Annual Report 2024

CONSERVATION WITH ROOTS

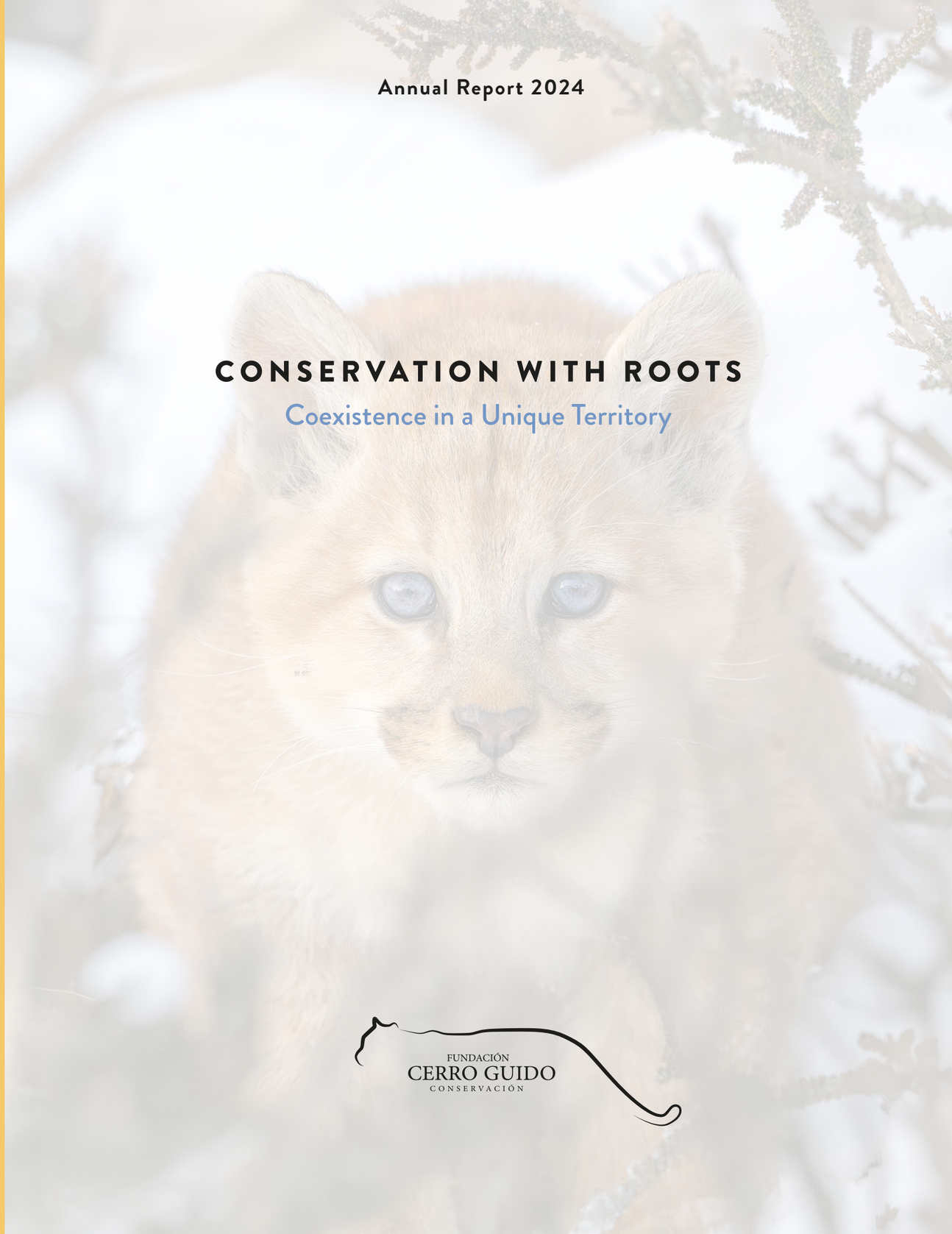
Coexistence in a unique territory

FUNDACIÓN
CERRO GUIDO
CONSERVACIÓN

Annual Report 2024

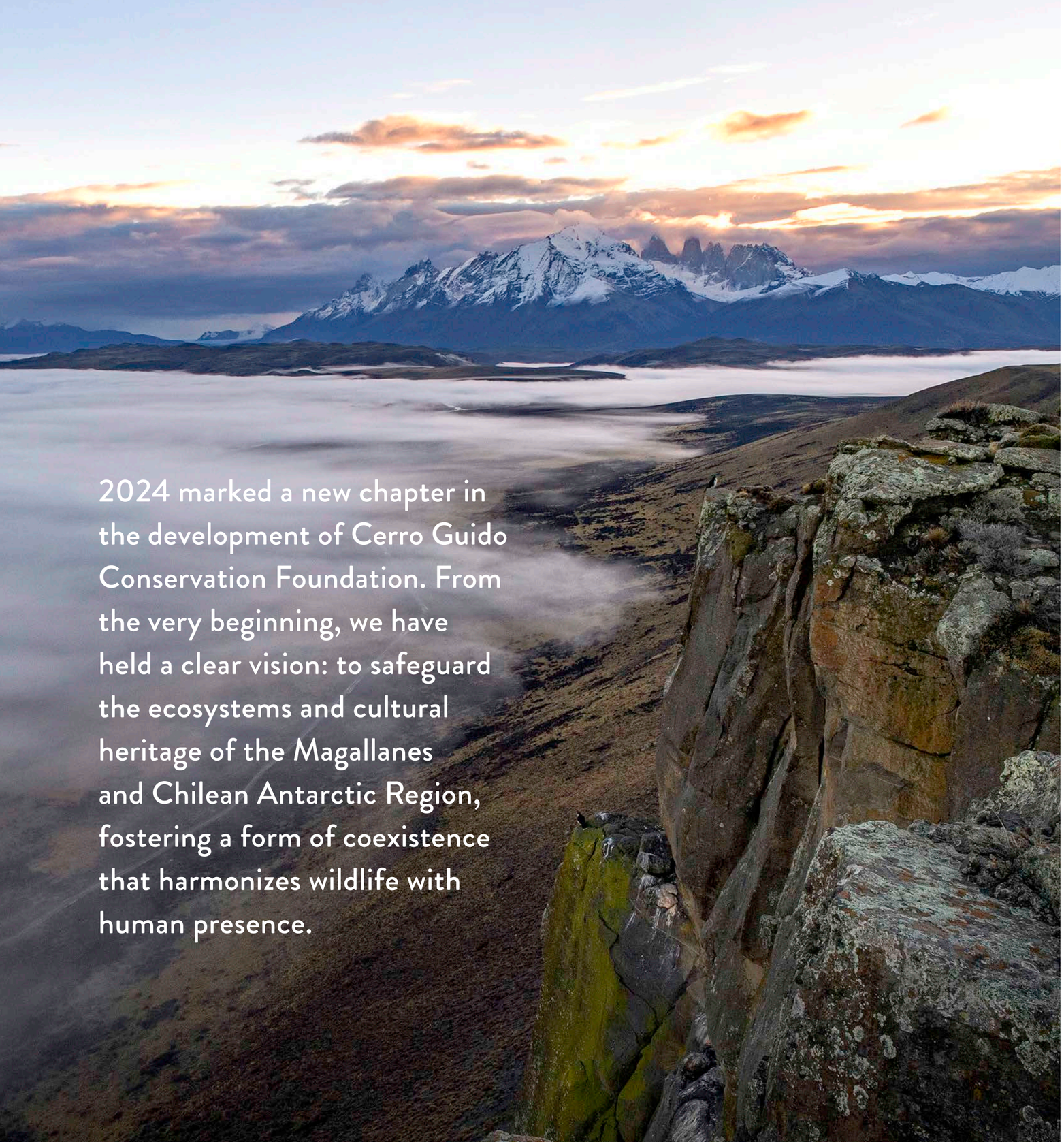
CONSERVATION WITH ROOTS

Coexistence in a Unique Territory



FUNDACIÓN
CERRO GUIDO
CONSERVACIÓN

Index



2024 marked a new chapter in the development of Cerro Guido Conservation Foundation. From the very beginning, we have held a clear vision: to safeguard the ecosystems and cultural heritage of the Magallanes and Chilean Antarctic Region, fostering a form of coexistence that harmonizes wildlife with human presence.

CONSERVATION WITH ROOTS
COEXISTENCE IN A UNIQUE TERRITORY

In our third year of formal operation as a foundation, we have experienced steady growth. We have strengthened our team, built strategic partnerships, and advanced projects rooted in the territory that address its real challenges. At the same time, we have continued to professionalize our work, enhancing our internal capabilities and shaping a strategy grounded in a deep understanding of the environment—its ecological, social, and productive dynamics.

Throughout this year, we have reaffirmed our conviction that livestock farming and conservation are not opposing paths. On the contrary, when understood as part of the same system, they can give rise to a model that values both biodiversity and productive traditions, promoting a more equitable, resilient, and sustainable approach to land management.

A cornerstone of this approach has been the development of monitoring, data collection, and analysis tools that allow us to guide our decisions based on evidence. We believe in long-term science, committed to delivering concrete solutions to the challenges we face in a changing environment.

At the same time, we have deepened our coexistence model through practical and replicable actions that emerge from the productive landscape and promote a new way of inhabiting the territory. We have also begun to strongly advance a vision of regenerative tourism as a means to diversify local development and connect visitors with the ecological and cultural values that make this place unique. Our goal is for those who come to Cerro Guido to become allies in its conservation.

We know that this path is complex and long-term, but we have a deep belief in the power of collective commitment. That is why we look to the future with hope, knowing that the work we do today can inspire new ways of thinking, living, and conserving in the heart of Patagonia.

Thank you for being part of this story in the making.

Cerro Guido Conservation Foundation

CERRO GUIDO
CONSERVATION
FOUNDATION

BOARD OF DIRECTORS

President
Cristián Matetic Hartard

Treasurer
Jorge Matetic Riestra

Vice President
Nicolás Simunovic Vodanovic

Director
Consuelo Valdés Chadwick

Director
Isabel Behncke Izquierdo

OUR TEAM

Executive Director
Pía Vergara Medina

Project Director
Agustín Roselló Hinrichs

Finance Manager
Pedro Larsen García

Communications
Beatriz Schneider Sepúlveda

Human Resources
Nadia Canales Contreras

Trackers:

Field Researcher
Diego Cornejo Navarro

Field Researcher
Rodrigo Garay Vera

Field Researcher
Mirko Utrovicich Aguilar

Field Researcher
Tomás Soza Madriaga

Field Researcher
Solange Sabelle Herrera

Varina Simunovic Bahamonde

The Magallanes and Chilean Antarctic Region—a natural and cultural landscape unique in our country and the world—has captivated me since I first visited as a teenager.

A land of pioneers whose spirit inspires and reinforces the goals of Cerro Guido Conservation Foundation, goals that I fully embrace.

I value the opportunity to contribute and be part of a group of people who feel a responsibility to seek solutions for a demanding sustainable development that combines biocultural conservation, tourism, and entrepreneurship.

I am grateful to be part of this commitment and, of course, to maintain my connection with a Patagonia that remains in the global imagination.

Amalia Matetic Undurraga

Cerro Guido Conservation Foundation captivated me slowly but deeply. It was a bond born from the landscape, but it grew thanks to its people and projects. In this Patagonia, which I have visited since childhood, the tension between conservation and development is palpable—and so is the hope of reconciling them.

What makes the Foundation unique is its ability to bring together diverse people who work with purpose and respect. Across history, culture, science, and community, they seek ways to inhabit this territory without losing its essence or beauty.

As part of this new generation, it excites me to see that there are still those who dream of changing the world. This reflection is a tribute to them and an invitation to continue preserving the spirit of Patagonia with humility, commitment, and love.

LETTER **FROM THE PRESIDENT** OF THE BOARD OF DIRECTORS

Dear friends and collaborators of Cerro Guido Conservation Foundation,

As we close the year 2024, I am pleased to address you to share the progress, achievements, and challenges that have marked our journey in protecting and conserving the natural and cultural heritage of the Torres del Paine commune. Our organization continues to establish itself as a benchmark in the coexistence of livestock farming and wildlife conservation, championing a sustainable model that integrates science, community, and territory.

Our mission is clear: to protect and restore Patagonia's ecosystems while promoting coexistence between wildlife and human activities. To achieve this, we focus on generating scientific knowledge, implementing innovative biodiversity management strategies, and collaborating with key stakeholders in the region.

This year, we have strengthened our strategy through applied research, the development of strategic partnerships, and raising awareness within both the local and international communities. In a challenging context—where the balance between conservation and productive development remains a global question—we reaffirm our commitment to working from a foundation of science and field experience to provide solutions that are both replicable and scalable.

