird colony, and along elevation in Svalbard

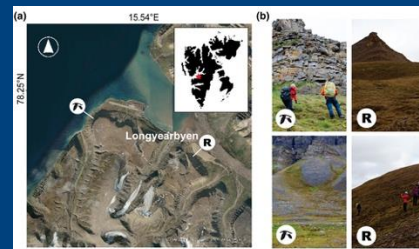
Vigdis Vandvik^{1,2,3,4}, Aud H. Halbritter^{1,2,3,4}, Inge H. J. Althuisen^{1,2,3,4}, Casper T. Christiansen¹, Jonathan J. Hemmings¹, Ingjilung Svava Jónsdóttir¹, Karl Klumpp¹, Marc Macleod¹, Faruq¹, Yashvinder Malhi¹, Brian Salvin Maltzner¹, Sean Michaela¹, Ruben E. Roos¹, Richard J. Telford¹, Polly Bass¹, Karin Bjørnsdóttir¹, Lucio Lucero-Vila Bustamante¹, Adam Cernyavsky¹, Shui Chen¹, Siri Verste Huggen¹, Julia Kemppinen¹, Kai Leppley¹, Yang Li¹, Mary Linakury¹, Iaine Silveira Matos¹, Barbara M. Neto-Bradley¹, Molly Ng¹, Pekka Niittymä¹, Silja Oksanen¹, Karolina Piskova¹, Nina Roth¹, Matis Castorena¹, Marcus Spiegel¹, Eleanor Thomson¹, Alexander Sævi Vågnes¹ & Brian J. Enquist^{1,2,3,4}

The Arctic is warming at a rate four times the global average, while also being exposed to other global environmental changes, resulting in widespread vegetation and ecosystem change. Integrating functional trait-based approaches with multi-level vegetation, ecosystem, and landscape data

OPEN DATA DESCRIPTOR

Plant trait and vegetation data along a 1314 m elevation gradient with fire history in Puna grasslands, Perú

Aud H. Halbritter et al.¹



Capacity building



Select Course:

All

☒ All ☐ Instructors ☐ Students

	United States	41
	Norway	38
	United Kingdom	18
	South Africa	10
	China	8
	Peru	7
	Canada	6
	Denmark	6
	Sweden	5
	Australia	4
	Chile	4
	Argentina	3
	Brazil	3

180

Participants

85

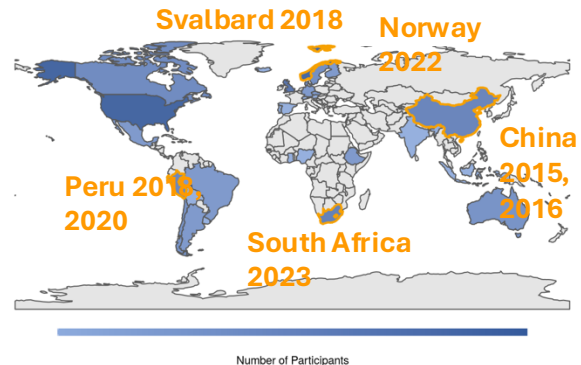
Institutions

30

Countries

39

Nationalities



Thank you!

