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Research Vessel Dra. Barbieri Receives Authorities from the Coquimbo Region

On July 10, at the invitation of Alejandro Dal Santo Cid, Regional Director of the Atacama-Coquimbo Fisheries Development Institute (IFOP), the Regional Secretary of Economy for the Coquimbo Region (IV Region), Martín Argaluz, Zonal Director of the Undersecretariat of Fisheries (Subpesca) for Regions III-IV, Franklin Zepeda, and Regional Director of the National Fisheries Service (Sernapesca) for Region IV, Cristian Gómez, visited the research vessel Dra. Barbieri.

The visit took place during a port call by the Dra. Barbieri to replenish water, fuel, and provisions. The vessel is currently conducting a research cruise to assess fisheries resources between the Antofagasta and Concepción regions. In this particular case, a significant portion of the research crew consisted of Scientific Observers working at IFOP's Coquimbo office.



The staff of IFOP Coquimbo is largely composed of highly trained and qualified Scientific Observers whose job it is to collect fisheries data in various locations such as fish processing plants, fishing coves, and artisanal and industrial vessels; on this occasion, they were working aboard the research vessel Dra. Barbieri. The samples and data collected provide the technical information necessary to deliver reports to the fisheries management authority, enabling effective and informed decision-making.



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Webinar “30 Years After the AMERB Regime: Where Are We Headed?”

The video of the webinar “30 Years After the AMERB Regime: Where Are We Headed?” is now available. Organized by the Chilean Association of Fishing Professionals (APROPECH) and the Fisheries Development Institute (IFOP), the event brought together artisanal fishing leaders, researchers, technical consultants, public officials from the Undersecretariat of Fisheries, SERNAPESCA (National Fisheries Service), and INDESPA (National Institute for the Development of Fisheries), and local stakeholders from various regions.

Luis Ariz Abarca, head of the Management Areas section at IFOP, presented an overview of the system from its inception to the present, explaining IFOP’s role, from implementing Marine Protected Areas (AMPEs) in the regions to advising the Undersecretariat of Fisheries. He noted IFOP’s current involvement in standardizing and organizing data for AMEBs throughout Chile, evaluating their performance over time, and generating supplementary information to understand the current challenges facing the AMEB system.

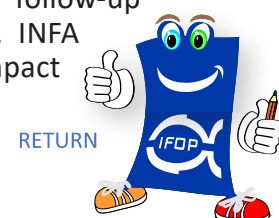
Oscar Avilez Stuardo was the first exponent of artisanal fishing. “In the Coquimbo region, management areas constitute one of the most important pillars of artisanal fishing. These areas represent not only an administrative mechanism but also an economic livelihood for hundreds of families linked to the sea. The management areas were created by law but also implemented by people who have practically taken this activity to levels we never imagined possible. Direct landings from the management areas have generated direct employment for fishermen, shellfish divers, fishermen’s assistants, shore gatherers, and shore workers associated with processing and transportation, in addition to the direct economic effects on local services, commerce, and logistical activities in the fishing coves.”

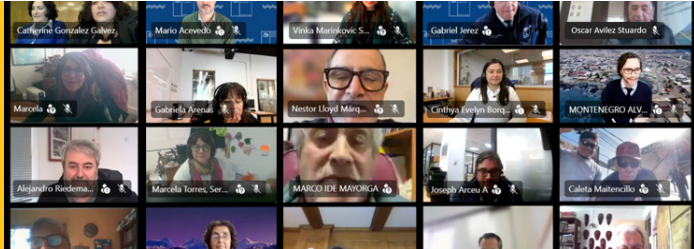
Mario Acevedo Gyllen, representing the Undersecretariat of Fisheries, spoke about the complexity of coordinating multiple relevant

institutions along the coast, where diverse interests now converge—a scenario quite different from that which existed when the first areas were established in 1996. He specifically addressed the legal and regulatory changes that have occurred regarding Marine Protected Areas (MPAs), from the introduction of the MPA concept in the 1991 Fisheries and Aquaculture Law to 2024, when several milestones were introduced with the Benthic Law. The regulations for management areas are currently under review and are expected to be published in 2027. Along with the regulations, he highlighted the following upcoming challenges: the implementation of the Benthic Law, the sampling manual for consultants—aimed at standardizing sampling procedures in MPAs—the electronic processing system, the use of the BusCAMERB mobile application, and the accreditation of sampling activities by SERNAPESCA (National Fisheries Service).