One of the most significant achievements this year in the cultural sphere has been the development of the book *Cerro Guido, A Living Window to Chilean Patagonia's History*, written by Mateo Martinic. Led by Consuelo Valdés, the book documents the rich history of this territory. We have also consolidated our institutional history through the preparation and publication of the 2022 and 2023 Annual Reports, reflecting our progress and learnings on the path of conservation.

In terms of strategic partnerships, we highlight the beginning of our collaboration with Fjällräven, which has believed in our project and supported us through donations of essential field equipment. Likewise, our presence at key events such as Remote, País Digital, and the Ladera Sur Festival has strengthened our network and positioned us within the environmental organization ecosystem.

Outreach and awareness-raising have been fundamental pillars of our work this year. In this context, the premiere of the short film *Cerro Guido: A Legacy*, directed by Timothy Dhalleine, marked a significant step in showcasing our vision and actions in Patagonia. At the same time, we have fostered dialogue for coexistence by initiating key meetings with actors from tourism, livestock farming, and conservation, promoting a comprehensive and collaborative vision for the territory.

In the field of scientific research, we have reached important milestones. One example is the publication of the master's thesis by Spanish student Ana Reverter at the Swedish University of Agricultural Sciences. We have also continued the coexistence experiment in collaboration with the NGO Panthera, and with the support of a research team led by our director Isabel Behncke, we have advanced in the systematization of puma ethological data, constructing an ethogram to unify criteria and retroactively standardizing five years of information.

Internally, this year has also been marked by a significant team restructuring—a key process to adapt to current challenges and optimize our capacities for the future. Consolidating a strong and committed team will enable us to continue growing and successfully face the challenges ahead.

Despite our progress, we continue to face significant challenges. Environmental regulations and the region's productive practices pose ongoing obstacles to coexistence between wildlife and livestock. On the financial front, securing funding to sustain and expand our initiatives remains a priority. We also need to strengthen coordination with governmental and private entities to promote policies and practices that support long-term conservation.

The future challenges us to continue innovating and consolidating our work. We will keep advancing applied research, reinforcing strategic partnerships, and promoting environmental education and culture as fundamental pillars of our mission.

We are deeply grateful to everyone who has been part of this journey: collaborators, researchers, strategic partners, and the community. Together, we continue to build a legacy for Patagonia and its biodiversity.

With gratitude and commitment,

Cristian Matetic Hartard
President
Cerro Guido Conservation Foundation

LETTER FROM **THE EXECUTIVE** DIRECTOR

"What is unseen"

Sometimes, before looking ahead, we need to pause and feel what has been lived. There are things we cannot see, yet they hold everything together: like the invisible bond between a puma and its territory, like the trust slowly built within a team, like roots that remain firm beneath the snow, even when it seems that all is asleep.

This 2024 was made of such things—of fertile silences, of decisions taken with care, of deep processes that are not always visible from the outside, but that make all the difference. Sometimes conservation is measured in data, reports, or campaigns. But true transformation happens when a perspective changes. When a neighbor stops seeing the puma as a threat. When a livestock practice adapts, fearlessly, to coexist with wildlife. When someone who once doubted becomes a defender of the project. When the productive and the natural finally begin to walk together.

In a landscape as extreme as it is beautiful, we have learned to read the subtle signs: footprints in the frost, the flight of a condor, the silence before an encounter. And we have also learned that conservation does not happen only in nature—it happens within people as well.

Seeing a puma is not just a privilege. It is a reminder. Of what is fragile. Of what is essential. Of what is worth protecting. Every encounter with them—with their quiet strength, their untamed freedom—confirms for me that we are on the right path.

Because what we do is not just about conserving species. It is about caring for a balance. A different way of inhabiting the land. A wiser, fairer, more life-connected way. And that includes not only wildlife, but also those who share the land with them: people, cultures, livelihoods, and the memories embedded in the landscape. From science to art, from grazing practices to dialogue with communities, every action we take seeks to reconnect the human with the natural.

Nature sustains me. But I am also sustained by the certainty that we are planting something that others will continue. That returning to the origin is not moving backward, but remembering what matters. And from there, choosing, every day, how we want to move forward.

We keep walking. With more calm, with more strength. With roots firmly planted in the earth.

Thanks to every person who has been part of this journey. To our team, for their tireless dedication, for sustaining this project with passion, professionalism, conviction, and care. And to the Board of Directors, for their generous guidance and unwavering trust. This work is the result of a shared vision, built day by day with many hands and many perspectives.

We move forward. With respect, with wonder, and with the certainty that much remains to be done. And with the enduring hope that balance is possible, if we pursue it with humility and deep roots.

Because, in the end, what cannot be seen… is what truly sustains us.

Pía Vergara Medina
Executive Director
Cerro Guido Conservation Foundation

02

Cerro Guido Conservation Foundation

HISTORY

Estancia Cerro Guido is located in the Torres del Paine commune, Última Esperanza Province, Magallanes and Chilean Antarctic Region. Situated 105 kilometers north of Puerto Natales, **it borders Torres del Paine National Park** to the west, the Sierra Baguales to the north, and Argentina to the east. **Covering nearly 100,000 hectares, it is the largest livestock estate in the region.**

Cerro Guido was established as a livestock-producing unit in the late 19th century, as part of the Sociedad Explotadora Tierra del Fuego. Today, it carries out activities related to livestock—sheep and cattle—tourism, and conservation.

In early 2019, the estancia's management set an ambitious goal: to find a way to make livestock development compatible with biodiversity conservation in one of the most inhospitable regions on the planet, which also marks the southernmost limit of puma populations. It was at that time that the "Puma Project" was born, with the primary objective of conserving wildlife while maintaining livestock practices and local traditions, seeking coexistence between livestock and wildlife. In this way, the project aimed to address the historic conflict between livestock farming and the native wildlife of the territory.

The Puma Project evolved into Cerro Guido's Conservation area, joining the estancia's two traditional areas: Livestock and Tourism. In January 2022, with a clear purpose and a solid project in place, Cerro Guido Conservation Foundation was officially presented as we know it today. From that moment, the Foundation became independent from the Estancia, establishing a Board of Directors composed of the founding partners and external experts, and took on its own direction and life, separate from the day-to-day operations of the estancia itself.

Globally, Cerro Guido Conservation Foundation quickly gained recognition in specialized circles, thanks to coverage of its fieldwork in two major international documentaries released in 2022, which included filming at Estancia Cerro Guido: *Patagonia: Life on the Edge of the World – The Far South*, produced by CNN and narrated by Pedro Pascal—where Mirko Utrovicich (a Foundation's tracker) was one of the main protagonists—and a shorter appearance highlighting the work of the estancias in *Dynasties II*, produced by the BBC and narrated by Sir David Attenborough.

During 2023, the Foundation strengthened its territorial work through key milestones. The 2,025-hectare Conservation Zone, focused on wildlife monitoring and observation, was consolidated. Consuelo Valdés and Isabel Behncke joined the Board, bringing leadership and expertise. The first Foundation-produced documentary on its work was released, and progress was made on the creation of a cultural rescue book in collaboration with historian Mateo Martinic. Additionally, the "Conservation Safari" was strengthened as a fundraising tool, and an agreement was signed with the University of Chile to develop scientific research projects.

Harmony
is not silence,
it is dialogue

CERRO GUIDO
CONSERVATION FOUNDATION

OUR PURPOSE:
THE REASON WE EXIST

Why do we do it?

For a future where humans and wildlife coexist in balance. We work to restore, conserve, and protect the natural and cultural heritage of Patagonia, promoting respectful and sustainable territorial development that integrates traditions (livestock farming), the economy (tourism), and nature (biodiversity and ecosystems).

How do we do it?

> By conducting experiments and collecting scientifically and practically relevant field data.

> By implementing a livestock model based on non-lethal practices to reduce human–predator conflicts, such as using guardian dogs to protect cattle from pumas.

> By working across more than 100,000 hectares in the Torres del Paine commune, promoting respectful livestock farming, encouraging conservation practices, and connecting people with the profound value of this territory.

> By educating and raising awareness about wildlife conservation, responsible wildlife observation, and innovative livestock management models.

What do we do?

> We carry out conservation, restoration, and rewilding projects.

> We train guardian dogs to prevent conflicts between livestock farmers and predators.

> We ran an experiment to evaluate the effectiveness of livestock guardian dogs.

> We monitor pumas as a key species in the ecosystem and work toward a broader understanding of the landscape, developing new initiatives that include the study of guanacos, condors, and other species essential to the health of the territory.

> We create educational and awareness-building experiences for tourists, students, and scientists.

> We generate knowledge and collect long-term, practical research data.

Cerro Guido Foundation's Purpose

To conserve natural and cultural heritage through harmonious coexistence among its stakeholders, safeguarding this legacy for future generations and for humanity.

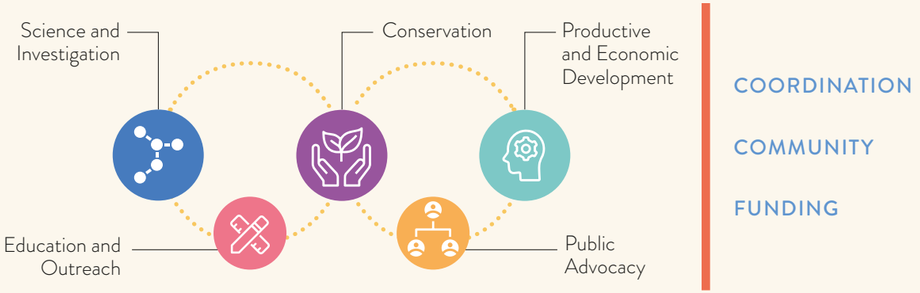
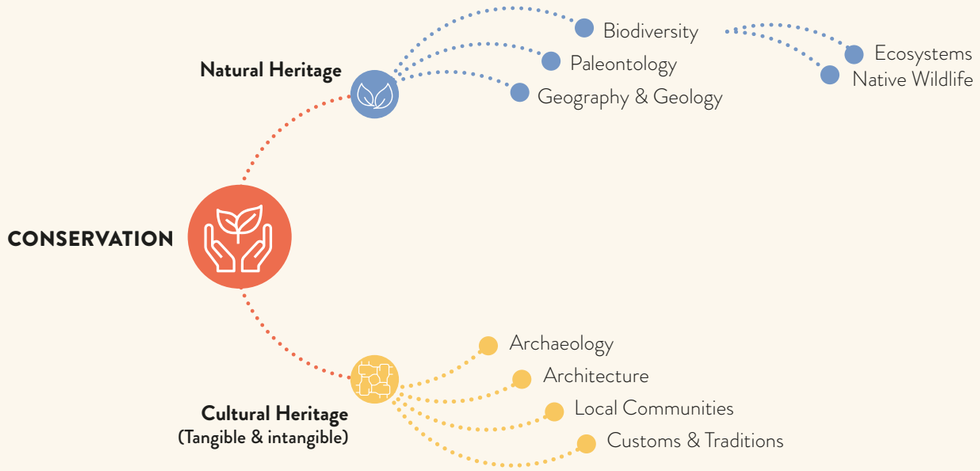


Figure 1: Areas of work

Look deeply into nature, and then you will understand everything better.

ALBERT EINSTEIN

Figure 2: Areas of action - Cerro Guido Conservation Foundation



APPROACH
AND AREAS OF ACTION

On the other hand, the Foundation's work encompasses two main areas of action: natural heritage and cultural heritage, as shown in Figure 2.

NATURAL AND CULTURAL HERITAGE

Natural Heritage

Cerro Guido stands out for its rich biodiversity and the characteristic geography of Patagonia. This environment includes steppes, mountains, and rivers that are home to iconic species such as the puma (*Puma concolor*), guanaco (*Lama guanicoe*), and Andean condor (*Vultur gryphus*), all of which are essential to the food chain and ecological balance of the region.

In addition to its biodiversity and geography, Cerro Guido is an area of significant paleontological importance, with discoveries of dinosaur fossils that reveal the geological history of the region and its relevance to the study of life's evolution on Earth.

The extreme climate, characterized by strong winds and drastic temperature variations, has shaped a resilient ecosystem where both wildlife and human activities—particularly livestock farming—have developed over centuries.

Cerro Guido Conservation Foundation is dedicated to preserving this natural heritage through scientific research, species monitoring, and the implementation of conservation practices that promote harmonious coexistence between wildlife and human communities.

Cultural Heritage

The region's cultural heritage is deeply linked to the history of livestock farming and rural Patagonian life. The figure of the *baqueano*—the traditional shepherd and guide of the region—represents extensive knowledge of the land and a continuous relationship with nature. The customs and traditions of these inhabitants, preserved over generations, reflect a unique way of life that deserves to be honored.

Livestock farming, as a key cultural activity of these communities, has been both a source of economic sustenance and an element of regional identity. However, it has also brought challenges, such as conflicts with wildlife, particularly pumas and guanacos.

