SUSTAINABILITY 2025 REPORT Nº4

MUSEO DE HISTORIA NATURAL DE VALPARAÍSO

SERPAT
Región de Valparaíso

Ministerio de las Culturas, las Artes y el Patrimonio

MUSEO DE HISTORIA NATURAL DE VALPARAÍSO

Sustainability Report N°4
Museo de Historia Natural de Valparaíso. Year 2025
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Cover
Sea fig, *Carpobrotus chilensis.*
Passion flower, *Passiflora pinnatistipula.*
Kelp gull, *Larus dominicanus.*

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The illustrations in this Annual Report reflect a vision of cohabitation through a sustainable lens, in connection with ecosystems.

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(Esp)

| Spanish version

Prologue

The Museum Sustainability Reports are a clear example of the institution's growth and commitment to environmental matters. Through its team, the contribution of its partners, and the ever-necessary coordination with other relevant regional actors, the Museum has decided to make steady progress on facilitating access to knowledge and tools for the inhabitants of the Valparaíso region and its visitors, in order to raise awareness, reflect, and address the global crisis. We expect to jointly promote different actions aimed at empowering citizens to protect and conserve diverse ecosystems, vital for human life on the planet.

In this fourth edition of the Memoria del Museo de Historia Natural de Valparaíso (sustainability report), significant advances in areas such as environment, circular economy, culture, and social perspective are reported. These advances enabled us to achieve the "Excellence" level of Oficina Verde, an accreditation program led by the Ministry of the Environment, which recognized our Museum as the first one in Chile to contribute to the reduction of organizational carbon footprint and—in turn—to the mitigation of the negative impacts arising from its administrative and technical processes.

For this public institution, bringing this type of information closer to the community is an essential role. Education and research on natural heritage are core elements of the Museum's Vision and Mission, along with efforts to mitigate the impacts upon it, most of which stem from human activity, such as biodiversity loss, increased pollution, and climate change. In addition, we are committed to being a coherent space that engages with problems and solutions in a spirit of service to the community. Consistent with that approach, we aim to face together the great challenges associated with building societies with a socio-environmental justice perspective, to advance toward sustainable development.

In this regard, we firmly believe that our sustainability reports are a relevant channel to share our commitments and convictions, with the purpose of encouraging other institutions to adopt more environmentally friendly practices aimed at establishing a lasting, collectively built environmental and sustainable culture.

Cinthia Mora Troncoso
Environmental Management Coordinator
Museo de Historia Natural de Valparaíso.

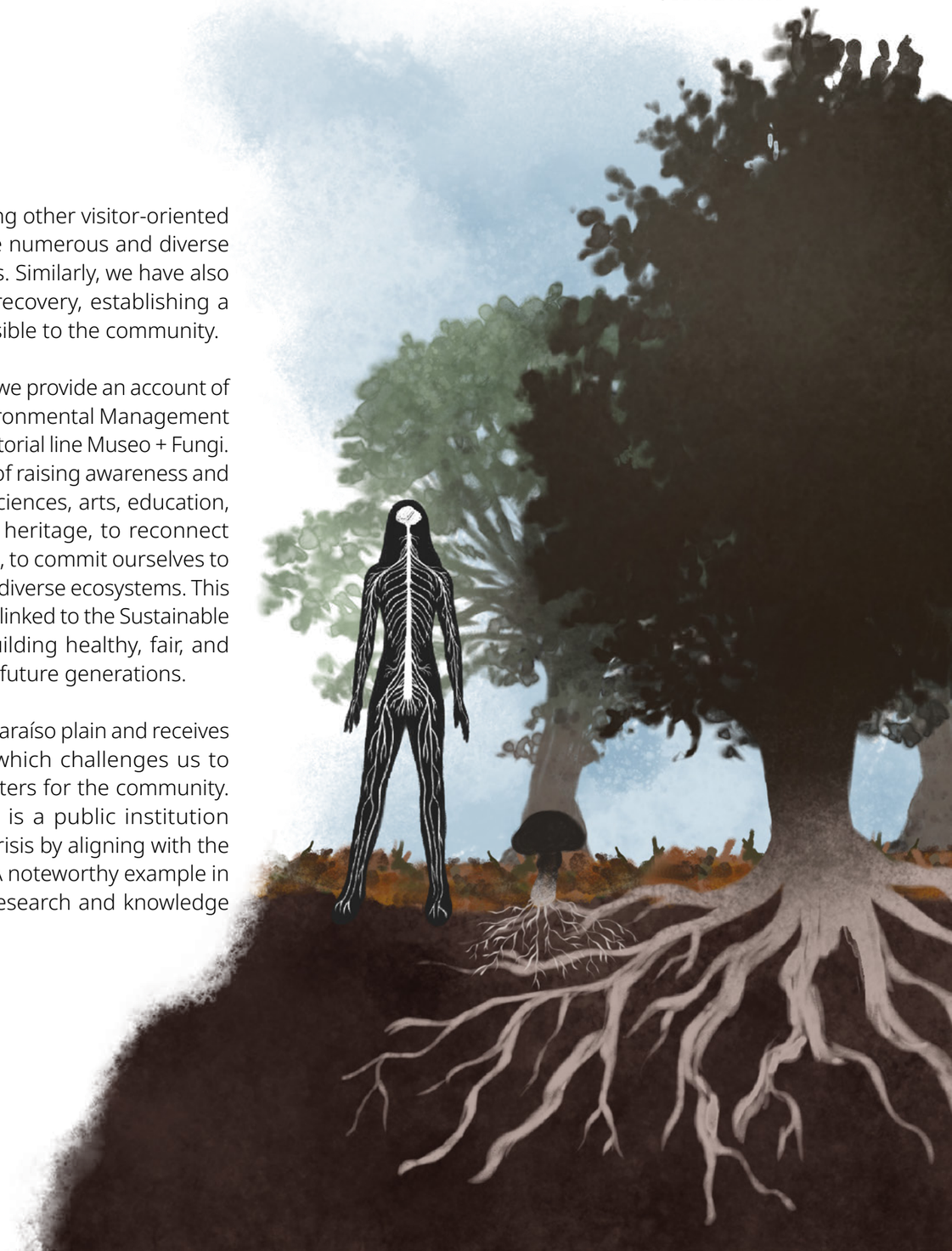
Introduction

After five years of integrating environmental considerations into the technical and administrative processes of the Museo de Historia Natural de Valparaíso—thanks to the leadership of the Environmental Management Coordinator, and the encouragement and support of the Executive Direction and the entire team of this institution—many concrete achievements in environmental and sustainability matters were attained, which changed the existing institutional culture.

This cultural shift has been neither easy nor immediate; it has required addressing obstacles and major challenges. However, it has led to many positive outcomes, encouraging our staff and partners to permanently adopt positive habits, such as using energy, paper, and water efficiently, as well as procuring ecofriendly materials and services, promoting local circular economy, and implementing and maintaining green areas in the Museum, among other visitor-oriented actions, which are reflected in the numerous and diverse activities of our monthly programs. Similarly, we have also made efforts focused on waste recovery, establishing a reuse and recycling station accessible to the community.

In this fourth sustainability report, we provide an account of the development of the 2025 Environmental Management Plan, along with the institution's editorial line Museo + Fungi. In the latter, we highlight the goal of raising awareness and encouraging reflection through sciences, arts, education, history, and cultural and natural heritage, to reconnect with our environment, and, in turn, to commit ourselves to conserving and strengthening the diverse ecosystems. This could be achieved through actions linked to the Sustainable Development Goals, aimed at building healthy, fair, and equitable futures for present and future generations.

The Museum is located on the Valparaíso plain and receives thousands of visitors annually, which challenges us to address current and relevant matters for the community. Along these lines, the Museum is a public institution committed to facing the climate crisis by aligning with the Sustainable Development Goals. A noteworthy example in this regard is the promotion of research and knowledge



through the "10th Innovation, Science and Technology School Contest" and the "6th Science Book Fair", both held during Heritage Day. Those events highlighted the value of environmental education and natural heritage through different interdisciplinary and collaborative activities accessible to the community. Also, it is important to note that the Museum promotes local circular economy all year round by hosting entrepreneurship fairs and book and educational materials launches that foster knowledge and protection of the national and regional biodiversity.

Another key aspect is the comprehensive service we offer to our visitors, which includes exhibitions, talks, workshops, guided tours, among other activities, on topics related to natural and cultural heritage. This service is aimed at fostering reflection and dialogue and promoting an active role as citizens to bring about positive changes in how we value our territory, supported by a sense of identity.

Finally, this sustainability report is available in both Spanish and English and features an interactive design which allows direct access to each chapter and supplementary information via hyperlinks. Additionally, it provides some insights into the implementation of our Environmental Management Plan, which encompasses 21 environmental and sustainability dimensions comprising 45 measures developed by our institution.

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Litre
(native Chilean tree),
Lithraea caustica

Grey-hooded
sierra finch,
Phrygilus gayi

Litre beetle,
Procalus viridis

About Us

The Museo de Historia Natural de Valparaíso is a public institution that forms part of the National Cultural Heritage Service (Serpat, by its initials in Spanish). At local level, it is affiliated with the Valparaíso Regional Board of the same service and is connected to the Government of Chile through the Ministry of Cultures, the Arts, and Heritage.

The Museum was founded in 1878 by the distinguished educator Eduardo de la Barra, thus becoming the first regional museum and the second oldest in Chile. The Museum is located in the Palacio Lyon, a building that was designated as a National Monument in 1979. The institution holds a collection of highly valuable museum pieces related to natural sciences, history, archaeology, and anthropology, estimated at 80,000 objects.

Mission

To preserve, conserve, research and promote heritage, from biological to sociocultural dimensions, in order to bring about positive changes in how it is perceived, valued, and protected. Our work adheres to international agreements on the protection and management of biodiversity, thereby ensuring the proper safeguarding of our flora and fauna, as well as the archaeological and historical heritage of the Valparaiso Region. To serve as the official Legal Deposit in the Valparaiso Region, safeguarding heritage from discoveries, archaeological sites, or donations resulting from administrative and legal mandates, in accordance with the National Monuments Law.

Vision

To work toward a sustainable museum, to foster a spirit of inclusive community service, acting as a mediator between State's sociocultural policies and the promotion of both natural and cultural heritage, while encouraging its research and conservation, as well as educational outreach.

Museum Team

In 2025, the Museum staff consisted of 25 people, organized into the following teams: Executive Direction, Administrative Office, Records Management, Environmental Sustainability Laboratory, Science and Research Department, Education Department, Environmental Management Division, MuseoLab–Aprendizaje/Heritage Outreach, John Juger Silver Science Library, Digital Museum Division, and Security.

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Teams at the Museo de Historia Natural de Valparaíso

Institutional Environmental Management

The Museum's Environmental Management Division was created in October 2020, being the first museum within the National Cultural Heritage Service to have the vision to voluntarily integrate environmental considerations into all its strategic processes. In 2021, the Museum joined the Oficina Verde program as a pilot project in the Valparaiso Region. Since the program had originally been designed for more conventional workplaces, such as offices, implementing it in this institution posed a major challenge.

Institutional Environmental Management is a cross-cutting process that involves the active participation of the entire organization. Specifically at this Museum, this has been conducted using a circular approach that emphasizes how collaboration, commitment, and responsibility of everyone are essential to establishing an environmental and sustainable culture and maintaining it over time. The decision to integrate environmental considerations into the Museum's internal processes has enabled us to obtain the Excellence accreditation level of the Oficina Verde program.

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Oficina Verde Committee (COV)

In May 2021, the Oficina Verde Committee (COV, by its initials in Spanish) was formed with the representation of all the departments and divisions of this institution. The committee's existence is of substantial and fundamental importance in ensuring all departments and divisions of the Museum move forward in harmony toward a common goal, focused on using electricity and water efficiently, developing strategies for managing the waste we generate, procuring materials and services based on environmental and sustainable criteria, among other actions. This has strengthened the lines of work in the Museum's operations from both an administrative and technical perspective.