Adam Ccahuana, Adam Chmurzynski, Agustina Barros, Ahui Peng, Aino-Maija Sinikka Määttänen, Akuonani Phiri, Alexander Byers Brummer, Alexander Elsy, Alexander Sæle Vågenes, Alyssa N. Olson, Alyssa Smith, Alyssa T. Kullberg, Anders Isaksen, Andrea Palomino Cardenas, Andrea Sánchez-Tapia, Anna Gowera, Anya Palm Courtenay, Aud H. Halbritter, Axel Lautaro Gualdoni Becerra, Bárbara Javiera Seaman Espinosa, Barbara M. Neto-Bradley, Barryette Oberholzer, Bernard Olivier, Bezawit Yilma Abebe, Bismark Ofosu-Bamfo, Blake Lee Joyce, Brian Enquist, Brian Salvin Maitner, Bridgette McMillan, Carmen Vázquez Ribera, Casper Christiansen, Celesté Maré, Christien Steyn, Christine Pötsch, Claire Ponsac, Cora Ena Löwenstein, Coskun Guclu, Courtenay Ray, Dagmar Egelkraut, Dickson Mauki, Eleanor Thomson, Eline Sterre Rentier, Elisabeth Nesheim Hauge, Emil Alexander Sherman Andersen, Erickson Giomar Urquiaga Flores, Erik Kusch, Eugenia Sanchez Diaz, Eva Lieungh Eriksen, Fei Ran, Fernanda Chiappero, Fiorella Gonzales, Francesca Jaroszynska, Francisco Navarro Rosales, Frida Knoop, Grecia Fernanda Rivas Ríos, Hanna Lee, Hilary Rose Dawson, Hilde Rui, Iláine Silveira Matos, Imke Smit, Imma Oliveras, Inge Althuisen, Jakub D. Wieczorkowski, Jess Rickenback, Jesslyn Tjendra, Jhon del Aguila Pasquel, Jhonatan Sallo Bravo, Jiri Subrt, Jocelyn Navarro, Joe Atkinson, Joe White, Jonas Trepel, Jonathan A. Wang, Jonathan Henn, Jonathan von Oppen, Josef Garen, Joseph Gauard, Joshua André Erkelenz, Joshua Lee, Julia Chacon, Julia Eckberg, Julia Kemppinen, Kai Lepley, Kaleb A. Goff, Kari Klanderud, Karolína Pánková, Katrín Björnsdóttir, Kine Blom, Korina Ocampo-Zuleta, Kristine Birkeli, Kristýna Kuncová, Laura Jessup, Lauren Gillespie, Leonardo Hamachi, Lesego Malekana, Li Zhang, Liliya Draganova, Lina Marcela Aragón Baquero, Linda Hovde Nordås, Linn Vassvik, Liyenne Hagenberg, Lohengrin Cavieres, Lorah Patterson, Lorelei Patrick, Lucely Lucero Vilca Bustamante, Ludwig Baldaszi, Mackenzie Lift, Marc Macias-Fauria, Marcella Cross, Marcus Spiegel, Maria Elisa Pierfederici, Marta Baumann, Marta Raquel Cardoso Lopes Correia, Mary Linabury, Matiss Castorena Salaks, Megan Kathleen Sullivan, Meghan T. Hayden, Michael Mustri, Michelangelo Sergio Moerland, Michelle Anne Louw, Mickey Boakye, Miguel Muñoz Mazon, Molly Ng, Mukhlis Jamal Musa Holle, Nadine Arzt, Nasser Mohammed, Natalia L. Quinteros Casaverde, Nathan Malamud, Nicole Bison, Nina Roth, Onalenna Gwate, Paul Abayomi Sobowale Soremi, Paul Efren Santos Andrade, Pekka Niittynen, Pernille Bronken Eidesen, Pete le Roux, Pia Bradler, Polly Bass, Priya Hansda, Ragnhild Gya, Ragnhild Svensen Stokka, Rebecca Harris, Rebecca Lehman, Rebekka Gullvåg, Richard J. Telford, Ruben Roos, Rudi Cruz, Sam J. Ahler, Samson Tsegaye Mekasha, Samuel Beale, Samuel Pastor Ploskonka, Sandra Duran, Sara Middleton, Sara Shemsu, Sean Michaletz, Sehoya Cotner, Shuli Chen, Signe Maskell Knudsen, Silje Östman, Siri Vatsø Haugum, Sonya Geange, Sorrel Hartford, Susan Eshelman, Tanya Strydom, Tasha-Leigh J. Gauthier, Tim Widyani Satriawan, Tom Vorstenbosch, Trace Martyn, Vanessa Buzzard, Verónica Noemí Zepeda Martínez, Verónica Pinelli, Vigdis Vandvik Will Johnson, William Farfan-Rios, William Garcia, Xiangyang Sun, Xiaoxiang Zhao, Yadvinder Mahli, Yan Yang, Yao Xiao, and Yaoqi Li.



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