Additionally, Cerro Guido contains important archaeological remains that evidence the presence of indigenous peoples who inhabited these lands long before European colonization. These sites provide a window into the past, showing how early communities interacted with the natural environment.

Local architecture, especially in the livestock estancias, is another key element of cultural heritage. Traditional buildings, designed to withstand extreme climatic conditions, are a testament to the ingenuity and adaptability of communities in Patagonia's harsh environment. Cerro Guido Conservation Foundation collaborates in preserving these structures, keeping the local history alive.

MILESTONES 2024

Two Books in Development

We are advancing the creation of two key publications that highlight the cultural and ecological value of this territory. *Cerro Guido, A Living Window to Chilean Patagonia's History*, a historical book led by historian and National History Award winner Mateo Martinic Beroš; and *Patagonia in Continuous Evolution*, a visual and narrative book by Alejandra Zúñiga and Mateo Martinic, combining images and stories about the transformation of the landscape and its inhabitants.

Annual Reports

We prepared and published our first institutional reports for 2022 and 2023. These documents are available on our website.

Partnership with Fjällräven

We launched a collaboration with the Swedish brand Fjällräven, which supported our team with donations and technical equipment, essential for operating in extreme field conditions.

Event Participation

We strengthened our visibility and connections with other organizations by taking part in events such as Remote Latin America, País Digital, and the Ladera Sur Festival.

Short Documentary *Cerro Guido: A Legacy*

We released a 12-minute short film directed by Timothy Dhalleine, capturing the essence of this conservation project from the heart of Patagonia.

Dialogue for Coexistence

We established regular coordination meetings between Ganadera Cerro Guido, Turismo Cerro Guido, and our Foundation, promoting a shared vision for managing the territory.

Team Restructuring

We added two new field researchers with scientific training—Solange Sabelle and Tomás Soza—strengthening the wildlife monitoring and research area.

Thesis on the Cerro Guido Model

Researcher Ana Reverter published her master's thesis at the Swedish University of Agricultural Sciences (SLU), exploring the coexistence model implemented at the estancia.

Continuation of the Experiment with Panthera

We continued advancing the joint experiment with Panthera, rotating livestock guardian dogs across different sectors of the estancia and conducting puma capture and monitoring campaigns.

Puma Ethology Study

In collaboration with Director Isabel Behncke and an external scientific team, we systematized five years of data to build a detailed ethogram and our first scientific paper on puma behavior.

International Scientific Collaboration

Following an invitation from the Fauna Australis Laboratory at the Pontificia Universidad Católica de Chile, we began a study on cortisol levels in puma feces, in collaboration with this institution and the University of Oxford. This research aims to explore stress indicators as a tool to assess the effects of different coexistence conditions.

Tourism-Linked Donation Strategy

We implemented a new system of voluntary donations for estancia visitors. This approach has increased financial support and enabled the development of specific projects, such as the installation of a grid of 60 camera traps for wildlife monitoring.

Conservation Zone

Active protection is maintained over 2% of the total area of Estancia Cerro Guido (2,025 hectares), fenced with 90cm-high wildlife-friendly mesh. This area includes La Condorera, a priority zone for puma observation and monitoring.

Scientific Tourism

We continue to strengthen the *Conservation Safari* experience, where visitors accompany our trackers in the field. This activity not only connects the public with wildlife but also generates essential funding for our conservation efforts.

03

Projects

During 2024, as in previous years, we continued working on the Puma Project. In addition, we launched new research initiatives, both independently and in collaboration with key strategic partners.

PUMA
PROJECT

Puma concolor

COEXISTENCE MODEL

Strategies for conflict prevention

Objectives

> Study mechanisms to prevent carnivores from approaching undesired areas and evaluate their effectiveness across different fields.

> Continue breeding Pyrenean Mountain and Maremma dogs to integrate them into herds as protectors and deterrents against livestock predators.

> Develop capacities and expand livestock management practices, gradually incorporating a holistic approach.

> Establish a Coexistence Model between Livestock Farming and Wildlife that can be replicated in other estancias and territories.

Activities carried out

> Continuation of the collaborative experiment with the NGO Panthera, aimed at evaluating the effectiveness of livestock guardian dogs as a tool to reduce predation on sheep.

> Ongoing training of livestock guardian dogs, specifically Pyrenean Mountain and Maremma breeds, focused on strengthening their bond with the herds and their performance in the field.

> Maintenance and strategic installation of Foxlight deterrent devices as a complementary tool to prevent predator attacks in high-risk areas.

> Design and construction of kennels for the breeding, transition, and rest of guardian dogs, ensuring optimal conditions when they are not active in the field.

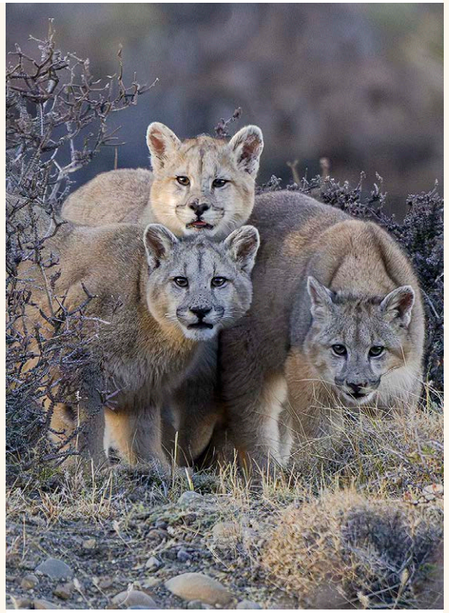
> Implementation of new livestock management practices aimed at coexistence, such as evening herd "gathering," (*repunte*) along with the integration of additional shepherds (*gauchos*) into the operational team.

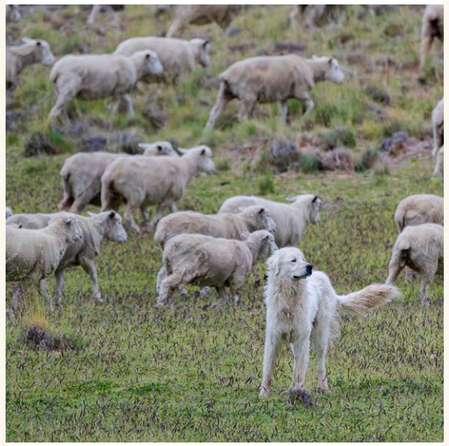
Results achieved

> To date, we have observed that livestock guardian dogs are the most effective deterrent and a highly efficient non-lethal alternative for minimizing puma predation events.

> The implementation of livestock management practices, such as the evening herd "gathering," has significantly strengthened the work of the guardian dogs, enhancing their performance and reducing the risk of attacks.

> Preliminary results from the experiment conducted with the NGO Panthera were analyzed by German scientist Dominik Berndt, revealing highly encouraging findings regarding the effectiveness of the coexistence model.





RESEARCH CENTER

Wildlife monitoring and research

Objectives

> Monitor and assess the presence of pumas and other species across the territory of Estancia Cerro Guido and the Torres del Paine complex through direct and indirect sightings.

> Maximize the likelihood of obtaining records of pumas (and other species) to conduct studies on their behavior, adaptability to ecosystem changes, interspecific interactions, and more.

> Prepare or collaborate on scientific publications for national and international journals.

> Generate valuable knowledge to support evidence-based decision-making and achieve harmonious coexistence among the territory's stakeholders.

Activities carried out

> For indirect wildlife monitoring, a network of motion-activated camera traps was maintained, programmed to record 30-second videos around the clock. This system has been operating continuously for over five years up to 2023, accumulating a valuable archive of observations.

> Regarding direct monitoring, daily wildlife observation sessions were conducted by three full-time trackers. Their work focused on detecting key species, recording behaviors, and collecting relevant variables for the study of ecosystems and the effectiveness of the coexistence model.

> The scientific tourism line continued to develop through the *Wildlife Conservation Safari*, an educational experience offered to guests of Hotel Estancia Cerro Guido and special groups, allowing participants to accompany trackers in the field during active monitoring sessions.

Results achieved

> Regarding indirect monitoring with camera traps, a total of 812 puma records were obtained, of which 719 were validated as confirmed sightings. From these, it was possible to individually identify 209 animals.

> In terms of direct monitoring, 185 observation sessions were conducted, resulting in 282 puma sightings. In 156 of these, individual animals were identified, totaling 14 distinct pumas.

> These efforts have enabled the collection of unprecedented audiovisual material showing pumas at different stages of development, allowing for detailed behavioral monitoring.

PUMA
PROJECT
Puma concolor

SCIENTIFIC OUTREACH AND EDUCATION

Objectives

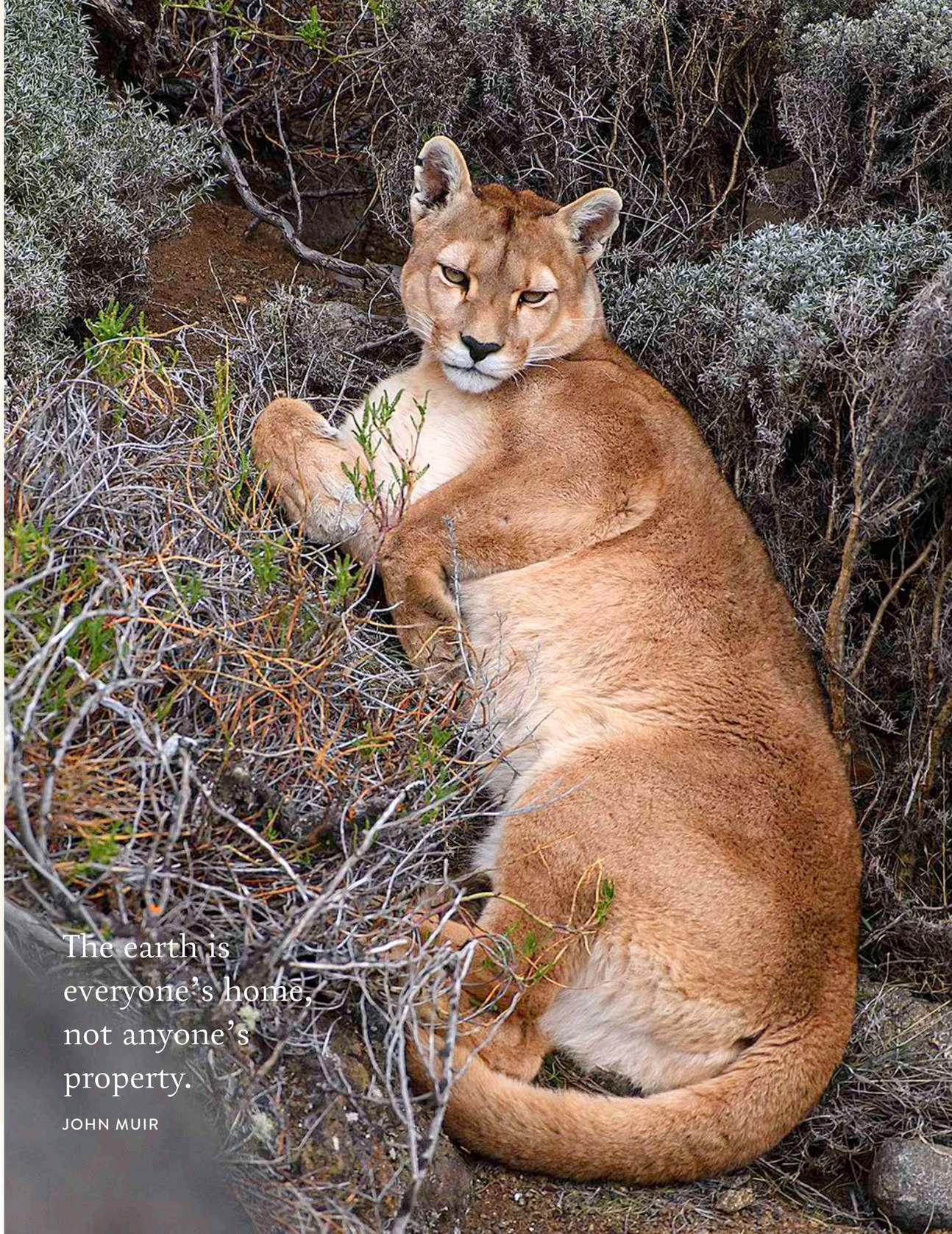
- We promote a deep understanding of biodiversity and coexistence in Patagonia through on-site educational activities open to the local community, visitors, and students. These experiences aim to foster curiosity, respect, and connection with the environment.
- We encourage active public participation in scientific processes by inviting people to take part in wildlife monitoring sessions, workshops, and conservation safaris. In this way, we strengthen the link between science and society, making knowledge a shared experience.
- We create and disseminate accessible and rigorous scientific content that inspires informed and committed engagement with the conservation of the territory. We believe that outreach is also conservation: by bringing science closer, we pave the way for change.

