



Reflectance

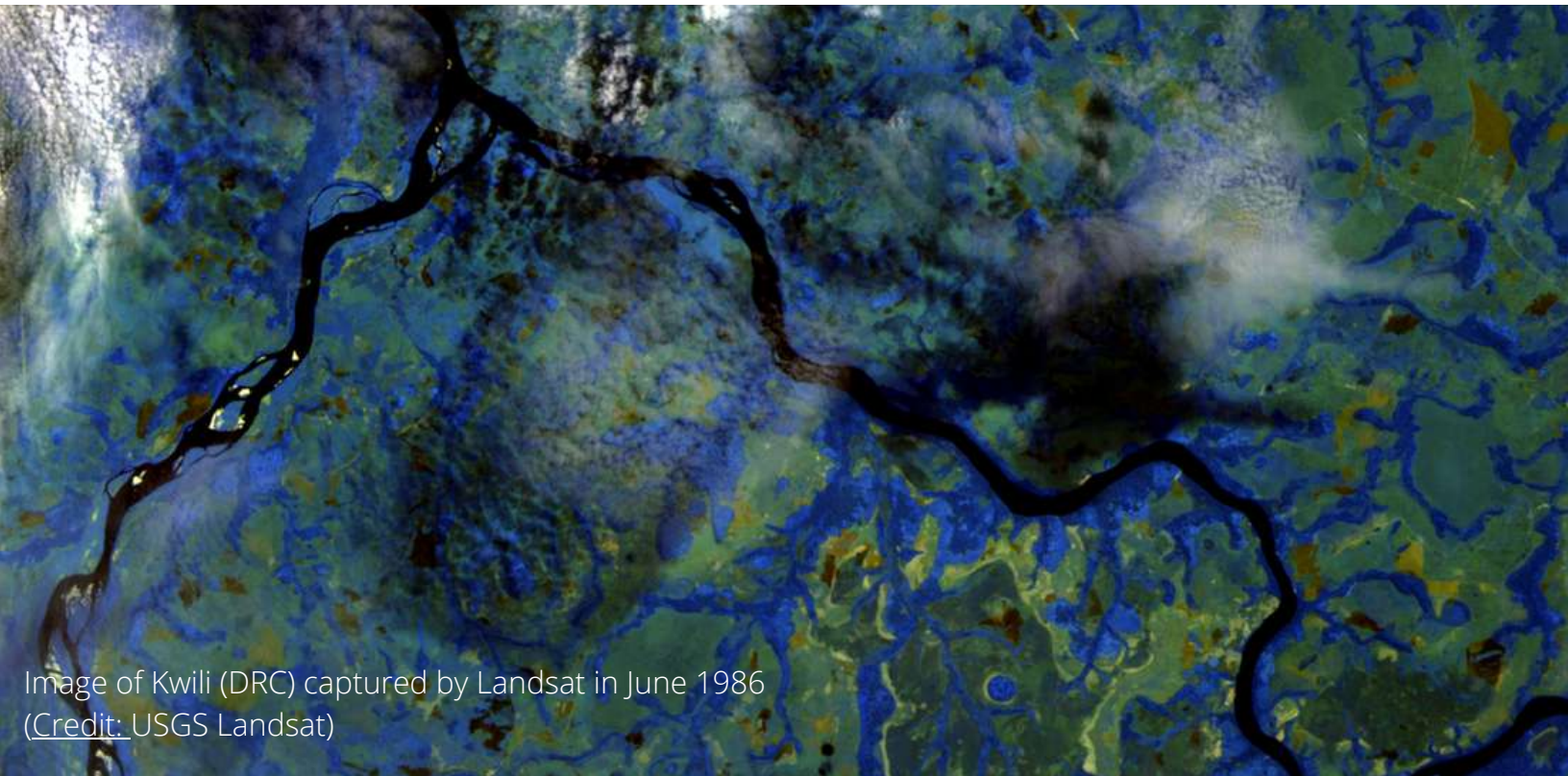


Image of Kwili (DRC) captured by Landsat in June 1986
(Credit: USGS Landsat)

Recent Publications & Materials

- Spatiotemporal wildfire extremes: understanding drivers of ignition and spread (Joseph et al, Ecological Applications)
- Repeated Fires Reduce Plant Diversity in Low-Elevation Wyoming Big Sagebrush Ecosystems (1984-2014) (Mahood & Balch, Ecosphere)
- Wildfire smoke exposure under climate change: impact on respiratory health of affected communities (Reid & Maestas, Current Opinion in Pulmonary Medicine)
- Invasive grasses increase fire occurrence and frequency across U.S. ecoregions (Fusco et al, Ecological Applications)
- If the trees burn, is the forest lost? (Iglesias & Whitlock, Philosophical Transactions of the Royal Society B)
- Earth Analytics Courses in R and Python; Earth Analytics Bootcamp Course; Introduction to Earth Data Science Textbook (Wasser, Palomino, & Holdgraf)

