Entryways to open data science and the power of welcome

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All artwork by Allison Horst

The problem

Despite the power of open data science*,
many scientists struggle with data and code – as individuals

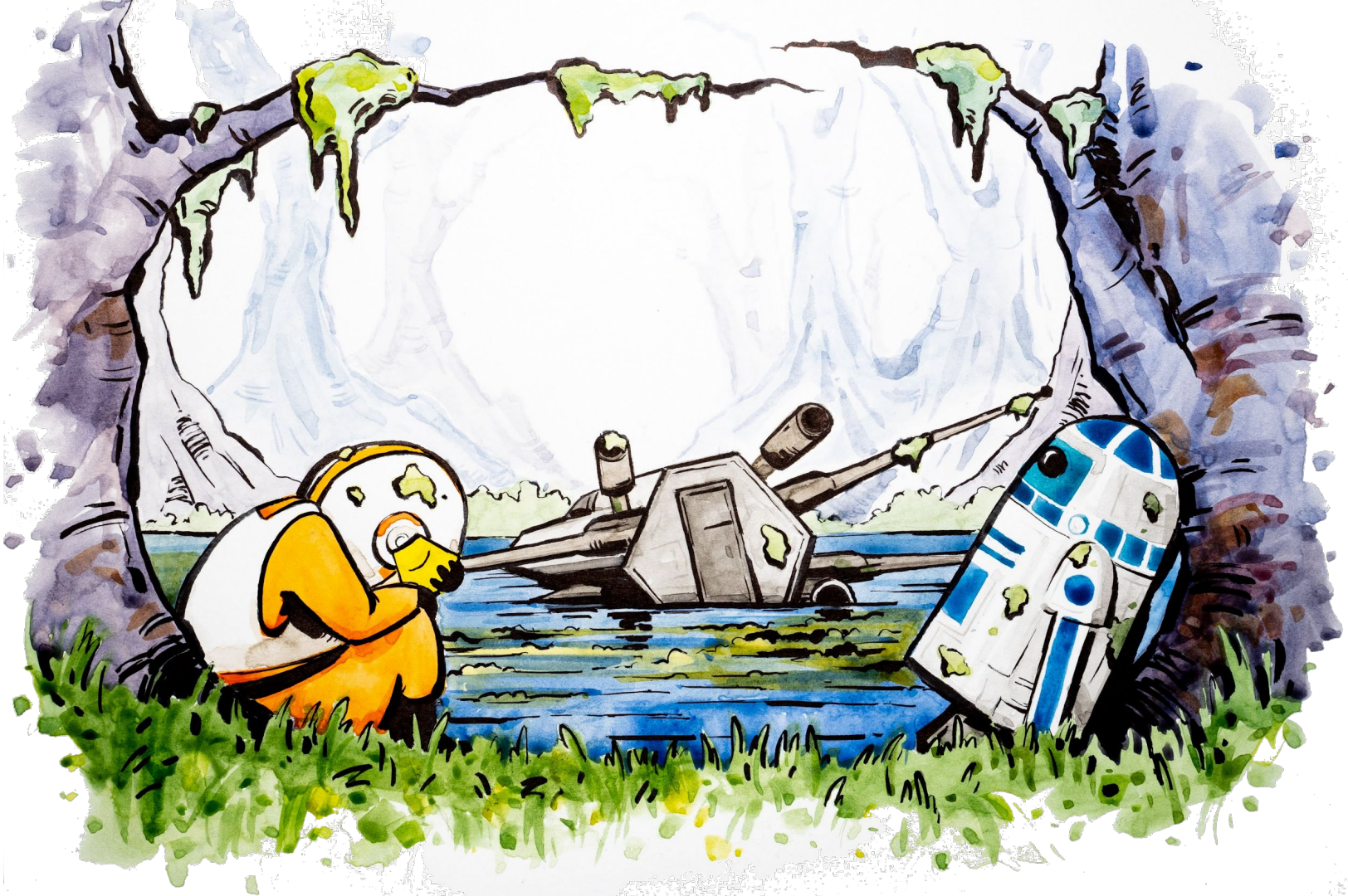
This matters now

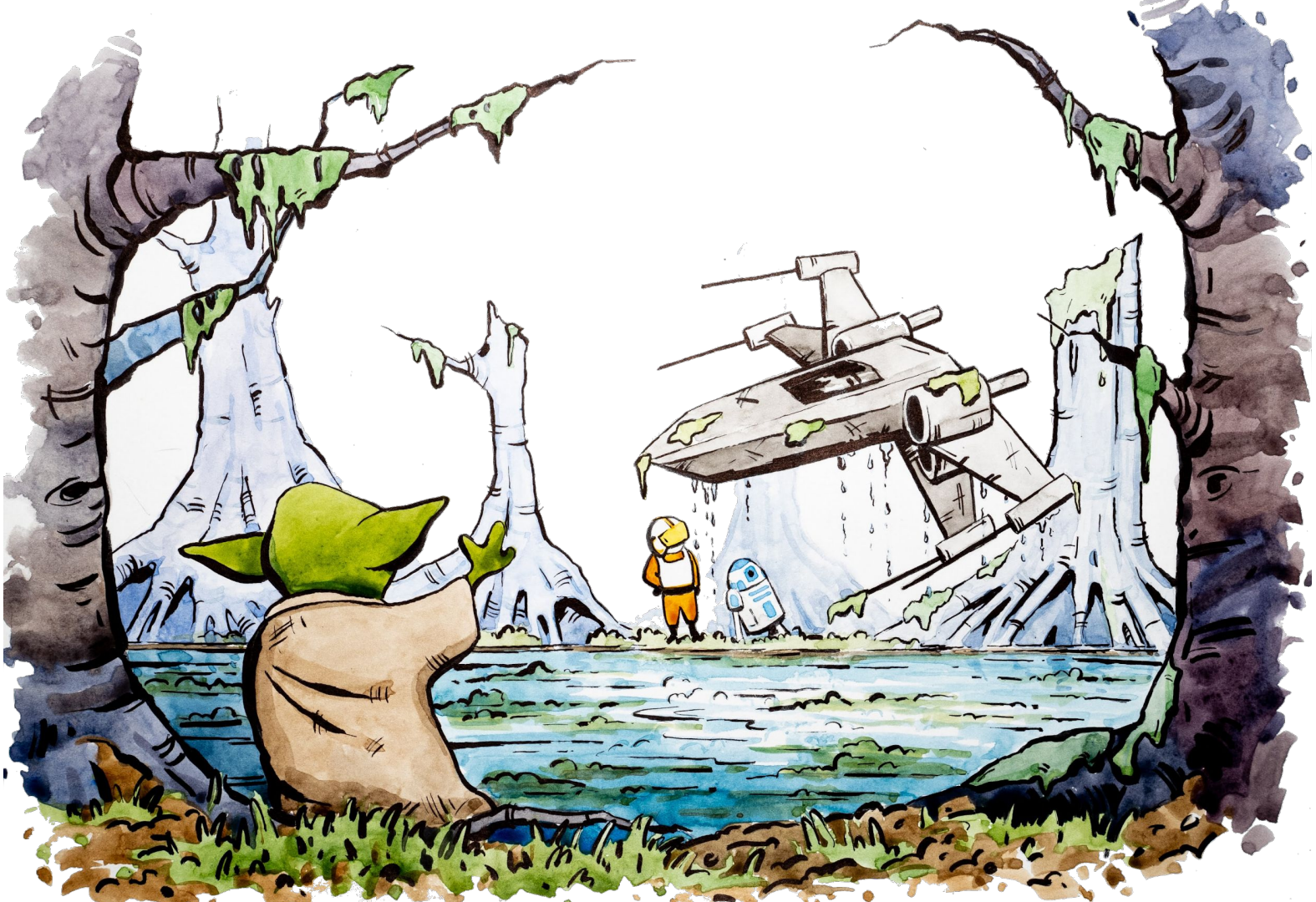
Scientists are perpetuating homegrown practices,
and with time-sensitive global challenges there's no time to waste

A contributing solution

Welcome scientists to open data science