Activities carried out

- Scientific tourism experiences were developed, such as conservation safaris, where visitors accompanied trackers in the field, observing pumas and other key species. These experiences bring science closer to people and foster a deep connection with nature.
- Knowledge about the breeding and management program for livestock guardian dogs was disseminated, highlighting their effectiveness as a practical tool to achieve harmonious coexistence between livestock farming and native wildlife.
- Collaborations with national and international academic institutions were strengthened, promoting applied research that provides valuable insights into the territory's ecological dynamics and its interaction with human activities.

Results achieved

- Over 100 people participated in awareness-raising experiences throughout the year, helping to position scientific tourism as a key source of funding for conservation actions.
- A monthly coordination meeting among the territory's key stakeholders—livestock farming, tourism, and conservation—was consolidated, strengthening dialogue, collaboration, and trust-building. In these meetings, the Foundation shared its progress, findings, and upcoming challenges.
- Significant data were obtained on the interactions between pumas, guanacos, and livestock, reinforcing the Foundation's role as a regional scientific reference in coexistence and ecosystem management.



HUEMUL
PROJECT

Hippocamelus bisulcus

Objectives

> A monitoring system was established to assess the presence of huemules in the Torres del Paine complex, prioritizing indirect records and occasional observations.

> Strategies were designed to maximize the likelihood of detecting huemules (and other species of interest) in order to study their presence, behavior, and adaptability to ecosystem changes.

> The goal is to generate information that will allow future evaluation of the feasibility of reintroducing huemules through the creation of a rescue and rehabilitation center for this endangered species.

Activities carried out

> Motion-activated camera traps were installed, programmed to operate 24 hours a day and capture 30-second videos, as part of the species' indirect monitoring.

> The possibility of expanding the study area to cover a larger portion of the territory was evaluated, thereby increasing the likelihood of detection.

> Discussions were advanced with Patagonia Camp to explore its involvement as a partner in the development of the program.

Results achieved

> Regarding direct sightings, no confirmed observations of huemules have been recorded in the study area to date.

> As a result of the evaluation and prospecting process, partnerships are being established with research centers and specialized organizations to define the next steps and strengthen the project's technical approach.

PALEONTOLOGY AND GEOLOGY AT CERRO GUIDO

Leader / Collaborator: **Chilean Antarctic Institute (INACH)**

Objectives

> To make the territory's paleontological sites visible and accessible to the scientific community, facilitating their research, dissemination, and valuation.

Activities carried out

> Scientific expeditions to conduct geological and paleontological studies.

> Stratigraphic survey of the area.

> On-site prospecting and identification of fossil material.

> Fossil extraction.

Results achieved

> Support for the production of various scientific publications

> Annual field campaigns.

> Discoveries of different species of prehistoric mammals, among others.

ARCHAEOLOGY AT CERRO GUIDO

Leader / Collaborator: **University of Magallanes (UMAG)**

Objectives

> To study, highlight, and make the territory's archaeological sites accessible to the scientific community, facilitating their research, dissemination, and valuation.

Activities carried out

> Scientific expeditions to conduct archaeological studies.

> Survey and documentation of the area.

> On-site prospecting and identification of archaeological material.

Results achieved

> Support for the production of various scientific publications

> Annual field campaigns.

> Discoveries of various archaeological remains.

PROJECTS WITH
STRATEGIC PARTNERS

Puma-Livestock Coexistence Project in Patagonia
EXPERIMENT

Ganadera Cerro Guido and NGO Panthera

With the aim of evaluating the effect of livestock guardian dogs on sheep predation by pumas (*Puma concolor*), in March 2024 we continued implementing the joint experiment between Cerro Guido Conservation Foundation, Ganadera Cerro Guido, and Panthera, initiating the first systematic monitoring sessions according to the methodology defined for the 2024–2025 period.

The experiment takes place across six fields within Estancia Cerro Guido, located between Lago Sarmiento and Sierra del Toro. In two of these fields, sheep groups are maintained: one accompanied by guardian dogs (treatment group) and one without dogs (control group). Each group consists of 350 sheep, with continuous replacement to ensure the stability of the experimental groups.

Rotations are conducted every three months across the different fields, minimizing bias associated with geographic variations. At the time of each rotation, a headcount of the animals is performed, replacing any losses to maintain consistency within the groups.

Field monitoring is carried out daily. Teams from Panthera and the Foundation patrol the grazing areas to identify livestock mortality events and analyze possible causes. In cases of death, the carcass is inspected for signs of puma attack (tooth and claw marks, feeding patterns, etc.) and surrounding evidence is recorded (tracks, scat, or other signs). Deaths attributable to natural causes are also distinguished and documented.

All information is recorded in the **EarthRanger** platform, including:

- GPS location of the finding
- Estimated time of death
- Assessment of the likelihood of a puma attack
- Photographic evidence and other relevant data

Wildlife Monitoring with GPS Collars

Currently, in the Sierra del Toro sector, nine pumas are being monitored using GPS collars deployed during previous campaigns (March and November 2024). Guardian dogs and a sample of 10% of the sheep are also equipped with GPS collars, allowing the recording of their movements and the analysis of interactions among these three key actors in the experiment.

The GPS system enables the detection of activity clusters (concentrations of locations in a small area), which are often associated with resting sites, hunting areas, or dens. These points are verified in the field, providing va-

"The results will inform practical and replicable recommendations to promote a more harmonious coexistence between livestock farming and the conservation of large carnivores in Patagonia."

luable information on the spatial and ecological behavior of pumas within a productive landscape.

Guanaco Counts and Ecological Context Analysis

As part of the experiment, a monthly count of guanacos (*Lama guanicoe*), a key natural prey of pumas, is conducted. Four transects around the experimental fields are surveyed, with direct observations recorded along with variables such as: number of individuals, age class, GPS location, sex, type of vegetation cover, and observation distance.

The data is analyzed using the Distance Sampling methodology, allowing the estimation of population density adjusted for detectability. This information contextualizes the natural predation pressure exerted by pumas and provides a better understanding of depredation patterns affecting livestock.

The experiment will continue until the end of 2025, generating a robust dataset representative of seasonal and geographic variations. The results will inform practical and replicable recommendations to promote a more harmonious coexistence between livestock farming and the conservation of large carnivores in Patagonia.

Ethical and Scientific Considerations

The monitoring of pumas is carried out under a strict protocol, with data used exclusively for scientific purposes. Any tourist or commercial use is strictly prohibited.

The use of GPS collars has enabled the study of the puma's home range — the area an individual requires to feed, reproduce, and survive. This technology also makes it possible to determine whether a puma remains stable in one area (resident) or moves in search of new territories (transient), as well as to observe variations in these behaviors according to age or sex.

Unlike findings reported in other parts of their distribution, preliminary analyses conducted by the Foundation show no significant differences between males and females in terms of home range size. Additionally, juvenile individuals have been observed to explore larger territories.

However, due to the loss of some collars—associated with the mortality of certain individuals—it is still necessary to expand the sample of monitored pumas to confirm these preliminary patterns and build a more statistically robust foundation.

PROJECTS WITH
STRATEGIC PARTNERS

Characterization of the puma (*Puma concolor*) diet

Christina Dunford | Melanie Duclos
Jeremy Cusack | Nicolás Lagos
Centro CAPES UC

Cerro Guido Conservation Foundation

Area of study

- Torres del Paine National Park: **10 samples**
- Estancia Laguna Amarga: **9 samples**
- Estancia Cerro Guido: **25 samples**
- Estancia Complejo Torres del Paine: **3 samples**

3 samples without location

N= 50 samples

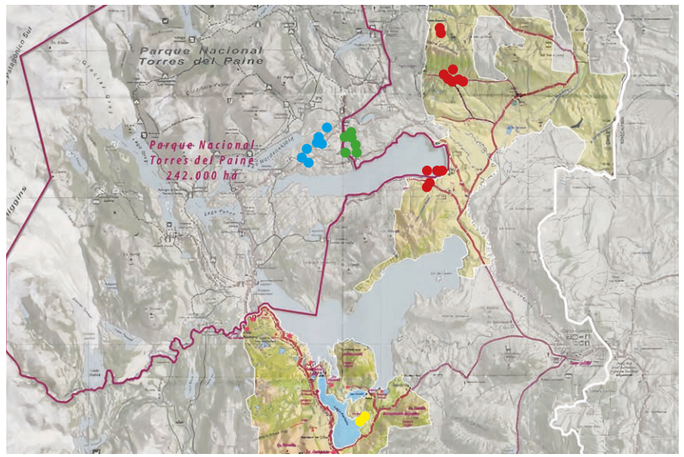
General Objective

Update the characterization of the puma diet in Torres del Paine National Park and surrounding estancias, in order to better understand its feeding patterns in a landscape that combines conservation and production.

Specific Objectives

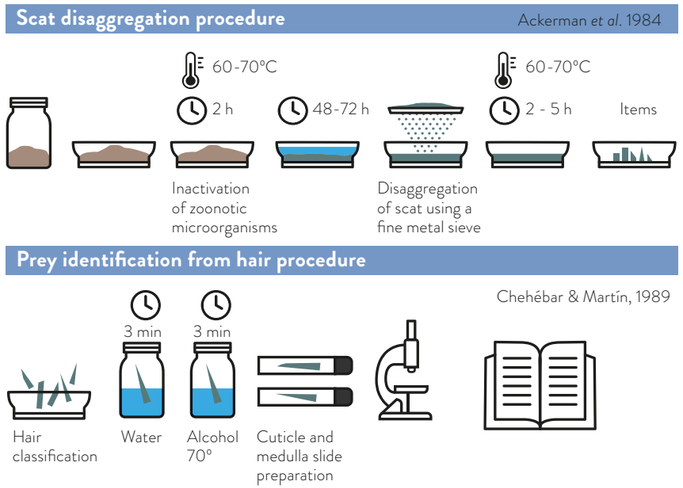
> Assess the effectiveness of analytical methods to accurately identify the prey consumed by pumas from hairs found in scat samples.

> Determine the prey species present in the samples collected in recent years, providing empirical evidence on the trophic ecology of the puma in this ecosystem.



Methodology

Scat processing protocol.



Results

Puma (*Puma concolor*) diet composition

DIETARY ITEM	N	FO%	RPO%	RBM%
MAMMALIA				
Artiodactyla				
Cattle (*Bos taurus*)[1]	8	16	5.9	15,2
Guanaco (*Lama guanicoe*)	25	50	18.3	47,5
Sheep (*Ovis aries*)[1]	4	8	2.9	6,4
Perissodactyla				
Horse (*Equus caballus*)[1]	3	6	2.2	5,7
Total ungulates	**40**	**80**	**29.3**	**74,8**
Carnivora				
Humboldt's hog-nosed skunk (*Conepatus humboldtii*)	3	6	2.2	2,2
Lesser grison (*Galictis cuja*)	5	10	3.7	3,1
Puma (*Puma concolor*)	2	4	1.5	-
Pampas cat (*Leopardus colocolo*)	1	2	0.7	0,7
Total carnivores	**11**	**22**	**8.1**	**6**
Lagomorpha				
Leporidae[1]	24	48	17.6	17,2
Rodentia				
Olive grass mouse (*Abrotrhix olivaceus*)	1	2	0.7	0,01
Patagonian chinchilla mouse (*Euneomys chinchilloides*)	1	2	0.7	0,03
Long-tailed pygmy rice rat (*Oligoryzomys longicaudatus*)	1	2	0.7	0,01
Rodents (unidentified)	1	2	0.7	-
Total rodents	**4**	**8**	**2.8**	**0,05**
TOTAL MAMMALS	**79**	**158**	**57.8**	
BIRDS				
Lesser rhea (*Rhea pennata*)	2	4	1.5	1,9
Birds (unidentified)	2	4	1.5	-
TOTAL BIRDS	**4**	**8**	**3**	**1,9**
Insects (unidentified)	2	4	1.5	-
Other				
Plant material	37	74	27.2	-
Rock fragments	10	20	7.4	-
Plastic	4	8	2.9	-
TOTAL OTHER	51	102	37.5	-
TOTAL	136	272	100	100
Total samples (scat)	**50**			

[1] *Introduced species, Leporidae = Lepus europaeus and/or Oryctolagus cuniculus.*

FO (Frequency of Occurrence): percentage of samples (scats) in which a given dietary item was found.