Oficina Verde Committee Directive

Technical Coordinator
Cinthia Mora Troncoso

President
Sergio Quiroz Jara

Secretary
Cailyn Herrera Clark

Representatives for John Juger Science Library

Primary:
Loreto Meléndez Cartes

Alternate:
Vivian Cordero Peñafiel

Representatives for Department of Science and Research

Primary:
Lilian López Labbe

Alternate:
Anabell Lafuente Cáceres

Representatives for Department of Education

Primary:
Alejandra Baradit Díaz

Alternate:
Andrea Vivar Morales

Furthermore, through the development of the annual environmental management plan, the committee members have strengthened their knowledge of environmental and sustainability matters by participating in training sessions organized in collaboration with various local partners. These partners are known for sharing tools and knowledge focused on the different ecosystems, with the aim of learning about them, and thereby promoting the development of a society that is more respectful and connected to the environment.

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Representatives for Surveillance and Security

Primary:
Myriam Droguett Morales

Alternate:
Juan Henríquez Fernández

Representantive for Digital Museum

Primary:
Juan Pablo Cruz Gallardo

Representantive for Gestión Documental

Primary:
Patricia Díaz Tobar

Representantive for MuseoLab-Learning Heritage Divulgation

Primary:
Claudio Ampuero Arancibia

Litre (native Chilean tree), *Lithraea caustica*

Culpeo fox, *Lycalopex culpaeus*

Rounded earthstar, *Geastrum saccatum*

Sustainability Pillars and SUSTAINABLE DEVELOPMENT GOALS

For the past five years, the Museo de Historia Natural de Valparaíso has been promoting the development of an environmental and sustainable culture within its team, which is then passed on to the community by incorporating measures and actions related to the 2030 agenda and the United Nations (UN) Sustainable Development Goals (SDGs) into its daily activities. These measures and actions encompass social, cultural, circular economy, and healthy environment dimensions.

Transforming our world: the 2030 Agenda for Sustainable Development

The General Assembly—composed of the 193 member states of United Nations—approved a plan based on common principles and interests, focused on measures to benefit "the people, the planet and the prosperity" (UN 2015).

The plan was implemented by all countries and stakeholders through a collaborative partnership of which Chile is a member. The purpose of this plan is to heal and protect our planet with a vision for the future, through the implementation of bold, ambitious, and transformative measures—which, 10 years later, remain urgent to implement—in order to set the planet on a path toward resilience and sustainability. The 17 Sustainable Development Goals, with its 169 targets and more than 230 indicators, aim to end poverty, and, in turn, seek to achieve challenging objectives in the areas of health, education, and gender equality. Additionally, they aim to make human rights a reality, empower all women and girls, and bring about a change in society to achieve economic development that can be sustained over time, through fair, inclusive, participatory, and collaborative strategies, in harmony with the environment.

In the following section, Sustainable Development Goals (SDGs) are outlined. To achieve these goals, the Museo de Historia Natural de Valparaíso implements actions and measures that are directly and indirectly linked to them.

Fox's ear,
Aristolochia chilensis

Butterfly
of the fox's ear,
Battus polydamas

• Nº 3 Good Health and Well-being:
Ensure healthy lives and promote well-being for all at all ages.

3.d ***trengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.***

The Museum staff, as well as external individuals holding events and/or ceremonies at the Museum, are encouraged to adopt positive habits associated with healthier lifestyles; for example, consuming water, fruit, and less processed foods in coffee breaks. Another measure was the incorporation of "active breaks" carried out by the administrator of the workers' compensation insurance. These active breaks are 15-minute physical exercises sessions aimed at preventing musculoskeletal disorders, reducing physical and mental fatigue, improving mobility, and strengthening the work environment through playful activities. Similarly, for the second consecutive year, "Workplace Well-being" week was held in September to raise public awareness about non-communicable diseases and their prevention through a healthy lifestyle. Another initiative was a field trip to the Viña del Mar Botanical Garden (JBV, by its initials in Spanish), in which both the Museum staff and the JBV staff participated. As part of this activity, a fungi workshop, led by Diana Mena—a journalism graduate, science communicator, and Museum collaborator —was held, offering participants the opportunity to learn about and identify different fungal species found at the JBV. While this action is linked to SDGs 4 and 17, it is worth noting the sense of well-being and positive effects that resulted from interacting with the abiotic and biotic elements of a natural environment close to urban areas. In addition, through the Museum social media accounts, the Science Library Lending Service Coordinator recommends books on a weekly basis. These books cover various topics, such as "Botanical Laboratory" (in Spanish), which explores the effects of green plants on people's mental stress experienced during the COVID-19 pandemic, a preliminary study that demonstrates how natural environments generate positive emotions on human beings and relieve stress, thereby helping to improve mental health.

• Nº 4 Quality Education:
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

4.7 ***By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.***

The Education Department, MuseoLab–Aprendizaje, the Science and Research Department, the Scientific Library and the Environmental Management Division bring knowledge and tools on environmental and museum-related matters closer to the community through non-formal education, using a scientific, environmental, social, and cultural approach.

Education Department staff daily welcome groups of primary and secondary school students, preschoolers, self-sufficient older adults, neighborhood associations, among other groups not only with the purpose of facilitating engagement with the natural and cultural heritage protected by the Museum, but also to create experiences that connect through memory and foster awareness and a sense of belonging to the territory. This transforms the Museum into a space for learning, knowledge and reflection that goes beyond its core mission of preserving heritage collections.

Chilean puya,
Puya chilensis

Chagual
butterfly-moth,
Castnia eudesmia

The tenth "Innovation, Science and Technology School Contest", led by the Biological Collections Coordinator of the Science and Research Department, gathered students from across the country, who presented their projects in the Youth Science Fair before a panel of experts. The event highlighted creativity, commitment, and collaboration among school communities and institutions, recognizing the most innovative and sustainable initiatives. As part of this activity, a "Youth Science Bulletin" is published, which seeks to highlight, both locally and nationally, the achievements and efforts of primary and secondary school students who participated in the contest, by presenting their research in the Museum's journal Anales, developed by its Science Library, which is a one-of-a-kind scientific publication.

In the context of environmental education, a series of talks and training sessions were held to empower the Museum's staff with knowledge on environmental matters, such as "Insects of Chile: A New Perspective", "Urban Climate and Socio-Environmental Justice in Chile's Coastal Conurbations"—a study led by Universidad de Chile, Universidad de Tarapacá and Universidad Mayor; a guided session of the project "Echoes of the Future" , led by the research center Centro de Acción Climática PUCV; "Fungi workshop", and "Vermicomposting workshop", to name a few. Other activities, such as seminars, talks, workshops and games were also held for our visitors, including the panel discussions "The Inner Garden: The Human Body and the Microbes That Inhabit It", and "How Plants and Insects Communicate Chemically"; the workshop "Clouds and their impacts"; lectures such as "Chilean fungi", "Sclerophyllous Forest" and "Birds of Chile", presented by the tour operator company Valparaiso Trekking, and talks like "The Effect of Used Vegetable Oil on the Environment", "Identifying Chilean Snakes", "Kelp Refuge: A Game for Marine Conservation", among others, as well as book recommendations from the Science Library, for example The Forests Tell Their Story (in Spanish).

• Nº 5 Gender Equality:
Achieve gender equality and empower all women and girls.

5.5 ***nsure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.***

The monthly programs developed by the Museum staff included numerous activities with a gender-equity perspective, from exhibitions led by secondary school students to motivational sessions aimed at promoting the empowerment of women and girls in science. In this regard, we highlight the session "Girls and Science: Learn, Lead and Change the World", led by Universidad Técnica Federico Santa Maria, which promoted women leadership and empowerment in rural school communities. Furthermore, as part of the commemoration of the International Women's Day, different activities were held ranging from exhibitions, trade fairs, illustration workshops and talks, to book recommendations, such as Historic Women Whose Stories Matter and Women that Changed History: María Montessori (both in Spanish). For its part, the regional Gender Committee—in which female Museum staff members participate—created short videos designed to encourage all staff members to reflect on key concepts such as Gender, Gender Parity, Equal Opportunities, and Gender Perspective, and inviting them to actively participate in caring for and maintaining workplaces based on respect and equality. They also shared preventive information on the International Day for the Elimination of Violence against Women.

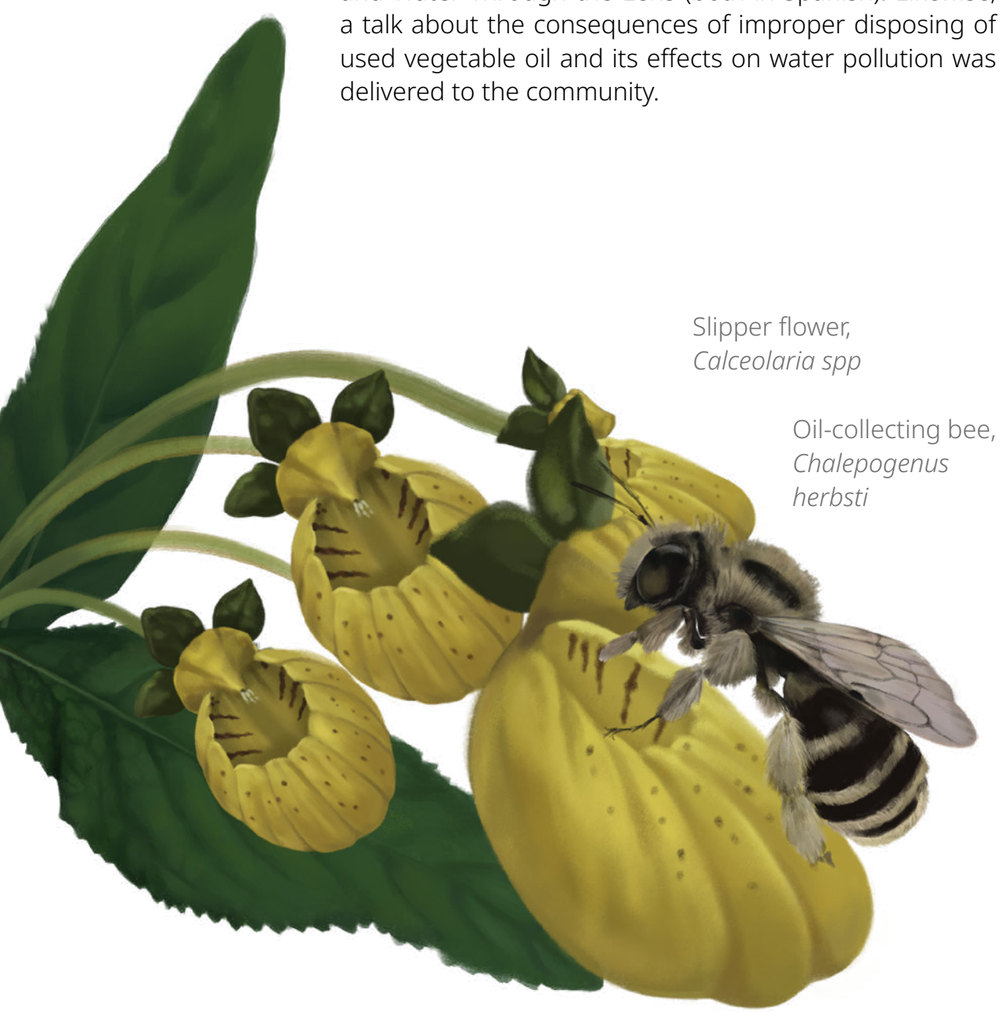
• Nº 6 Clean Water and Sanitation:
Ensure availability and sustainable management of water and sanitation for all.

6.1 ***By 2030, achieve universal and equitable access to safe and affordable drinking water for all.***

6.6 ***By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.***

In the summer of 2023, the Museum was designated as an "Urban Climate Shelter", with the main purpose of allowing people to refill their water bottles with drinking water free of charge. This service was made possible by replacing the bathroom faucets with kitchen faucets. Another measure implemented was hiring a cleaning service company that uses biodegradable supplies, as established in the Museum public tender.

Similarly, throughout the year, inspections of the water fixtures are made to prevent drinking water losses. Water consumption in both buildings (Palacio Lyon and Carlos Porter administrative building) is also registered and analyzed to detect potential misuse of water in advance and to develop strategies to promote water efficiency across the Museum's premises. In addition, the book recommendations from the Science Library included the titles Discover the Journey of Water on Earth, Glaciers, and the Aurora Borealis and Water Through the Lens (both in Spanish). Likewise, a talk about the consequences of improper disposing of used vegetable oil and its effects on water pollution was delivered to the community.



