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IFOP INFORMATION BULLETIN

El Ifopino

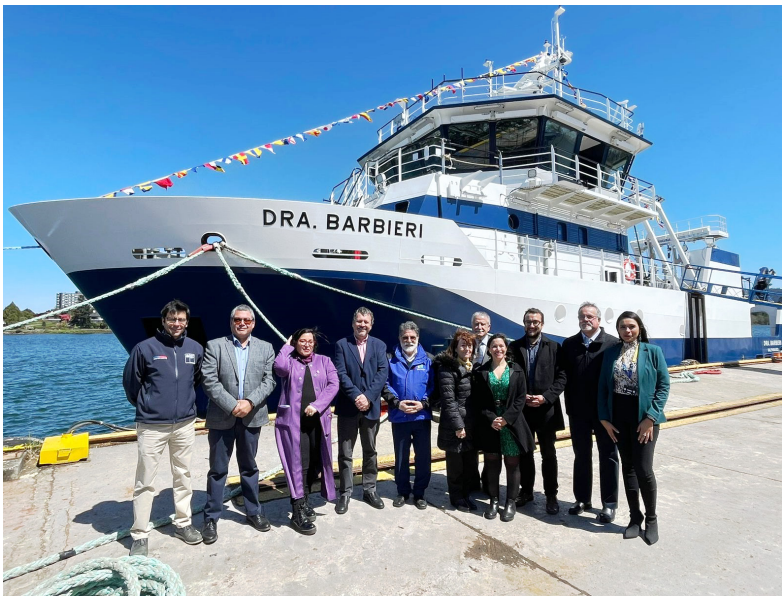
IN THIS NUMBER

New Dra. Barbieri Research Vessel will be operated by IFOPhh

It is a Silent Boat (ICES 209 standard, Silent-R) to not disturb fish's behavior when prospected, avoiding escape when the boat passes, improving biomass estimates.

On October 12th, at ASENAV shipyard in Valdivia, fishing and oceanographic research vessel Dra. Barbieri's baptism and launch took place, a project financed by Fisheries and Aquaculture Undersecretariat, and which will be operated by Fishing Development Institute.

Various national and regional authorities participated in the ceremony, including of Fisheries Undersecretariat, Julio Salas; Los Ríos's governor, Luis Cuvertino; Regional presidential delegate, Carla Peña; IFOP director, Gonzalo Pereira, who referred to the ship "as IFOP, we are very happy and proud to be responsible for this new research vessel Dra. Barbieri's operation, together with Abate Molina scientific vessel, will allow us to expand investigations carried out in sectors in which Abate Molina cannot reach due to its size. We are very happy that this ship has Dr. Barbieri's name, in tribute to an outstanding professional who developed a large part of her performance in our institution. María Ángela Barbieri was a pioneer in developing and progressing in the hydroacoustic evaluation studies that are carried out. On the other



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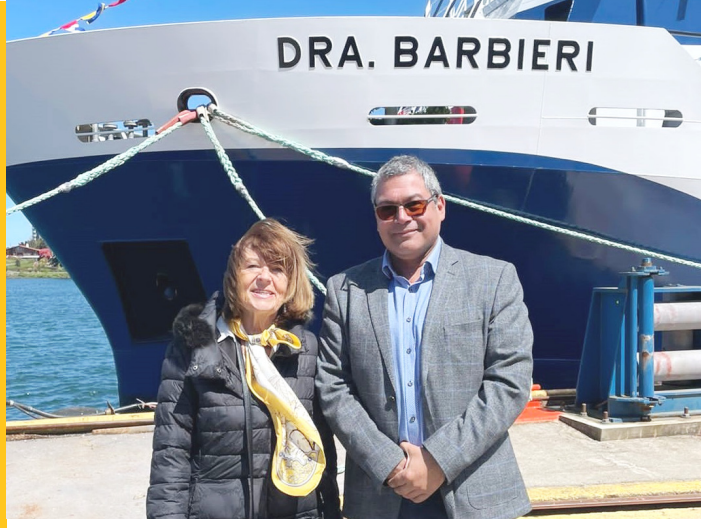
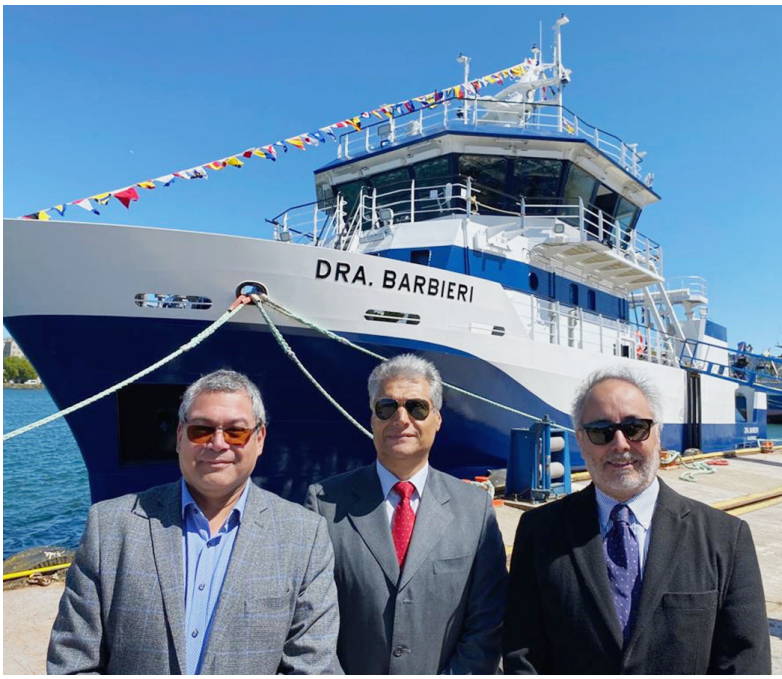