and empower resilient habits and mindsets – as teams

* the tooling and people enabling reproducible, transparent, and inclusive practices for data analysis

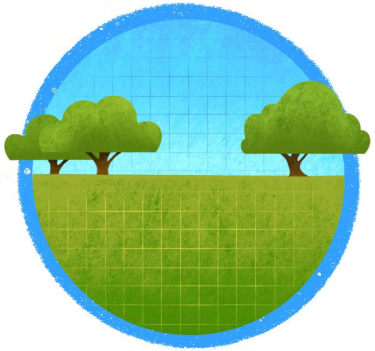




Open data science

Tooling

tools & practices



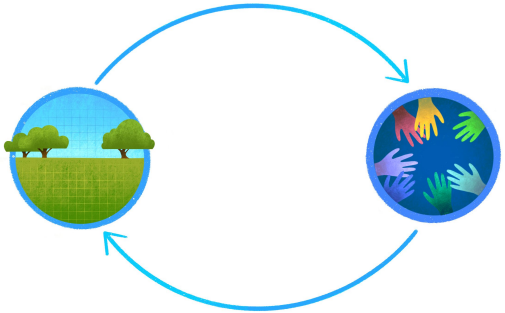
People

teams & community

OCEAN HEALTH INDEX

Tooling

tools & practices



People

teams & community

- Open source coding
- Version control
- Collaboration platform
- Real-time co-development
- Connection to broader communities