Slipper flower, *Calceolaria spp*

Oil-collecting bee, *Chalepogenus herbsti*

• Nº 7 Clean and affordable energy:

Ensure access to affordable, reliable, sustainable and modern energy for all.

7.1 ***By 2030, ensure universal access to affordable, reliable and modern energy services.***

7.3 ***By 2030, double the improvement in energy efficiency.***

Since 2022, The Museum has been implementing a pilot project on energy efficiency. Some of its measures focus on encouraging changes in habits among staff members regarding the use of electrical energy in offices and common areas—such as kitchens and hallways—which involve turning off the lights and unplugging electrical appliances when not in use. In this regard, electricity bills for different periods from both the Palacio Lyon and Carlos Porter buildings were analyzed, showing a reduction in consumption at both buildings. This indicates that —prior to the integration of environmental considerations— the consumption levels were much higher. In addition, it is important to note that there is an internal register for temporary exhibitions regarding the use of lighting fixtures and electrical appliances. In relation to that register, we propose giving preference to those fixtures and appliances with energy labels, a policy that also applies to the institution's energy-related procurement.

Along the same lines, the weekly book recommendation from the Science Library was the title Energies that move the World.

• Nº 8 Decent work and economic growth

Promote sustained, inclusive, and sustainable economic growth, full and productive employ-ment, and decent work for all.

8.3 ***Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, and innovation, and encourage the formalization and growth of micro, small, and medium-sized enterprises, including through improved access to financial services.***

8.9 ***By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.***

The Museum is committed to promoting and supporting the local circular economy by hosting entrepreneurship fairs and educational materials launches aligned with the topics addressed by the institution. These actions promote economic growth and job creation. In this regard, for the commemoration of Women's Day, the work of regional women entrepreneurs—including their creations in art, textiles, and metalwork—was showcased. On World Oceans Day, the "Blue Market" event was held, with different educational and informational booths run by various regional organizations. Likewise, as part of the Heritage Day, the "6th Science Book Fair" stood out, with the participation of publishing houses, bookstores and local shops that shared knowledge about the fungi kingdom with people of all ages.

Similarly, the Museum prioritizes its procurement by choosing local businesses and, in turn, has a sustainable procurement and circular economy protocol that is also linked to SDG

No 12, which establishes internal criteria on environmental and sustainability matters for public procurement and tender processes. This protocol identifies the best sustainable practices adopted by suppliers, ensures that participating companies and natural persons have accreditations or certification seals such as Huella Chile, Empresa Mujer, Pro Pyme, and/or adhere to environmentally friendly practices, and assigns a 5% of the total tender score to these criteria.

• Nº 11 Sustainable cities and communities

Make cities and human settlements inclusive, safe, resilient and sustainable.

11.4 ***Strengthen efforts to protect and safeguard the world's cultural and natural heritage.***

Through its Mission and Vision, the Museum focuses on the preservation and promotion of cultural and natural heritage, with the purpose of raising awareness of the vital role of the various ecosystems found both within the region and throughout the country. It does so through different strategies to present knowledge in diverse forms to spark curiosity and wonder, seeking to foster reflection and a sense of belonging and identity.

The permanent exhibition "Biodiversity of the Valparaíso Region"—consisting of the galleries: "Museum Experience", "Bathyscaphe", "Migrations", "Photic Zone", "Surface", "Coast", "Island Formation", "Islands and Their Biodiversity", "Corvette", "Valley", "Aconcagua", "Seed", and "La Campana National Park" —invites visitors to join an interactive journey through the central region of Chile, from the depths of the Pacific Ocean to the heights of The Andes Mountains. These galleries showcase the region's biodiversity and its native and endemic species, as well as biosphere reserves such as La Campana National Park and Juan Fernández archipelago.

Parrot beak orchid, *Chloraea bletioides*

Numerous activities were held throughout the year, in collaboration with partners, to promote knowledge of the rich biodiversity found in the Central Zone and specifically, in the Valparaíso Region, as well as its protection and conservation. These activities included talks such as: "Insects of Chile," "Commemoration of World Wetlands Day" and "Paws in the Wetland: The Impact of Dogs on Fragile Ecosystems"; the sound work "Echoes of the Future"; workshops on the Fungi kingdom; the talk and exhibition "Identifying Chilean Snakes"; the launch of the board game "Kelp Refuge" (in Spanish); the Innovation, Science and Technology School Contest; and the Science Festival, among many other activities.

• Nº 12 Responsible Consumption and Production:

Insure sustainable consumption and production patterns.

12.5 ***By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.***

12.7 ***Promote public procurement practices that are sustainable, in accordance with national policies and priorities.***

12.a ***upport developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.***

The Museum promotes and implements measures focused on responsible consumption, both in its own procurement of services and materials and in its engagement with the community, by facilitating participation in waste recovery through the recycling and reuse station set up in the Ana Ávalos Hall 4 years ago. Internally, and for the first time, organic waste is treated in a vermicomposting bin, thus preventing it from ending up in a landfill, where methane gas—a greenhouse gas 80 times more potent than carbon dioxide at trapping heat in the atmosphere—is released.

While the Museum developed a sustainable procurement and circular economy protocol, the National Cultural Heritage Service (Serpat, by its initials in Spanish) has also implemented, starting this year, a procedure that sets up clear guidelines on sustainable procurement and its environmental benefits, providing a tool for

Serpat's various units nationwide to integrate sustainability into their procurement processes through the application of sustainability-based criteria.

In line with efforts to strengthen scientific and technological capabilities toward more sustainable consumption and production patterns, the Museum has become a key player within the network Red Territorio STEAM Valparaíso, carrying out actions associated to STEM+ education, with a focus on science outreach, socio-environmental sustainability and collaborative work with school communities. To this end, the Museum features the MuseoLab-Aprendizaje room and implements scientific outreach programs, such as the Café STEAM gatherings, and forums for dialogue between science, education and the community, held at the Museum's premises. In addition, through the Innovation, Science and Technology School Contest—organized as part of the Youth Science Fair—a wide range of topics are explored, from bio-based textiles and biodegradable soaps to studies on seabirds, climate change, renewable energies, and pollinators protection. This contest highlights the creativity and commitment of new generations to science and sustainability as they develop solutions to challenges faced by their communities.

• Nº 13 Climate Action:
Take urgent action to combat climate change and its impacts.

13.2 ***Integrate climate change measures into national policies, strategies and planning.***

13.3 ***Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.***

Some of the measures in the Museum's Environmental Management Plan address actions related to climate change, such as the designation as a "Urban Climate Shelter" —a program that provides shelter during climate events such as heatwaves. Also, in 2024, the Museum received the donation of a weather station, thanks to Dr. Pablo Sarricolea and the National Fund for Scientific and Technological Development (Fondecyt, by its initials in Spanish) research project "Urban Climate in Chile's Coastal Conurbations: A Socio-Environmental Justice Proposal Based on Climate-Sensitive Planning", which was funded by the National Agency for Research and Development (ANID, by its initials in Spanish). The study, which considered the Museum a sampling point, reported that our institution meets the criteria of shelter.

One of the milestones of 2025 was the formalization a collaboration agreement with the Centro de Acción Climática (CAC, by its initials in Spanish) of Pontificia Universidad Católica de Valparaíso. The CAC is an applied research center dedicated to enhancing the region's and the country's preparedness for the current climate crisis, seeking to promote the development of comprehensive proposals and solutions that strengthen climate resilience, in collaboration with private and public organizations.

In the same vein—through talks and workshops, book recommendations, temporary exhibitions, and guided tours through the permanent exhibition—the Museum offers relevant information on climate change, while also inviting people to join as agents of change by taking both individual and collective actions.

Chilean puya,
Puya chilensis

Giant hummingbird,
Patagona gigas

• Nº 14 Life Below Water:
Conserve and sustainably use the oceans, seas and marine resources.

14.2 ***By 2030, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.***

14.3 ***Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.***

The vitality and role of underwater ecosystems are key topics for the institution, and are part of its permanent exhibition, including the "Bathyscaphe", "Migrations", "Photic Zone", "Surface", "Coast", "Island Formation", and "Islands and Their Biodiversity" galleries. The Museum staff conduct guided tours through these spaces, seeking to spark curiosity and wonder among visitors. Furthermore, through environmental education, we aim to encourage protection and strengthen the conservation of these ecosystems, which play a dual role: acting as sinks for greenhouse gases and sustaining rich biodiversity.

Along these lines, the sound work "Echoes of the Future" was launched, with the goal of raising awareness about the effects of climate change and exploring new ways to interact with the environment. On this occasion, three episodes were released, including: "Conservation of Kelp Forests" and "Resilience in Juan Fernández." These episodes—which combine radio art, historical narratives, and music—are available on Spotify, and aim to educate and encourage reflection on the resilience, conservation, and restoration of our ecosystems.

Finally, and along similar lines, the family and educational event "MuseOcéano" stood out, bringing science, environmental awareness and wonder on World Oceans Day, under the theme "Together for the Promotion and Protection of Marine Biodiversity." This full-day event was a true meeting point between science, the community, and conservation.

Marine otter, *Lontra felina*

Redspotted catshark, *Schroederichthys chilensis*

Giant kelp, *Macrocystis pyrifera*

• Nº 15 Life on Land:
Sustainably manage forests, combat desert-ification, and halt and reverse land degradation and halt biodiversity loss.

15.2 *PBy 2030, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.*

15.4 *By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.*

Part of the Museum's permanent exhibition focuses on terrestrial ecosystems, showcased in galleries such as "Valley," "Aconcagua," "Seed," and "La Campana National Park." Through expert-led guided tours, visitors are introduced to the key features and roles of these ecosystems, with the aim of raising awareness of the importance of strengthening and conserving them, while encouraging each of us to contribute to their protection and preservation. Similarly, throughout the year, numerous activities related to the terrestrial ecosystems are held, such as the conference "Let's Learn to Protect Nature"; the commemoration of World Wetlands Day with the talk "Paws in the Wetland: The Impact of Dogs on Fragile Ecosystems"; book recommendations, including the titles The Forests Tell Their Story and Wild City: A Guide to Biodiverse Living (both in Spanish); the launch of the pocket guide Temperate Rain Forest (in Spanish); the opening of the temporary exhibition "Expanding the Mycelium"; the workshop "Watercolor Pencils: Fungi Kingdom Special"; the presentation of the book Endemic Mammals of Chile (in Spanish) and the festival "Quinta Funga", among many other activities with the same focus.

• Nº 17 Partnerships for the goals:
Revitalize the global partnership for sustainable development.

17.16 *Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.*

17.17 ***Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.***

Indeed, establishing and promoting partnerships and agreements between public and private institutions is crucial for expanding our reach in the territory and enhancing positive outcomes in environmental and sustainability matters. The Museum is convinced that, by promoting strategies based on cooperation and collaboration with multiple stakeholders throughout the territory—including academia, municipalities, educational institutions, museums, NGOs, foundations, and civil society, among other organizations—it has enabled it to work alongside the community to foster a sustainable culture and future.

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Elegant fat-tailed mouse opossum, *Thylamys elegans*

Short-eared owl,
Asio flammeus

2025 Environmental Management Plan

In mid-2025, following prior audits conducted by the Ministry of the Environment and the submission of a file documenting the 100% implementation of all the actions committed in the 2024 Environmental Management Plan, along with the experience gained by the institution in environmental management matters since 2021, the aforementioned Ministry granted the Museo de Historia Natural de Valparaíso the "Excellence" accreditation level, recognizing its environmental and sustainability practices. Naturally, the progress achieved by the Museum staff brought motivation and satisfaction, which is reflected in the building of an environmental and sustainable culture that extends beyond the institution and engages the community and other institutions.

The ongoing environmental and sustainability management encouraged the Museum's team to carry out all the actions and measures committed in the 2025 Environmental Management Plan, which was led by the Technical Coordinator, alongside with the Oficina Verde Committee (COV), through regular meetings and sustained efforts. During the meetings, numerous actions were defined and executed. These actions will be included in the file to continue working toward achieving the Outstanding Excellence accreditation level, which is the highest distinction under the Oficina Verde program.