hand, I have to highlight and thank IFOP's officials who worked on the ship's construction technical support, there were several teams that participated, I want to highlight Jorge Castillo and Patricio Herrera who were there from the first minute making their technicial contribution for its construction."

It has the capacity to easily accommodate 8 scientists and 11 crew members. Its area and operating regime will be Arica to Chacao Channel and inland waters coastal sector from Chacao Channel to Golfo de Penas. This ship will be able to operate for 24 hours, will have a 10 day's autonomy without resupply and an operating radius of 500 nautical miles.

It's mission will be:

- Pelagic fish biomass evaluation (sardine-anchovy) in Los Lagos Aysén and Magallanes coastal sectors and inland waters using acoustic methods
- Demersal crustaceans biomass evaluation (prawns and shrimp) between Coquimbo and Biobío using fishing nets.
- Fish populations biological prospected sampling through reconnaissance fishing with pelagic nets (mediagua).
- Seabed bathymetric survey
- Physical, biological oceanography and meteorology climatic change research and El Niño Phenomenon, through Plankton sampling and study (ichthium, zoo and phyto-plankton),
- temperature vertical physical conditions, salinity, oxygen, fluorine, sea acidity,
- Horizontal profile in temperature navigation, sea's salinity, oxygen, fluoride and acidity.
- Meteorological data in navigation.
- Correntometry, (study of sea currents)



The ship has:

- Acoustic and data processing laboratory, for scientific echo sounders operation. With computers and 27-inch KVM screens, LAN network and computer server.
- Dry laboratory for data processing with 2 workstations with computers and KVM screens and LAN network, from here the oceanographic rosette and the oceanographic winch are controlled
- Wet laboratory to process water samples, with LAN network, a vacuum pump for chlorophyll extraction, 2 scientific-level freezers for sample maintenance.
- Fish measurements (size, weighing) laboratory for obtaining biological samples for stocks characterization, stainless steel counters, with electronic scales with compensated movement and ichthyometers for measuring individuals size all connected to a central computer.

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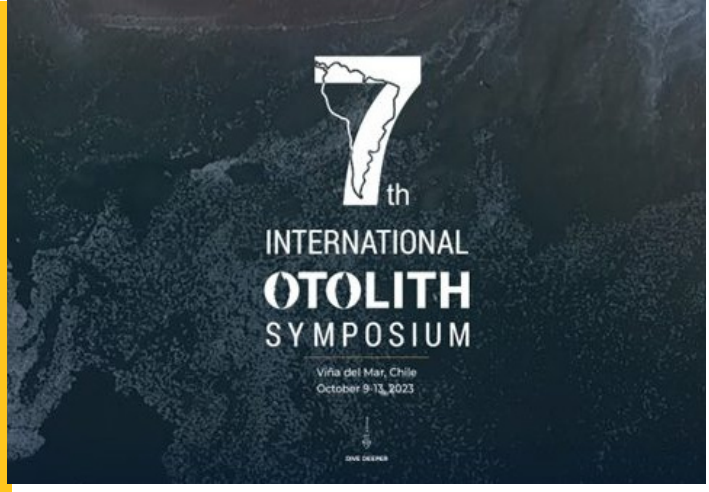

The International Otolith Congress will be held in the Valparaíso Region

OTOLITHS ARE CALCAREOUS STRUCTURES THAT ALLOW US TO DETERMINE AGE, MIGRATORY PATTERNS, MICRO-EVOLUTIONARY AND ECOLOGICAL CHANGES OF FISH POPULATIONS IN THE INTERACTION WITH THEIR HABITAT, BEING A FUNDAMENTAL PIECE OF INFORMATION IN THE EVALUATION OF FISH STOCKS AND THE IMPACT OF CLIMATIC CHANGE. ON THEIR POPULATIONS

Between October 9th and 13th, the Seventh International Otolith Symposium will be held in Chile, an event that brings together the world's scientific leaders who carry out otoliths and other calcified structures of aquatic organisms research. These structures have the capacity to record populations age, migratory patterns, microevolutionary and ecological changes and the relationship with their habitat, which has led to various applications, both in the field of fishery resource management and in approaches to reconstruction of Past events and their relationship with the life cycle of fish and invertebrates.

This event has been held six previous times: 1st South Carolina, USA (1993), 2nd Bergen, Norway (1998), 3rd Townsville, Australia (2004), 4th Monterey, USA, 5th ° Mallorca, Spain (2014) and 6° Keelung, Taiwan (2018). The 7th International Otolith Symposium (IOS), which will take place between October 9 and 13, 2023 in Viña del Mar, will allow the scientific development of this discipline to be promoted from Chile to Central and South America.