From the Los Ríos Region, Marco Ide Mayorga explained, “The management area system was born as a powerful promise based on granting resource rights to artisanal fishers, subject to resource management plans. This promise had four pillars: conservation, territorial rights, organization, and development, which transformed organizations from mere users of the resource to having direct responsibility for its administration. This allowed for the recovery of a resource as precious as the Chilean abalone (loco), but an idea falls short if it is not updated. Responsibility increased, but support for all this added complexity was not always available. Today, we must move from an administration that simply processes a resource to one that considers the territory as a whole.”

On behalf of SERNAPESCA, Vinka Marincovic Ibarra presented the current status of Marine Protected Areas (AMERB) in Chile, with 888 AMERBs established by decree of the Ministry of Economy. Of these, 781 have current maritime designations, and 662 have usage agreements between SERNAPESCA and the organizations of the designated fishers. The remote monitoring plan, which is being used to monitor baseline studies, AMERB follow-up studies, aquaculture reports, INFA (National Environmental Impact





Students in Cochamó Strengthen Training in Small-Scale Aquaculture with IFOP-Guided Farming Experiments

On June 25, researchers from the Repopulation and Farming Department (RyC) of the Fisheries Development Institute (IFOP) conducted a farming experiment with students from the Juan Soler Manfredini Border School in Cochamó.

In an activity that strengthens technical training and ties with the local production sector, on June 25, fourth-year high school students specializing in aquaculture at the Juan Soler Manfredini Border School in Cochamó participated in an important practical activity on the diversification of small-scale aquaculture (SSA). This activity took place within the framework of the “Comprehensive Aquaculture Development Program for Artisanal Fishers and Aquaculture Producers (SSA),” implemented by IFOP under an agreement with the Undersecretariat of Economy and, as the technical counterpart, the Undersecretariat of Fisheries and Aquaculture. This line of work focuses on training, education, and knowledge transfer to educational institutions that incorporate Aquaculture and Production (APP) into their curricula and/or training programs. Specifically, it supports the educational and practical development of students in technical-vocational high schools specializing in aquaculture with an emphasis on APP. Currently, we are working with two high schools in the Los Lagos Region, co-designing a work plan that includes the development of three modules:

- 1) Support in aquaculture training content,
- 2) Practical implementation of APP initiatives,
- 3) Technical-pedagogical visit.

During the day, as part of module 2, the students carried out a partial harvest of the Chilean oyster (*Ostrea chilensis*) and Japanese oyster (*Crassostrea gigas*) culture implemented last year. They also performed cleaning and maintenance work on the cultivation lines located in

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Assessment), bivalve mollusc sanitation programs, PSMB (Plan for the Management of Biological Resources), and research fisheries, was presented. This remote monitoring requires the submission of navigation coordinates that allow for the reconstruction of navigation during the studies and verification that they were conducted within the AMERB area. As of October 1, 2025, these files are required from technical entities to validate the studies.

Cintha Bórquez Badillo, from the National Institute for the Development of Artisanal Fisheries (INDESPA), presented the AMERB Sustainable Development Program, which aims to strengthen productive and organizational capacities through comprehensive, territorially focused support. An initial assessment conducted across 16 AMERBs in 10 regions revealed significant territorial diversity, management and marketing gaps, and a strong interest in diversification and value-added activities. This led to the development of the AMERB program, which is based on five pillars: sustainability, productive development, organizational strengthening, a territorial approach to ensure the relevance of actions, and institutional strengthening and resource protection. Implementation is expected to take place in four stages, from the initial assessment and gap analysis, through strategic plan design and technical assistance, to investment in infrastructure and productive equipment. “The challenge is not only to manage benthic resources, but also to strengthen organizations, productive capacities, and coastal territories capable of sustaining their development in the long term,” Bórquez Badillo stated.

The webinar continued with a discussion moderated by María Isabel Toledo of APROPECH and Catherine González of IFOP. Throughout the webinar, several academics and professionals who promoted the establishment of AMERB were mentioned, including Carlos Moreno, Juan Carlos Castilla, Gabriel Jerez, Wolfgang Stotz, and Hernán Miranda, among others. The entire webinar can be viewed on IFOP’s YouTube channel: <https://www.youtube.com/watch?v=U7h4tECDsFE>



the concession managed by the Cochamó Municipal Corporation. Additionally, as part of the 2026 work plan, two experiments were implemented to generate productive and scientific data applicable to local aquaculture:

Japanese Oyster Density Experiment: Aimed at observing the productive growth behavior of the resource under two different densities.