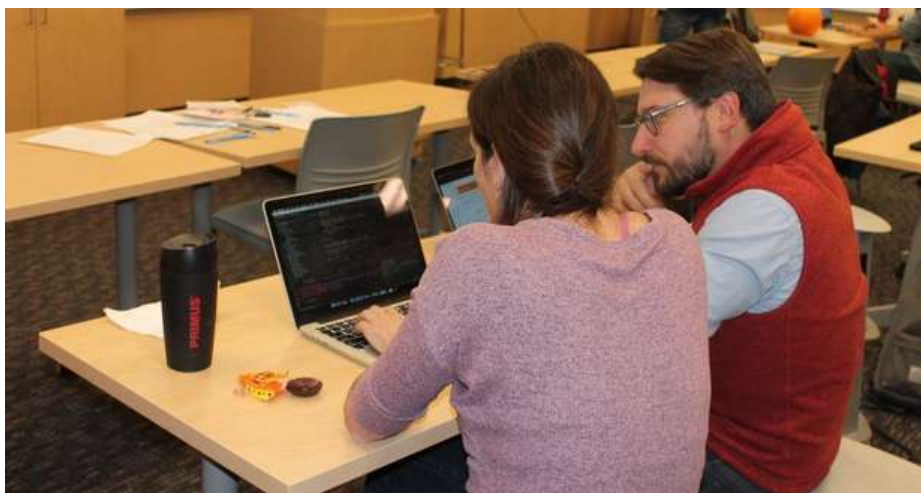
\$1.2 million to Earth Data Science Corps

Earth Lab is proud to announce that their Earth Analytics Education Initiative received an NSF grant for the project, Earth Data Science Corps - Fulfilling Workforce Demand at the Intersection of Environmental Science and Data Science. Partnered with United Tribes Technical College, Oglala Lakota College, Front Range Community College, and Metropolitan State University of Denver, the grant includes \$1.2 million in funding over the course of 3 years.

The Earth Data Science Corps is a several month-long program aimed at teaching faculty and students at tribal and minority-serving institutions key data science skills needed in today's workforce. The program first begins with training instructors to teach an introductory Python course. It then expands to students via trainings, professional development, and an Earth Analytics Bootcamp course, finally applying their knowledge to a paid internship.

Despite the significant career potential and opportunity in Earth data science, many institutions face significant challenges to providing programs that specialize in the field. The Earth Data Science Corps' main mission, now supported by NSF funding, is to provide students with the ability to pursue the numerous careers available, equalizing opportunity and filling the gap in the workforce.

Original Press by: Lauren Herwehe & Ally Faller



Earth Analytics Education Director Leah Wasser assists a postdoctoral researcher. (Credit: Lauren Herwehe)

Earth Lab: By the Numbers

90

Grants submitted since inception

\$8.1M

Grant dollars currently pending and in development

100,000

Visitors per month to earthdatascience.org

29

Undergraduate interns supported

168

Number of attendees at NEON Science Summit 2019

62

Papers published since inception

12+

Cloud-based software tools and workflows developed

12,000

Cloud compute hours per month

313

Publicly available coding tutorials

1,100

EarthPy downloads per month

2,300

Gain in Twitter followers from 2016 to 2019



NEON is seeding the next revolution in ecology

The National Ecological Observatory Network (NEON) became fully operational across 81 sites in May 2019, and represents an unparalleled investment in continental-scale ecology. We believe NEON will precipitate the next big shift in the discipline with the help of the current and emergent community.

Earth Lab hosted the first NEON Science Summit at the University of Colorado (CU)–Boulder in October 2019 to bring together the early NEON adopters already exploring topics such as biodiversity and environmental change across space and time scales. Together there have been over 80 publications using NEON assets. The Summit convened 168 scientists for an “unconference” (a loosely structured, participant-driven meeting) that prompted more than 70 ideas on how to use NEON data.



Jennifer Balch



Chelsea Nagy



Benjamin Halpern

Participants of the 2019 NEON Science Summit listen to speaker on Day 3 of the “unconference” (Credit: Victoria Scholl)

The Summit identified two emergent Grand Challenges that are critical if NEON is to reach its full potential: building open data skills for all ecologists and linking NEON to the larger environmental data constellation.

We believe the network’s growing pains may reflect the fact that many current and future ecologists have yet to fully adopt NEON because of these two Grand Challenges. We envision that NEON will be a cornerstone of our science for the next three decades, but we need our research community to promote a new ecology, embracing new data skills, data-driven inquiry and analytical approaches, coordinated and large-team science, and a commitment to open science. We are just getting started in this new phase of ecology.

This article was a collaboration between researchers at CU Boulder and UC Santa Barbara.

Read the full editorial in the February 2020 edition of Frontiers in Ecology and the Environment