



## ANNUAL REPORT

# 2023





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A MESSAGE FROM OUR

# EXECUTIVE DIRECTOR

2023 was a year of change for Fauna del Noroeste: a new team, new projects, and new collaborations. This series of changes has brought challenges and opportunities, pushing us to adapt, grow as an organization, and strengthen our actions as we actively search for improvement and cohesiveness

It is exciting to see so many positive results from previous years' work and the development of new plans to benefit the species we have all worked for.

We are more than grateful for the support of each person who has been part of the Fauna's network this year and years past. Their presence and contributions have served as a vote of confidence in our mission and have inspired us to continue our work.



Anny Peralta



## STAFF



**JORGE VALDEZ**  
Research coordinator



**DIEGO MALDONADO**  
Restoration coordinator



**CINTHIA HARO**  
Administrator



**DAVID MORA**  
Community manager



**ELISA LUNA**  
Project assistant



**DAVID PÉREZ**  
Grant writer



**MARCO SOLIS**  
Field biologist

## BOARD DIRECTORS

**ANDREA ADAMS**  
Earth Research Institute, UC Santa Bárbara

**BRADFORD HOLLINGSWORTH**  
San Diego Natural History Museum

**JEFF ALVAREZ**  
The Wildlife Project

**OSCAR A. FLORES-VILLELA**  
Universidad Nacional Autónoma de México

**LUPITA SOLANO**  
Calyx Environmental

**RICHAR ERICKSON**  
LSA Associates, Inc.

**ANDREW FORDE**  
Forde Biological Consultants

**SULA VANDERPLANK**  
SUVA Research





## OUR WORK

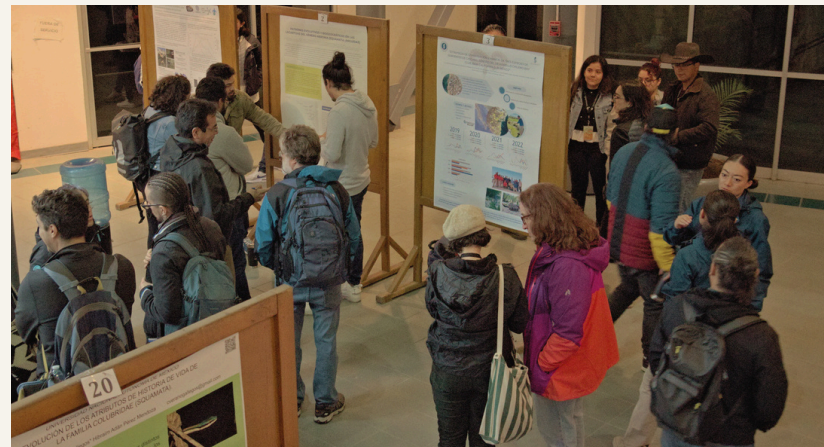
Facing the current biodiversity crisis, our mission is to promote the recovery and conservation of natural resources through scientific research, fostering restoration initiatives, and promoting education and collaboration.

At Fauna del Noroeste (Fauno), we believe that by generating scientific knowledge and community empowerment, we can preserve our ecosystems and lay a foundation for informed management plans.



# EDU CA TION

# Education



## NATIONAL HERPETOLOGY MEETING

The XVI National Herpetology Meeting was held for the first time in Ensenada, Baja California, and was hosted by the Autonomous University of Baja California (UABC). This year, the event was organized by Fauna del Noroeste, in collaboration with different institutions, including the Faculty of Sciences of the UABC and the Mexican Herpetological Society. The meeting was held from January 16th to the 20th, with the participation of 180 attendees from 81 institutions from different countries, and 124 papers were presented on various herpetological topics. There were keynote lectures, workshops, and symposia.