Mussel and Sea Urchin Co-culture Experiment: Designed to evaluate the effect of sea urchins on cleaning the lanterns and the mussels themselves, in order to reduce the fouling load (biological encrustation) that affects the efficiency of the cultivation.

Sebastián Cook, IFOP researcher in charge of the guidance and technical support, notes that the students actively participated in all phases of the day, from measuring and cleaning to preparing the lanterns for cultivating the resources. From now on, the students themselves will be responsible for the monthly monitoring of the data, which will allow them to carry out a comprehensive technical evaluation of the experiments by the end of the year.

Francisco Cárcamo, head of the Program, indicates that this activity and line of work aim to help future technicians understand that aquaculture is a broad and diverse field, extending far beyond the traditional production of salmonids. Within the framework of the APE Program, this support and strengthening of educational and training processes can be projected into the medium term, with high schools serving as complementary APE demonstration and/or transfer units for other students, fishers, and aquaculturists. He also emphasizes that on this occasion, they had the support not only of the Municipality of Cochamó, but also of local mussel farmers.

Andrés Álvarez, a teacher specializing in aquaculture at the educational institution, indicates that this collaborative work between the school, the Municipality, IFOP (the Fisheries Development Institute), and the students of our institution represents a great opportunity for them. The activities carried out are related to some of the subjects taught, such as seed collection, underwater work, information management and safety, risk prevention, and environmental care in the aquaculture industry. All the actions we have undertaken together have had a significant impact on the range of knowledge our students have acquired, especially those carried out in the field. They have always demonstrated a positive attitude toward the expected learning outcomes and respect for their peers and teachers. With that said, we hope to continue counting on the support of IFOP and the professionals who collaborate with us, as their contributions are invaluable.

Rodrigo Macalusso, head of aquaculture for the Municipality of Cochamó, emphasizes the importance of this collaborative work, as it directly connects technical and vocational education with the real and sustainable development of our community. Instilling the value of aquaculture in young people not only opens up concrete career opportunities with a local identity, but also injects renewed energy and qualified human capital into an activity that drives our region. This effort would not be possible in isolation; the constant inter-institutional support between IFOP and the Municipality, along with the pedagogical and practical contributions of the teachers, is the bridge that ensures students receive a top-tier scientific and technical foundation. Furthermore, the commitment and support of the Cochamó and Bosquequemar unions demonstrate that



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the local mussel farming community is fully integrated into this process, guaranteeing that traditional knowledge merges with innovation for the benefit of our community.

Successful Training Strengthens Co-Management of Small-Scale Benthic Fisheries in Chile and Mexico

The initiative aims to strengthen the governance of small-scale fisheries with a focus on sustainability, inclusion, and adaptation to climate change, and is funded by the Chile-Mexico Fund.

With the participation of 35 representatives from Benthic Fisheries Management Committees, artisanal fishers, industry professionals, and researchers, the second training session of the Chile-Mexico cooperation project, which seeks to strengthen the co-management of small-scale fisheries, concluded in Puerto Montt.

The project, implemented by the Fisheries Development Institute (IFOP) and the Mexican Institute for Research in Sustainable Fisheries and Aquaculture (IMIPAS), is being carried out throughout Chile, as it includes the participation of members of Benthic Resource Management Committees

at the national level, with an emphasis on Chiloé and Ancud Bay, and in Mexico in the towns of Celestún, Sisal, Progreso, and Río Lagartos, in Yucatán. Its purpose is to strengthen the governance of benthic resources through an approach that incorporates gender equality, inclusion, aquaculture and fisheries technology training, and climate change adaptation.

The workshop also included professionals from the Undersecretariat of Fisheries and Aquaculture (SUBPESCA), the National Fisheries and Aquaculture Service (SERNAPESCA), the National Institute for Sustainable Development of Artisanal Fisheries and Small-Scale Aquaculture (INDESPA), researchers from the Fisheries Development Institute (IFOP) and the Austral University of Chile, as well as representatives from the organizations “Connecting to Conserve” and “Embroiderers of Miramar.”