This symposium, organized jointly between Fisheries Development Institute (IFOP) and the Pontificia Universidad Catolica deValparaíso (PUCV), will feature the participation of academics, researchers and postgraduate students from 44 countries from all continents. It will also have the presence of international experts who will offer 6 keynote lectures and 4 workshops to enhance methodological aspects. To organize this event, an Organizing Committee was formed made up of Chilean and Latin American researchers with experience in otolith science. The main conveners of this event are doctors Francisco Cerna Troncoso and Guido Plaza Pasten from the IFOP and PUCV, respectively, who have stated that the seventh IOS will provide an international forum for students and scientists from all continents to present their new research, discuss new potential applications, project future perspectives and expand your research networks.

For more information about the congress, please visit the website: https://www.ios2023.cl

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With 41 countries represented, the Otolith International Congress was inaugurated

Yesterday, October 9th, in Viña del Mar with regional authorities assistance, the 7th International Otolith Congress was inaugurated, which for the first time was held in Chile, with 41 countries participating with 170 exhibitors.

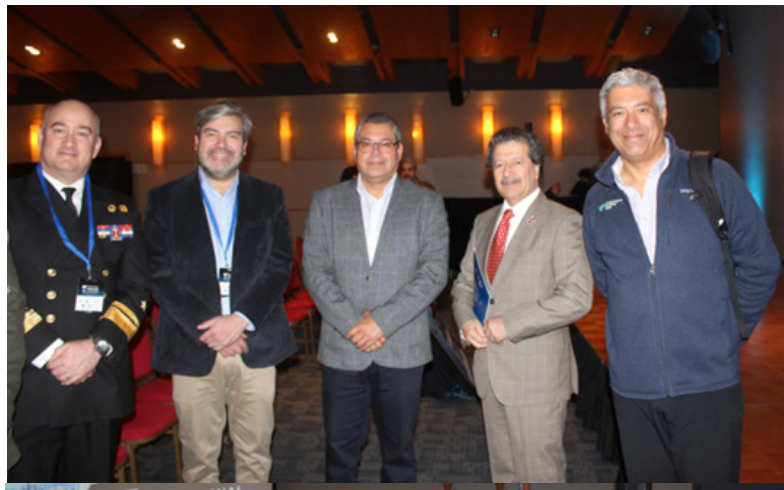
Hernán Ramírez, Valparaíso region's Environment Seremi, expressed "I want to congratulate the Fisheries Development Institute and Universidad Católica de Valparaíso for the international Symposium organization, which will allow us to update our knowledge regarding otoliths, not only as age indicators but also as a source of recording information on parameters as important as; climatic change and marine organisms feeding.

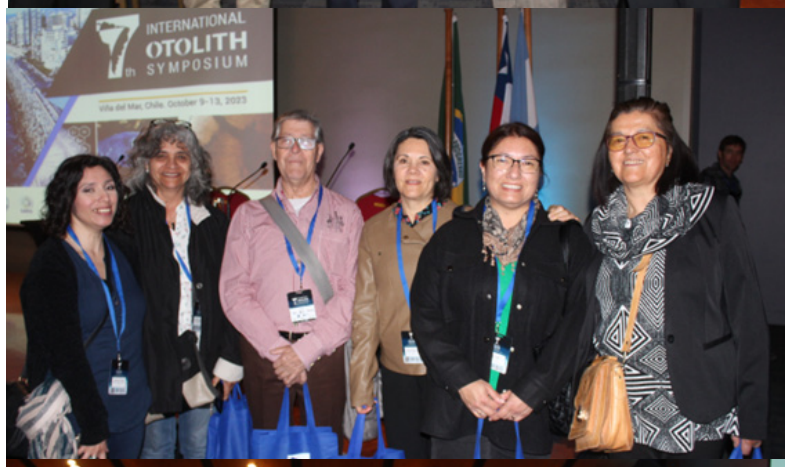
Gonzalo Pereira Puchy, IFOP's Executive Director, referred to the congress, "otoliths research has been a topic of interest for our institution since 1964, creating an applied scientific research unit that, at the national level, systematically and sustained, has been making age estimates in fish for regulatory purposes.

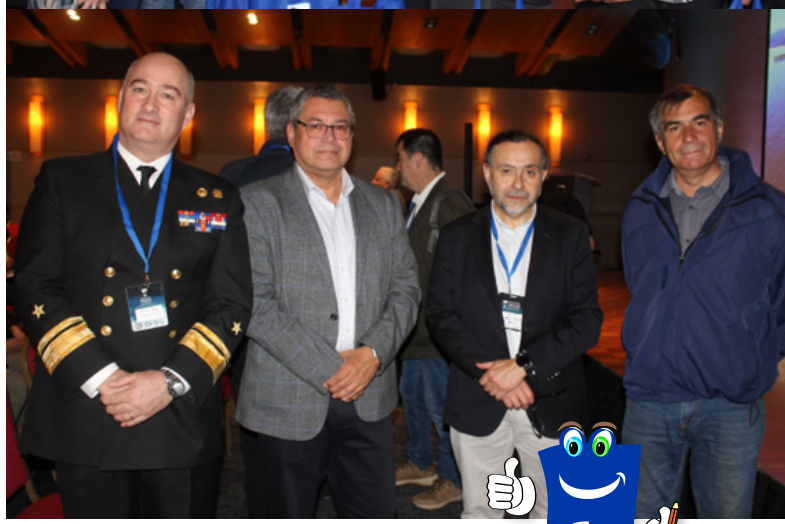
Through this important task, the age and growth laboratory has been able to contribute to generation, development and knowledge transfer public value, essential for the national fishing sector. In our country, information on the age of hydrobiological resources, together "With of each species demographic units correct determination and their populations dynamics, it is one of the most relevant variables stock evaluation models, with a proper fishing resources management with our country view."