This program is an accreditation system aimed at implementing environment protection and resource conservation policies, principles, and practices in facilities and administrative processes of State agencies across administrative, legislative, and judicial branches, as well as in the agencies of private organizations.

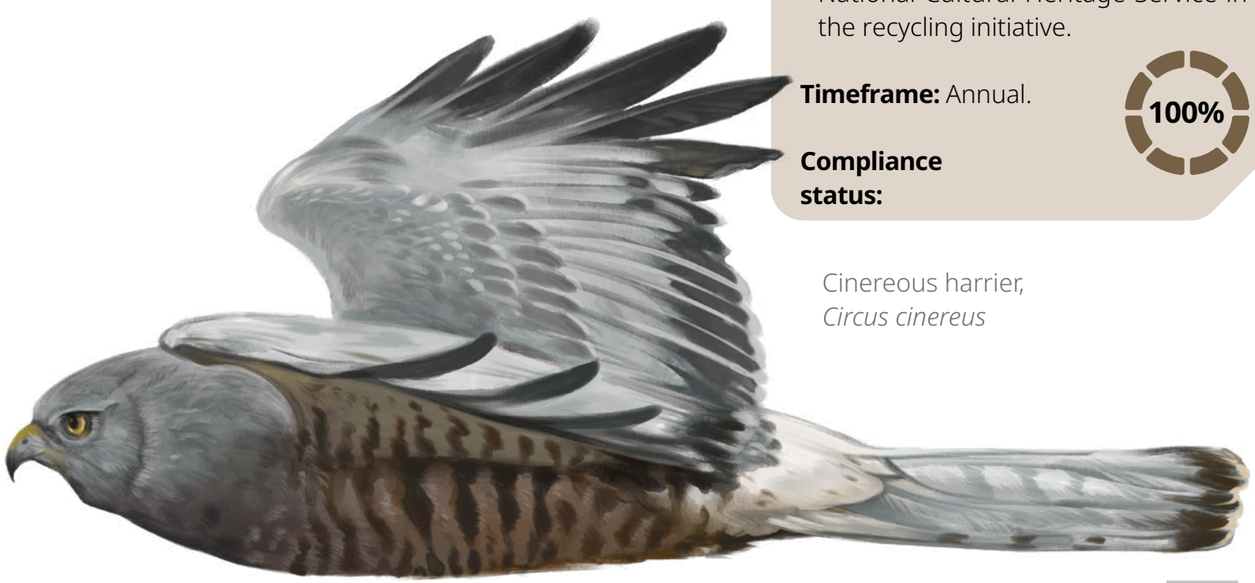
The Museum is also part of the Management Improvement Program (PMG) "Sistema Estado Verde", established by the Supreme Decree No 347 of November 14, 2022, issued by the Ministry of Finance. This decree was approved in 2023 for the purposes of the institutional performance bonus established in Article 6 of Law No 19,553. The PMG aims to encourage public institutions to implement an institutional management that sets up environmental and climate change criteria.

During 2025, the National Cultural Heritage Service (Serpat) made progress in this regard by creating an Environmental Management Plan applicable to the entire service through the Exempt Resolution No 93. This plan proposes actions in areas such as: "paper management," "water management," "energy management," "vehicle management," "furniture decommissioning management," "sustainable procurement management" and "passenger transport." It can be

concluded that the PMG "Sistema Estado Verde" shares common goals with the Oficina Verde Program. In this sense, the Museum was visionary in voluntarily committing to this program as early as 2021.

Undoubtedly, the Museum stands out as a regional leader in environmentally friendly practices, balancing our convictions and commitments with the protection and conservation of ecosystems, while also encouraging society to join this paradigm shift by providing valuable information, thereby allowing us to continue building a more sustainable territory together.

The measures included in the 2025 Environmental Management Plan, which encompasses 21 environmental and sustainability dimensions and 45 measures developed by the institution, are detailed in the next chapter. All these measures were fully implemented and, in some cases, exceeded the established goals, resulting in a greater number of actions carried out across social, environmental, circular economy, and cultural dimensions.



Cinereous harrier,
Circus cinereus

Resource consumption

The Museum's resource consumption is divided into three dimensions, each of which has its own objectives, goals, and measures to control and/or reduce resource use.

Paper Consumption

Objective:
To reduce paper usage, implement a saving protocol, and reduce the number of printouts.

Goals:
- To use paper 100% from sustainably managed sources and/or recycled paper.
- Not to exceed 1 ream of paper per employee annually.
- To include another institution of the National Cultural Heritage Service in the recycling initiative.

Timeframe: Annual.

Compliance status: 100%

Energy Consumption

Objective:
To use electricity efficiently and responsibly.

Goals:
- To review and update the energy efficiency pilot project.
- To verify changes in habits that help keep electrical energy consumption at levels similar to previous years.
- To keep the team informed about significant advances.
- To conduct a comparative analysis of previous periods.
- To clean up the storage of institutional emails.
- To generate a report for external staff in charge of temporary exhibitions, encouraging the use of energy-efficient electrical appliances.

Timeframe: Annual.

Compliance status: 100%

Water Consumption

Objective:
To use water efficiently and responsibly.

Goals:
- To verify the operation of all water fixtures in both buildings and to prevent improper use of water.
- To generate a comparative consumption report including previous periods.
- At least 2 cleaning products must contain biodegradable ingredients. Goal exceeded.

Timeframe: Annual.

Compliance status: 100%

Emissions

Four emission sources were identified within the Museum. This dimension, as well as the consumption one, has its own objectives, goals, and control actions.

Waste Generation

Objective:
To recover waste by promoting recycling and reuse.

Goals:
- To carry out 4 recycling campaigns per year. Goal exceeded.
- To coordinate 5 recycling collections per year. Goal exceeded.
- To quantify the hazardous waste generated per year. To carry out at least two activities on waste recovery.
- To empower staff members with knowledge of organic waste management and recovery to help mitigate GHG emissions.
- To share the updated Museum's waste management protocol with the team.

Timeframe: Annual.

Compliance Status: 100%

Includes Furniture Decommissioning Management

Objective:
To prevent waste generation and extend the life cycle of materials or appliances in movable assets decommissioning processes.

Goals:
- To manage at least one donation of decommissioned assets (if applicable).
- To arrange for decommissioned assets to be recycled and prevent their destruction (if applicable).

Timeframe: Annual.

Compliance Status: 100%

Gas Emissions from Transportation

Objective:
To mitigate carbon footprint.

Goals:
To maintain a bicycle parking space for Museum and external staff attending meetings.

Timeframe: Annual.

Compliance status: 100%

Huella Chile

Objective:
To implement carbon footprint measurement.

Goals:
- To compile inventories for the years 2024 and 2025.
- To contribute to GHG emissions reduction through actions related to waste recovery, the promotion of local circular economy, and the implementation of green areas.

Timeframe: Annual.

Compliance status: 100%

Noise Generation

Objective:
To take measures to prevent noise exposure that may lead to occupational illnesses among staff.

Goals:
- To prevent occupational diseases caused by noise, when necessary.

Timeframe: Annual.

Compliance status: 100%

Pajarito del campo
(native Chilean bulb flower),
Conanthera bifolia

Maicillo
(native Chilean iris),
Solenomelus pedunculatus

Sustainability

Sustainability is an essential pillar in the Museum's internal management. It is organized into twelve areas with established objectives, goals, and measures.

Internal Environmental Management Policy

Objective:
To integrate environmental considerations across all work processes.

Goals:
- To incorporate elements of the Museum's environmental policy into the internal protocols of at least five departments/divisions. Goal exceeded.
- To maintain the display of the updated internal environmental management policy on the Oficina Verde banner.

Timeframe: Annual

Compliance status: 100%

Sustainable Procurement and Circular Economy

Objective:
To promote sustainable procurement and circular economy

Goals:
- To implement the protocol for goods and services procurement (acquisitions/tenders) in at least two departments/divisions of the Museum.
- To carry out at least five activities with local entrepreneurs. Goal exceeded.
- At least 90% of the coffee break activities held during the year must exclude products in single-use packaging, and measures should be taken to ensure healthy food options.

Timeframe: Annual

Compliance status: 100%

Community

Objective:
To promote natural and cultural heritage across territories on a permanent basis.

Goals:
- To carry out at least three activities to promote natural and/or cultural heritage. Goal exceeded.

Timeframe: Annual

Compliance status: 100%

Promotes SDGs

Objective:
To identify Sustainable Development Goals (SDGs) that are being implemented in the Museum.

Goals:
- To implement at least 5 actions, including talks, workshops, exhibitions, digital material, etc., in matters linked to the SDGs. Goal exceeded.

Timeframe: Annual

Compliance status: 100%

Environmental Education

Objective:
To facilitate learning and practices related to environmental topics.

Goals:
- To manage staff participation in at least 4 talk-training sessions, ensuring 100% participation from the COV. Goal exceeded.
- To conduct the induction for 100% of new staff members, interns, and collaborators.
- To carry out at least ten activities. Goal exceeded.

Timeframe: Annual

Compliance status: 100%

Green Infrastructure

Objective:
To enhance and transform spaces into green areas.

Goals:
- To implement two actions that contribute to the maintenance of the green area.

Timeframe: Annual

Compliance status: 100%

Oficina Verde Committee (COV)

Objective:
To maintain the proper functioning of the Oficina Verde Committee (COV).

Goals:
- To meet periodically (4 times a year).

Timeframe: Annual

Compliance status: 100%

Gender Equity Perspective

Objective:
To implement actions that promote a gender perspective among Museum staff members in the short, medium, and long term.

Goals:
- To implement at least three actions during the year.
- To implement at least three actions during the year, including information dissemination, workshops, talks, exhibitions, among others. Goal exceeded.

Timeframe: Annual

Compliance status: 100%

Pelican,
Pelecanus thagus

Communications Campaign

Objective:
To keep staff and visitors informed about upcoming processes and challenges.

Goals:
- To implement at least 5 actions, including digital dissemination, talks, workshops, games, among others.
- To publish a minimum of 5 news articles per year on the MHNV official website. Both goals exceeded.

Timeframe: Annual

Compliance status: 100%

Buen Vecino Policy

Objective:
The museum sets out short, medium, and long-term environmental management commitments aligned with its specific activities.

Goals:
- To implement at least three community-focused initiatives that connect the Museum's daily activities with the community. Goal exceeded.

Timeframe: Annual

Compliance status: 100%

Healthy Lifestyle and Workplace Well-being

Objective:
To promote and disseminate information on healthy lifestyle and well-being throughout the workday.

Goals:
- To propose at least four actions that promote healthy lifestyle and well-being both in and outside the workplace. Goal exceeded.

Timeframe: Annual

Compliance status: 100%

Public Report on Environmental and Sustainability Matters

Objective:
To communicate Museum actions that have both internal and external impacts.

Goals:
- To draft Sustainability Report No. 3.
- To prepare and hold a launch ceremony.
- To disseminate the report, making it available for download on the MHNV official website.
- To keep the community informed about environmental topics through web posts and banners.

Timeframe: Annual

Compliance status: 100%

Fire añañuca,
Phycella cyrtanthoides

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Environmental Management Plan Results

Passion flower,
Passiflora pinnatistipula

Fire añañuca,
Phycella cyrtanthoides

Azulillo (native blue lily),
Pasithea caerulea

Cloudless sulphur,
Phoebis sennae amphitrite

In this chapter, we present the quantitative results of the 2025 Environmental Management Plan of the Museo de Historia Natural de Valparaíso regarding water, energy, and waste management, as well as carbon footprint. We also highlight the Museum's role as a Climate Shelter and discuss the Management Improvement Program (PMG, by its initials in Spanish) "Sistema Estado Verde".

Water Management

Water management actions were primarily based on data collection and analysis to plan for effective management of the resource. This data collection focused on bathroom fixtures inspection in both staff and public restrooms in the Carlos Porter building (administrative building) and in the Palacio Lyon premises (Museum). The inspected fixtures and fittings included dishwasher faucets, washbasins, showers, irrigation faucets, urinals, and toilets (WC). During inspection, a total of 54 water fixtures were identified in both buildings, of which 89% are in good condition and 11% present defects that can be repaired. As for toilets, these are equipped with dual-flush systems for liquids and solids.