## Education

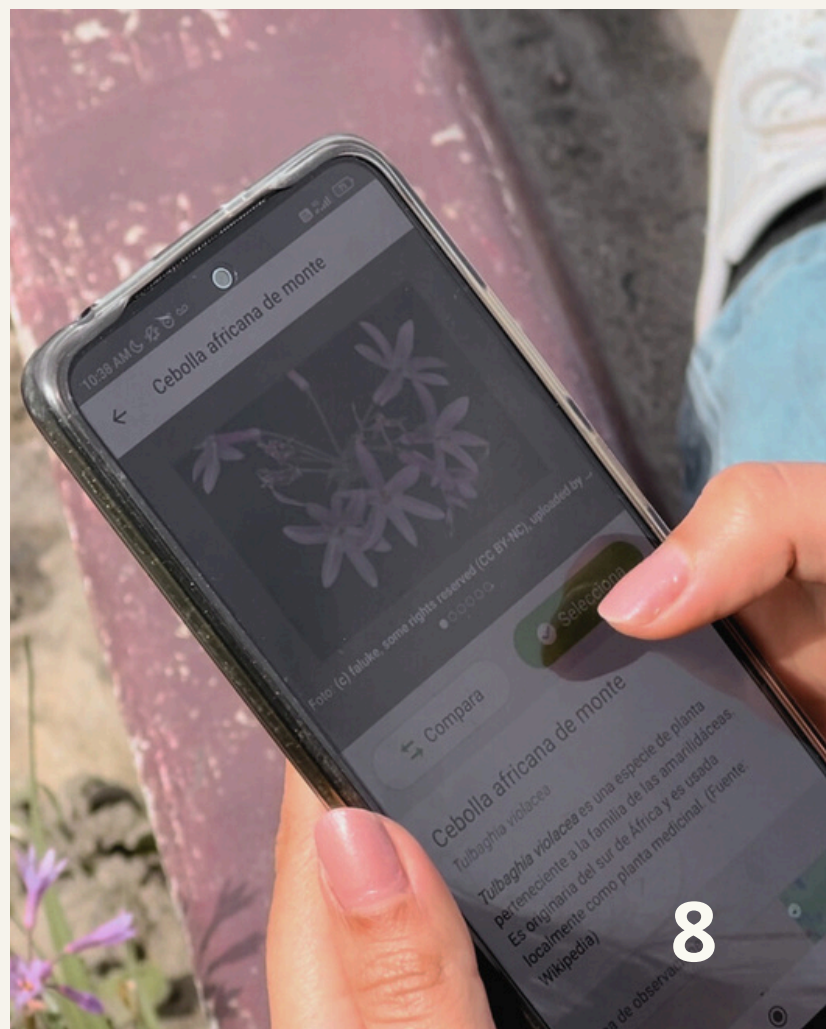
### 6TH INTERNATIONAL MEREDITH GOULD CONGRESS

Every two years, UABC celebrates the Meredith Gould International Congress in honor of the doctor who inspired thousands of students and peers with her life and work, a dedication to the natural sciences at both UABC, UCSD, and SDSU.

During the sixth edition of the Congress, our director presented a lecture "The Leap of the Frog: How and Why the Red-legged Frog Crossed the Border". In her presentation, she outlined the state and successes of the binational recovery plan for the California Red-legged Frog on both sides of the U.S.-Mexico border.

### iNATURALIST WORKSHOPS

As in previous years, the workshops of the citizen science platform iNaturalist ([naturalista.mx](https://naturalista.mx)) were an important part of our activities to engage the community in issues related to nature and conservation during 2023. This year we managed to reach more than 350 people with eight workshops held between January and November!







# Education

## LECTURES ON SNAKES

Our Research Coordinator was invited to give a lecture on snakes to the students of the Faculty of Engineering Sciences and Technology (FCITEC) of the UABC, Valle de las Palmas Unit. This event was part of the activities carried out during the 14th FCITEC Week, which was attended by students from the different careers of this faculty.



## TALKS ON AMPHIBIANS AND REPTILES

On several occasions this year, our team had the opportunity to collaborate with institutions such as UABC, Museo Caracol, and Grupo de Ecología y Conservación de Islas (GECI), as well as with the radio station EXA FM to share our knowledge about the amphibian and reptile groups of the world. Through short talks, we shared relevant data such as their habits and morphological peculiarities that make them super interesting animals!



# Education

## GETTING TO KNOW THE PUNTA BANDA ESTUARY SANDY SPIT

The protection of coastal habitats is of utmost importance to safeguard the biodiversity found there. A vital strategy to ensure that these spaces are preserved for posterity is through environmental education.

In December, we carried out environmental education activities in the Estero de Punta Banda together with the COCUY and Tipai schools. The students had the opportunity to walk along the interpretive trail, play board games about invasive species, and get to work removing exotic vegetation. With this, we hope that the knowledge about the importance of this wetland will be transferred to family members and future generations. We hope that this is just one of the many events we wish to carry out with educational institutions in the region.



## COMMUNITY OUTREACH ABOUT EXOTIC SPECIES

Exotic species are found in regions other than their native geographic distribution and often become highly successful because they have no competition or predators in their new habitats; they become invasive, affecting local species and negatively altering ecosystems.

One of the causes of this problem has been the accidental or deliberate introduction of these invaders by humans. At Fauno, we recognize the importance of disseminating this information and raising awareness in our society to prevent this problem from getting worse. For this purpose, we participated in the event "Guardians of Nature" organized by our friends from Terra Peninsular, where we shared information about the exotic species present in our state.