Guillermo Martínez, professor at Universidad Católica de Valparaíso marine sciences school, explained "today, when the world faces an unprecedented climatic crisis, is when it is most necessary to promote altruism, healthy coexistence and collaboration in all areas." human activities. Science is not exempt from this.

It is in this context that events like this acquire greater relevance, because they become another stepping stone to continue advancing towards the desired environmental sustainability. International conferences like this become a unique opportunity for undergraduate and graduate students to draw on the experience of researchers with extensive experience and enhance their collaboration networks."







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IFOP's Successful Scientific Dissemination Activity at Colegio San Jorge l in Arica

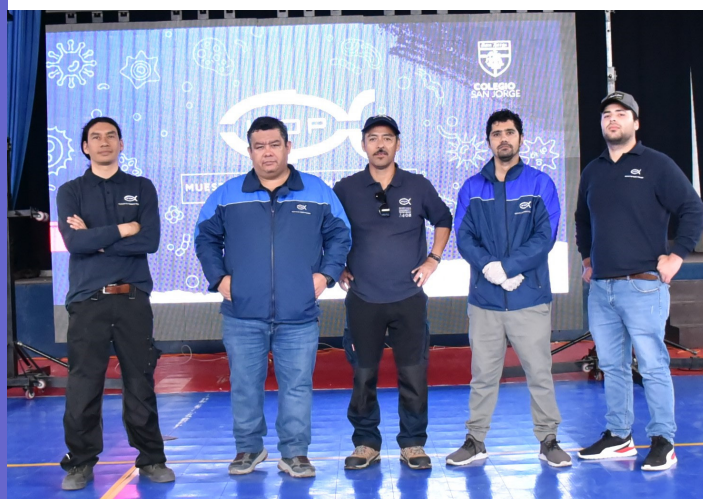
MARINE ENVIRONMENT ENVIRONMENTAL COMMITMENT AND KNOWLEDGE FOR MORE THAN 430 ATTENDEES

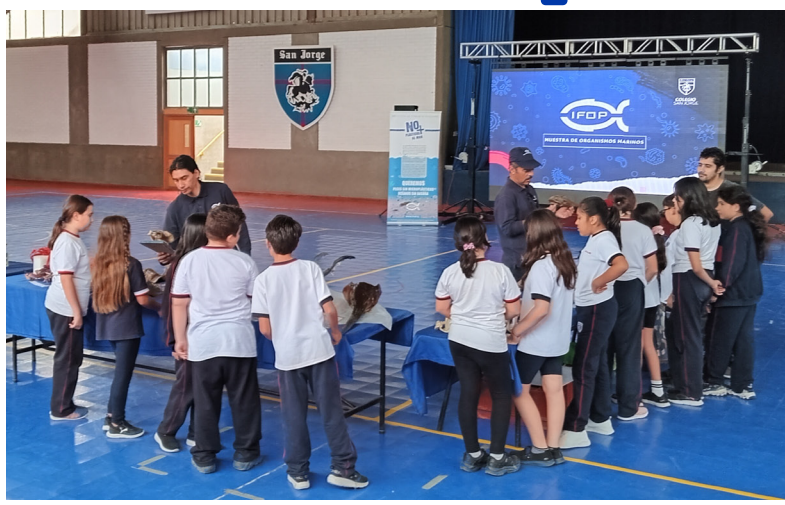
Last Tuesday, October 3rd, Fisheries Development Institute (IFOP) carried out an important scientific dissemination activity at Colegio San Jorge, in Arica's city. More than 430 students and their teachers actively participated in an enriching day that included exhibitions and a fascinating display of marine species.

The presentation was fun and educational, it also served as a platform to highlight marine resources conservation and sustainability importance . During the presentations given to each of the groups, the need to avoid plastics indiscriminate use was also emphasized, highlighting how these negatively affect various marine species.

IFOP scientific observers, Camilo Arancibia and Daniel Fuenzalida, when interviewed, stated that students enjoyed the experience, and that they expanded their knowledge about marine ecosystem richness and the responsibility that falls on all of us to preserve. Direct interaction with marine species sample allowed participants a unique practical experience.

In addition, the exhibition served as an opportunity to highlight IFOP's transcendental work in Arica and Parinacota, during its almost 60 years of presence in the region. In summary, the activity was a success in terms of participation and learning, and also managed to strengthen environmental awareness and highlight the valuable work of the IFOP in the area.