Another action taken was the analysis of water consumption in both buildings, which considered the volume consumed (in m^3) by the staff members and the public visiting the museum. The goal was to compare total consumption in 2025 with previous periods and—based on that analysis—determine whether measures to improve water-use efficiency are needed.

It is worth noting that, since December 2023, the Museum has been designated as a "Climate Shelter", and visitors are therefore encouraged to refill their water bottles with drinking water in its public restrooms. An analysis of water consumption in 2025 at the Palacio Lyon showed not an increase but rather a decrease in the use of this essential resource. However, it remains necessary to continue monitoring water consumption to prevent a significant rise; should such an increase occur, measures will need to be taken, such as launching an information campaign to promote responsible water use. This campaign would highlight that the region has been experiencing a prolonged drought for over a decade and that, as a result, some communes must rely on water tanker trucks for their drinking water supply. To this end, the Education Department staff members—who assist organized groups that regularly visit the Museum— are responsible for reinforcing these internal rules both when reservations are made via email and on the day the groups visit the Museum.

For the analysis of water consumption, each building was considered separately, as they have independent meters.

In addition, consumption in 2024 was compared with that of 2025. Table 1 below shows the annual consumption in m^3 for those periods.

Table 1. Water consumption in m^3 for the Carlos Porter and Palacio Lyon buildings, and the combined total for both buildings in 2024 and 2025.

Year	Annual Total Consumption (m^3) Carlos Porter	Annual Total Consumption (m^3) Palacio Lyon	Annual Total Consumption (m^3) of Both Buildings
2024	478	539	1017
2025	497	510	1007

Cloudless sulphur,
Phoebis sennae amphitrite

In the case of the Palacio Lyon building, records are available only for utility bills issued from 2024 to the present, unlike the Carlos Porter building, for which bills records exist dating back to 2018.

In 2024, a total of 105,270 people visited the Palacio Lyon, which houses the Museum. Assuming that all visitors used the restroom, water consumption per person was estimated to be less than 0.01 m—the same value estimated for 2025, when 83,348 people visited. When comparing the total consumption of both buildings between 2024 -2025, it can be noted that there was a 1% decrease in overall consumption.

In 2024, the Museum's staff consisted of 23 people, who consumed a total of 478 m^3 of water annually in the Carlos Porter building. It is important to note that this building houses most of the staff offices. Access to the building is restricted, with the exception of the Science Library—located on the first floor—which is open to public from Tuesday through Friday; therefore, this space is not considered in the calculation of total drinking water use, which amounts to 21 m^3 per person. It should be noted that there were issues with the pump system that facilitated water circulation throughout the building; this is why water consumption was very low in December. In 2025, there were no issues with the operation of the pumps, and based on annual consumption, there was a 4% increase compared to the previous year. That year, the Museum's staff consisted of 25 people, so it can be calculated that each employee consumed 19.88 m^3, which is lower than in 2024.

Table 2 below shows water consumption for the Carlos Porter building (administrative building) from 2018 to 2025.

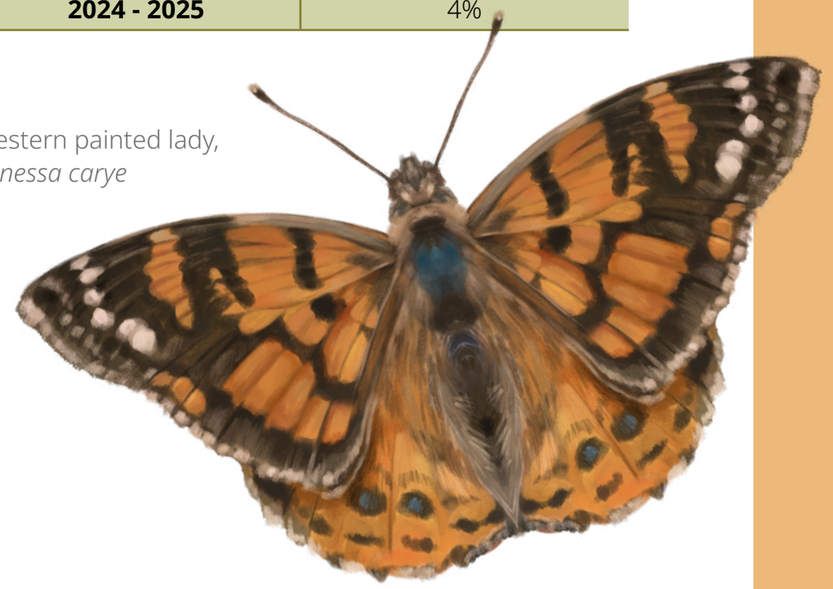
Table 2. Water consumption in the Carlos Porter building, including annual totals and monthly averages from 2018 to 2025.

Carlos Porter Building		
Year	**Annual Total Consumption (m^3)**	**Monthly Average Consumption (m^3)**
2018	379,00	31,58
2019	345,00	28,75
2020	458,00	38,17
2021	221,00	18,42
2022	365,00	30,42
2023	620,00	51,67
2024	478,00	39,83
2025	497,00	41,42

Table 3 below shows the comparisons between periods from 2018 to 2025, for the Carlos Porter Building (administrative building), showing both decreases and increases in water consumption.

Table 3. Comparisons of water consumption at Carlos Porter Building between periods, showing decreases and increases.

Comparisons	
Period	**Annual total Consumption (m^3)**
2018 - 2019	-9%
2019 - 2020	33%
2020 - 2021	-52%
2021 - 2022	65%
2022 - 2023	70%
2023 - 2024	-23%
2024 - 2025	4%



Western painted lady,
Vanessa carye

Energy Management

The Museum has implemented an energy efficiency plan since 2022, which focuses on promoting positive changes in habits among staff members, including turning off office lights when leaving and turning off computer screens when not in use, unplugging kitchen electrical appliances after use, turning off lights in hallways and common areas, among other actions. The inspection is conducted without prior notice to obtaining real information on habits during the different months of the year.

The habits being assessed are:

Checklist. Our own creation.

Habits to assess	YES	NO
Are hallway lights left on when no staff are present?		
Are office lights left on when no staff are present?		
Are computer screens left on when no staff are present?		
During the workday, are office lights left on when they are not needed?		
Are the windows clean, allowing for natural lighting?		
Are the central hall lights left on when they are not needed? (consider the season—fall, winter, spring, or summer—including the presence of coastal trough)		
In the kitchen and dining area, are electrical appliances (microwave, coffee maker, etc.) unplugged after use, except for the refrigerator?		

The results of the checklist showed that we must continue reinforcing responsible habits, such as turning off hallway lights and computer screens when staff are absent, as well as unplugging electrical appliances in the kitchen area after use. These responsible habits are discussed at the Oficina Verde Committee (COV) meetings and are communicated to all staff once the meeting minutes are distributed via email. Along these same lines, the energy consumption results for both buildings are shared with the entire team to acknowledge their efforts and commitment to the efficient use of electrical energy, which have been very positive so far.

Table 1. Annual totals and monthly average consumption (in kWh) for each building (Carlos Porter and Palacio Lyon) and the combined total of both.

LYON		
Year	**Annual Total Consumption (kWh)**	**Monthly Average Consumption (kWh)**
2018	78498,00	6541,50
2019	83287,20	6940,60
2020	39763,10	3313,59
2021	20381,00	1852,82
2022	34996,90	2916,41
2023	39776,90	3314,74
2024	39266,00	3272,20
2025	38658,00	3221,50

PORTER		
Year	**Annual Total Consumption (kWh)**	**Monthly Average Consumption (kWh)**
2018	21775,00	1814,58
2019	21028,00	1752,33
2020	10809,00	982,64
2021	11089,00	924,08
2022	12701,00	1058,42
2023	15514,00	1292,83
2024	17140,00	1428,30
2025	14441,00	1203,42

BOTH BUILDINGS	
Year	**Annual Total Consumption (kWh)**
2018	100273,00
2019	104315,20
2020	50572,10
2021	31470,00
2022	47697,90
2023	55290,90
2024	56406,00
2025	53099,00

Comparisons	Annual total	Monthly Average
2018 - 2019	6%	6%
2019 - 2020	-52%	-52%
2020 - 2021	-49%	-44%
2021 - 2022	72%	57%
2022 - 2023	14%	14%
2023 - 2024	-1%	-1%
2024 - 2025	-2%	-2%

Comparisons	Annual total	Monthly Average
2018 - 2019	-3%	-3%
2019 - 2020	-49%	-52%
2020 - 2021	-3%	-6%
2021 - 2022	15%	15%
2022 - 2023	22%	22%
2023 - 2024	10%	10%
2024 - 2025	-16%	-16%

Comparisons	Annual total
2018 - 2019	4%
2019 - 2020	-52%
2020 - 2021	-38%
2021 - 2022	52%
2022 - 2023	16%
2023 - 2024	2%
2024 - 2025	-6%

Simultaneously, current energy consumption was compared with consumption reported between 2018 and 2025. The results of this comparison are shown in the tables below. The analysis was conducted by comparing the average consumption figures for the Palacio Lyon for the 2018-2019 period (prior to the COVID-19 pandemic) with those for 2024-2025, and the 2023-2024 period with 2024-2025. The first comparison showed a 52% decrease in consumption, while the second showed a 1% reduction. Similarly, for the Carlos Porter Building, when comparing the 2018-2019 period with 2024-2025, consumption decreased by 26%, and when comparing 2023-2024 with 2024-2025, a 3% decrease was observed. Finally, the averages from both buildings were compared, showing a 46% decrease compared to the 2018-2019 period and a 2% decrease compared to the second period. The table shows significant changes when comparing pre-pandemic results (2018-2019) with the current figures. However, it should be noted that the reduction between the 2023-2024 and 2024-2025 periods is due to the fact that, since 2022, numerous measures have been implemented that have allowed for a more efficient use of electricity. These include the replacement of the screens in the permanent exhibition with more efficient ones, the change in the tariff of the Palacio Lyon building, the acquisition of energy-efficient electrical appliances, and the continuation of the energy management plan.

Table 1 displayed in this page shows annual totals and monthly average energy consumption data (in kWh) for each building, as well as the combined total of both.

Another measure taken in this regard was the distribution of an informational bulletin to the Museum staff concerning the generation of Studio Ghibli-style images. Due to high global demand, the use of these images had to be restricted as it caused data processors to overheat. This situation prompted us to reconsider our use of AI: What is its carbon footprint? What does it consume? How does it impact the environment?

As previously mentioned, digital information processing requires storing data in data centers that generate significant heat under high demand. To mitigate these effects, air cooling is sometimes used; however, in most cases, water cooling is used because water is more efficient at absorbing heat. A clear example of this can be seen in the Quilicura commune, in the Metropolitan Region, where several data centers have already begun to impact the surrounding environment and nearby communities. For this reason, we encourage reflection on this issue so that AI can be used responsibly. In line with this, a set of guidelines was subsequently drafted on how to clean up institutional email accounts, with the goal of optimizing email performance and deleting data that is no longer relevant to daily work.

With respect to temporary exhibitions organized by individuals external to the Museum, there is a protocol stipulating that all lighting used must be LED, and that electrical appliances must meet energy efficiency standards, therefore, it is essential that their energy labels be A+++, A++, or A+.

In parallel, the Museum Science Library team recommends books aimed at the community on a wide range of topics, such as Energies That Move the World, which is linked to SDG 7: Affordable and clean energy. This book issues a global call to take concrete actions in response to environmental damage and the depletion of its resources caused by energy production based on fossil fuels—oil, gas, and coal. It also emphasizes that accelerating the transition to an affordable, secure, and sustainable energy system is essential, especially in today's context, as energy demand continues to rise.

Finally, upon reviewing the Museum's progress in implementing environmentally friendly measures, it can be concluded that significant advances have been made in terms of efficiency. However, there are still opportunities for improvement, such as further promoting positive habits within the organization and investing in more efficient appliances; since both buildings still have light fixtures installed more than a decade ago that do not meet current energy efficiency standards.

