

BIOLOGICAL RESOURCES, BIODIVERSITY & CLIMATE CHANGE

BACKGROUND

Los Angeles is situated in a global biodiversity hot spot, and many of the region's species and ecological communities are found nowhere else in the world. The region's biodiversity depends on critical habitat that is threatened by climate change, rapid urbanization, and energy and water management practices. While projections have not yet been made for California, some biologists project that globally 50% of all living species might be lost by 2100. Virtually all of these losses are driven by human activities.

VISION

- Protection of endemic species and their critical habitats from the impacts of climate change with no loss of native biodiversity by 2050.
- Self-sufficiency in energy and water in Los Angeles in a way that is harmonious with the needs of the region's wildlife.
- Restoration of balance between human and ecosystem use of land and water.
- Heightened awareness and appreciation for the region's natural areas and unique biodiversity.
- Enjoyment of a revamped cityscape that includes new green spaces and emphasizes the integration of biodiversity and the built environment.

ACTION

- Develop and implement cutting-edge survey techniques and monitoring technologies to enumerate and map the region's biodiversity.
- Understand how climate change is likely to affect species and habitats.
- Identify species vulnerable to local extinction and critical habitats in need of protection.
- Design new biodiversity conservation tools and infrastructural technologies to achieve habitat protection in an urban context. Use these tools to identify land in greatest need of conservation to build in resiliency into biodiversity conservation.
- Collaborate with energy and water technologists, architects, urban planners, and other stakeholders to select energy and water technologies and strategies compatible with species protection, as well as to develop and implement habitat restoration and revitalization plans.

CONNECTIONS WITH OTHER COMPONENTS

Thriving in a Hotter Los Angeles is a complex, multifaceted challenge requiring creativity and problem-solving across traditional disciplinary boundaries. Many of the cross-campus collaborations that make up the Project contribute to more than one of the Project's components. Here are some examples of the connections between Biological Resources, Biodiversity, and Climate Change and other components:

- Work done under Water Resource Characterization and Climate Change informs the assessment of water resources available to species in the future.
- Information about species and habitat needs are incorporated into assessments of Energy Generation and Storage and Water Technologies, as well as plans and designs created under the Urban Planning, Transportation, Architecture, and Design topic area.
- Law, Policy, and Economics work draws upon information about species and habitat needs to develop policy recommendations and strategies for protection.
- Public Engagement and Outreach work helps us understand current attitudes toward biodiversity, identify behaviors that negatively affect biological resources and develop communication strategies to encourage better practices.

UCLA STRENGTHS

- Esteemed terrestrial and marine conservation scientists and ecologists, one of the top conservation genomics groups in the nation, restoration ecologists, biodiversity and ecological modeling experts, and habitat remote-sensing and geographic information systems (GIS) practitioners.
 - These team members serve as advisors to various organizations seeking to understand environmental impacts.
 - They have also received many honors from professional societies; this group has an elected member of the National Academy of Sciences and an American Association for the Advancement of Science elected fellow.
- State of the art facilities and capabilities for genomics and ecology, remote-sensing, GIS, computational data storage, analysis, and modeling.
- More than \$5M in ongoing research related to biological resources and protection of biodiversity.