During the working sessions, participants addressed topics related to the project’s progress, climate change, ecosystem restoration, participatory monitoring, protected areas, governance, and the current challenges of co-management in Chile.

The project leader and senior researcher at IFOP, Nancy Barahona Toledo, emphasized that this initiative aims to strengthen the capacities of those involved in the management of small-scale fisheries and generate tools that contribute to the design of more inclusive and sustainable public policies. “The project has allowed us to consolidate learning networks, promote participatory monitoring, and incorporate a gender perspective as a cross-cutting theme to strengthen the governance of benthic fisheries,” he noted.

For his part, Nibaldo Yáñez, a member of the Atacama Brown Algae Management Committee and director of the National Coordinator of Seaweed Harvesters of Chile, valued the opportunity for exchanging experiences among organizations from different regions and agreeing on a roadmap aimed at strengthening the visibility of the Management Committees and their contribution to the sustainability of fisheries. “As a Co-Management Network, we must highlight the importance of the committees and the hydrobiologi-



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Sixth Edition of the “Image Analysis” Course at IFOP

On July 1, 8, and 15, 2026, the sixth edition of the “Image Analysis” course, using Image-Pro software, was held at IFOP-Valparaíso.

This year, due to ongoing requests from staff who perform routine work in the plankton laboratory, personnel from the Department of Oceanography and Environment, the Department of Fisheries Assessment, and the Department of Resource Assessment were trained.



With 14 participants, instructor Lizandro Muñoz, who has extensive international and national training in microscopy and image analysis, among other areas, explained that the course aimed to cover all the topics outlined in the program, while also emphasizing potential challenges related to the use of stereoscopic microscopy. This resulted in very positive interaction among the participants.

Furthermore, she commented that some images previously obtained by the participants were also used, further increasing the existing knowledge regarding the samples processed in the laboratory. In addition, image processing exercises were conducted during the course, where the attendees suggested ways to improve the images or apply the available tools to obtain counts and various morphometric data of the objects or samples studied daily.

This training has provided an opportunity to form a strong group of individuals who could develop or collaborate on studies involving the use of “Image Analysis,” including in the area of photogrammetry. However, they still need to address their own challenges and develop work routines that will allow them to improve their results in terms of image capture, counting, and measurements of their samples.

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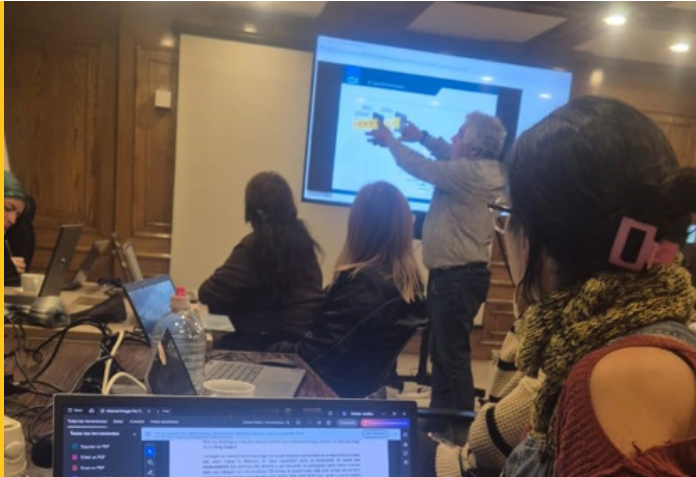
cal resources for the country, as well as the human capital that sustains this activity. We want to influence public policies that strengthen our work and the sustainability of the resources, sharing our experience and the realities we face in the territories,” he stated.

One of the main outcomes of the meeting was the strengthening of the Co-Management Learning Network, an initiative that brings together representatives from various Management Committees across the country to share experiences, build capacity, and promote improvements in fisheries management that place coastal communities at the heart of decision-making.

The activity was led by Layla Osman, director of Conectar para Conservar and leader of Co-management2030, who emphasized that the Learning Network is a strategic space for strengthening capacities, connecting territories, and promoting public policies developed from the experience of the Management Committees themselves.

The project is funded by the Chile-Mexico Joint Cooperation Fund, administered by the Chilean Agency for International Development Cooperation (AGCID) and the Mexican Agency for International Development Cooperation (AMEXCID), a mechanism that since 2006 has supported more than 230 bilateral cooperation initiatives.