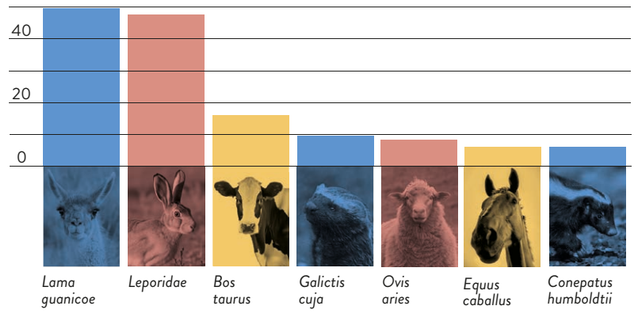
RPO (Relative Percentage of Occurrence): percentage occurrence of each dietary item relative to the total number of detected items, considering that a single scat may contain more than one dietary item.

RBM (Relative Biomass): proportion of the consumed biomass represented by each prey item relative to the total biomass consumed, calculated based on the average weight of the prey.

Puma (*Puma concolor*) diet composition based on 50 scat samples collected in Torres del Paine National Park and surrounding estancias during 2018–2021 and 2023.

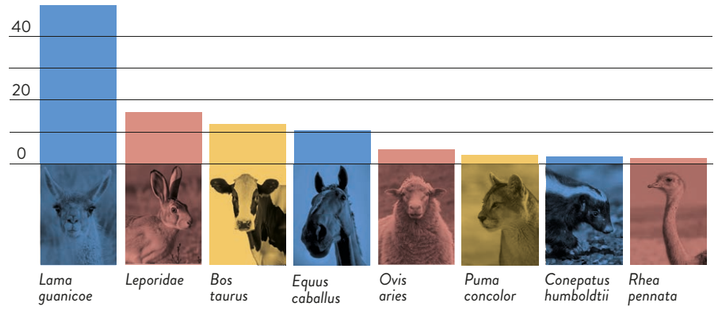
Frequency of occurrence vs. species (%)

Number of scat samples in which the prey species was present



Relative Biomass (RBM) v/s species (%)

Proportion of biomass represented by each prey species



04

Research

CONTEXT

Areas of work

A large part of the Foundation's work is dedicated to supporting the Livestock area in preventing puma attacks on livestock through non-lethal methods (livestock guardian dogs and Foxlight deterrent lights), applied across most of the Estancia Cerro Guido's territory (+100,000 hectares).

In addition to the coexistence work, in 2024 the Foundation significantly professionalized its scientific efforts by adding two scientists with Master's degrees in Natural Resources to the team, while continuing to rely heavily on our Scientific Director Isabel Behncke and her team in Santiago (Christina Dunford, Ángeles Osorio, and Isidora Poblete).

Last but not least, the Foundation has a strong focus on knowledge sharing, making outreach a fundamental part of its work. To this end, we organize excursions for external participants, during which hundreds of people each year learn about and connect with the work carried out at the estancia.

Conservation area

The Foundation's research and outreach efforts are primarily focused within the Conservation Area, which was established in 2022 in collaboration with Ganadera Cerro Guido. Boundaries were defined, and a low-height fence was installed to allow the free movement of native wildlife.

The Conservation Area has been maintained at approximately 2,025 hectares, representing 2% of the total surface of Estancia Cerro Guido (Figure 4).

Year after year, we have observed an increase in wildlife within this space through a rewilding effort—not by introducing new individuals, but by providing habitat and reducing anthropogenic pressures. In 2024, we recorded approximately five species successfully breeding in this area: puma, fox, condor, hawk, and eagle.

Five years ago, we set a primary goal of advancing coexistence between livestock farming and wildlife, with a special focus on puma interactions. Since then, we have continued implementing diverse techniques and technologies aimed at minimizing losses of sheep due to predation.

To achieve this, we have undertaken long-term work, carrying out multiple investigations—both with direct and indirect support—collecting five years of field information and observations on animal behavior under internally defined standards that were previously difficult to analyze.

A key milestone in this line of work was the introduction of a new field data collection system that facilitates the entry of information into databases. This tool aims to optimize data systematization and analysis, and was developed under the leadership of Isabel Behncke, Director of the Foundation, primatologist, and PhD in Evolutionary Anthropology from the University of Oxford. She is supported by a team composed of Christina Dunford, Angeles Osorio, and Isidora Poblete, all biologists from the Pontificia Universidad Católica de Chile.

Additionally, monitoring systems were maintained to deepen understanding of puma behavior. These monitoring systems are divided into three main approaches: indirect monitoring through camera traps (CT), direct monitoring conducted by field researchers (trackers), and analysis of satellite collar data (still in the data collection phase).

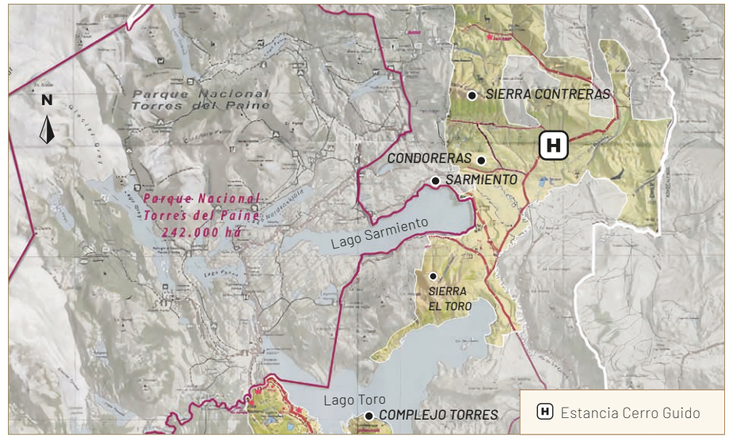


Figure 3: Direct action area for research and monitoring efforts.

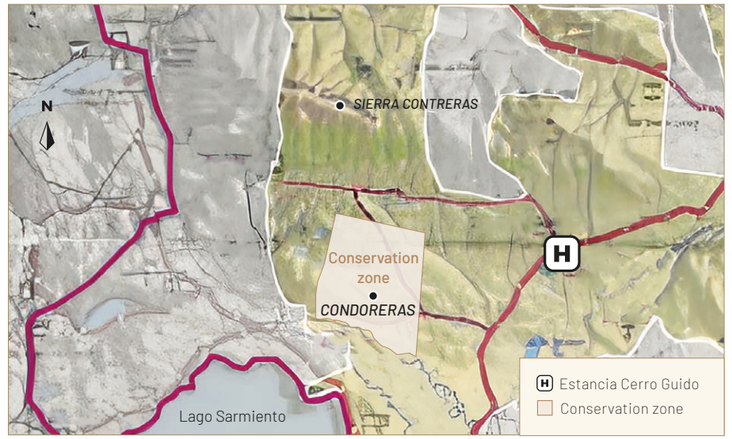


Figure 4: Conservation area

DIRECT OBSERVATIONS

Field monitoring by field researchers/*trackers*

Puma (*Puma concolor*) sighting records

The development of behavioral studies in mammals, particularly primates, has been greatly advanced through direct ethological observations (Gooda-ll, 1986; Wrangham, 1996). This method has also proven valuable in the study of carnivores in Africa and other parts of the world (Aguiar & Moro-Rios, 2009).

However, field observational studies of *Puma concolor* remain scarce. Most research has relied on indirect methods to study its ecology and behavior (Alexander & Gese, 2018; Cutler & Swann, 1999; Gelin et al., 2017). Direct observations are rare—for example, Wilson (1984) reported only one hour of puma observation in Torres del Paine, and Flueck (2004) also documented puma behavior while studying red deer (*Cervus elaphus*) in Argentine Patagonia.

The Foundation, together with the scientific team, is about to publish an ethological study compiling data collected between February 4, 2019, and March 31, 2025. With over 3,500 hours of observation, this publication will become the most extensive record of puma behavior in the Southern Hemisphere.

Methodology

For five years, we monitored a population of free-ranging pumas within Estancia Cerro Guido. A total of 66 distinct individuals (28 males, 38 females) were identified based on unique physical characteristics, including facial features, scars, ear notches, and coat patterns, with the aid of photographic records. This allowed for reliable re-identification of individuals across observations.

An ethogram was developed detailing specific puma behaviors based on observations at Estancia Cerro Guido, adapting and expanding the standardized field ethogram proposed by Stanton et al. (2015). Our ethogram includes behaviors frequently observed in Patagonian pumas at this site that were not explicitly covered in previous studies.

Puma (*Puma concolor*) ethogram

Based on behaviors observed at Estancia Cerro Guido

Behavioral category	Definition	Base behavior
Feeding	Any behavior associated with the acquisition and ingestion of food.	Caching, Eating prey, Killing prey, Chasing prey chase, Stalking prey
Grooming	Behaviors related to fur grooming.	Allogroom, Groom
Locomotion	Behaviors that allow the directional movement of pumas from one place to another.	Fleeing, Running, Swimming, Trotting, Walking
Motionless	Behaviors performed when pumas are at rest or making minimal movements.	Dead prey guard, Resting, Sleeping, Vigilant
Playing	Behaviors in which pumas interact with (modifier) in a “non serious” or playful way. Signs that indicate play can be looked for, such as exaggeration or repetition of movement. The observer should perceive that pumas apparently have no intention of harming the individual with whom they are playing and there is an absence of signs of aggression, such as piloerection or showing teeth.	Object, Social Solitary
Reproduction	Sexual behaviors associated with reproduction and mating.	Copulation, Flirting run, Lordosis, Reproductive vocalization
Signaling	Communication behaviors through chemical or auditory signals.	Flehmen, Sniff, Territory marking, Vocalize
Other	Any behavior not described in this document.	Any behavior that is not described in this document

Results

Summary of key observation data by year 2019- 2025

Year	Sightings per year	Sightings per month	Behaviors per yaer	Behaviors per sighting	Scans per year	ID animals sighted	Duration of sightings (hh:mm)	Observation time year (horas)	Observation time month (horas)
2019	175	15	774	4.4	-	16	04:40	817	68
2020	168	14	616	3.7	-	16	01:35	266	22
2021	216	18	671	3.1	-	12	02:16	490	41
2022	163	14	825	5.1	-	15	02:21	383	32
2023	191	16	873	4.6	-	18	02:00	382	32
2024	287	24	1,231	4.3	4,433	30	02:25	694	58
2025	81	27	386	4.8	1,171	16	01:53	153	51
Total	**1,281**	**-**	**5,376**	**-**	**5,604**		**-**	**3,184**	
Average	**218**	**18**	**933**	**4.3**	**4.559**	**18**	**02:27**	**520**	**43**
SD	58.7	4.9	309.8	0.6	125.5	5.3	00:56	181.2	15.1

Includes total behavioral observations, total sightings, average behaviors per sighting, number of identified pumas observed, number of excursions (Feb 2024–Mar 2025), average sighting duration (hours:minutes), and total hours of observation.

Numbers of unique sightings 2019- 2025 Fig. 1

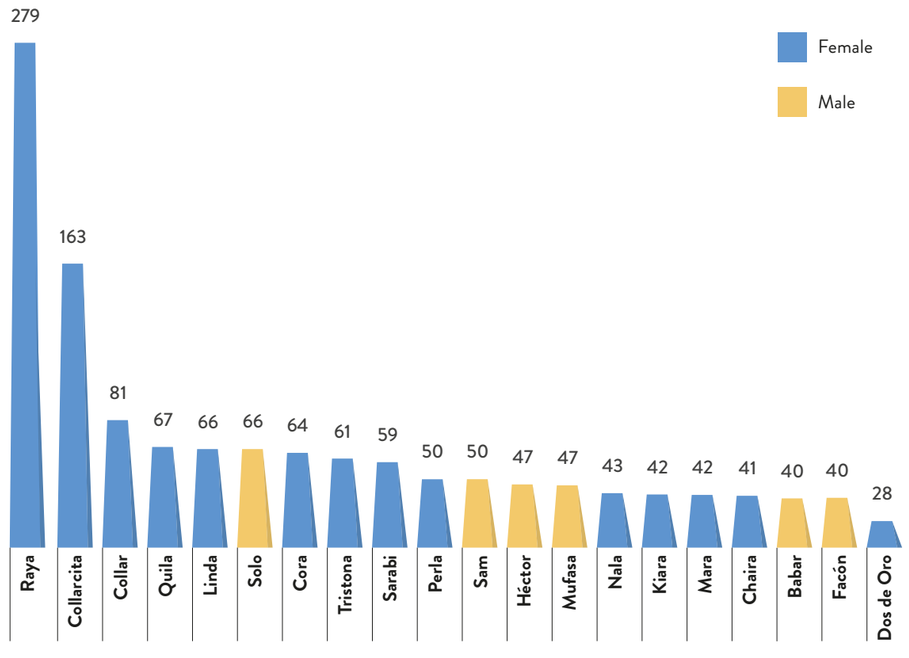


Fig. 1. The 20 most frequently identified individuals based on unique sightings (2019–2025). Individuals are labeled by ID and color-coded by sex: females (blue) and males (orange). All included individuals were classified as subadults or adults.

