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JICA Japan representatives visit Abate Molina Scientific Vessel

JICA IS THE JAPAN INTERNATIONAL COOPERATION AGENCY.

Shoji Ozawa Resident Representative of JICA Chile and Toshimi Kobayashi, Deputy Resident Representative of JICA Chile, visited Abate Molina scientific vessel. The activity was led by (IFOP) Fisheries Development Institute Executive Director Gonzalo Pereira, on the occasion, a tour of the ship, the laboratories was made and the work and advances in research topics that are led by Abate Molina's research.

Daniela Díaz Guizado, Executive Directorate for Cooperation and International Affairs assistant referred to the visit "for IFOP it is essential to generate new strategic alliances, as well as to strengthen existing ones with agencies such as JICA, for the development of joint initiatives that allow us to strengthen and expand the lines of research of our institution".

Leonardo Guzmán, head of the Aquaculture Division, explained "the objective of the activity is to strengthen relations between JICA and IFOP, today we are working



on the MACH project, but historically there has been a very good relationship with Japan. In fact, the Abate Molina is a donation from Japan's Government built in the legendary MIHO shipyards of Japan, it arrived in Chile on March 3, 1991".

The Algae Monitoring project in Chile (MACH) arises as a Chilean-Japanese collaboration, financed with resources from Research in Science and Technology for Sustainable Development Associative Program (SATREPS) from Japanese Government, through its Cooperation Agencies International (JICA) and the Agency for Science and Technology (JST).



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IFOP Director Gonzalo Pereira attended “keel laying” of new scientific research vessel in Chile

THE 30 METERS LONG, SHIP, WILL BE OWNED BY THE STATE OF CHILE, DESTINED FOR UNDERSECRETARY OF FISHERIES AND AQUACULTURE AND OPERATED BY FISHERIES DEVELOPMENT INSTITUTE.

On Tuesday, November 15th, Keel Laying Milestone Ceremony of Fisheries and Oceanographic Research Vessel currently under construction was held at ASENNAV Shipyards in Valdivia.

, Carla Peña IFOP’s Executive Director, Gonzalo Pereira; Los Ríos region Presidential delegate; Luis Cuvertino Regional Governor;; Economy, Development and Tourism Seremi, Alejandra Vásquez; Fisheries zonal director , Daniela Cajas; maritime authorities and workers and ASENNAV shipyards executives , led by its general manager, Heinz Pearce.

The vessel, whose delivery is scheduled for the first half of 2024, will collect biological samples of fish or crustaceans using midwater and bottom trawls (demersal crustaceans) and plankton. It will record meteorological data, hydrographic conditions as well as oceanographic processes and ocean circulation.

Likewise, it will take water samples through the operation of the rosette that will allow biological and chemical variables measurement. Among variables to be measured are temperature, salinity, density, dissolved oxygen, chlorophyll and nutrients. At the same time, acoustic surveys will be carried out, the ship will be very modern since it will have the latest technology.



IFOP Director Gonzalo Pereira made a scientific visit to Flanders Marine Institute (VLIZ) and to Basque Country AZTI Foundation

In April 2022, VLIZ Director Dr. Jan Mees and VLIZ international relations Director Dr. Ann-Katrien Lescauwat visited IFOP facilities in Valparaíso, an opportunity in which a collaboration agreement was signed between both institutions. This agreement promotes researchers and technicians exchange for training and joint research work and facilitates access to research infrastructure and data exchange between institutions.

Aiming to strengthen VLIZ and IFOP’s relationship Dr. Jan Meet extended an invitation to IFOP Director Gonzalo Pereira and IFOP Environment Department Head Dr. Gastón Vidal to visit their VLIZ facilities in Oostende, Belgium and the facilities of its strategic partners and their directors such as the Research in Agriculture, Fisheries and Food Institute (ILVO) with its Director Dr. Hans Polet, the European Marine Council (EMB) with its Director Sheila Heymans and of Chancellery and Government of Flanders Foreign Affairs Department Mr. Peter Desmet. This visit took place in November.



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Economy SEREMI visited IFOP Regional Headquarters in Arica

The Ministry of Economy ministerial secretariat), José Zúñiga, visited on November 14th Arica and Parinacota region Fisheries Development Institute (IFOP) offices. Upon arrival, the ministerial secretariat was received by Hernán Padilla Regional Headquarters head. who through a presentation was in charge of transmitting to the authority, the important role that the institution plays on public value scientific and technical background data preparation for fishing resources, aquaculture and their ecosystems administration and sustainability .

