

Avery P. Hill

California Academy of Sciences | 55 Music Concourse Dr | San Francisco, CA 94118

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Education

Stanford University

Stanford, CA

PHD IN ECOLOGY AND EVOLUTION

September 2017 - June 2022

- [Dissertation] *The Vegetation of the Anthropocene: At the Confluence of Climate Change, Wildfire, and Conservation Ethics*
- Cumulative GPA: 3.82/4.00

Cornell University

Ithaca, NY

B.S. IN GENERAL BIOLOGY, PLANT BIOLOGY CONCENTRATION

August 2013 - May 2017

- [Honors thesis] *The Effect of Different Sources of Vegetation Occurrence Data on Species Distribution Models*
- minor in Philosophy
- Cumulative GPA: 3.63/4.00, Cum Laude
- Distinction in Research

Research Experience

Center for Biodiversity and Community Science, California Academy of Sciences

San Francisco, CA

POSTDOCTORAL RESEARCHER

September 2022 - PRESENT

- Built tools for land managers to access biodiversity data for their lands
- Extended species distribution models of conservation-target species to urban areas
- Used community-sourced iNaturalist data to explore the community composition of 'zombie forests' in CA
- Collaborated with other scientists and community members on conservation solutions for California grasslands
- Led the development of a community science campaign for collecting understory species data in the Sierra Nevada

Chris Field Lab, Stanford University

Stanford, CA

PHD CANDIDATE

September 2017 - PRESENT

- Computationally modeled the environmental niches of vegetation in the western U.S. and mapped expected and observed shifts
- Established the first empirical evidence that wildfire can facilitate climate change-induced vegetation transitions
- Researched philosophical underpinnings of conservation praxis in the Anthropocene
- Worked to further wildfire mitigation and adaptation planning in CA with interdisciplinary group of wildfire researchers
- Developed collaboration with iNaturalist to help identify regions of expected vegetation transition in the Sierra Nevada

Kevin Nixon Lab, Cornell University

Ithaca, NY

HONORS THESIS CANDIDATE

May 2016 - May 2017

- Wrote iOS app for field data collection
- Spent summer 2016 in the high Sierra Nevada collecting plant occurrence data
- Found that vetting community-sourced subalpine tree occurrences with altitude envelope determined from field work improved MaxEnt model performance
- Presented poster of research and submitted written thesis to Honors Thesis Committee

Teaching Experience

Department of Biology, Stanford University

Stanford, CA

TEACHING ASSISTANT

September 2018 - June 2019

BIO 130 ECOSYSTEMS OF CALIFORNIA, BIO 313 ETHICS IN THE ANTHROPOCENE, BIO 81 INTRO TO ECOLOGY

- Helped organize and lead 5 field trips to various California ecosystems
- Held weekly office hours and facilitated in-class discussion
- Led weekly discussion section and helped make lesson plans
- Aided in course development for new environmental ethics course

Department of Biochemistry, Cornell University

Ithaca, NY

TEACHING ASSISTANT

January 2016 - May 2017

- Administered and graded weekly quizzes, and performed oral assessment of students' knowledge of biochemistry
- Students worked through a study guide on their own and came to my office hours for examination and additional training



Naturalist Outreach Practicum

Ithaca, NY

VOLUNTEER TEACHER

August 2016 - December 2016

- Traveled to local elementary schools and after-school programs to teach North American plant diversity and plant adaptations to climate
- Designed activities and content for 40 minute lessons
- Developed an educational iOS app for children to learn more about plant adaptations to climate

Service

Report Co-Author	Contributing author on 'Nature and Climate Change' chapter of the U.S. 1st National Nature Assessment. (2024-present)
Research Mentor	Oversaw undergraduate research project <i>Investigating geographical species distributions before and after reservoir construction in northern Sierra Nevada foothills</i> . (2024)
Trustee	Advise and help manage a 20-student cooperative-living house, Cayuga Lodge Inc., which provides housing for low-income BIPOC Cornell students (2020-Present)
1st-year Mentor	Helped first-year students navigate the first year of their PhD through regular meetings and events. (2018-2022)
Research Mentor	Advised and co-led a group of 5 undergraduate students in the Stanford Data Science and Mapping for Society club in producing an historical vegetation map of the Santa Cruz Mountains. (2021)
Research Mentor	Advised the biodiversity mapping project of underrepresented undergraduate student through the Stanford Summer Research Program. (2020-2021)
Research Mentor	Advised the tree range-shift mapping project of undergraduate student in the Field Lab. (2020-2021)
Academic Mentor	Helped undergraduate student navigate academia and post-grad paths through the First-Gen/Low-Income Mentorship Program. (2020-2021)
Guest Editor	<i>PNAS</i> – Manuscript concerning anthropogenic impacts on vegetation range-filling. 2018