- Vertical & horizontal leadership
- Trust, kindness, willingness, & learning
- Create norms about data & docs, leverage overlapping skills, on/offboarding
- Join global & create local communities

Our path to better science in less time using open data science tools

Lowndes *et al*. 2017, *Nature Ecology & Evolution*

OCEAN HEALTH INDEX

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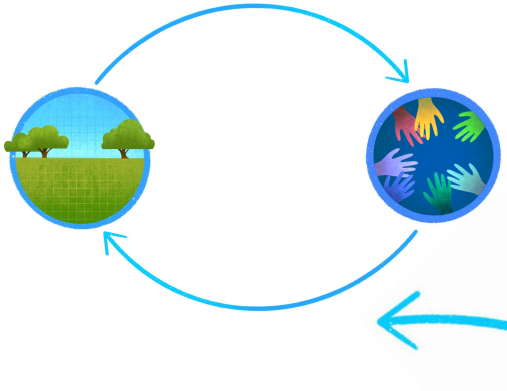

People

teams & community

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Our path to better science in less time using open data science tools

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Open data science

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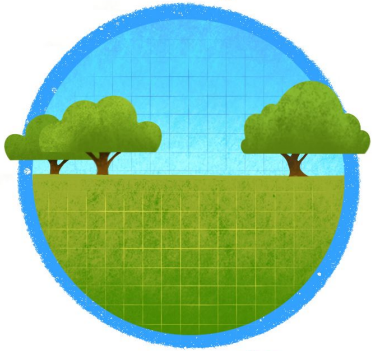

People

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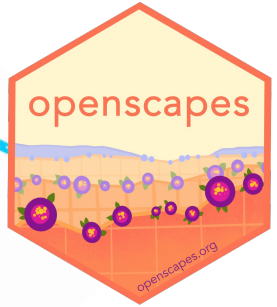

OPENSCAPES CHAMPIONS

An open data science mentorship program for science teams.

Core design to empower lasting habits and mindsets for resilient culture change

- Team- and cohort-based, including team leads and members
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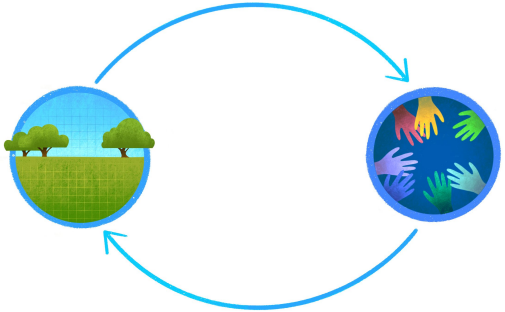
- Lesson series focus on tooling & people

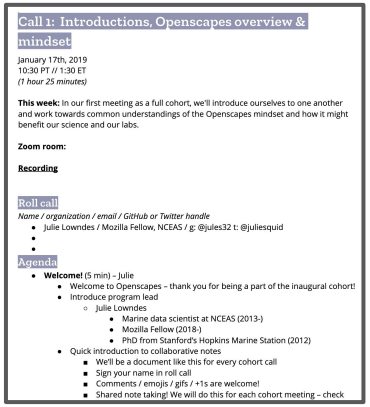
Tooling
tools & practices



People
teams & community

- Streamlining workflows, interoperability
- Reproducibility
- Transparency
- Collaboration
- Communication & publishing

- Team mindset: Future You, Future Us
- Reimagine challenges: expect there's a better way; you're not alone, it's not too late
- Openness: trust, inclusion, belonging
- Empower horizontal leadership, Champions



Call 1: Introductions, Openscapes overview & mindset

January 17th, 2019
10:30 PT // 1:30 ET
(1 hour 25 minutes)

This week: In our first meeting as a full cohort, we'll introduce ourselves to one another and work towards common understandings of the Openscapes mindset and how it might benefit our science and our labs.