# Education



## **BAJA CALIFORNIA AMPHIBIANS AND REPTILES WORKSHOP**

During April and May we organized two more Amphibians and Reptiles Workshops at Rancho Meling in the Sierra de San Pedro Martir. Thanks to our 30 participants this year, we had a successful count of 25 species in April and 30 in May. Through these events, we have expanded Fauno's network of friends and collaborators as we continue to explore the fascinating herpetofauna of Baja California. Thanks to The Wildlife Project for their invaluable support for these workshops.



# RESTO RATION & CONSER VATION

# Restoration & Conservation

## GOOD NEWS FOR THE CALIFORNIA RED-LEGGED FROG!

As in previous years, we monitored the populations of the California red-legged frog (*Rana draytonii*) as part of our efforts to conserve this species listed as Vulnerable (IUCN) and Endangered (NOM-059-Semarnat-2010). Thanks to the data obtained, we can update the information on its conservation status and propose improvements for the implementation of our project.

In addition, we maintain the ponds that are home to our frogs and that also represent a sanctuary for their reproduction. Maintenance turns the entire Fauno team into gardeners! Removing cattail is not an easy task but it is important that this plant does not take up more than 25% of the space of a pond so that the water level is sufficient for the frogs and their habits.

A few months after these restoration activities, during the breeding season, we can see the result with egg mass counts. This year we counted 192 egg masses, which represents an increase of almost 10 times (960%) in sample size from our first year of action.





## RESTORING OUR DUNES

Coastal dunes are unique sites in the world, only found on a few beaches and increasingly threatened by human impacts. South of the city of Ensenada, we have the Estero de Punta Banda, a coastal lagoon that is home to a great diversity of resident and migratory species.

With the support of the San Diego Foundation, we were able to initiate a collaborative project with the San Diego Audubon Society whose main objective is to take the first step towards restoring lost habitat in the sandbar dunes of the Estero de Punta Banda.



Our actions include the removal of exotic vegetation in the interpretive trail area, creating and installing educational signage, and involving the local community in restoration events.

By mid-2024, we aim to have a comprehensive restoration plan for the sandy spit. This plan will not only consolidate current activities but will also lay the groundwork for future initiatives for the preservation of this vital ecosystem.





# Restoration & Conservation

## MORE WETLANDS FOR THE NATIVE WILDLIFE!

In Baja California, most of the freshwater wetlands have disappeared, and many of those that remain are home to exotic species. These ecosystems are vital for numerous species, especially amphibians, which require these places to breed and lay their eggs. Since 2018, we began a project to restore and create these habitats to prevent the extinction of at-risk species, such as the *Rana draytonii*, by building and rehabilitating ponds that serve as breeding and refuge areas for both this species and native wildlife in general.

During 2023, we rebuilt two ponds at Rancho El Potrero, in the Sierra de San Pedro Mártir, and built a new one at Rancho Agua Caliente, located in Arroyo San Vicente. At Rancho El Potrero, we increased the size of "Poza Pivi" and "Poza Ana". The former is the largest pond we have built so far, with an approximate area of 1000 m<sup>2</sup>, while the latter now has an area of 250 m<sup>2</sup>.

In 1978, the California Red-legged Frog was last recorded in Arroyo San Vicente, before being declared extirpated from this watershed. For this reason, we considered this site as a strategic location for the creation of a new pond that would have viable characteristics for the future repopulation of this species.

Over the past five years, we have built ten ponds to ensure the survival and well-being of local wildlife in an increasingly threatened environment. They represent our commitment to the protection and restoration of the region's natural ecosystems.

We are very grateful to our collaborators and volunteers! Especially to the Arce Martorell family for allowing us to continue this project, to Wetland Restoration and Training LLC for their guidance, to Yagos las Cruces for directly helping us build the ponds, and to all of our donors.







## Restoration & Conservation

### RED SWAP CRAYFISH CONTROL

The Red Swamp Crayfish (*Procambarus clarkii*), originally native to the southeastern United States, was introduced to Baja California for food and recreational purposes. However, poor management has allowed it to spread beyond its intended areas, threatening local ecosystems and native species. To combat this, we implemented control efforts in Arroyo San Rafael, located in Ejido Benito Juárez. Over the course of ten interventions, carried out from March to December, we successfully removed 3,435 individuals from a 2 km section of the stream. While these actions have reduced the crayfish population, continued management is essential to further decrease their numbers and prevent this invasive species from disrupting the natural balance of the Arroyo San Rafael riparian ecosystem.





