2024 Bloom-Hays Ecological Research Grant and Zembal Wetland Research Grant: Six excellent student proposals were selected for funding by the Sea and Sage Student Grants Committee. The objective of the Bloom-Hays Ecological Research Grant is to advance ecological research, particularly research related to avian species and the natural communities upon which they depend, by providing funds or supplies to support research activities benefitting native species and habitats in Southern California. The objective of the Zembal Wetland Research Grant is to advance ecological research related to coastal wetland habitats of Southern California, including habitats that support shorebirds and seabirds.

Bloom-Hays Ecological Research Grant

- ***Ella Eleopoulus, California State Polytechnic University, Pomona*** *(MS), $2,500, Prevalence of Anticoagulant Rodenticides in Raptors.* Ella is studying the prevalence of anticoagulant rodenticides in raptor populations in Southern California. Her research will quantify anticoagulant rodenticide exposure in natural populations of red-tailed hawks, red-shouldered hawks, Swainson's hawks, and great-horned owls. It will also compare exposure risk between nesting environments (urban vs. natural) in red-tailed hawks, and will test the relationship between anticoagulant rodenticide exposure between adult and nestling red-tailed hawks. Notably, Ella is working with the grant's namesake, Dr. Pete Bloom, on the methods for how to capture hawks and to collect samples.

- ***Carolyn Coyle, Colorado State University*** *(PhD), $2,500, Songbirds as Pollinators: Uncovering Plants of Importance for Southern California's Flower-Foraging Songbirds*. Carolyn's study aims to understand the role that flower-foraging songbirds (not normally considered nectar foragers) play in plant-pollinator systems. Her study will identify which bird species forage on flowers, will assess which individual or environmental characteristics contribute to flower-foraging, and will identify which plants are important for flower-foraging songbirds. Carolyn is collaborating with 10 banding stations from Arizona to British Columbia to collect pollen samples from songbirds captured along the western flyway; Southern California banding stations include Zuma Canyon, Burns Pinon Ridge Reserve, and bear Divide.

- ***Lindsay Peria, California State Polytechnic University, San Luis Obispo*** *(MS), $1,250, Avian biodiversity in a vineyard dominated landscape in California.* Lindsay's study is assessing different vineyard characteristics in the Edna Valley including surrounding and interspersed habitat, trees and hedgerows, ponds, other nearby agriculture, and level of structural complexity to determine which characteristics are associated with high bird diversity and abundance. Her results could help guide wildlife-friendly vineyard management.

- ***Joseph Di Liberto, University of California, Los Angeles*** *(PhD), $1,250, Investigating Adaptive and Fitness Consequences of Behavioral Phenotypes in Urbanizing Dark-eyed Juncos.* Joseph is studying whether individual behavioral traits are influencing individual fitness of urban dark-eyed juncos on the UCLA campus. To do this, he is determining whether aggressive, stress response, and fear behaviors are related to the number of eggs laid, nestling survival, and number of young fledged. He will also collect samples to

analyze the genetics of the individuals studied to understand the relationship between the genetics and the behavioral phenotypes. The research will contribute to an understanding of how birds are adapting to an urban environment.

- ***Karagan Smith, University of California, San Diego*** *(PhD), $1,250, Understanding Functional Traits Driving Drought and Herbivore Resistance in Southern California's Postfire Vegetation.* Karagan is studying how post-fire disturbances, such as drought and non-native species invasions, shape the natural succession pattern of chaparral and coastal sage scrub plant communities. The nest phase of her study involves an examination of functional traits associated with drought and herbivore resistance across an array of plant species. By understanding the interaction between fire, drought, and herbivory, this study aims to guide post-fire restoration strategies and enhance resilience of ecosystems.

- ***Sam London, University of California, Riverside*** *(PhD), $1,250, Investigating the Seed Predation and Dispersal Activities of the Giant Kangaroo Rat.* Sam is studying the endangered giant kangaroo rat in the grasslands of the Carrizo Plain National Monument to evaluate how their foraging influences plant community dynamics. The current phase of his study involves determining which seed species are preferred by giant kangaroo rats and then comparing seed preference with the seed functional traits that may be indicative of food choices. He is also using videos of giant kangaroo rats to determine whether particular seed species are consumed or cached for later use.

Zembal Wetland Research Grant

None of the applications submitted in 2024 were related to coastal wetland habitats, shorebirds, or seabirds. Therefore, no Zembal Wetland Research Grants were awarded in 2024. Funding for 2024 will be carried over to provide research grants in future years.