Waste Management

The Museum is aware of the problems caused by poor waste management, which is why it stands out in the city of Valparaíso by promoting waste recovery through its own recycling and reuse station, which is permanently available for the entire community. In addition, the Museum contributes to strengthening the local circular economy by entering into agreements with partners such as Ecoandes, Sembra Artesanos, Museo Marítimo Nacional, Entel, Midas, and Coaniquem. These partnerships with organizations that promote waste recovery make it possible, through their management practices, to extend the life cycle of waste, with the goal of reducing the volume of waste sent to landfills. Furthermore, collaborative work with local organizations has been essential for recovering waste and expanding the scope of waste management. The institution has two recycling stations: one available to Museum visitors and another internal station for the staff and for institutions of the National Cultural Heritage Service (SERPAT).

Kelp gull,
Larus dominicanus

At the recycling station located in the Ana Ávalos Hall, Museum visitors may dispose of the following types of waste:

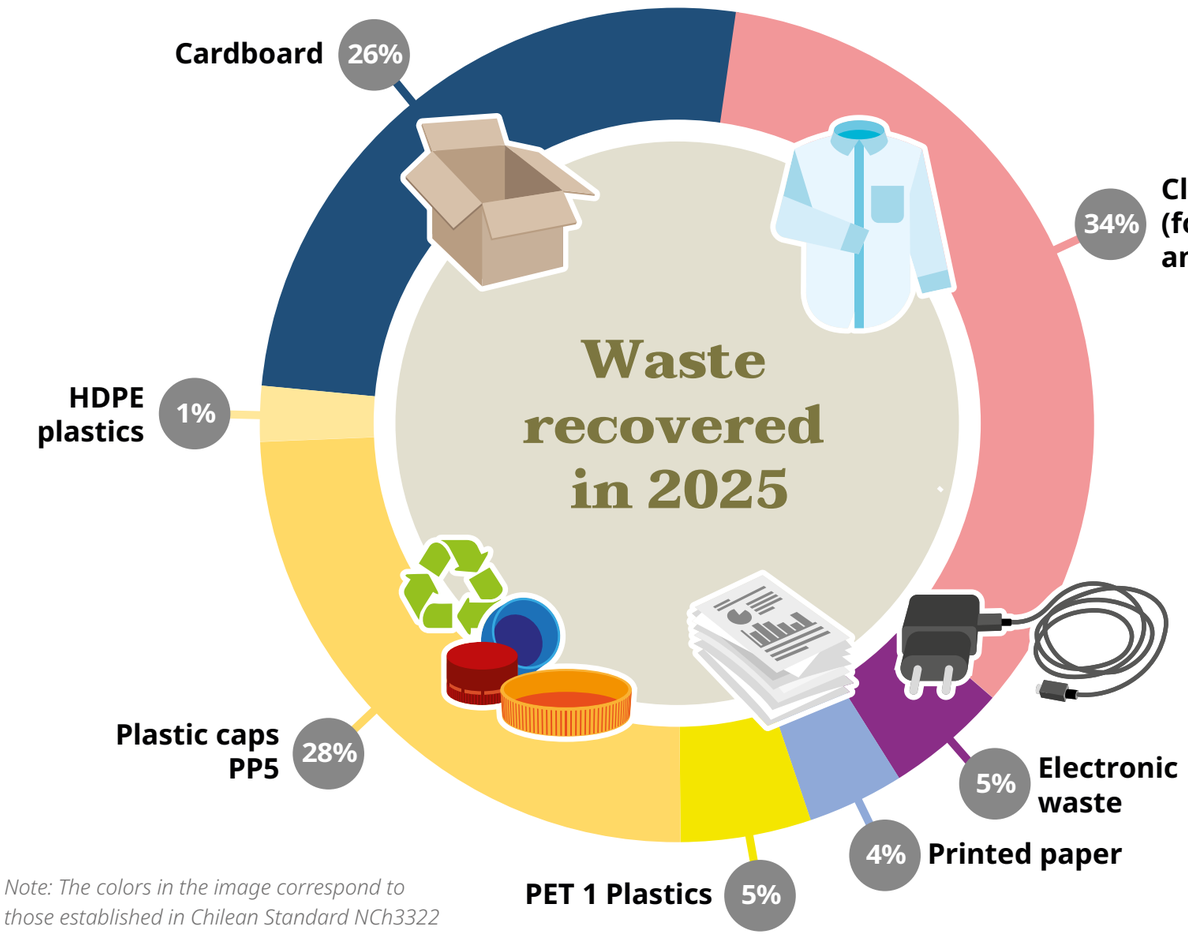
- **plastics:** PET 1 (soft plastics), HDPE (rigid plastic) and PP5 (plastic caps)
- **textiles:** clothing in good condition that is no longer used
- **small electronic waste**
- **books** in good condition for the book recirculation program.

At the institution's internal recycling station, the following items may be disposed of:

- **used vegetable oil**
- **printed paper**
- **cardboard**
- **batteries**

For the first time, organic waste generated by the Museum staff is being treated using a vermicomposting bin, with California red worms (Eisenia Foetida) playing a key role by feeding on decomposing organic matter and transforming it into humus—a natural soil fertilizer that benefits plants, trees, and food crops. The vermicomposting bin was obtained thanks to a donation from Geociclos with whom we share a common goal of promoting waste recovery. Geociclos is a company with more than 16 years of experience in the development and implementation of waste management and environmental education initiatives across all sectors of society: businesses, communities, educational institutions, and public and private organizations. In addition, a theoretical-practical workshop titled "Vermicomposting at the museum: Adding value to organic waste" was held for the Museum team. The workshop was led by the institution's Environmental Management coordinator in collaboration with Mr. Freddy Mix, a professional from the Environmental Education Department of the Viña del Mar National Botanical Garden. In this context, it is worth noting that in 2025, a total of 799.16 kg of waste was recovered by the community and Museum staff.

The chart below shows the percentages of recovered waste by category:



Note: The colors in the image correspond to those established in Chilean Standard NCh3322 by the National Standardization Institute for identifying waste fractions.

Carbon Footprint

The Museum is committed to contributing to carbon footprint mitigation. This is reflected in the quantification of the footprint itself, along with various actions and measures we have been implementing for several years, ever since environmental considerations were integrated into all technical and administrative processes, with the goal of reducing carbon dioxide emissions and, consequently, mitigating global warming.

Why quantify the carbon footprint?

According to the Ministry of the Environment, the carbon footprint was developed as a measure to quantify and generate an indicator of the impact that an activity or process has on climate change, extending beyond just major emitters.

¿Qué es la huella de carbono?

"The carbon footprint is defined as the total greenhouse gas emissions produced, directly or indirectly, by people, organizations, products, events, or geographical regions, expressed in CO2 equivalents. It serves as a useful management tool for identifying the behaviors or actions that are contributing to an increase in our emissions, determining how they can be improved, and promoting a more efficient use of resources."[1]

1 Ministerio del Medio Ambiente. (s.f.). Huella de carbono. https://mma.gob.cl/cambio-climatico/cc-02-7-huella-de-carbono/

In this regard, the measures implemented by the Museum staff focus on waste management, with an emphasis on reuse and recycling of plastics (PET 1, HDPE, and PP5), clothing, printed paper, cardboard, batteries, used vegetable oil, electronic waste, and organic waste. Similarly, measures aimed at promoting the efficient use of electricity are being implemented, ranging from fostering specific habits among staff to implementing protocols for the acquisition of energy-efficient electrical appliances. Furthermore, green infrastructure was installed in the inner courtyard, known as Espacio Museo Verde, to create a lively space. To achieve this, two parking spaces were repurposed to plant five native trees from the sclerophyllous forest, which contribute to CO_2 absorption. This initiative has encouraged some team members to voluntarily donate ornamental plants—a gesture that has helped enhancing the space.

Throughout 2025, new information was gathered to be incorporated into the inventories to strengthen the quantification of the institution's organizational footprint. This included tracking the travel routes reported by organized groups that visited the Museum, as well as the travel routes reported by the employees during work-related activities upon leaving the Museum. Electricity and drinkable water consumption, material acquisitions, staff commutes and means of transportation used (subway, personal car, trolley, bicycle, walking, etc.), along with the routes taken for recycling and for the collection of household solid waste, were also quantified. The quantification of the carbon footprint through the Huella Chile program is an ongoing process for the Museum and forms part of its commitments to contribute—as a public institution of the State of Chile—to addressing climate change, just as all the other actions described do.

REFUGIO CLIMÁTICO
MUSEO DE HISTORIA NATURAL DE VALPARAÍSO

Urban Climate Shelter

The Museo de Historia Natural de Valparaíso stands out for being at the forefront of climate action, having been designated as a Climate Shelter since the summer of 2023. This initiative aims to protect passersby and the visiting community during extreme weather events, such as heat waves or heavy rains. Its location, infrastructure and status as a public space enables it to meet the requirements to provide shelter to people, share information on preventive measures and offer guidance on how to cope safely and healthily with various climate-related challenges, such as heat waves.

In the same context, it is worth noting that an urban climate study was conducted in which the Museum participated, thanks to the donation of a weather station. The study, titled "Urban Climate in Chile's Coastal Conurbations: A Socio-Environmental Justice Proposal Based on Climate-Sensitive Planning", was led by Universidad de Chile, the Universidad de Tarapacá and the Universidad Mayor. It represents a valuable contribution and tool for providing accurate data on climate conditions of the Valparaíso Plain. The project involved studying the communes of Concón, Viña del Mar, Quilpué, Villa Alemana, and Valparaíso, evaluating climate conditions, observing their behavior, and considering the

impact of urbanization. Its design and planning are key to mitigating and adapting to the effects of climate change, which severely affects cities—especially in coastal areas—according to Felipe Thomas, a geographer at the Universidad de Chile, who presented the study results to the staff members at Museo de Historia Natural de Valparaíso.

The weather station has been an innovative addition for the Museum staff and for society in general, as it provides online information on weather conditions, such as temperature, rainfall, wind speed, humidity levels, and UV radiation, among other parameters.

In this regard, emphasis is placed on the fact that the data provided by the weather station has confirmed that the Museum's infrastructure functions as an urban climate shelter,as—when monitoring temperatures on a summer day—the station recorded a difference of at least 5°C between the outdoor and indoor temperatures. Similarly, in winter, the temperature inside the building was higher than outside, demonstrating greater thermal comfort within the Palacio Lyon premises.

"Green State System" Management Improvement Program

The Museum also forms part of the Green State System Management Improvement Program (PMG Estado Verde), whose objective is to "progressively implement sustainable management in the administrative processes and in strategic initiatives of institutions, in order to reduce environmental impacts and contribute to the commitments made by the Chilean Government regarding climate change"[2].

In this regard, since 2021, the Museum has voluntarily joined the Ministry of the Environment's (MMA, by its initials in Spanish) Oficina Verde program, which shares common goals with the Green State PMG. Currently, the Museum is making pioneering advances in environmental and sustainability matters compared to other institutions within the National Cultural Heritage Service (SERPAT), in response to its commitment to environmental conservation and through environmental education that address climate change.

Each year, compliance with the Green State System PMG is ensured through the Gestiona Energía platform, where data on the Museum' consumption is entered, such as electricity and water usage, records on the condition of water fixtures, quantification of waste destined for recycling, information on printing paper acquisitions and printing volume, and work-related air travel itineraries.

2 Res. Exenta N~ 093 APRUEBA PLAN DE GESTIÓN AMBIENTAL 2025 DEL SERVICIO NACIONAL DEL PATRIMONIO CULTURAL

For the first time, on World Climate Day, the National Natural Heritage Service, through its Environmental Management Unit, organized the seminar "Heritage and Climate Change", in which the Museum's Director and the Environmental Management Coordinator participated with a presentation on the expertise gained from incorporating environmental considerations into work processes, along with the challenges and successes experienced by the institution's staff.

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Azulillo (native blue lily), *Pasithea caerulea*

Community Engagement

In this chapter, we present a variety of community-oriented activities carried out at the Museum in the areas of environment and sustainability, with the aim of highlighting the value of natural and cultural heritage and encouraging its research and conservation through education and outreach.