# RESE ARCH

## Research

### SALVADOR “CHAVA” GONZÁLEZ RESEARCH GRANT

For the second year, we were launching our call for the Research Grant in honor of our friend and ornithologist Chava, in which we offered support of MXN 10,000 to students and young researchers from the peninsula. This year, our winner is Ismerai Betsabeel Córdova Rojas who leads the project "Variation of the Song of the Belding's Yellowthroat *Geothlypis beldingi* in oases of Baja California Sur". We know that this endemic bird of Baja California Sur is endangered (NOM-059-Semarnat-2010) and is listed as a vulnerable species (IUCN) because of the transformation of its habitats. We wish Ismerai every success and trust that her study will provide valuable information to improve conservation strategies for this species.



### IN SEARCH OF THE ARROYO TOAD

The Arroyo Toad (*Anaxyrus californicus*) is an anuran native to southwestern California and northwestern Baja California. During the past two decades, it has received little attention in terms of current knowledge of its populations south of the U.S.-Mexico border. The most recent information of viable populations comes from a population sampling between 2000 and 2003. Currently, this toad is listed as Endangered in the United States and Threatened in Mexico. Therefore, the purpose of this project was to determine the current status of Arroyo Toad populations in northwestern Baja California.

Beginning in late March 2023, we collaborated with the San Diego Natural History Museum to initiate Arroyo Toad surveys in the region, visiting historic and recent localities where this species has been recorded.

We visited 32 sites in total, of which eight represented new localities. Unfortunately, we did not find individuals at some historical localities because there is no suitable habitat for the survival of this species. The main threats detected at the sites visited were the introduction of exotic species, habitat loss, and cattle ranching. The information obtained represents a new opportunity to optimize habitat management in these localities and improve conservation strategies for the Arroyo Toad.



# SCIENTIFIC PUBLICATIONS 2023

- **The Herpetofauna of the Baja California Peninsula and its adjacent islands, México: composition, distribution and conservation status.** Amphibian and Reptile Conservation, 17(1&2):57-142 (e326).
- **An update on the freshwater exotic fauna in the Mediterranean region of Baja California, Mexico.** BioInvasion Records, 12(4):1045-1057.
- **Phylogenomic data reveal cryptic diversity and deep phylogeographical structure within the common chuckwalla, *Sauromalus ater* (Squamata: Iguanidae).** Biological Journal of the Linnean Society, 1-20.
- **Resumen y perspectivas del simposio sobre tortugas dulceacuícolas y terrestres de México en la XVI Reunión Nacional de Herpetología en Ensenada Baja California.** Revista Latinoamericana de Herpetología, 6(2):174-179.
- **Westernmost record the short-nosed rock lizard (*Petrosaurus repens*; Squamata: Phrynosomatidae) and comments on its distribution.** Revista Latinoamericana de Herpetología, 6(2):14-16.
- **Bird Mobbing on the West Coast Boa Constrictor (*Boa sigma*) in Sonora, Mexico.** Sonoran Herpetologist, 36(3):80-81.

# Joining Forces

**Thanks to everyone that colaborated  
with us in 2023!!**

## HUMAN RESOURCES

### Internships

- Camilo Enrique Medina Brena
- Sara García Castro
- Joel Hernández Guerrero
- Diego Maldonado de la Torre

### Outreach Projects

- Sebastián Rodríguez Govea
- David Mora Giles

## VOLUNTEERS

- Alejandra Rodríguez Méndez
- Alejandro Alvarez
- Andres Medina Clark
- Annette Jwsany Jimenez Espinoza
- Arturo Yoshizada Morales
- Bryan Tamayo Estrada
- Christopher Nuñez Martinez
- Corey Chan
- Daniela Graef Vélez
- David M. Huerta Rodríguez
- David F. Pérez Cañas
- Don Hardeman Jr.
- Eliana Rosas
- Enrique Rebelin
- Jaime C. Virrey Valdez
- Janie Neftali Paz Palacios
- Jimena Julissa López Gonzales
- Joaquín Esteban López Ledesma
- Joel Estrada Guerrero
- John Kinabrew
- Juana A. Ramírez Alba
- Julie Noriega
- Kelsi Black
- Lizbeth Gutiérrez Vargas
- Luis Gael Juárez Rosas
- Lupita Solano
- Mariany Sofía Quintana Ruvalcaba
- Mario Contreras Dueñas
- Mayra Lorena Flores Cota
- Meliza Le Alvarado
- Metzli Cadena Soto
- Paulina Bueno Gutiérrez
- Rafael Monge Herrera
- Roberto Eduardo Searcy Meza
- Roberto López González
- Sam Gurley
- Susana Guevara Castillo
- Victor Ulises López Martínez
- Yessica S. Loya Madera
- Zair Eduardo Camacho Tafoya