During the visit, the Seremi was informed about Monitoring Programs associated with different northern macrozone fisheries and other projects and initiatives, which also have regional scale implications. In addition, both took time to jointly analyze some of the gaps and research needs identified in the sector in recent times.



Meeting: G. Pereira, G. Vidal and H. Polet at ILVO offices.



Visit: VLIZ Robotics Center.

Regarding the activity, Dr. Gastón Vidal commented, work schedule was intense and tremendously productive, it allowed us to make contact with VLIZ and its partners directors and researchers to get to know their facilities (laboratories, research vessel and equipment) and their most important research lines among them; microplastics, marine ecology using metagenomics and metatranscriptomic methods, restoration of marine ecosystems and artificial reefs use, acidification, generation of oceanographic digital twins, and real-time monitoring and assessment systems for fishing stocks. Work lines are similar between both institutions and there is interest in working together, therefore, we are currently exploring a work and financing agenda that allows our researchers and technicians to participate in training programs and participate in projects. sets.

During this trip, there was also a visit to Belgium's Chilean Embassy where the Director and Gastón Vidal met with Gloria Navarrete Brussels Ambassador. In addition, the opportunity was taken to visit the AZTI facilities in the Basque Country. AZTI is a scientific and technological center specialized in marine environment and food, which provides cutting-edge and value-added products and technologies based on solid science and research.



Among the outstanding milestones, that IFOP's work has been developing for more than 55 years especially in the region was addressed, as well as its commitment to local Ariqueña community, in scientific dissemination aimed at marine resources and ecosystems care and sustainable use in which they underlie. Along the same lines, the Head of Headquarters communicated IFOP's intentions to access regional financing to create a museum within its facilities. The foregoing, with the objective of showing the community hy-



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drobiological species great biodiversity present in the area and also to publicize the historical development of fishing activity in the Arica and Parinacota region.

The visit to the IFOP Headquarters ended with a tour of the facilities, where SEREMI was able to verify in situ that the place has great potential to develop the aforementioned initiative, which could be added to other important works of touristic interest, which have been developed in the southern sector of the city. Among the latter, some are in the planning stage, such as the layout of the fishermen's cove from Arica to the Arenillas Negras sector and other works already carried out, such as the remodeling of pedestrian walkways, parks and other tourist attractions such as Cuevas de Anzota.

IFOP Putemún-Castro, carries out an interactive field activity in in Quehui Rural School

On Tuesday, November 8th, researchers from the "Larval Monitoring and Mutilid Seed Capture Program", Dr. Cristián Segura, Marina Oyarzún Vera, and Alejandra Montaner Velázquez from "Aquaculture Environmental Performance research", both groups associated with IFOP's Environment Department carried out a local diffusion and dissemination activity with 5th to 8th grade students from Los Angeles de Quehui Rural School .

On that occasion, boys, girls and teachers participated in an interactive and practical workshop on environment, microalgae and filter-feeding molluscs that IFOP professionals took to the school facilities. In the opportunity, instances of understanding of natural processes and reports of experiences of the students with their environment were generated.

According to Marina Oyarzún, "a dynamic was developed that allowed students to connect with the coastline and to recognize organisms from this didactic material wich belongs to their educational program planning. Which is always very helpful when learning is linked to positive experiences."

Cristian Segura added "these instances allow students to generate identity with their coastal environment, strengthening behaviors to care for the environment, as well as strengthening their knowledge in the face of the boom processes of harmful algae and bioaccumulation in bivalve mollusks,"



Alejandra Montaner researcher established that "the importance of bringing children closer to science with an environmental focus, making measurements such as pH, allows them to understand processes that occur behind ocean acidification and the impacts that these can have on the flora and fauna that surrounds them"

The city council Castro Corporation thanked Fisheries Developm ent Institute for promoting marine world interest among boys and girls and strengthening environmental education through research on coastal marine systems.

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IFOP Puerto Montt, participates in an interactive inclusion program activity during “special education day”

IFOP Puerto Montt recently participated in a dissemination activity organized by Liceo Manuel Montt, diversity oriented program in Puerto Montt’s city , an invitation extended on the occasion of the celebration of special education day commemorated on November 4th and whose objective was to carry out a professional and occupational activities sampler within inclusion week (November 8th – November 11th) where various activities related to inclusion and good coexistence were carried out.

José Pérez field coordinator and Héctor Huerta, general coordinator on behalf of Fisheries Division and on behalf of Aquaculture Division, Macarena Herrera, IFOP’s researcher on Mutilid Larval Monitoring Program, participated in this activity. Who previously would have participated in similar instances for students, where they had shown interest in learning more about the marine environment and its resources.