Humboldt Current Warning, Forecast and Observation System Project disseminates at Otoliths International Congress

The Humboldt Current Warning, Forecast and Observation System (SAPO Chile) is being presented at the 7th version Otoliths International Congress to be held in Viña del Mar. More than 170 researchers from 41 countries are participating in this congress, which among its Thematic themes propose climatic change indicators definition derived from these calcareous structures. Additionally, IFOP presents its shark and sea turtle tagging program.

Dr. Letelier, SAPO Chile Project principal IFOP investigator, pointed out that "this instance is the best way to disseminate this technological tool in the scientific world," while Sergio Palma Environmental Defense Fund National Director, "confirms that this type of instance allows for a transdisciplinary approach to the need to know and mitigate climatic change effects on South Pacific ecosystems and fishing resources, as well as, through scientific data, to improve food systems management at a global level." regionally and globally.

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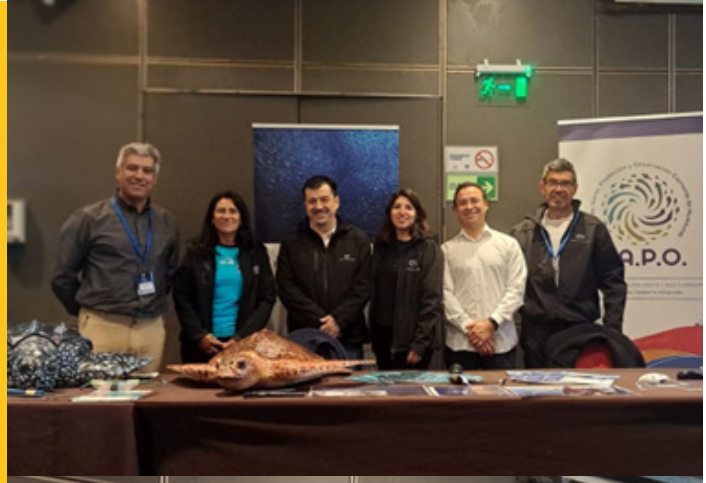
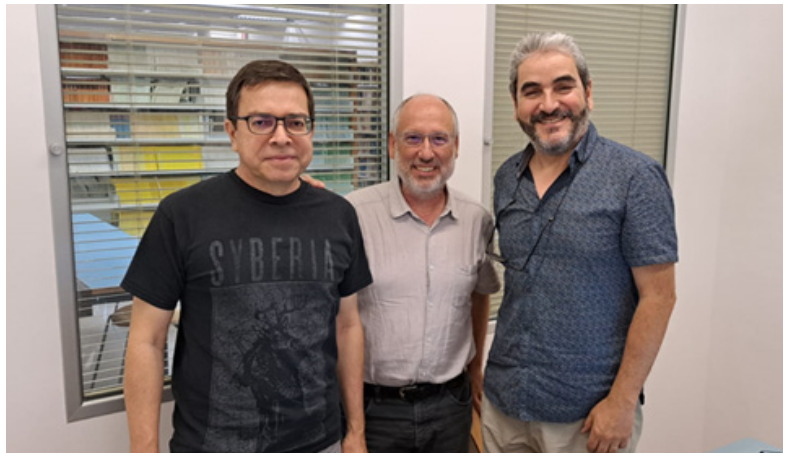


Dr. Zárate, Highly Migratory Resources Monitoring – Ecosystemic Approach project principal investigator, mentions the importance of the marking program and its dissemination "through this methodology we can know navigation routes and potential risks for their conservation during their movement, these "Animals, many of them threatened with extinction in the Pacific Ocean, move between different countries in the region, so this instance allows us to share our knowledge and experiences and generate contacts with other researchers and places in the region."

Oceanography and Environment Department's Researchers Andrés García, Hernán Reyes, Juan Faúndez, Ilia Cari and Ljubitza Clavijo also participated in the exhibition.

Ignacio Payá IFOP's researcher, made his second trip as an IFOP scholarship recipient in Universidad de Barcelona and ICM-CSIC doctoral Marine Sciences program

Ignacio Payá IFOP Resource Evaluation Department's researcher, made his second stay during July at Marine Sciences Institute (ICM-CSIC) (https://www.icm.csic.es) within the framework of his second year (2022-2023) in the Marine Sciences Doctorate program at Universidad de Barcelona (https://www.ub.edu/portal/web/ciencias-tierra/doctorado-ciencias-mar). The purpose of this visit was to meet with his tutor, Dr. Antoni Calafat from Universidad de Barcelona, and with his thesis directors, doctors Joan Company and Nixon Bahamon from ICM-CSIC, and Cristian Canales (telematically) from the PUCV.



His thesis is aimed at evaluating *Dosidicus gigas* squid fishery management strategies. During her visit he worked on reviewing individual growth, stock evaluation models and simulation (operational) models topics. He also participated in Pablo Couve doctoral thesis progress discussion, he is a Chilean with a scholarship from National Research and Development Agency (ANID) of Chile. Mr. Payá's studies are being funded by an IFOP scholarship, as these are crucial for the Resource Assessment Department. The thesis is carried out at the IFOP and the ICM-CSIC, with a program of one visit per year to the ICM-CSIC.