# Joining Forces

## COLABORATORS

- Pro Esteros
- Rancho Bonanza
- Rancho El Potrero
- Rancho Meling
- San Diego Natural History Museum
- SAVE THE FROGS!
- Sheltowee Environmental Education Coalition
- The Nature Conservancy
- The Wildlife Project
- USGS
- Wentland Restoration and Training

## DONORS

### MONTHLY

- Dean Levitt
- Guadalupe Solano
- Jeff Alvarez
- Jonathan Richmond
- Luc Myers
- Marty Reed
- Mira Falicki
- Ryan Anderson
- Samuel Gurley
- Sula Vanderplank

### SINGLE DONATION

- Adam Clause
- Alan Harper
- Ana Bertha Gatica Colima
- Ana Lilia Corona
- Andrew Forde
- Bill Clark
- Clark Mahrtdt
- Dalton Stanfield
- Drew Talley
- Emilio Saturno
- Esmeralda Perez
- Evan Griffiths
- Javier

- Jim McGuire
- Jose Muzquiz
- Judith Cañas
- Karla Biederbeck
- Kelsi Black
- Manuel Angel Pérez
- Mary Clark
- Meliza Le Alvarado
- Patricia Frias
- Patricia Pimentel
- Raquel Elander
- Richard Spotts
- Sandra Pérez
- Sara Schmid
- Yessica Loya
- William Levine

## FUNDATIONS

- San Diego Foundation
- The Nature Conservancy
- LUSH Cosmetics



## Financial Report

BALANCE 2022

**\$308,972**

REVENUE

**\$2,680,296**

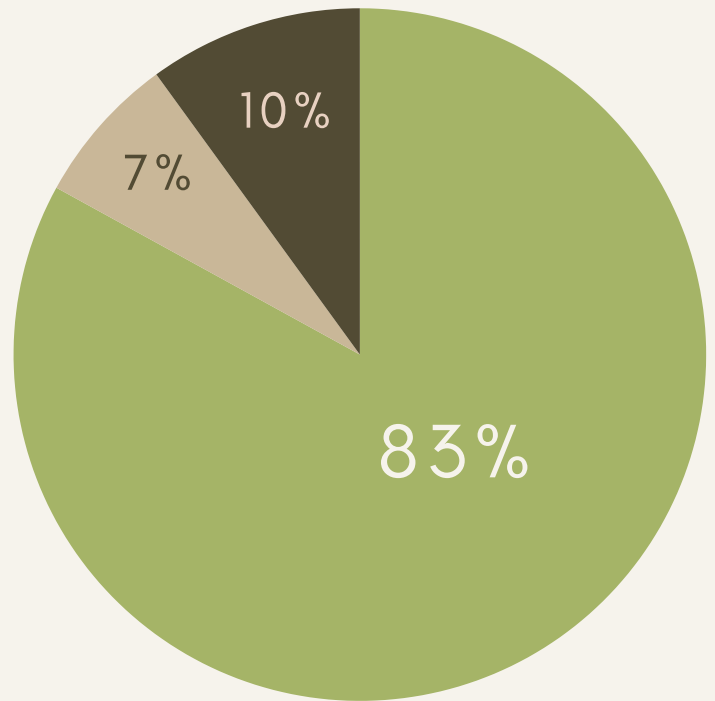
EXPENSES

**\$2,672,866**

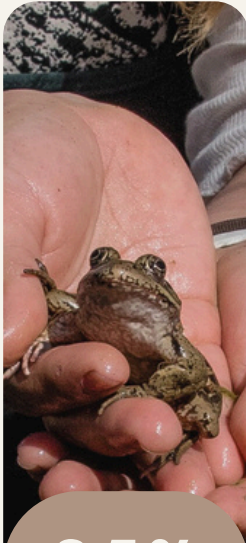
BALANCE 2023

**\$316,402**

FUNDATIONS DONATIONS SERVICES



CALIFORNIA RED-  
LEGGED FROG



**35%**

WETLANDS



**25%**

PUNTA BANDA  
ESTUARY



**14%**

ARROYO TOAD



**12%**

RED SWAP  
CRAYFISH CONTROL



**10%**

OTHER



**4%**



# SUPPORT OUR WORK

Learn about our programs and products that support the conservation of endangered species, participate in ecological restoration projects, and join educational workshops. Your help is key to preserving the biodiversity of northwestern Mexico!







# Fauna del Noroeste

Research for conservation