Finally, the speaker thanked everyone for their attendance and interest in participating in this course, adding that to date IFOP already has a considerable number of trained people with good knowledge in “Image Analysis” covering Valparaíso, Talcahuano and Puerto Montt (which included a Laboratory Analyst who traveled from Punta Arenas on that occasion).

IFOP Iquique Participates in the 3rd Annual Family Environmental Festival of the Coastal Zone

Invitation from the Semillita Sagrada Educational Foundation for Environmental Research, Sustainable, Social, and Cultural Development

As part of its commitment to scientific outreach and community engagement, the Fisheries Development Institute (IFOP) participated in the third annual Family Environmental Festival of the Coastal Zone. This initiative aimed to strengthen environmental education among families, promote the protection of the marine environment, and highlight the natural and cultural heritage of our fishing coves.

The event took place on July 18th on the coast of Caleta Chanavayita, located 59 km south of the city of Iquique. Various organizations committed to conservation and sustainability participated in the event.

On this occasion, the IFOP team was present with an interactive booth showcasing the various

activities we carry out at our Regional Headquarters, such as sample collection, laboratory analysis, measurements, and more, highlighting our institutional work. This event allowed us to connect our research and advisory services to the government with students, teachers, local residents, and staff from other participating institutions. Through interactive activities, attendees gained a deeper understanding of the importance of sustainable resource use, learning firsthand about our actions to mitigate bycatch, conduct environmental monitoring, and promote best practices.

For our team, it was a true privilege to interact directly with the community, share monitoring experiences, and promote the care of marine ecosystems. This participation reaffirms IFOP’s commitment to science education and the development of research capabilities in the Tarapacá Region.

We sincerely thank the Semillitas Sagrada Foundation for the kind invitation. We deeply value these opportunities, as they allow us to contribute to building a more inclusive, respectful, and environmentally conscious society.



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The course “Application of the Ecosystem Approach to Fisheries Management in Area Management” was held as part of the Marine Sciences Congress

The second iteration of the course “Application of the Ecosystem Approach to Fisheries Management in Area Management” successfully concluded in Concepción, as part of the 2026 Marine Sciences Congress. Students and professionals from various institutions, from Arica to Aysén, participated.

The course was conducted interactively, integrating theoretical content and practical experiences, guided by professionals from the IFOP Management Areas Section: Pedro Romero, Bryan Bularz, and Catherine González. Through the review and analysis of two case studies, participants examined contrasting scenarios. Following a diagnostic assessment, they were able to develop a work plan, prioritizing integration strategies.



IFOP Presents Advances in Wild Fish Health Surveillance and Antimicrobial Resistance in Salmon Farming

Specialists from IFOP and the Undersecretariat of Fisheries and Aquaculture presented advances in wild fish health, bacterial resistance to antimicrobials, and strengthening research for decision-making in aquaculture.

The Hydrobiological Health Department (DSH) of the Fisheries Development Institute (IFOP) held the “Workshop for Disseminating Results of the ASIPA 2025 Permanent Research Programs,” an event where progress on various research projects aimed at strengthening decision-making in aquaculture and hydrobiological health was presented.

The day began with a welcome address by Dennis Cisterna, an analyst from IFOP’s Hydrobiological Health Department. Subsequently, Tamara Palma, a veterinarian from the Health and Pest Management Unit of the Undersecretariat of Fisheries and Aquaculture, presented the institution’s ongoing research program designed to support decision-making in aquaculture matters.

“Within the framework of the implementation of the Escazú Agreement, the Aquaculture Division promotes the incorporation of these principles to strengthen informed, participatory public management oriented towards sustainable development,” commented Tamara Palma.

The professional noted that Article 91 of the General Law on Fisheries and Aquaculture establishes that, “the Undersecretariat will develop the necessary research program for the regulation of fisheries and aquaculture. The results of this research will serve as the basis for the management and conservation measures, and for the decision-making process for extractive fishing and aquaculture activities.”

He also highlighted that the budget for the Undersecretariat of Fisheries and Aquaculture’s basic or ongoing research program for the 2026-2027 agreement includes 13 aquaculture initiatives totaling \$6.2 billion pesos, of which \$752 million pesos are allocated to health research projects. These projects include monitoring the health status of wild fish, tracking bacterial resistance to antimicrobials, and monitoring the resistance of *Caligus rogercresseyi* to antiparasitic drugs.