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Former IFOP Director Sergio Basulto Campos passed away

Sergio was Fisheries Development Institute's Director between 1970 and 1973. In 1959 he joined Agriculture Ministry Fisheries and Hunting Development Department as counterpart to an international whaling research project. Likewise, he served for several years as secretary of the Chilean Section of the Permanent Commission of the South Pacific.

In 1965 he traveled on a scholarship to Japan, where he obtained certificates in courses on "Fisheries Propagation and Management" and "Fisheries Research." Likewise, under his responsibility, in 1986, government work to introduce Pacific salmon, interrupted for almost forty years, was restarted.

In the period 1970-1973 he was appointed as Fisheries Development Institute's Director.

At the end of 1973 he entered the Norwegian Marine Research Institute (Bergen), where he researched issues related to Atlantic salmon.

In 1976 he was hired by the Mozambique Republic Government to cooperate in its fishing services organization. On the other hand, in the period 1978-79 he was a member of the Marine Research Advisory Committee of United Nations General Secretariat. In 1990 he retired from FAO and returned to Chile.

His publications:

- The long journey of the salmon. A forgotten chronicle" (2003),
- Fishing news from five centuries (2014).

IFOP's computer networks modernization

Within this Administration strategic objectives regarding Information Technologies, projects to update our connectivity infrastructure are being addressed. To this end, a series of investments are being made aimed at reducing existing obsolescencelevels , with strong regional headquarters priority. This modernization translates into our networks improvement, investment in high-end communications switches, communications rack, cable management, among other measures, which provide better capabilities for management and administration. Next institutional level initiatives will be focused on continuing to modernize regions, and increasing bandwidth and Internet speeds. All of the above forms a framework for our technological capabilities modernization in telecommunications, aimed at continuing to strengthen operational continuity, through modern and better technological tools, which are used daily by IFOPINOs (IFOP's members) throughout the country.

During 2023, and with CORFO resources, we plan to modernize four areas, these are:

Puerto Aysén
Punta Arenas
Coquimbo
San Antonio

In Puerto Aysén, it was carried out in August, in Punta Arenas, it was recently completed on September 8th, 2023, and, San Antonio and Coquimbo, preliminary work is being carried out.

It should be noted that carried out work , and those that are in progress, have been developed within the framework of excellent teamwork, between IT Department, composed by Alejandro Rivero, René Veraguas and Jaime González, and regional counterparts. : Alejandra Lafón, Erick Daza, Alejandro Dal Santo and Nilsson Villaroel. Along with their managers, them all have committedly participated.

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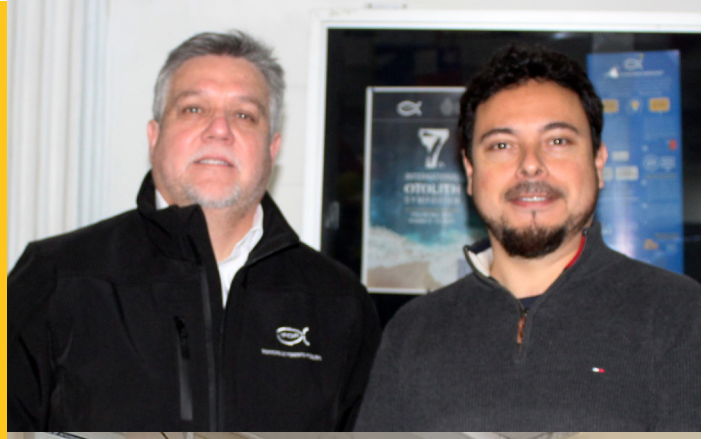

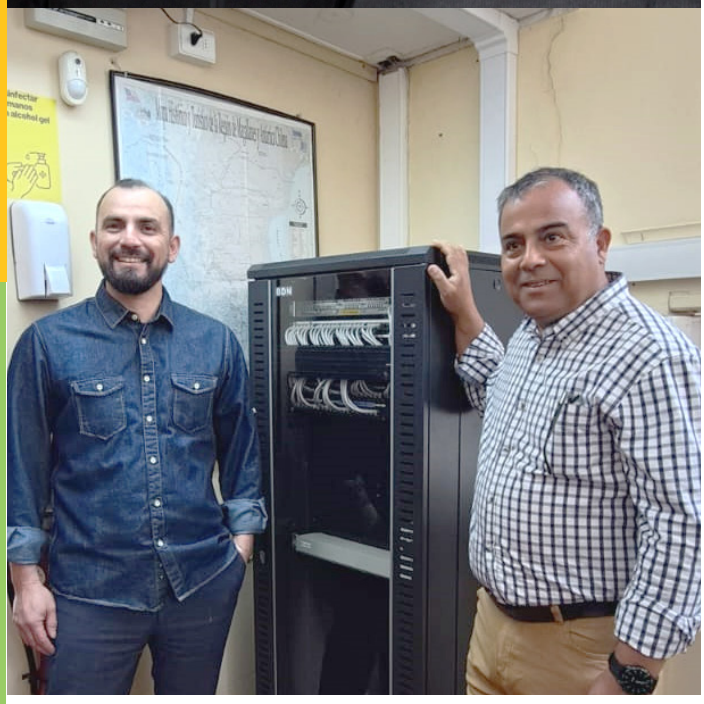

Alejandra Lafón: IFOP Aysén headquarters Head explained " Internet network updating and improvement work is very important for Aysén headquarters carried out work, considering this service growing demand due to virtual meetings and workshops being held. They add to the data entry and validation activity. For this reason, we especially value these tasks coordination and execution and we hope to have greater transmission speed, reception and stability from now on."

