

# Avery P. Hill

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

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## Education

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### 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

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### Center for Biodiversity and Community Science, California Academy of Sciences

San Francisco, CA

POSTDOCTORAL RESEARCHER/RESEARCH SCIENTIST

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

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### 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



## Service

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<b>Report Co-Author</b>	Contributing author on ‘Nature and Climate Change’ chapter of the U.S. 1st National Nature Assessment. (2024-present)
<b>Co-organizer</b>	Native Gatherers and Climate Change Convening. San Francisco, CA (2023)
<b>Research Mentor</b>	Oversaw undergraduate research project <i>Investigating geographical species distributions before and after reservoir construction in northern Sierra Nevada foothills.</i> (2024)
<b>Trustee</b>	Advise and help manage a 20-student cooperative-living house, Cayuga Lodge Inc., which provides housing for low-income BIPOC Cornell students (2020-Present)
<b>1st-year Mentor</b>	Helped first-year students navigate the first year of their PhD through regular meetings and events. (2018-2022)
<b>Research Mentor</b>	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)
<b>Research Mentor</b>	Advised the biodiversity mapping project of underrepresented undergraduate student through the Stanford Summer Research Program. (2020-2021)
<b>Research Mentor</b>	Advised the tree range-shift mapping project of undergraduate student in the Field Lab. (2020-2021)
<b>Academic Mentor</b>	Helped undergraduate student navigate academia and post-grad paths through the First-Gen/Low-Income Mentorship Program. (2020-2021)
<b>Guest Editor</b>	PNAS- Manuscript concerning anthropogenic impacts on vegetation range-filling. 2018

## Honors

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2021 **Philippe S. Cohen Graduate Fellowship**, Stanford University

*Stanford, CA*

2019 **Excellence in Teaching**, Department of Biology

*Stanford, CA*

## Grants

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- Leveraging NASA Data to Guide Biodiversity Conservation Investments with the Trust for Public Land. **NASA** (2024-present). Carl Boettiger (PI), Justin Brashares (co-I), Mitch Hannon (co-I), **Avery Hill (co-I)**, Melissa Chapman (co-I). Total: \$620,000
- Establishing Enabling Knowledge and Conditions for Wildfire Resilience in California. **Gordon and Betty Moore Foundation** (2023-present). C.B. Field (PI), **Avery P. Hill (co-I)**. 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** (2022-2024). C.B. Field (PI), **A.P. Hill**, T. Bellagio, L. Gillespie, K. Mualim. Total: \$21,000

## Media

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



## Invited Talks

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- **A.P. Hill.** 2025 August. *Econativeness: A niche-based framework for resolving contradictions in conservation ethics* (talk). Ecological Society of America; Baltimore, MD
- **A.P. Hill.** 2025 March. *Biodiversity: New Challenges and Tools to Address Them* (panel). University of San Francisco; CA
- **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

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- Rebecca C. Wilcox, Anthony E. Baniaga, **A.P. Hill**, Alison Young, Rebecca F. Johnson, Sarah J. Jacobs. “[Documenting biodiversity with digital data: comparing and contrasting the efficacy of specimen-based and observation-based approaches.](#)” *New Phytologist* (2025)
- **A.P. Hill** “[Nativeness as gradient: Towards a more complete value assessment of species in a rapidly changing world.](#)” *Journal of Agricultural and Environmental Ethics* (2024)
- **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)