The number of sightings per individual ranged from 28 to 279. The most frequently observed individual was Raya (female) with 279 sightings, followed by Collarcita (female, n=163) and Collar (female, n=81). Among males, the highest counts were Solo (n=66), Sam (n=50), and Héctor (n=47). Females made up the majority of the top 20 individuals and, on average, had a higher number of sightings than males.

Fig. 2. Distribution of observed behaviors from 2019 to 2025 (n=5,376). Data include both identified and unidentified pumas of all age classes (cubs, subadults, and adults) across 1,281 sightings. Behaviors are grouped into Maintenance (stationary, locomotion, feeding; green shades) and Social (play, grooming, marking, reproduction; blue shades).

Maintenance behaviors accounted for 83% (n=4,442) of all observations, dominated by stationary states (41%; n=2,183), followed by locomotion (36%; n=1,932) and feeding (6%; n=327). Social behaviors represented 15% (n=806), primarily play (7%; n= 80), followed by marking (4%; n = 212), grooming (3%; n=169), and reproduction (1%; n=45). Other behaviors constituted the remaining 2% (n=128).

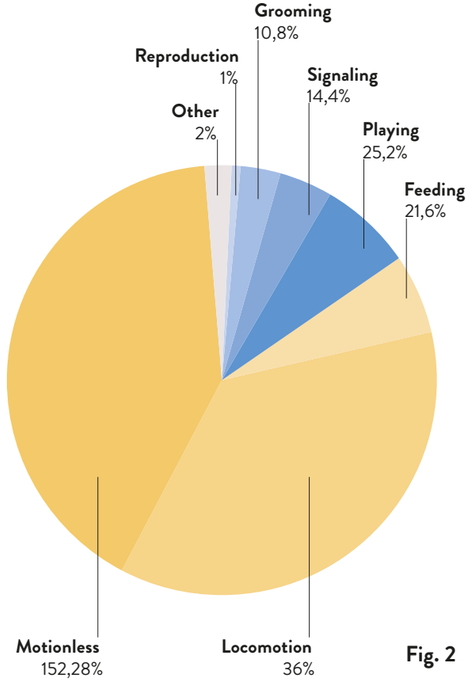


Fig. 2

INDIRECT OBSERVATIONS

Monitoring using camera traps

Objectives

Since 2019, systematic monitoring has been conducted throughout Estancia Cerro Guido with the aim of studying the puma populations in the area, following years of persecution and hunting of this species in the territory.

The specific objectives of camera trap monitoring are:

- Detect the presence of the species
- Identify resident individuals within the estancia
- When possible, determine the sex of the recorded individuals

Monitoring methodology and strategy

The monitoring strategy is based on identifying potential puma transit points. Once these key locations are detected through tracking or indirect evidence, a camera trap is installed at the site. If the camera successfully records the species—evaluated based on the number of detections—it remains fixed in that location. If not, it is relocated to a new area with a higher likelihood of detection.

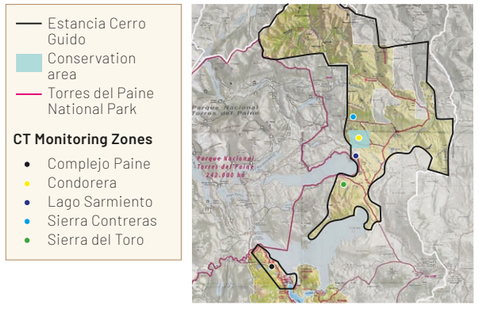
Since the program's inception, a total of 60 camera traps have been installed, although not all were deployed simultaneously. In 2024, 31 cameras remained operational, distributed across the previously mentioned sectors (see map).

It is important to note that 10 of these cameras have remained continuously active from 2019 to 2024 due to their high effectiveness in recording the target species. This continuity has allowed for long-term monitoring at key points within the territory.

Theoretical framework

Although camera traps were installed primarily to fulfill the objectives previously described—mainly related to the detection, identification, and monitoring of pumas within the estancia—the data generated allow for the derivation of a variety of relevant metrics.

It is important to consider that this methodology provides presence records, i.e., photographic evidence that a species was present at a specific location and time, but it does not allow for inferring absence with certainty. Despite this limitation, valuable information can be derived from the collected data, such as:



Distribution of monitoring zones within Estancia Cerro Guido

- Species presence in specific habitats or sectors
- Capture rate
- Species richness, understood as the number of distinct species recorded in a given area or time period
- Activity patterns, which allow understanding the temporal behavior of species over a 24-hour cycle, distinguishing between diurnal, nocturnal, or crepuscular species.

There are key concepts that are important to clarify in order to understand the results presented in this report.

Key Concepts

Trap nights: This corresponds to a measure of sampling effort and is defined as the total number of nights a camera trap was operational and capable of recording activity. This metric is essential to standardize data and allow comparisons between sites, time periods, or species.

Independence between records: To ensure that events used in the analysis are truly independent, temporal criteria are established. In the case of pumas, two records of the same species are considered independent if they occur at least 30 minutes apart. If two pumas are detected within the same 30-minute interval, they are assumed to correspond to the same individual and counted as a single record.

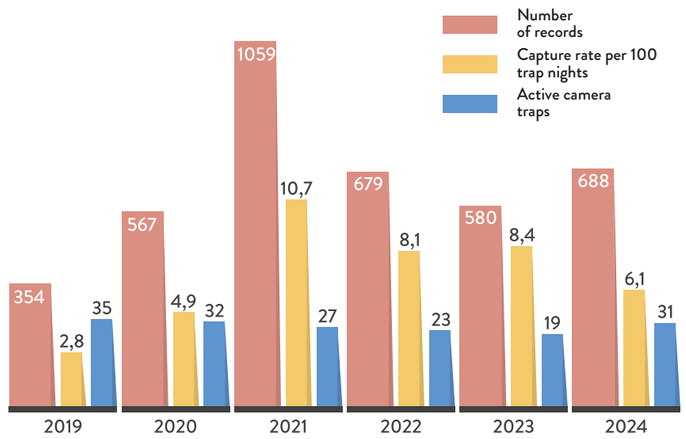
Capture rate: This is a relative measure of the frequency with which a species is recorded and is commonly expressed as the number of independent detection events per 100 trap nights. For example, if species A has a capture rate of 25 for a camera trap, it means that over 100 nights, 25 independent events of puma detection were recorded.

CAPTURE		
4 pumas		6 pumas
TIME		
200	trap nights	300
CAPTURE RATE		
2		2

Conclusion: Although the red camera detected more pumas, both cameras have a capture rate of 2 pumas per 100 trap nights. This indicates that puma activity is similar in both locations, despite differences in time and number of records.

Results 2019 - 2024

Independent records of puma and annual capture rates
(for the period of monitoring with camera traps)



*** Due to changes in the data collection structure, the capture rate is calculated assuming that the total number of active days corresponds to a full calendar year. This estimate may under or overestimate the capture rate.

*** Not all active cameras successfully recorded captures.

Decoupling between records and sampling effort

Although the total number of records (bars) remains relatively high in some years (such as 2024), the capture rate (red line) decreases compared to previous years like 2021. This suggests that sampling effort (number of active cameras) significantly influences data interpretation. It is not enough to look at the number of records; it is crucial to consider the effort behind them.

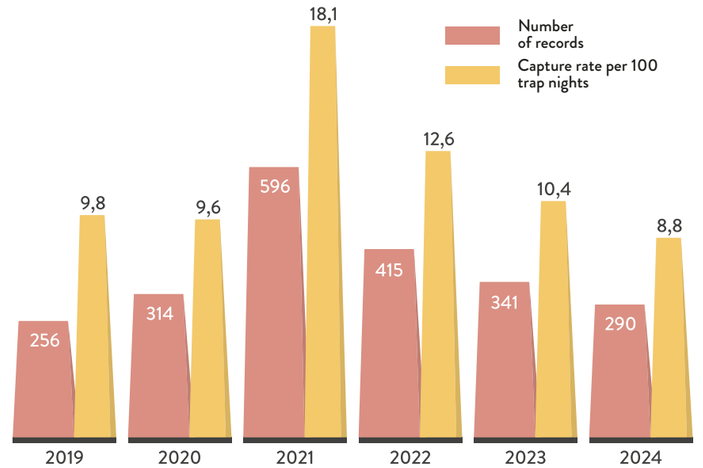
Anomalous peak in 2021

The year 2021 shows the highest number of records (1,059) as well as the highest capture rate (~10.7). **This may be associated with exceptional conditions, such as reduced human pressure due to the pandemic, which could have facilitated puma movement or detection.**

Recent decline in capture rate

Starting in 2022, and especially in 2024, the capture rate decreases despite the total number of records remaining high. This can be interpreted as an indication that more active cameras were needed to obtain a similar number of records, which could reflect: changes in puma behavior, a local decrease in abundance, and/or changes in monitoring design. Between 2023 and 2024, the number of cameras (sampling effort) increased, but since some were deployed in new locations, detectability may be lower for certain cameras, reducing capture rates.

Independent puma records and annual capture rates
(for cameras active continuously since 2019)



The cameras are located in Condorera (n=3) and Sierra del Toro (n=6). Standardized monitoring shows an increasing trend in puma activity until 2021, followed by a sustained decline in both records and capture rate. These patterns may be related to population dynamics, changes in landscape use, or variations in anthropogenic pressure on the habitat (pandemic and tourism-related impacts).

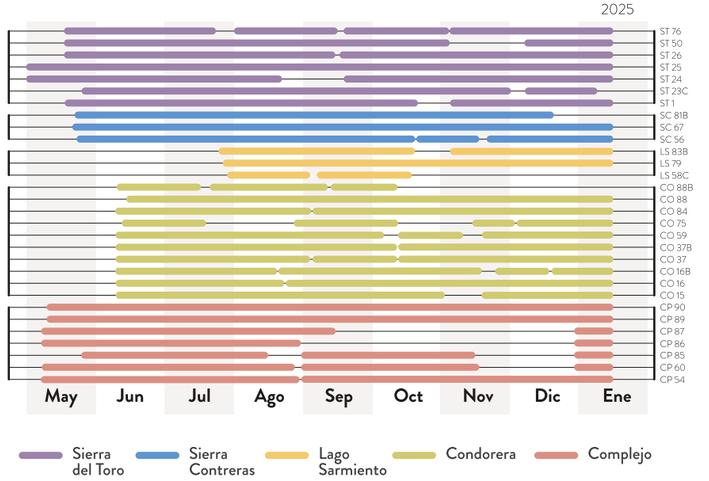
2024 Results

Descriptive summary of camera traps for the year 2024

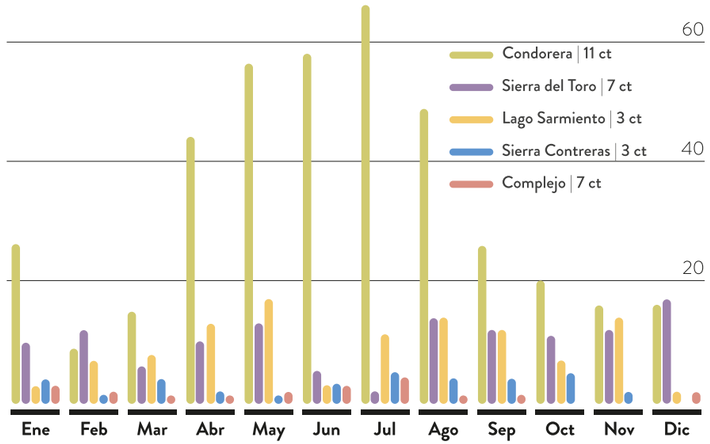
Sector	Number of cameras	Monthly average	Monthly standard deviation
Complejo	7	24,7	10,9
Condorera	11	25,1	10,3
Lago Sarmiento	3	17,3	14,0
Sierra Contreras	3	28,7	4,9
Sierra del Toro	7	28,7	4,9
Total	**31**		
Monthly average		**24,8**	**4,6**

During 2024, a total of 31 camera traps were deployed across Estancia Cerro Guido, resulting in 6,096 trap nights, with an average of 24.8 trap nights per sector.