Erik Daza, IFOP Punta Arenas headquarters Head, added "we are currently developing 14 Research Programs in fishing and aquaculture field, the above involves an important deployment of various field activities, which finally translate into data generation that our Scientific Observers collect and are entered into the institutional database. Connectivity is essential for this information transmission, so the work carried out in these 2 weeks constitutes a first phase that seeks to double our internet bandwidth, which will ensure that we transmit fishing trips that today easily exceed 40,000 data . We appreciate Executive Directorate, Administration and Finance Division, Information Technology Department and Human Resources Department support, with whom we are constantly talking with the aim of enhancing our team work in this geographical area that day after day "It poses different challenges in our work where communications are a fundamental pillar."

René Veraguas, IFOP's Information Technology Department, Network and Services Administrator, expressed "we continue to renew and regularize our local zonal networks according to necessary standards to support future increases in bandwidth and have the highest continuity of service." secure with the necessary technological tools."

IFOP representative participated in Southeast Pacific Scientific Technical Committee Regional Action Plan for Sharks, Rays and Chimaeras Conservation and Management at XVII Annual Meeting (PAR-Shark)

In Guayaquil city, Ecuador, Southeast Pacific Scientific Technical Committee Regional Action Plan for Sharks, Rays and Chimaeras Conservation and Management at XVII Annual Meeting (PAR-Shark) was held between September 12th and 14th, organized by South Pacific Permanent Commission (CPPS), scientists and administrators from Colombia, Chile, Ecuador and Peru participated.

The purpose of the meeting was to facilitate scientific and techni-

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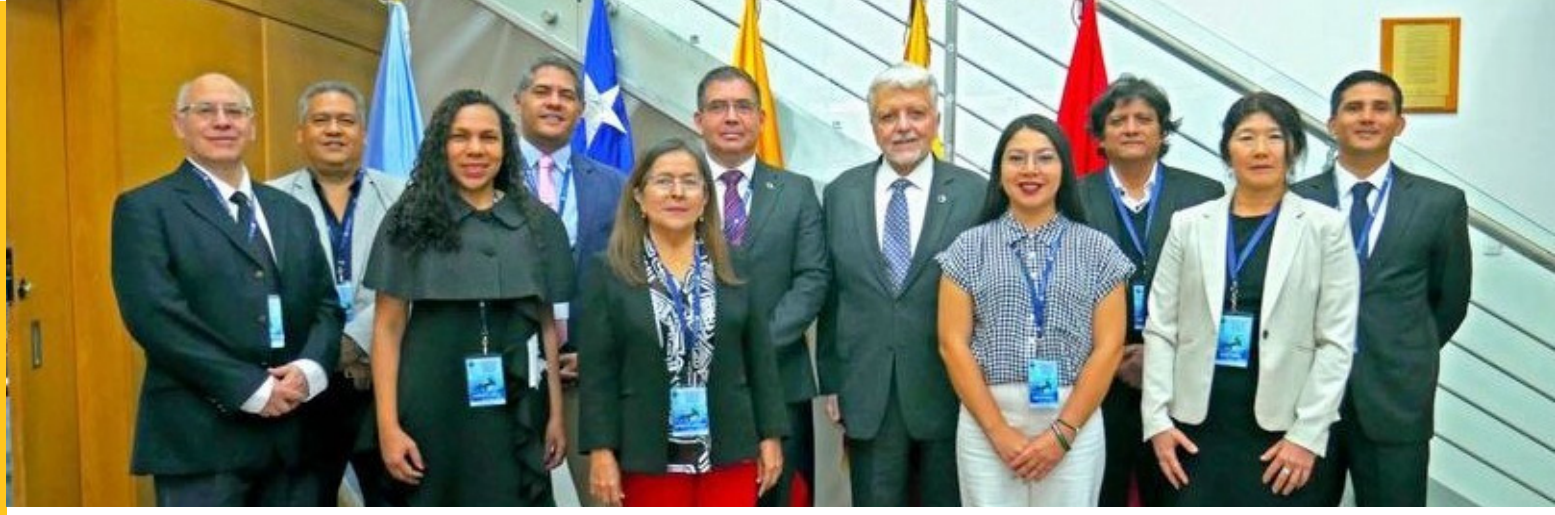

cal knowledge exchange, to learn about experiences from the point of view of these resources management in member countries and learn about governance experiences in the region on the application of the PAR-Shark Regional Action Plan . On the other hand, CPPS linkage with international organizations such as Inter-American Tropical Tuna Commission (IATTC), South Pacific Regional Fisheries Management Organization (SPRFMO), and Central American Isthmus Fisheries and Aquaculture Sector Organization (OSPESCA) was strengthened). In this regard, during this year there are significant advances in memorandum of understanding and cooperation between these organizations work plans. This meeting was attended by the Chilean delegation represented by Patricio Barría, Fisheries Development Institute.researcher.