Health Surveillance in Wild Fish

One of the main topics addressed during the workshop was the presentation “Evaluation and Surveillance of the Health Status of Wild Fish in Freshwater and Marine Environments, 2025-2026,” given by Juan Carlos Quintanilla, a researcher in



potential for PA transmission, given the limited existing data on this matter.”

He also emphasized that “more research is needed to identify population structures in wild fish, which will allow us to establish a foundation for understanding mobility patterns in wild fish populations in the future.”

Bacterial Resistance to Antimicrobials

The day continued with the presentation “Monitoring Bacterial Resistance to Commonly Used Antimicrobials in Chilean Salmon Farming, 2025-2026,” presented by Cristian Valenzuela, a researcher in the Hydrobiological Health Department of IFOP (the Fisheries Development Institute).

“Within the framework of Phase XII (2025-2026) of the program for monitoring bacterial resistance to commonly used antimicrobials (AMB) in Chilean salmon farming, IFOP conducted 34 samplings in the Los Lagos and Aysén regions, encompassing five salmon farming companies, 32 fish farms, and 19 Salmon Farming Concession Areas (ACS),” explained Cristian Valenzuela.

The researcher explained that “as a result of the monitoring, researchers obtained and evaluated 18 bacterial isolates, achieving a 56.25% isolation success rate.” This background information is part of the ongoing health surveillance program developed by IFOP to generate scientific information that contributes to monitoring bacterial resistance and supports decision-making regarding health and responsible use of antimicrobials in Chilean salmon farming.

Furthermore, he noted that “a trend toward decreased antimicrobial susceptibility is observed, primarily to florfenicol in pathogens during the grow-out phase and to oxytetracycline in pathogens during the freshwater phase,” adding that the program’s upcoming challenges include “the incorporation of pathogens from the genus *Tenacibaculum* and the updating of epidemiological cut-off values.”

The workshop concluded with a question-and-answer session that allowed for an exchange of inquiries and comments between the attendees and the presenters.

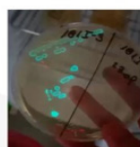
Source: AQUA



Bacterias Intestinales

Recuentos cultivables y aislamiento bacteriano

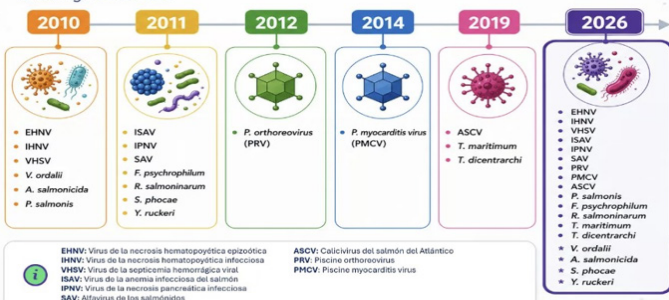
- Muestras: 50
- Aislados: 281



ANTECEDENTES GENERALES

Evolución de la incorporación de agentes patógenos al programa de investigación

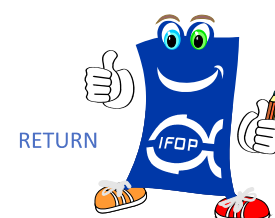
Cronología 2010-2026



the Hydrobiological Health Department of IFOP (the Fisheries Development Institute).

“The detection of pathogenic agents (PAs) in wild fish and free-living salmonids, with particular attention to **P. salmonis**, raises questions about the epidemiological role of native fauna as potential reservoirs and/or transmitters of diseases,” stated Juan Carlos Quintanilla.

The researcher added that “regarding the interaction and transmission of diseases between native and farmed species, further studies (experimental/field) are needed to evaluate the



A source of global pride, the Viña del Mar Chamber Orchestra won the gold medal at the World Orchestra Festival in Vienna

The 12th World Orchestra Festival took place between July 16th and 19th in Vienna, Austria. This event is considered one of the most im-

portant international gatherings for orchestras worldwide, and IFOP is proud to announce that **Kiyosshi Abe, violinist and chemical engineering student at Santa María University**, has been a member of the orchestra for seven years and has been playing the violin for 17 years. **He is the son of our colleague Takashi Abe, first pilot of the Abate Molina.**

Congratulations to the Orchestra on this well-deserved achievement and to Kiyosshi for being part of the IFOP family and the award winner.



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