Christopher T. Cosma, Ph.D.

Conservation Biology Institute
Remote Office: Spokane, WA
consbio.org/our-team/chris-cosma
Ph. (925) 784-8696
chris.cosma@consbio.org

Chris Cosma is a community ecologist and pollination biologist with eight years of experience spearheading innovative research initiatives and leading interdisciplinary teams. Chris's doctoral research at the University of California, Riverside focused on the impacts of climate change on plant-pollinator interactions, and how to apply ecological data and tools to guide effective insect conservation actions. Alongside this work, Chris developed an innovative web application for butterfly and moth conservation which is being used by thousands of people to expand and connect insect habitat across California. In addition to pollination and climate change ecology, Chris has expertise in spatial ecology, ecological network science, molecular ecology, plant ecophysiology, insect biology and identification, and environmental policymaking. Chris specializes in translating science into impactful biodiversity conservation strategies, and is particularly passionate about leveraging multi-disciplinary collaborations for holistic solutions that balance ecological and social justice. In his role developing and implementing insect conservation programs with CBI, Chris brings with him resources and expertise from various collaborations, including an interdisciplinary pollinator conservation working group that he formed through the National Center for Ecological Analysis and Synthesis.

EDUCATION

2024   Ph.D. Evolution, Ecology, and Organismal Biology, University of California, Riverside
2017   B.S. Ecology and Evolutionary Biology, University of California, Santa Barbara

RECENT AWARDS AND CERTIFICATIONS

2022   Forrest Shreve Award, Ecological Society of America
2022   Joan Mosenthal DeWind Award, The Xerces Society
2021   Science to Policy Graduate Certificate, University of California, Riverside

EMPLOYMENT HISTORY

2024-present   Ecologist, Conservation Biology Institute, Corvallis OR
2018   Field Technician, Smithsonian Conservation Biology Institute, Front Royal VA

PROFESSIONAL SKILLS

Statistical data analysis and visualization in R including multivariate methods for community ecology and ecological interaction network analysis; Data management; Species distribution modeling and spatial ecology; Molecular biology techniques, microscopy, and bioinformatics; Pollination biology techniques including nectar and pollen analysis and pollinator exclusions; Plant and insect identification; Biodiversity surveys including moth light trapping, flowering phenology, and native and invasive species assessments; Project development, management and leadership including grant writing, forming multi-disciplinary partnerships, budgeting and resource allocation, strategic planning, and stakeholder engagement.

PROJECT EXPERIENCE

Improving national pollinator conservation through the USDA Farm Service Agency Conservation Reserve Program (in process) – Serving as an ecological data analyst and conservation planner; Leveraging large ecological datasets and applying spatial ecological network analysis to optimize plant species selection for Conservation Reserve Program lands; Employing a data-driven approach to balance multiple goals including pollinator recovery and improved crop yields; Capitalizing on resources and expertise from multi-disciplinary collaborations to increase conservation impact and to maintain compatibility with parallel goals; Working with user groups and web developers to ensure evidence-based guidance is accessible and realistic.

SELECTED PUBLICATIONS

(Revision in review) Rafferty, N.E., and **C.T. Cosma**. 2024. A key part of the equation: Incorporating plant-pollinator interactions into nature-based solutions. *Journal of Ecology.*

Cosma, C.T. 2022. The Butterfly Net: Lepidoptera Conservation Tool. *R Shiny Web Application.* https://ctcosma.shinyapps.io/the_butterfly_net/

Anderson-Teixeira, K.J., V. Herrmann, W.B. Cass, A.B. Williams, S.J. Paull, E.B. Gonzalez-Akre, R. Helcoski, A.J. Tepley, N.A. Bourg, **C.T. Cosma**, A.E. Ferson, C. Kittle, V. Meakem, I.R. McGregor, M.N. Prestipino, M.K. Scott, A.R. Terrell, A. Alonso, F. Dallmeier, and W.J. McShea. 2020. Long-Term Impacts of Invasive Insects and Pathogens on Composition, Biomass, and Diversity of Forests in Virginia's Blue Ridge Mountains. *Ecosystems* 24:89-105.