Chile presented a Understanding and cooperation memorandum work plan proposal between CPPS and IATTC, which aims to carry out South Pacific Ocean blue shark macro-scale stock assessment, a joint research that has a period of five years long. On this occasion, the holding of a videoconference workshop "Fisheries, sampling systems and data on bluebird sharks to carry out stock evaluation" was approved. This initiative was accepted and approved in CTC-PAR-Shark assembly and considers multidisciplinary researchers and technicians teams participation from all CPPS countries.

At the annual meeting, the Regional Shark Action Plan was reviewed for the period 2022 – 2023, by strategic line, where the progress by country and applied methodologies were made known; In addition, each of the countries presented their advances and progress. The strategic lines analyzed were: Planning and conservation research; Fisheries Management, species and ecosystems conservation and/or protection; Control and surveillance; Social and economic aspects; Training, communication and dissemination and strategic alliances.

Finally, the Scientific Technical Committee delegates recognized PAR Shark significant progress and its impact on various countries management, as a mechanism for sharks, rays and chimeras conservation and management , and their habitats in the region. However, all countries agreed to update the Plan in the short term, to adapt it to the new challenges faced by all countries in the region.

Dr. Jorge Mardones from CREAN-IFOP was appointed as part of GlobalHAB international scientific committee

On September 15th, Dr. Jorge Mardones from Fisheries Development Institute's Harmful Algae Studies Center (CREAN), was appointed by "Intergovernmental Oceanographic Commission (IOC)" of UNESCO and by "Oceanic Research Scientific Committee (SCOR)" as part of GlobalHAB Scientific Steering Committee (SSC) for 2023-2025 period.

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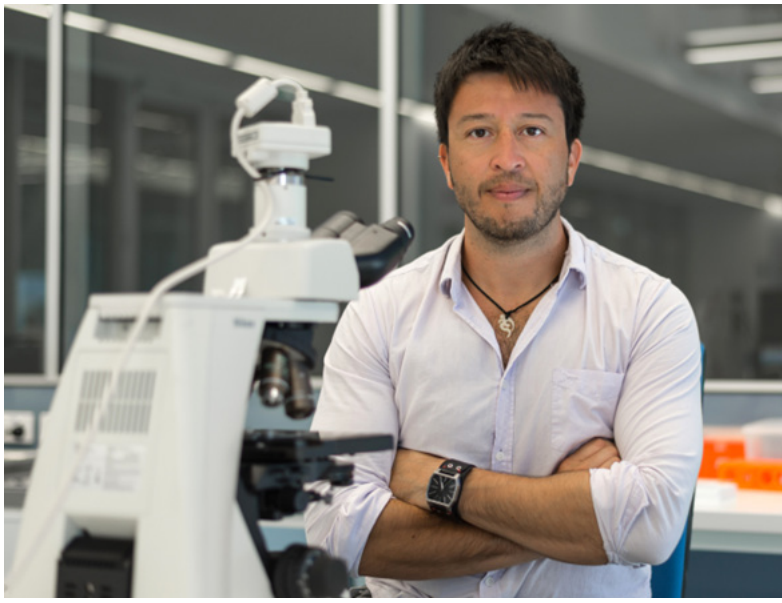
The Global Harmful Algal Bloom Program (GlobalHAB) is an international scientific program focused on harmful algal blooms (HABs). Its objective is to encourage and promote cooperative research aimed at improving the understanding and prediction of HAB events, providing scientific knowledge to manage and mitigate their impacts in the context of global climatic changes and increasing anthropogenic pressures on aquatic ecosystems. GlobalHAB addresses scientific and social challenges of HABs through advanced and cost-effective technologies application, training and education, with a multidisciplinary approach. It also makes connections to broader scientific fields (climatology, toxicology, economics, medicine, public health), emphasizes social science communications, and addresses management priorities.



GlobalHAB is a continuation of the first international program, GEOHAB (Global Ecology and Oceanography of Harmful Algal Blooms), created in 2001 to foster international cooperation and advance our understanding of HAB dynamics and improve our ability to predict them. Upon completion of GEOHAB, international FAN community at Paris Open Scientific Meeting (OSM, April 2013) encouraged a follow-up initiative to implement the most relevant and partially achieved goals of GEOHAB into FAN research and incorporate new pressing questions (GEOHAB 2014). Based on Paris OSM (GEOHAB 2014) and subsequent discussions, and recommendations from the GEOHAB SSC, in consultation with SCOR and IOC representatives. GlobalHAB program was formally presented in April 2015 to the Intergovernmental Panel on Harmful Algal Blooms (IPHAB, of the IOC) and SCOR, and was also supported by the International Atomic Energy Agency (IAEA). IPHAB (and the IOC) and SCOR endorsed GlobalHAB as a new programme.

GlobalHAB adopts GEOHAB partially achieved objectives, expanding them to brackish and freshwater systems, as well as a variety of harmful groups (including benthic microalgae, cyanobacteria and macroalgae) and addresses various issues related to the HABs effects on human societies (health, sociocultural aspects, economic impacts). With new challenges, new tools and a broader multidisciplinary perspective, GlobalHAB also analyzes possible HABs trends and their impacts in climatic change scenarios. The ultimate goal is to translate HABs improved knowledge into sound policy and decision-making to effectively protect marine ecosystems and human health.

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