Honors

2021	Philippe S. Cohen Graduate Fellowship , Stanford University	Stanford, CA
2019	Excellence in Teaching , Department of Biology	Stanford, CA

Grants

- Establishing Enabling Knowledge and Conditions for Wildfire Resilience in California. **Gordon and Betty Moore Foundation** (2023-present). C.B. Field (PI), **A.P. Hill (co-PI)**. Total: \$241,000
- Scenes from the Anthropocene—A video documentary of diverse voices and views on conservation from across society. **McCoy Family Center for Ethics in Society** (2022-present). C.B. Field (PI), **A.P. Hill**, T. Bellagio, L. Gillespie, K. Mualim. Total: \$21,000

Media

Interview	Wigglesworth. "California's mountains are too warm for some trees to survive." <i>LA Times</i>	2023
Interview	Smith. "Millions of California trees are dying; Joshua trees are just the latest victims." <i>LA Times</i>	2023
Article	Hernandez. "Climate is changing too quickly for the Sierra Nevada's 'zombie forests'" <i>NPR</i>	2023
Article	Shao. "Mapping California's 'Zombie' Forests." <i>The New York Times</i>	2023
Interview	Garcia. "Global Study Finds Adaptation Progress Local Not Societal." <i>Kneedeep Times</i>	2021
Article	Jordan. "Stanford researchers reveal how wildfire accelerates forest change." <i>Stanford Report</i>	2021
Interview	Ellison. "The Heat is On." <i>Stanford Magazine</i>	2021
Interview	Lillios et al. "This is Not a Drill." <i>C Magazine</i>	2019



Presentations

- **A.P. Hill**. 2023 November. *Using species occurrence data for land management decisions* (talk). Past Present Future Biodiversity Convening; San Francisco, CA
- **A.P. Hill**. 2023 October. *Vegetation-climate mismatch in California's Sierra Nevada and implications for long-term forest management* (talk). Society of American Foresters; Sacramento, CA
- **A.P. Hill**. 2023 October. *What does vegetation-climate mismatch mean to the understory? Using iNaturalist to explore species composition trends in California's Sierra Nevada* (talk). GEO BON Global Conference; Montreal, Canada
- **A.P. Hill**. 2023 September. *Zombie Forests: Vegetation-climate mismatch in California's Sierra Nevada* (talk). California Academy of Sciences Members Talk; Online
- **A.P. Hill**. 2023 May. *iNaturalist Data Informs Regional Conservation Policy* (talk). C*Sci 2023 Meeting; Tempe, AZ
- **A.P. Hill**. 2022 June. *Vegetation-climate mismatch in California's Sierra Nevada conifer forests* (talk). California Botanical Society
- **A.P. Hill** and M. Harris. 2021 November. *Public Science Communications: Op-Eds and Webinars* (talk). Biology Graduate Seminar Series; Stanford University
- **A.P. Hill**, K. Hemes, C. Nolan, T. Cambron, and C.B. Field. 2021 November. *Zombie Forests: Long-term Wildfire Management and California's Standing Dead* (talk). Mechanism Design for Social Good Seminar Series; Virtual
- **A.P. Hill** and C.B. Field. 2021 April. *Wildfire, Competition, and the Rate of Tree Range Shifts in the American West* (talk). Bay Area Conservation Biology Symposium; Virtual
- **A.P. Hill**, K. Hemes, C. Nolan, T. Cambron, and C.B. Field. 2021 April. *Zombie Forests: Fire Risk of the Standing Dead in the Sierra Nevada* (talk). Stanford Wildland Fire Seminar Series; Virtual
- **A.P. Hill** and C.B. Field. 2020 August. *How Competition and Wildfire Affect Tree Range Shifts in the American West* (talk). Ecological Society of America Meeting; Virtual

Publications

- **A.P. Hill** "Nativeness as gradient: Towards a more complete value assessment of species in a rapidly changing world." *In review*
- **A.P. Hill** et al. "[Low-elevation conifers in California's Sierra Nevada are out of equilibrium with climate.](#)" *PNAS Nexus* (2023)
- **A.P. Hill** and C.B. Field. "[Forest fires and climate-induced tree range shifts in the western US.](#)" *Nature Communications* (2021)
- Berrang-Ford et al. "[A Systematic Global Stocktake of Evidence on Human Adaptation to Climate Change.](#)" *Nature Climate Change* (2021)
- **A.P. Hill** and E.A. Hadly. "[Rethinking 'Native' in the Anthropocene.](#)" *Frontiers in Earth Science* (2018)