The activities were implemented throughout 2025 through the efforts of the Museum's various departments and divisions, in collaboration with partners from multiple disciplines, who are recognized for their strong commitment to social, environmental, and cultural causes. The topics covered were cross-cutting and ranged from ecosystem conservation, socio-environmental issues, gender-equity approaches, waste management, promotion of the sciences, to innovation and technologies, reading promotion, and the strengthening of the local circular economy. All these actions are part of the development of the Environmental Management Plan and are aligned with the Sustainable Development Goals (SDGs), reaffirming the Museum team's commitment to creating a space dedicated to serving the community and working toward a more sustainable future.

To learn more about the activities, click on the featured images and texts.

Summer Talks Series with Valparaíso Trekking

Since 2024, VALPARAÍSO TREKKING—a local initiative dedicated to education and responsible tourism—has been sharing its expertise with the Museum by hosting miscellaneous workshops for people of all ages, which consistently fill up quickly. Its founders describe themselves as lovers of natural spaces in Chile and around the world and are known for their commitment to conservation and to raising awareness about environmental and cultural matters. Their lines of work focus on hiking and the creation of products such as field guides for the care of flora, fauna, and fungi, as well as the publication of a book titled Climate of Torres del Paine National Park. In this regard, VALPARAISO TREKKING has held several workshops for the community visiting the museum, notably "Identifying the Birds of the Valparaíso Region", "Clouds and their impacts workshop", "Let's Learn to Protect Nature", "Chilean fungi", "Commemoration of World Wetlands Day", all of which took place during the summer.

Additionally, as part of the 6th Science Book Fair on Heritage Day, they participated with an outreach booth to educate the public about the ecosystems of Chile through their pocket guides and also gave a talk covering topics related to the editorial line Museo + Fungi, during which they discuss the chromatic diversity of fungi found in Chile.

Echoes of the Future

This is an immersive sound work composed of three chapters that explore the environmental history of the Southeastern Pacific and the impacts of climate change, combining radio art, historical narratives, and music to foster an interdisciplinary perspective and new ways of connecting with the environment. The piece seeks to raise awareness, educate, and encourage reflection, highlighting knowledge and proposing sustainable practices.

This radio artwork was commissioned by the Centro de Acción Climática (CAC), the Institute of History, and the Institute of Literature and Language Sciences of the Pontificia Universidad Católica de Valparaíso, in collaboration with the Museo de Historia Natural de Valparaíso where it was premiered and exhibited. The project was funded by the Interdisciplinary Creation Fund for Sustainable Development, which operates under the Office of the Vice President for Research, Creation, and Innovation of the aforementioned university.

The three sound chapters are available on the Spotify application. They cover topics related to resilience, conservation, and restoration, combined with research, recording of soundscapes, interviews, and musical composition.

8M: International Women Day Commemoration

The Museo de Historia Natural de Valparaíso joined the commemoration of International Women's Day, an initiative aimed at recognizing and bringing visibility to the creativity, talent, and impact of women across various disciplines.

The full-day event featured the trades fair: Women of the Territory, organized in collaboration with the Asociación Gremial de Empresarias y Profesionales de Viña del Mar (AGEPV, by its initials in Spanish), where regional women entrepreneurs showcased their art, textiles, and metalwork creations. In addition, a talk titled "Voices of Mermaids" was presented, exploring the role of women in Marine Sciences, and an illustration workshop focused on women and nature was held.

Furthermore, the exhibition "Hands on Violeta" was inaugurated, paying tribute to Violeta Parra, a Chilean singer-songwriter, recognized both nationally and internationally for her invaluable contribution to Chilean folklore and popular music.

According to the Museum's Chief Curator:
The exhibition was developed by a group of women artists, members of the Asociación Gremial de Empresarias de Valparaíso (AGEPV), who, through visual arts, painting, and embroidery, preserve and highlight the legacy of the folklorist, broadening the scope of traditional art toward a perspective that recognizes and honors the knowledge historically associated with women. The fact that this exhibition was conceived and developed exclusively by women not only bring visibility to the artistic legacy of Violeta Parra but also continue to open spaces for the recognition and appreciation of the work of contemporary women artists. Their active participation in cultural events such as this one strengthens their autonomy, promotes gender equity in the arts, and contributes to a more just and diverse representation in museum spaces.

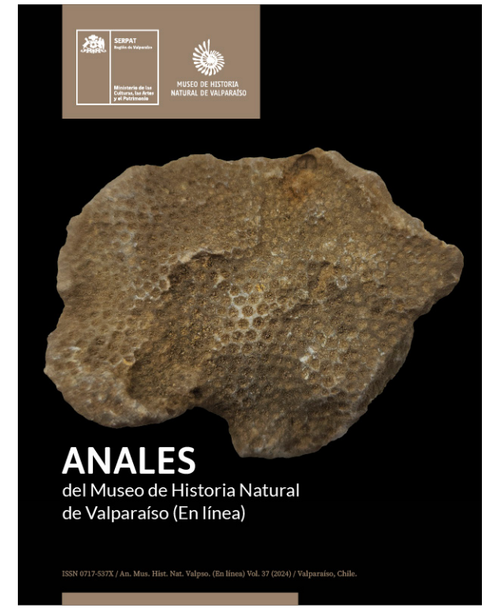
Malvilla (native chilean mallow), *Cristaria glaucophylla*

Click on the image to get more information

Heritage and Climate Change Seminar

The first version of the seminar "Heritage and Climate Change" took place in the América Hall of the National Library on World Climate Day. Organized by the Environmental Management Unit of the National Service of Cultural Heritage (Serpat), the event gathered staff members and general public interested in the impact of climate change on heritage.

The presentations explore heritage from a resilient-based perspective, addressing climate change, conservation and restoration, the role of museums as urban climate shelters, environmental education, and the challenges of safeguarding intangible cultural heritage. The Director and the Environmental Management Coordinator of the Museo de Historia Natural de Valparaíso presented the institution's experience integrating environmental considerations into all its internal processes. They also highlighted the Museum's achievement of becoming the first in Chile to obtain carbon footprint quantification seals under the Huella Chile program and its designation as a Climate Shelter in the commune of Valparaíso.



Click on the image to get more information

Anales journal

As part of World Book and Copyright Day, the Museum's Science Library Coordinator presented volume 37(2024) of its scientific journal, Anales. This new issue features a variety of content, including articles on geology, paleontology, archaeology, education, and school science. The Anales journal seeks to contribute to science outreach through research studies and projects in the fields of natural sciences, archaeology, anthropology, heritage, and history of the Valparaíso Region. It also aims to contribute to knowledge and research, and to showcase the archaeological, biological, educational, bibliographic, and documentary collections preserved by the Museum as a legal deposit. The journal can be downloaded by clicking on the image below.

Book Giveaway

Similarly, as part of the World Book and Copyright Day, the Scientific Library organized the activity "Book Giveaway at the Museum"; an intervention for visitors in which books were gifted at the Palacio Lyon premises, with the aim of promoting reading.

Book recommendations from the John Juger Science Library

The Coordinator of the Lending Service at the John Juger Specialized Library posts weekly book recommendations on social media. The suggested titles are available at the library and can be borrowed on-site as "reading-room loans". The specialized library has an extensive catalogue of bibliographic, documentary, and art collections, primarily covering topics in natural sciences, archaeology, anthropology, the environment, history of Valparaíso and cultural heritage. These are organized into the "General Bibliographic Collection", "Periodicals Collections", "Special Collections", "Museum Historical Archive", and "Historical Bibliographic Collection".

For more information on accessing the Library and its services, click on the image below:

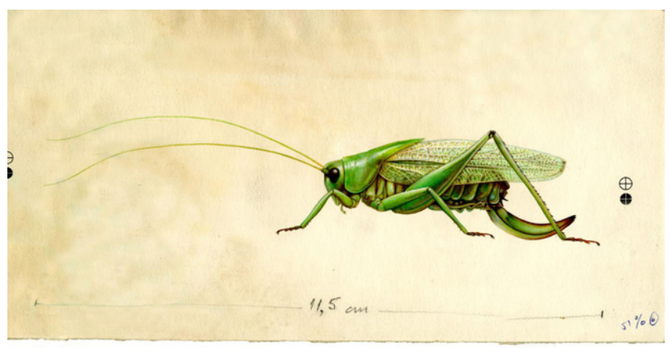


Image: Naturalist illustration of *tettigoniidae sp.* Expedition to Chile Collection. Museo de Historia Natural de Valparaíso Science Library.

Elevators of Valparaíso:

a bridge between downtown and the hills

The Museum hosted a panel discussion that explored the present and future of Valparaíso's iconic elevators, featuring prominent speakers such as poet Juan Cameron, author of the book *Elevators of Valparaíso*; Pilar Figueroa, the president of the ASCENVAL association; an architect César Obreque. The event sought to highlight the heritage, social, and urban value of these emblematic structures.

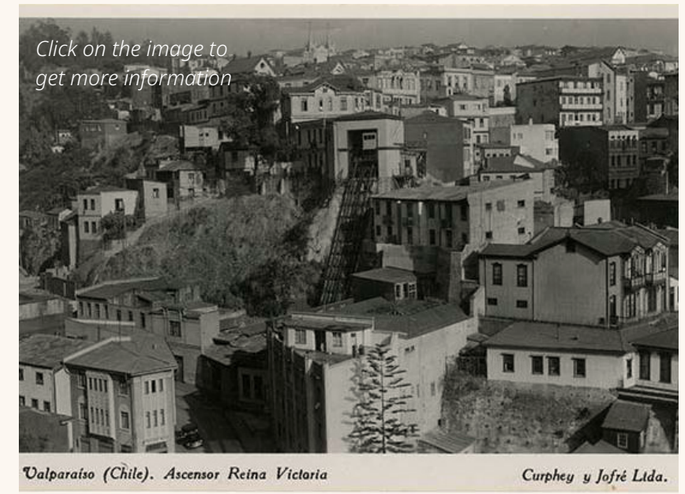


Image: Reina Victoria Elevator, Valparaíso, Chile. Teodoro Kuhlmann Photographic collection. MHNV-TKS-0037. Museo de Historia Natural de Valparaíso Science Library.

Recycling Campaigns

Throughout the year, the Museo de Historia Natural de Valparaíso promotes recycling campaigns aimed at the community, encouraging reflection on our individual and collective responsibility in protecting the planet. Becoming agents of change and contributing to waste recovery is essential for advancing toward a more sustainable society. Although recycling is not the primary option for contributing to waste management—since it is not a definitive solution—it is a key action within circular economy, allowing materials to be reintroduced into the production and consumption cycle and, in turn, reducing our carbon footprint.

Talk: The Environmental Impact of Used Vegetable Oil

Click on the image to get more information

Along these lines, the talk "The Environmental Impact of Used Vegetable Oil" was held. This educational activity, open to the community, aimed at raising awareness of the environmental damage caused by the improper disposal of used cooking oil in households. The activity was led by the Museum's Environmental Management Coordinator together with Julio Lobos, Director of the company Ecoandes. The talk presented data on the potential impact of disposing used vegetable oil through the kitchen drain, noting that a single liter of oil can contaminate up to forty thousand liters of water, severely affecting rivers, seas, and wastewater treatment systems. In addition to highlighting this issue, the speakers emphasized the role that community organizations can play in the collection, recycling, and education regarding this type of waste, promoting responsible and sustainable practices in everyday life.

Heritage Day

On May 24 and 25 of 2025, as part of the twenty-sixth edition of Heritage Day, the Museo de Historia Natural de Valparaíso (MHNV) successfully held the 6th Science Book Fair, an outreach activity aimed at promoting scientific knowledge, environmental education, and respect for natural and cultural heritage. The event attracted a total of 5,736 visitors to the Palacio Lyon premises. During this celebration, the Museum's editorial line Museo + Fungi was highlighted, an editorial and curatorial proposal that emphasizes—through education and outreach—the value of the third biological kingdom, which has traditionally been excluded from natural and cultural heritage. The event stood out for its transdisciplinary, collaborative, and community-oriented activities, including artistic performances, scientific works, and illustrative workshops, along with the participation of organizations related to this field, such as Universidad Viña del Mar, Fundación Fungi, ONG Panthalassa, Ilustraverde, and Ziento un cuento. Furthermore, the Science Book Fair became a space for reflection on the ecological, educational, and symbolic role of the fungi kingdom in local ecosystems and knowledge, featuring thirteen exhibitors, including publishing houses, bookstores, illustrators, scientific initiatives, and organizations linked to sustainability and biodiversity, such as VALPARAÍSO TREKKING, Sur Ciencia, Librería Libro Verde, John Juger Science Library, Naturaleza Inarrumen, Mai Ediciones, Ilustraverde, Pitra Backpacks, Camila Romero, Aprende con Ciencia, Libros y Más Libros, LOPA juguetes, and Aprende Sostenible. Similarly, the temporary exhibitions "Expanding the Mycelium", "FotoLab", "Microcosms", and "Skulls, Essential for Life", and the permanent exhibition "Biodiversity in the Valparaíso Region", integrated the public's experience, strengthening the connection between knowledge, biocultural memory, and natural heritage.