Zoom room:

Recording

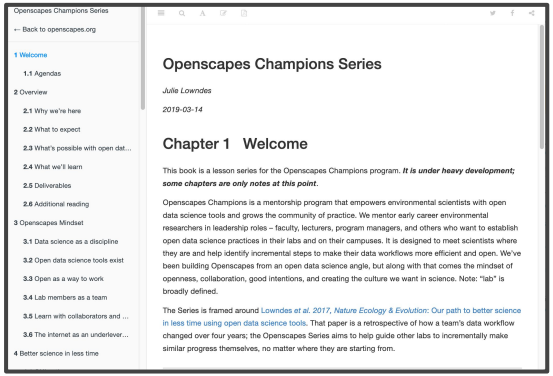
Roll call

Name / organization / email / GitHub or Twitter handle

- Julie Lowndes / Mozilla Fellow, NCEAS / g: @jules32 t: @juliesquid
-
-

Agenda

- **Welcome!** (5 min) – Julie
  - Welcome to Openscapes – thank you for being a part of the inaugural cohort!
  - Introduce program lead
    - Julie Lowndes
      - Marine data scientist at NCEAS (2013-)
      - Mozilla Fellow (2018-)
      - PhD from Stanford's Hopkins Marine Station (2012)
  - Quick introduction to collaborative notes
    - We'll be a document like this for every cohort call
    - Sign your name in roll call
    - Comments / emojis / gifs / +1s are welcome!
    - Shared note taking! We will do this for each cohort meeting – check



Openscapes Champions Series

← Back to openscapes.org

1 Welcome
1.1 Agendas
2 Overview
2.1 Why we're here
2.2 What to expect
2.3 What's possible with open dat…
2.4 What we'll learn
2.5 Deliverables
2.6 Additional reading
3 Openscapes Mindset
3.1 Data science as a discipline
3.2 Open data science tools exist
3.3 Open as a way to work
3.4 Lab members as a team
3.5 Learn with collaborators and …
3.6 The internet as an underlever…
4 Better science in less time

Openscapes Champions Series

Julia Lowndes

2019-03-14

Chapter 1 Welcome

This book is a lesson series for the Openscapes Champions program. ***It is under heavy development; some chapters are only notes at this point.***

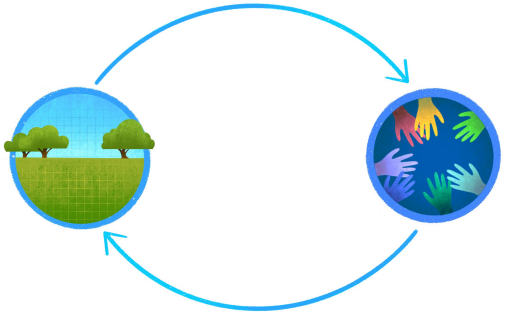
Openscapes Champions is a mentorship program that empowers environmental scientists with open data science tools and grows the community of practice. We mentor early career environmental researchers in leadership roles – faculty, lecturers, program managers, and others who want to establish open data science practices in their labs and on their campuses. It is designed to meet scientists where they are and help identify incremental steps to make their data workflows more efficient and open. We've been building Openscapes from an open data science angle, but along with that comes the mindset of openness, collaboration, good intentions, and creating the culture we want in science. Note: "lab" is broadly defined.

The Series is framed around Lowndes *et al. 2017, Nature Ecology & Evolution*: Our path to better science in less time using open data science tools. That paper is a retrospective of how a team's data workflow changed over four years; the Openscapes Series aims to help guide other labs to incrementally make similar progress themselves, no matter where they are starting from.