Activity periods for each camera trap, organized by sector, for the year 2024

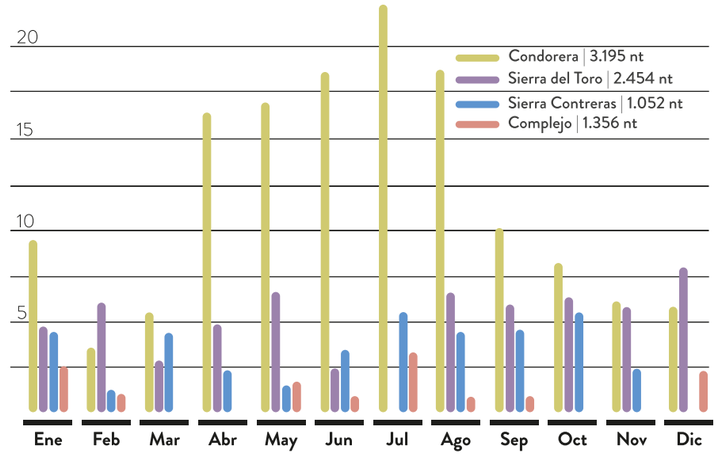


Number of independent puma (*Puma concolor*) records by sector



A total of 688 independent puma events were recorded (IE30 criterion)

Capture rate by sector (data standardization)



Conclusion of the graph: Monthly puma capture rate by sector (2024)

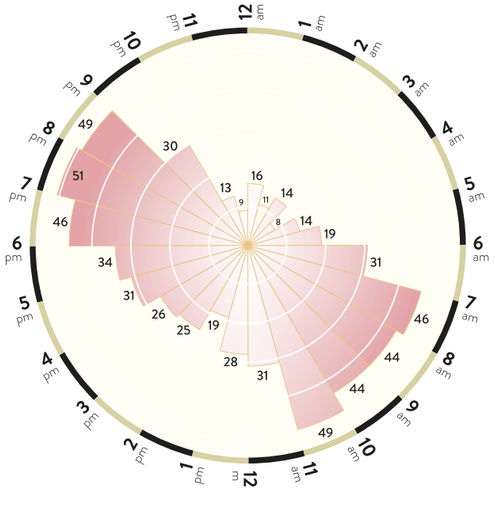
This graph allows for a comparison of relative puma activity between sectors, standardized by sampling effort (number of camera trap nights). It is important to note that the Lago Sarmiento sector was excluded from the analysis because its sampling effort was below the recommended minimum threshold of 1,000 trap nights to obtain reliable capture rates (n=3 cameras, total effort less than 1,000 nights).

Based on the data, the following observations stand out:

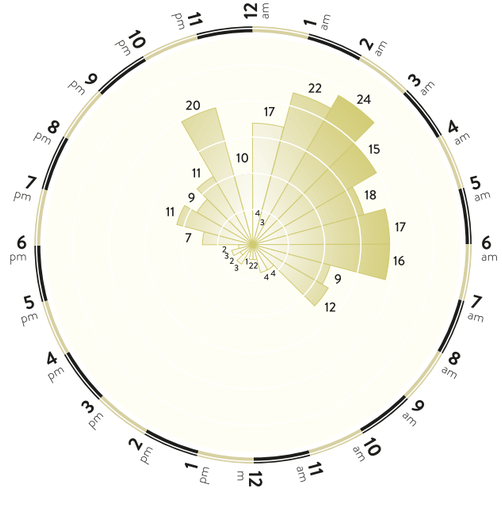
- **Condorera** exhibits the highest and most consistent capture rates throughout the year, peaking in July (~22%). This pattern indicates high puma activity in the area, even when accounting for its substantial sampling effort (3,195 trap nights). This reinforces the importance of the Condorera as a key sector for puma presence within the estancia.
- **Sierra del Toro** shows more stable but moderate activity throughout the year, with a slight increase in December. Although it does not reach the Condorera's levels, it presents notable capture rates given a sampling effort of 2,454 trap nights.
- **Sierra Contreras** and **Torres del Paine Complex** exhibit moderate to low activity throughout the year, suggesting lower puma presence or detectability in these sectors, despite a sampling effort exceeding 1,000 trap nights.

Activity patterns of species: *Puma concolor* and *Leopardus geoffroyi*

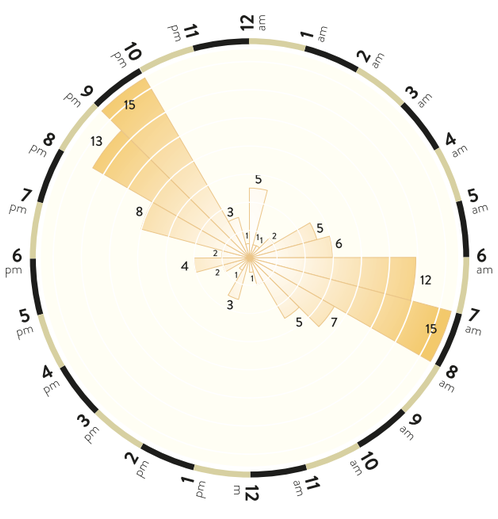
Puma concolor **| Annual 2024**



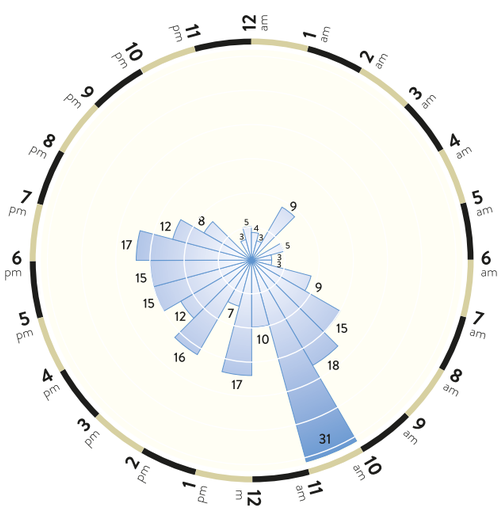
Leopardus geoffroyi **| Annual 2024**



Puma concolor **| Summer 2024**



Puma concolor **| Winter 2024**



Conclusion of the annual puma activity patterns graph.

The circular graph shows the hourly distribution of 688 independent puma events (IE30 criterion) recorded during 2024. From visual analysis, the following observations emerge:

The puma is active throughout the day, with clear peaks of activity between 7 AM and 11 AM, and between 6 PM and 9 PM.

Time periods with the highest number of records are:

- 7–11 AM: peaking at 49 records between 10 and 11 AM.
- 6–9 PM: reaching the absolute maximum of 51 records between 7 and 8 PM.

This suggests a **primarily bimodal pattern**, with intense activity at dawn and dusk, consistent with **crepuscular behavior** typical of many felids.

Nighttime activity (12 AM – 5 AM) and early morning activity are visibly lower, indicating that the puma in this area is **not predominantly nocturnal**, although it can remain active during these hours.

Conclusion of the activity patterns graph for *Puma concolor*.

The results suggest that pumas at Estancia Cerro Guido adjust their daily activity patterns according to seasonal changes in daylight:

Summer: Pumas display a clearly crepuscular behavior, with activity concentrated at the edges of the day. This is likely a response to high solar exposure and elevated temperatures, combined with a long photoperiod (over 16 hours of daylight), reducing the need for activity during midday.

Winter: There is increased diurnal activity, with peaks between 8 and 11 AM. This adaptation suggests that pumas maximize the limited daylight hours available during the shorter months.

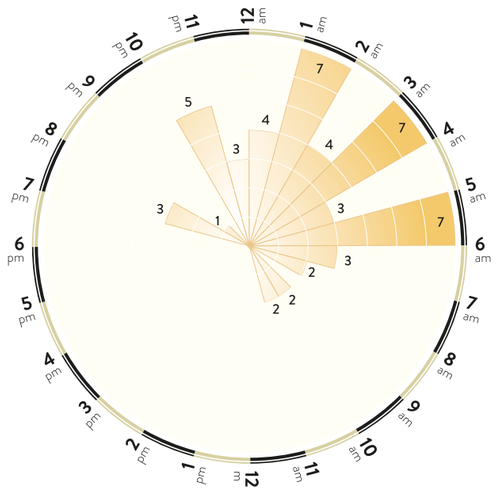
Conclusion of the activity patterns graph for *Leopardus geoffroyi*

With a total of 251 independent records between 2019 and 2024.

Geoffroy's cat shows a clear nocturnal and crepuscular pattern, with the highest number of records between 12 AM and 7 AM, and a secondary, smaller peak during the late evening hours (8 PM – 11 PM).

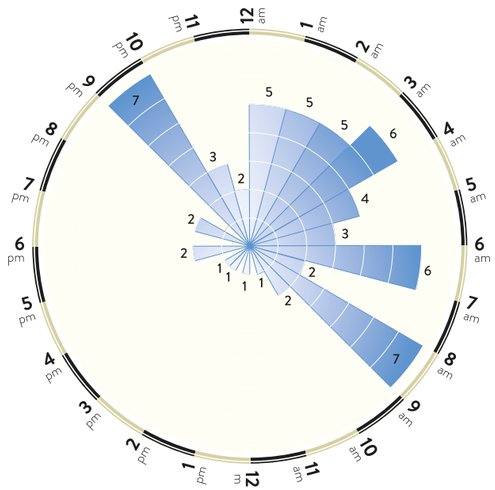
During daytime hours (10 AM – 6 PM), activity is considerably lower.

***Leopardus geoffroyi* | Summer 2024**



IE30= 53 independent events

***Leopardus geoffroyi* | Winter 2024**



IE30= 66 independent events

Comparison between Geoffroy's cat and puma

Unlike the puma, which shows clear seasonal variations in its activity pattern (with increased diurnal activity in winter and more nocturnal activity in summer), Geoffroy's cat (*Leopardus geoffroyi*) maintains a relatively stable activity pattern across season.

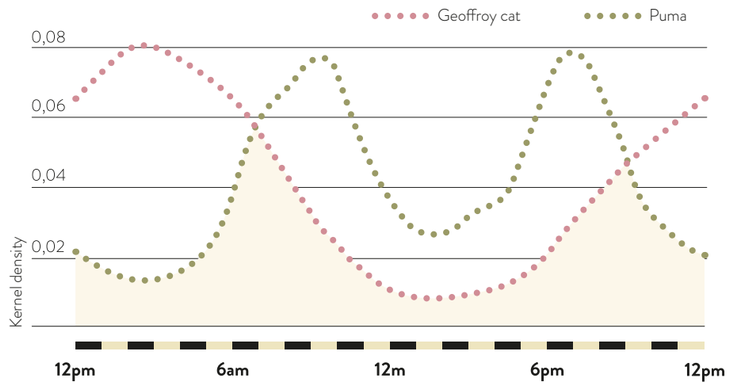
- Both in winter and summer, *L. geoffroyi* concentrates its activity primarily during nighttime and early morning hours (00:00 – 07:00).
- No significant shift in the peak of activity or marked expansion of active hours is observed. This suggests that the cat exhibits a more rigid and temporally specialized pattern, likely related to hunting strategies, predator avoidance (including avoidance of pumas), and a lower degree of behavioral flexibility in response to seasonal changes.

Ecologically, this makes sense because:

- Geoffroy's cat is smaller, more vulnerable, and likely more strict in avoiding human activity or large predators.
- It may rely more heavily on a safe and efficient time window (such as deep night) for hunting or movement.

Evidence of evasion strategies in Geoffroy's cat in response to large predators such as the puma

The graph shows a low temporal overlap between *Puma concolor* and *Leopardus geoffroyi*, with an OVL value of approximately 0.59, indicating a moderate-to-low coincidence in their daily activity patterns. This differentiation suggests possible temporal segregation, which could be a strategy to reduce resource competition or avoid direct encounters between the two species. This is particularly relevant given that the puma is a top predator, while Geoffroy's cat is more vulnerable to predation or competition



General conclusions

The camera-trap monitoring conducted at Estancia Cerro Guido since 2019 has generated a valuable dataset on the presence and activity of the puma, a top predator in this region's ecosystem. Over the years, a robust sampling effort has been established, with more than 6,000 trap nights accumulated in 2024 and spatial coverage encompassing five key sectors of the estancia.

The analyzed data indicate that pumas are present across all monitored sectors, although capture rates vary between areas. The Condorera sector, a conservation zone within the estancia, stands out with the highest detection levels, both in absolute terms and standardized by effort. It is also the only sector showing marked seasonal variation in capture rates, suggesting a more dynamic spatial use by the species.

The analysis of daily activity patterns reveals primarily crepuscular behavior, with activity peaks at dawn and dusk. However, when the data are broken down by season, significant differences emerge:

- **In Summer,** pumas concentrate their activity during crepuscular and night-time hours.
- **In Winter,** there is an increase in diurnal activity, which may be linked to the shorter photoperiod, as well as changes in prey distribution and variations in the type of human pressure.

Condorera represents a special case due to its dual exposure to human activity: in summer as a tourist area, and in winter due to its proximity to sheep-grazing zones. These conditions raise key ecological questions about how pumas respond to different forms of human use of the landscape.

Emerging questions from this report for future research:

- How does seasonal human pressure (tourism vs. livestock grazing) influence puma behavior and space use?
- Are there consistent differences between sectors with varying levels of human intervention?
- How does seasonal variation in prey availability affect puma activity patterns?

