

»»» THE PEREGRINE «««

ENDEMIC ENVIRONMENTAL SERVICES



Alex Eagleton handling Turkey Vultures- Photo By/Credit: Alex Eagleton

STAFF SPOTLIGHT: ALEX EAGLETON AND RAPTOR RESEARCH

»»» RAPTOR RESEARCH FOUNDATION

This past year, Endemic biologist and project manager Alex Eagleton attended the Raptor Research Foundation (RRF) conference in Albuquerque, NM. The RRF, an international scientific society whose primary goal is accumulating and disseminating scientific information about raptors, hosts a yearly conference where raptor specialists and foundation members join together to share their knowledge of raptor studies. Alex Eagleton, whose passion and interest in raptors led her to conduct her master's thesis in this area of study, was able to present the culmination of her research at the conference.

Alex comes back to us with an enriching experience that connected her with fellow raptor biologists, exploring the latest technology from vendors and attending a variety of talks on topics ranging from raptor population dynamics and demography to morphology, health, toxicology, and even international work on vulture species in Africa. Interacting with esteemed raptor researchers was inspiring, providing numerous insights into the individual's ongoing work with turkey vultures. The conference sparked ideas in Alex for future research endeavors with other raptor species.

LEARN MORE ABOUT ALEX'S RRF EXPERIENCE AND CURRENT RESEARCH





ALEX EAGLETON - RAPTOR RESEARCH FOUNDATION

>>> EXPLORING THE FRONTIERS OF RAPTOR RESEARCH

Alex describes her experience at the Raptor Research Foundation Conference,

"My time at the Raptor Research Foundation conference in Albuquerque was amazing. I was able to connect with other raptor biologists, meet vendors selling the most recent tech, and attend tons of talks on everything from raptor population and demography to morphology, health, and toxicology, and even some interesting far-away work like vulture species in Africa. I also attended a raptor molt identification workshop where I learned techniques to improve my in-hand aging of diurnal raptors greatly. It was inspiring to rub elbows with such great raptor researchers, and I gained a lot of ideas for my current work with turkey vultures. I was also able to gain some ideas for future research with other raptor species.

I presented my master's thesis study on Thursday at the conference. I talked about my work capturing and collecting data from turkey vultures in California to determine if they had the toxicant lead (Pb) in their blood and, if so, whether it had any effect on their health through measuring biomarkers associated with oxidative stress. Both migrant and resident populations of turkey vultures had individuals with elevated blood Pb levels. Migrant TUVU had higher levels of Pb in their blood than resident TUVU. Based on findings for the antioxidant and oxidative damage in each population, there is evidence of a potential upregulation of antioxidant levels in migrants to combat the stress of increased Pb toxicity and long-distance flight."

Alex's research investigates the effects of lead poisoning and oxidative stress on Turkey Vultures, *Cathartes aura*, specifically on resident and migratory populations. Her research in Southern California between August 2020 and April 2021 found that migrants had higher blood lead (Pb) concentrations than resident vultures. Various biomarkers indicative of oxidative stress, like glutathione (GSH) and protein carbonyls (PC), were measured in both populations. Results showed an indication of upregulation, or an increase in levels, of GSH levels in migrants, which could increase their susceptibility to Pb poisoning.

The higher levels of lead in migrant birds indicate a greater toxicological risk for Turkey Vultures elsewhere within the species' range, especially in light of the energetic demands of migration. This research emphasizes the need for a flyway approach to conservation, as local environmental measures may not adequately address the conservation needs of migratory birds.

**"IT WAS
INSPIRING TO
"RUB ELBOWS"
WITH SUCH GREAT
RAPTOR
RESEARCHERS..."**





ENDEMIC ENVIRONMENTAL SERVICES GETS INVOLVED

WILDLIFE DONATION DRIVE



NorCal team member Alex Lyon recently hosted a donation drive for wildlife rescues up near our northern California, one with whom she volunteers with currently. This year, Alex's drive brought in a diverse range of donations, including food, medical supplies, and other essential items that will go a long way in supporting local wildlife rehabilitation. The donations were given to two prominent wildlife centers in the region - the Wildlife Care Association and the Wildlife Center of Silicon Valley - both of which do critical work in caring for injured and orphaned wildlife. We are grateful to Alex for her efforts in making this drive a success, and we're equally thankful to the staff and supporters who generously contributed to the cause. Their contributions will undoubtedly significantly impact the lives of the animals and the communities they serve!



WESTERN SOCIETY OF NATURALISTS - AN OVERVIEW

Last year, **Calvin Won, Min Han, and Emma Dressel** attended the Western Society of Naturalists annual meeting in Monterey, highlighting the brilliance of minds in marine science. This year's meeting included two sessions addressing kelp forest science and restoration and one session dedicated to restorative aquaculture. Endemic biologist Calvin Won explains that the sessions and conference discussed the decline of aquatic species and aquaculture's role in stabilizing their populations. It was argued that "restoration" is becoming outdated and that our scientific focus should be on innovation and adaptation to new conditions in our rapidly changing world. The team also attended the presidential symposium on urban ecology, which revealed that many species adapt to urban environments and thrive. While many believe that urban areas destroy ecosystems and biodiversity, this is not entirely true. As an environmental consultant, Calvin found the discussions on the intersection between business and conservation values highly relevant.

Through the WSN conference, the team made valuable connections at the meeting and plans to pursue partnerships in restorative aquaculture as part of Endemic's marine science division. In addition to networking at the conference, Min Han was able to present his poster presentation on the development of a step-by-step guide to the Green Gravel methodology for kelp forest restoration. Calvin stated, "This is one of many innovative approaches for addressing the massive decline of canopy-forming kelps along our coast in recent years due to increasing sea surface temperatures. Marine heatwave events are becoming more frequent as climate changes, so kelp restoration has become a center-stage topic. Min's poster was quite relevant to this, and he did a fantastic job communicating this science to others. Way to go, Min!". Thank you to our team for representing Endemic at WSN and to Min for his hard work and research!





THE PRESIDENTS CORNER

A word from CEO of Endemic Environmental, Barry Nerhus

»»» REFLECTING ON A YEAR OF GROWTH: 2023

As we end the first month of the new year, I have been reflecting on the changes that occurred in 2023. It's incredible how much can happen in just one year. Our field team gained much experience working with various wildlife across California. We rescued plants and animals, conducted research on rare species to understand them better, and presented our findings. We worked hard to protect streams, rivers, and creeks to ensure our precious resources were minimally impacted. As an Endemic Team, we became stronger by learning to communicate better, manage resources more efficiently, and rely on each other.

I truly appreciate your contributions as staff and supporters. So much effort went into the business, and the most valuable part was the people who believed in the business vision and each other. I am grateful to all of you for being part of the team! As we celebrate and welcome the return of sunlight, I hope you have many happy days basking in it.

Thank you for reading and supporting Endemic in its mission to navigate today's environmental challenges with innovative solutions.

HAPPY NEW YEAR

HERE'S TO A SUCCESSFUL 2024!