openscapes.org/series

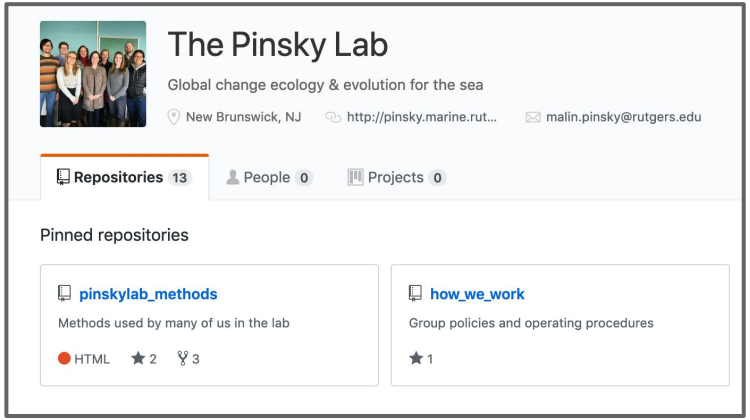
Tooling

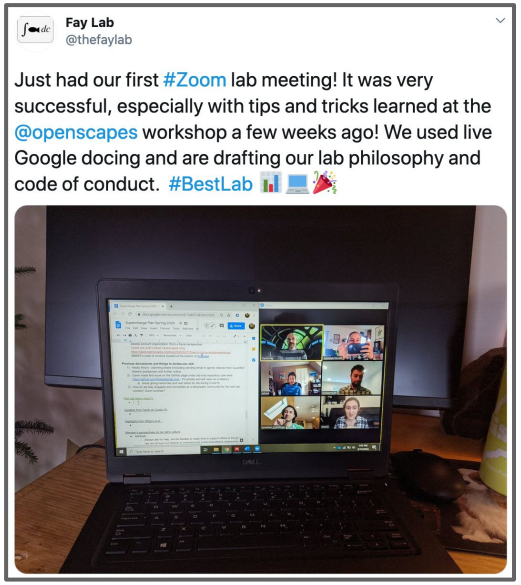
tools & practices



People

teams & community

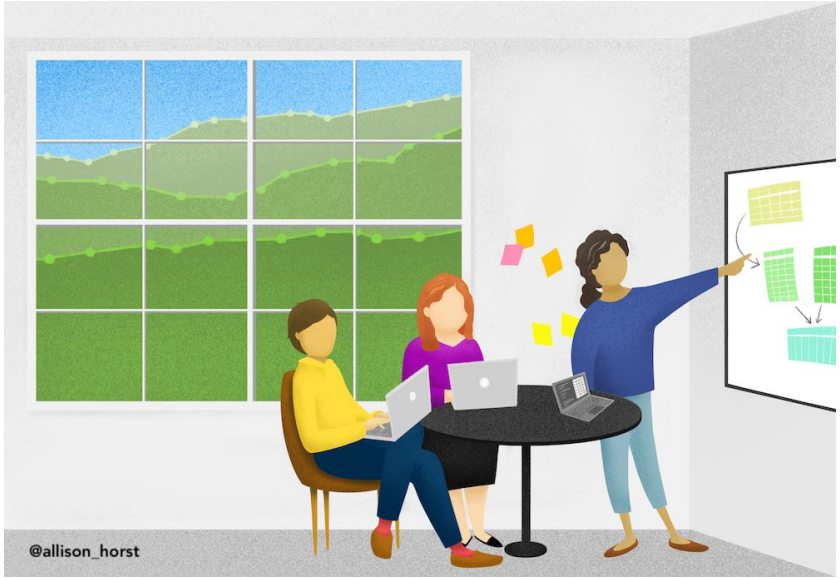




Supercharge your research:
a 10-week plan for open data science

1. Normalize data discussions
2. Identify and address shared needs
3. Think ahead for Future You & Future Us

Lowndes et al. 2019, Nature



"This isn't just about coding & GitHub, it's about changing the way we do science."
- Prof. Malin Pinsky

"Openscapes has created a new way of thinking about merging empathy and science. That's an invaluable gift to me."
- Prof. Halley Froehlich

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Tailorable:

- **timeline**
- **team composure**
- **lessons**

We welcome scientists to open data science, and grow the movement.

Engage: build awareness and excitement with empathy, art, and storytelling

Empower: connect with existing open software and communities

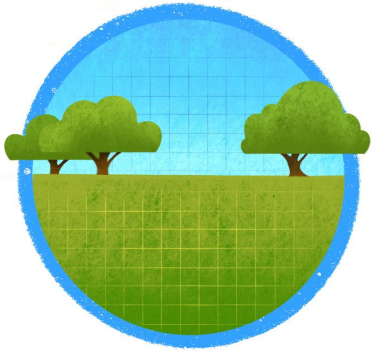
Amplify: champion broadly to increase visibility, value, and practice

openscapes.org

Open data science

Tooling

tools & practices



People

teams & community

The power of welcome

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Thank You

openscapes.org; @openscapes

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All artwork by Allison Horst

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@juliesquid,
https://jules32.github.io
lowndes@nceas.ucsb.edu

Further reading (incomplete list):

- The Value of #Welcome - Butland 2017
- Unmet needs for analyzing biological big data - Barone et al. 2017
- Skills and Knowledge for Data-Intensive Environmental Research - Hampton et al. 2017
- Open Software Means Kinder Science - Lowndes 2019
- Supercharge your research: a ten-week plan for open data science - Lowndes et al. 2019
- Our path to better science in less time using open data science tools - Lowndes et al. 2017
- 3 lessons from remote meetings we're taking back to the office - Cabunoc Mayes et al. 2020
- Open science is a behavior - Corker 2018