SPECIES RECORDS AT CERRO GUIDO

Common name	Scientific name	Reference
Black-chested Buzzard-Eagle	*Geranoaetus melanoleucus*	https://ebird.org/species/bcbeag1/
Scale-throated Earthcreeper	*Upucerthia dumetaria*	https://ebird.org/species/sctear1
Austral Parakeet	*Enicognathus ferrugineus*	https://ebird.org/species/auspar1
Crested Caracara	*Caracara plancus*	https://ebird.org/species/y00678/
Mountain Caracara	*Daptrius megalopterus*	https://ebird.org/species/moucar1/
Chocolate-vented Tyrant	*Neoxolmis rufiventris*	https://ebird.org/species/chvtyr2/
House Wren	*Troglodytes aedon*	https://ebird.org/species/houwre/
Rufous-collared Sparrow	*Zonotrichia capensis*	https://ebird.org/species/rucspa1
Chingue or Andes Skunk	*Conepatus chinga*	https://www.gochile.cl/en/flora-fauna/chingue.htm
Dark-bellied Cinclodes	*Cinclodes patagonicus*	https://ebird.org/species/dabcin1/
Austral Negrito	*Lessonia rufa*	https://ebird.org/species/ausneg1
Patagonian Sierra Finch	*Phrygilus patagonicus*	https://ebird.org/species/pasfin1/
Andean Condor	*Vultur gryphus*	https://ebird.org/species/andcon1/
Fire-eyed Diucon	*Pyrope pyrope*	https://ebird.org/species/fiediu1/
Pampas Cat	*Leopardus colocolo*	https://www.gbif.org/species/2434919
Geoffroy's Cat	*Leopardus geoffroyi*	https://animalia.bio/geoffroys-cat
Guanaco	*Lama guanicoe*	https://animalia.bio/guanaco
Black-crowned Night Heron	*Nycticorax nycticorax*	https://ebird.org/species/bcnher/
Black-chinned Siskin	*Spinus barbatus*	https://ebird.org/species/blcsis2
European Hare	*Lepus europaeus*	https://animalia.bio/european-hare
Long-tailed Meadowlark	*Leistes loyca*	https://ebird.org/species/lotmea1
Southern Big-eared Brown Bat	*Histiotus magellanicus*	https://animalia.bio/es/southern-big-ea-red-brown-bat
Darwin's Rhea	*Rhea pennata*	https://animalia.bio/darwins-rhea
Crested Duck	*Lophonetta specularioides*	https://ebird.org/species/creduc1/
White-bellied Seedsnipe	*Attagis malouinus*	https://ebird.org/species/whbsee2/
Big Hairy Armadillo	*Chaetophractus villosus*	https://animalia.bio/big-hairy-armadillo
Chilean Flicker	*Colaptes pitius*	https://ebird.org/species/chifli1
Puma	*Puma concolor*	https://panthera.org/cat/puma
Magellanic long-clawed akodont	*Chelemys delfini*	https://animalia.bio/es/chelemys-delfini
Thorn-tailed Rayadito	*Aphrastura spinicauda*	https://ebird.org/species/thtray1/
Cinnamon-bellied Ground-Tyrant	*Muscisaxicola capistratus*	https://ebird.org/species/cibgrt1/
Chimango Caracara	*Daptrius chimango*	https://ebird.org/species/chicar1
Austral Blackbird	*Curaeus curaeus*	https://ebird.org/species/ausbla1/
Eared Dove	*Zenaida auriculata*	https://ebird.org/species/eardov1/
Lesser Horned Owl	*Bubo magellanicus*	https://ebird.org/species/grhowl2/
Mourning Sierra Finch	*Rhopospina fruticeti*	https://ebird.org/species/mosfin1/
Culpeo or Andean Fox	*Lycalopex culpaeus*	https://animalia.bio/es/culpeo
South American Gray Fox	*Lycalopex griseus*	https://animalia.bio/south-american-gray-fox
Austral Thrush	*Turdus falckandii*	https://ebird.org/species/austhr1

05

Partners

PARTNERS 2024

&BEYOND

Iconaf

ESTANCIA
COMPLEJO TORRES DEL PAINE

EARTHRANGER
A product of AI2

Nómade

PATAGONIA CAMP
Unique Nature Experience

PANTHERA

PASSER
ILUSTRACIONES

FJALL RAVEN

GANADERA
CERRO GUIDO

INSTITUTO
ANTÁRTICO
CHILENO

KARÜN
EST. IN PATAGONIA

PULSAR

FUNDACIÓN
REWILDING
ARGENTINA

HOTEL & EXPERIENCES
Estancia Cerro Guido

The Nature Conservancy

LADERA SUR.

FAUNA AUSTRALIS

ILUSTRE MUNICIPALIDAD
TORRES DEL PAINE

natural habitat
ADVENTURES

UNIVERSIDAD
DE CHILE

UMAG
Universidad de Magallanes

VOLKANICA
OUTDOORS

WCS

WWF

06

Financial Statements

Statement of financial position (as of December 31, 2024)

ASSETS	2024 M$	2023 M$
Current assets		
Cash and cash equivalents	27.793	1.881
Short-term investments		0
Accounts receivable (net)		
Donations receivable		0
Grants receivable		0
Membership fees receivable		0
Receivables from related parties and entities		1.666
Other debtors	10.939	0
Other current assets		
Inventories		0
Recoverable taxes	15.362	11.526
Prepaid expenses		0
Others		0
Restricted current assets		0
Total Current Assets	**54.094**	**15.073**
Fixed Assets		
Land		0
Buildings		0
Furniture and fixtures	1.281	1.187
Vehicles	172.260	165.359
Other fixed assets		0
(-) Accumulated depreciation	35.646	10.388
Restricted fixed assets		0
Reserved fixed assets (net)		0
Total Net Fixed Assets	**137.895**	**156.158**
Other Assets		
Permanent financial investments		0
Restricted other assets		0
Reserved other assets		0
Total Other Assets	**0**	**0**
TOTAL ASSETS	**191.989**	**171.231**

LIABILITIES AND EQUITY	2024 M$	2023 M$
Current Liabilities		
Obligations with banks and financial institutions		742
Accounts payable		
Suppliers	38.267	18.114
Payables to related parties		0
Other creditors		0
Funds and projects under management		0
Other liabilities		
Income tax payable	1.723	0
Withholdings	3.471	2.848
Provisions		0
Unearned income		0
Others	15.789	0
Total Current Liabilities	**59.250**	**21.704**
Long-Term Liabilities		
Obligations with banks and financial institutions		0
Funds and projects under management		0
Long-term creditors		
Loans from third parties		0
Payables to related parties		0
Provisions		0
Other long-term liabilities		0
Total Long-Term Liabilities	**0**	**0**
TOTAL LIABILITIES	**59.250**	**21.704**
EQUITY		
Unrestricted (freely available)	132.739	149.527
Reserved for specific purposes		0
Restricted		
TOTAL EQUITY	**132.739**	**149.527**
TOTAL LIABILITIES AND EQUITY	**191.989**	**171.231**

Statement of comprehensive income (as of December 31, 2024)

	2024 M$	2023 M$
Operating Income		
Private		
Donations	244.323	77.034
Projects	0	0
Contributions and membership fees	0	0
Sale of goods and services	51.312	1.707
Others	0	0
Total Operating Income	**295.635**	**78.741**
Operating Expenses		
Personnel expenses	174.694	130.897
Operational activity expenses	51.892	39.604
Management and administrative expenses	68.155	52.017
Depreciation	25.258	7.483
Write-off of uncollectible accounts	0	0
Direct cost of goods and services sold	0	0
Other costs of specific projects	0	0
Other operating expenses	0	0
Total Operating Costs	**319.999**	**230.001**
Operating Surplus (Deficitl	**(24.364)**	**(151.260)**
Non-operating Income		
Investment income	0	0
Gain on sale of assets	0	0
Insurance compensation	0	0
Other non-operating income	7.725	2.578
Total non-operating income	**7.725**	**2.578**
Non-operating Expenses		
Financial expenses	0	98
Loss on sale of assets	0	0
Loss from claims/events	0	0
Other non-operating expenses	149	0
Total non-operating expenses	**149**	**198**
Non-operating Surplus (Deficit)	**7.576**	**2.380**
SURPLUS / (DEFICIT) BEFORE TAXES AND EXTRAORDINARY ITEMS	**(16.788)**	**(148.880)**
Income tax	0	0
Extraordinary contributions	0	0
SURPLUS / (DEFICIT) FOR THE YEAR	**(16.788)**	**(148.880)**

Statement of Cash Flows (as of December 31, 2024)

	2024 M$	2023 M$
Cash flow from operating activities		
Donations received	244.323	77.034
Income from projects and grants	0	0
Contributions and membership fees	0	180.000
Other income received	51.312	1.707
Extraordinary contributions	0	0
Salaries and fees paid (less)	158.905	130.897
Payments to suppliers (less)	110.762	90.589
Taxes paid (less)	0	0
Other operating disbursements	56	0
Net Operating Cash Flow	**25.912**	**37.255**
Cash flow from investing activities		
Sale of fixed assets	0	0
Purchase of fixed assets (less)	0	77.034
Long-term investments (less)	0	0
Purchase/sale of marketable securities (net)	0	0
Interest received	0	0
Other investing cash flows	0	0
Net Investing Cash Flow	**0**	**(77.034)**
Cash flow from financing activities		
Loans received	0	0
Loan repayments (less)	0	0
Financial expenses (less)	0	198
Funds received for administration	0	0
Funds used for administration (less)	0	0
Other financing cash flows	0	0
Net Financing Cash Flow	**0**	**(198)**
NET CHANGE IN CASH	**25.912**	**(39.977)**
Opening balance of cash and cash equivalents	**1.881**	
CLOSING BALANCE OF CASH AND CASH EQUIVALENTS	**27.793**	**1.881**

ACKNOWLEDGMENTS

As I conclude my tenure as Chairman of the Board, I want to express my heartfelt gratitude to all those who have been part of this dream, one that was born years ago as a family aspiration and today has become a foundation that inspires, leads, and paves the way for conservation in Patagonia.

My thanks go to each of the directors who accompanied me on this journey, to the Simunovic and Matetic families for believing in and generously supporting this project, and to the extraordinary team of the Foundation, who have shown that science, commitment, and love for the land can truly transform realities.

I am also deeply grateful to our partners and collaborators, both in Chile and abroad, who have extended a hand and joined forces to take this vision of coexistence even further.

Today, I confidently hand over the presidency to Consuelo Valdés, to whom I wish the greatest success in this new challenge. I am certain that her experience, wisdom, and passion for culture and nature will further strengthen the path we have begun together.

I leave this role with the conviction that this legacy will continue to grow with new energy and leadership. The challenge goes on, and I know that Cerro Guido Conservation Foundation will keep setting an inspiring example of how to live in Patagonia with respect and vision for the future.

With pride and gratitude,

Cristián Matetic Hartard
Outgoing Chairman of the Board

This year has been a reminder that conservation is not a destination, but a journey traveled with patience, courage, and conviction. None of what we have achieved would have been possible without the team that, day after day, gives their very best—both in the field and in management—building trust, knowledge, and solutions to coexist with wildlife.

I am deeply grateful to the Board of Directors and, most especially, to Cristián Matetic, for his guidance, vision, and commitment throughout these years. His generous leadership made it possible to shape this project and open spaces for dialogue that today are the very soul of our Foundation.

My gratitude also goes to the founding families, to the *gauchos*, to our strategic allies, and to every person who has joined us in this challenge: from researchers and artists to donors and travelers who have chosen to turn their visit into an act of conservation.

I invite everyone to keep believing in this story. Because what we are doing here is not only about protecting a territory, but about sowing hope for future generations.

With gratitude and conviction,

Pía Vergara Medina
Executive Director

Be part of the story together with Cerro Guido Conservation Foundation!

We firmly believe that only by working together can we care for and regenerate both the natural world of our planet and the social fabric of those who inhabit it.

There are different ways to contribute.

Join the movement!

Allies for change

Our Allies for Change are foundations, NGOs, companies, philanthropists, and corporations that provide ongoing support and take part in the co-creation of programs through which the Foundation ensures long-term financial sustainability.

Community members

Netflix, Spotify, YouTube... Why not Cerro Guido Conservation Foundation? We invite you to become a member of our community by supporting us with a monthly contribution that will directly impact our work.

Direct donation

You can make a one-time contribution to help us achieve our goals and be part of the change. Any amount contributes to the conservation of Patagonia.

¿How to donate?

You can donate directly via PayPal at **www.fundacioncgc.com** or by scanning the QR code.

If you would like to know more, please contact us:

Pia Vergara
Executive Director
pia@fundacioncgc.com

Agustín Roselló
Director of Projects
agustin@fundacioncgc.com

All photographs in this annual report are by **Pía Vergara**, except for those on pages 12, 13, 25, and 54, which were taken by **Agustín Roselló**.

Graphic design by **Hombo & Zegers Diseño**


FUNDACIÓN
CERRO GUIDO
CONSERVACIÓN