Click on the image to get more information

Book Recirculation

As part of World Book and Copyright Day, celebrated each year on April 23, the John Juger Science Library—located at the Museo de Historia Natural de Valparaíso—invites the community to reuse books. This initiative runs year-round, from Tuesday to Friday, offering visitors access to poetry collections, novels, children's literature and more. The activity seeks to keep books in circulation within community spaces and/or as part of projects that promote reading. To participate, books must be free of contamination—such as mold or food residues—and must not contain markings; in short, they must be in good condition for reuse. Organizations interested in receiving a donation of books may submit a request to the Museum's Environmental Management Coordinator.

Museums and Sustainability: an experience from Chile in Oporto

Andrea Vivar, a professional from the Museum's Education Department, participated in the 2nd Ibero-American Conference on Museums and Sustainability, held at the Soares dos Reis National Museum in Porto, Portugal. She presented the workshop "Heritage: What I Love, What I Care For, What I Preserve", a moving experience with older adults that promotes well-being, memory, and a connection to heritage in everyday life. Representatives from 14 Ibero-American countries attended this important event, sharing ideas and practices on sustainability, education, and community. During her presentation, Vivar highlighted that "sustainability also means connecting with others through heritage. The museum not only safeguard collections; it is also a space where we can connect with our stories, emotions, and bonds."

Image: Andrea Vivar is located on the right side of the photo.

Passion flower, *Passiflora pinnatistipula*

Women Mathematicians: A Temporary and Latin American Journey

The museum inaugurated the temporary exhibition "Women Mathematicians: A Temporary and Latin American Journey", which highlighted the role of Latin American women mathematicians through infographics designed by students from regional schools. The project was developed by the Institute of Mathematics at the Universidad de Valparaíso. The Museum Director emphasized the importance of bringing visibility to the scientific work carried out by women and congratulated the participating students from "Liceo Eduardo de la Barra", "Instituto Marítimo" in Valparaíso, and "Liceo Polivalente A-2" in Cabildo.

Click on the image to get more information

South american sea lion,
Otaria flavescens

MuseOcéano: World Oceans Day

A new edition of MuseOcéano took place during World Oceans Day, attracting massive participation under the theme "Together for the Promotion and Protection of Marine Biodiversity". The event brought the community together around scientific content, interactive workshops, and conservation activities. This initiative encouraged participants to appreciate the ocean's rich biodiversity and its ecological role—such as an acting as a CO_2 sink—which is essential for sustaining life and the planet's functioning.

One of the milestones of the event was the "Little Blue Market", an initiative through which the Museum promotes and supports the local circular economy. This initiative was carried out with the participation of the Museum's Scientific Library, entrepreneurs, and local organizations, which showcased appealing products that highlighted the value of the marine natural heritage through an educational approach. Likewise, workshops on marine litter and microscopic biodiversity generated great interest among audiences of all ages.

Science to Get Through Winter

Since 2023, the Museum's team has been running the program "Science to Get Through Winter", aimed at people of different ages and interests who are beginning their winter break. The Museum organized various workshops on elevators, watercolor pencils, and an introduction to geology and paleontology, along with the presentation of the book Endemic Mammals of Chile. In addition, outreach activities were conducted on topics specific to this time of the year. The topics covered aim to spark curiosity and develop observation skills, while evoking a sense of wonder by learning about specific facts of phenomena or situations that occur in winter. Some of the activities included "Why We Should Eat Oranges in Winter?" and a creative proposal to bring mycology closer to the general public.

Litre fungus,
Lambertella sp.

Quinta Funga Festival

The third "Quinta Funga" festival was held on the Museum's premises as part of the Museo + Fungi editorial line. The two-day event celebrated the fungal diversity of the Valparaíso region, fostering curiosity to learn about, protect, and respect the world of fungi. The event featured various science outreach booths, field guides, edible mushrooms, numerous talks, and interactive exhibitions. The festival was organized by Diana Mena, a journalism graduate, myco-photographer, and science communicator, in collaboration with various groups and projects, including @fungarium_, @champis_dip, @sesacanfotos.cl, @valparaiso_trekking, @fungaexploracl, @eljardin_delgato and @ser_nativo_.

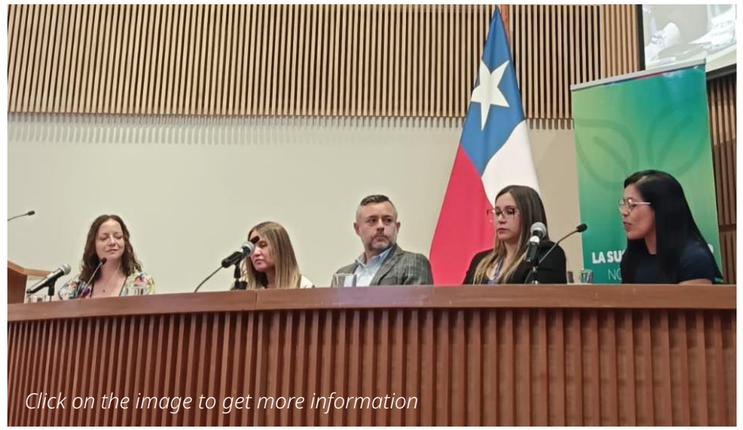
Click on the image to get more information

Science Festival

Click on the image to get more information

The Museum served as the venue for one of the milestones of the 2025 Science Festival (FECI, by its in initials in Spanish), organized by the Ministry of Science, Technology, Knowledge, and Innovation. This celebration took place under the theme "Knowledge Against Misinformation". The event brought together different groups of visitors, including families, students, and researchers, who enjoyed a variety of activities focused on science outreach, creativity and critical thinking, held both inside the museum and on Condell street, which was closed to traffic for the occasion.

First Seminar on Local and Institutional Environmental Management



Click on the image to get more information

The Museum's Environmental Management Coordinator participated in the first "Seminar on Local and Institutional Environmental Management", organized by the Ministry of the Environment. The seminar aimed to exchange experiences and promote the implementation of environmental management strategies and best practices in public and private institutions. During the Oficina Verde program accreditation ceremony, the Museo de Historia Natural de Valparaíso received the "Level of Excellence" accreditation, becoming the first museum in Chile to achieve this recognition through the development of environmental and sustainability practices that extend their impact to the community.

The presentation "Working Toward a Sustainable Museum", detailed the experience that has enabled the Museum to develop a comprehensive and replicable environmental management model, incorporating environmental, social, cultural, and circular economy approaches.

Innovation, Science and Technology School Contest

Click on the image to get more information

This year, the Museum hosted the 10th edition of the Innovation, Science and Technology School Contest, led by the Biological Collections Coordinator of the Science and Research Department. Held annually since 2015, the contest aims to foster scientific curiosity, creativity, and critical thinking among primary and secondary education students across the country. Over the past ten years, this initiative has encouraged hundreds of young people to carry out research, promoting the development of projects that address current territorial needs in the areas of sustainability, innovation, and community well-being. It is worth noting the role this competition has played in strengthening scientific knowledge in schools, enabling students to tackle emerging challenges both locally and nationally. It has also been essential in fostering the development of STEM (science, technology, engineering and mathematics) skills through the scientific method, which entails promoting creativity and strengthening collaborative work, thereby reinforcing partnerships between teachers and students as they devise solutions to the problems identified in their projects. Additionally, the Museum has created a space for exchange and mutual learning among participants, audiences, and the contest jury by presenting their projects at the Science Fair—an initiative that fosters dialogue through the analysis and discussion of their proposals.

Vermicomposting at the Museum

Click on the image to get more information

The Museum stands out in waste recovery in the commune of Valparaíso through its recycling and reuse station, open to the community. Along the same lines, starting in November 2025—thanks to the donation of a vermicomposting bin by Geociclos—the institution has been helping to reduce methane production—a greenhouse gas that is more potent than CO_2 due to its ability to trap heat. Vermicomposting is a biotechnical method for treating organic waste that uses the red wiggler (*Eisenia foetida*) to degrade waste and transform it into a high-quality natural fertilizer, rich in nutrients and microorganisms that improve soil structure and fertility. In this context, the Museum Environmental Management Coordinator, in collaboration with Freddy Mix, a professional from the Environmental Education Department of the Viña del Mar National Botanical Garden, led the workshop "Vermicomposting at the Museum", aimed at the Museum staff members. This initiative strengthened collaborative work among institutions committed to environmental matters and marks the beginning of an ongoing educational process that will include new talks and workshops open to the community to promote organic waste recovery.

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Organic waste and red wiggler worm, *Eisenia foetida*

Passion flower,
Passiflora pinnatistipula

Conclusions

For the team at the Museo de Historia Natural de Valparaíso, the results achieved so far—such as being granted the excellence accreditation level by the Ministry of the Environment—has been deeply rewarding. They reflect a paradigm shift that shapes every action we take in environmental and sustainability matters, which are grounded in strong convictions and commitments that guide us toward envisioning a more sustainable future for everyone.

The recognition granted by the Ministry of the Environment is the result of integrating environmental considerations into all technical and administrative processes inherent to the Museum's daily activities. These include quantifying carbon footprint and maintaining an environmental management policy, which forms part of the internal protocols for the efficient use of electrical energy, water management, comprehensive waste management and the procurement of goods and services. The same approach has been applied when adopting a gender-equity perspective, developing training programs for the Museum staff and the community—on topics related to the role of ecosystems—, promoting the conservation of natural heritage and serving as a climate shelter, among other actions, all focused on caring for and protecting the environment both for present and future generations.

Evidently, developing environmental management within a museum is an ongoing process that involves continuous review and can be replicated by other cultural institutions. It contributes to the institution's strategic plans by enabling better decision-making and identifying opportunities for improvement, with the goal of advancing toward a more sustainable society amid the challenges posed by climate change and, likewise, contributing to these matters through environmental education across the territory.

In this regard, we highlight the importance of building connections with a wide range of public and private organizations—such as academia, municipalities, regional ministerial secretariats, educational institutions, NGOs, and civil society, among others—with whom we have advanced in formalizing robust partnerships. These alliances foster collaborations that allow us to move toward a shared future, achieving positive results that benefit individuals, the community, and the environment alike.

We believe that, as a public institution with a 147-year history, we have a responsibility to contribute to society in matters that are relevant and of concern to it. For this reason, our institutional strategy is grounded in environmental and sustainability matters, which are directly and indirectly linked to the 17 Sustainable Development Goals (SDGs). It seeks to highlight and safeguard the natural and cultural heritage of all Chileans and to promote positive change, as these areas must be addressed and put forward for the common good.

Our next steps for the 2026–2027 period are to advance in the accreditation process for obtaining the "Outstanding Excellence" level, which involves greater requirements and a broader scope in environmental and sustainability matters. Similarly, together with our permanent partners and other institutions, we aim to develop a network of urban climate shelters so that people can find protection during extreme weather events. Furthermore, our goal is to continue disseminating and educating on natural and cultural heritage to contribute to society through information, thereby helping it to be more connected to the territory, and enabling a better response to the challenges posed by climate change.

Finally, by means of this Fourth Sustainability Report, we invite visitors, residents of Valparaíso plain, nearby institutions, and those that form part of the National Cultural Heritage Service to join us in taking action and adopting concrete measures on environmental and sustainability matters that benefit future generations and support the conservation of ecosystems, so as to move toward a sustainable society.

Index

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To promote a culture of sustainability, this publication is available free of charge in digital format on the Museum's website.

We suggest not printing it, to avoid using ink and paper.

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