On the occasion, it was possible to present an interactive sample of IFOP’s carried out work, in its institutional work, which included a collection of benthic, demersal and pelagic resources from different carried out research works by the institution in both of its Divisions. This activity was carried out on Thursday, November 10th, from approximately 12:30 p.m. to 3:00 p.m. Where the student community was able to appreciate macroscopic and microscopic universe. In the first they were fascinated with fish measurement methods , how their organs’s weight is recorded. They also had the experience of observing and feeling a kite ray, getting to know its landing, handling and consumption.

On the other hand, in the microscopic world, they were able to appreciate marine phytoplankton and bivalve larvae diversity and richness . Also fish otoliths observation, such as the case of the southern hake, was very well received. These structures are studied by co-



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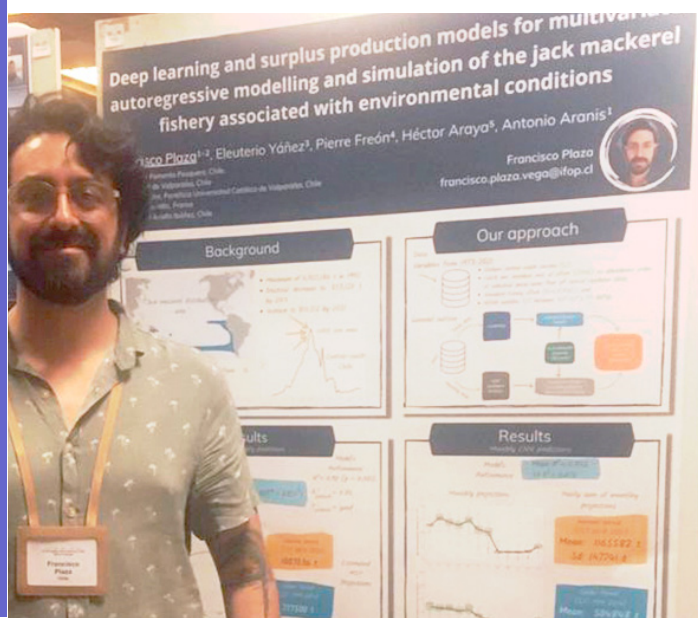


IFOP researcher was awarded at an international symposium

IFOP researcher, Francisco Plaza Vega participated in ICES/PICES international symposium on Small Pelagic Fish “Small pelagic fish: New frontiers in science and sustainable management” held from November 7th to 11th, in Lisbon (Portugal).

Plaza Vega explained “my participation in the symposium involved the presentation of a work as a poster presentation called “Deep learning and surplus production models for multivariate autoregressive modeling and simulation of the jack mackerel fishery associated with environmental conditions” This work is an effort between researchers from different institutions and considers temporal horse mackerel fishery analysis with conventional models and deep learning models with environment and the simulation of temperature scenarios incorporation. Within this context, the work was awarded as the best poster presentation”.

Francisco Plaza Vega is a Management Control Engineer, member of Project Audit and Control team, and a PhD candidate in Statistics.



Marianne explained “I was invited to participate as an evaluator of this student debates these debates take place between different schools and high schools in Tarapaca’s region, these were convened at Iquique’s Museum. This type of student debates aim on creating a critical power in young people, which allows them to argue their points of view on a specific topic.

From an evaluative point of view, we had to score different items that we were asked to evaluate and deliver a constructive critical opinion to young people. The schools with the best evaluation in each of the days went on to the next level. The final of these debates will be held during the first week of December.

“In the XVIII School Research and Innovation 2022 Explora Regional Congress we were invited to participate because we belong to the evaluation committee, an evaluation that consists of two stages:

- 1st Stage_ to evaluate the projects’s written work sent by participating schools and high schools.
- 2nd Stage to presencially evaluate projects at a Science Fair in Plaza 21 de Mayo-Iquique” said Graciela.

Marianne commented “it was a pleasant moment to be able to share with young people’s thinking to contrast their ideas to encourage them to continue, that even if they are nervous and forget some concepts, it is valuable that they are there and train in public speaking and knowledge.

Graciela added “it was a very pleasant experience for both of us, we were surprised by young people’s ability to develop and translate their ideas into research and innovation work. The participants were from elementary and high school. The ability to explain their projects was exciting and produced a re-enchantment with marine sciences.

The different works which reached this stage were of high quality and useful for the region, without a doubt scalable to be carried out with public and/or private financing”.

Both researchers agreed that “IFOP workers have a tremendous capacity for knowledge that we must deliver to young people and children who are interested in science. Promoting knowledge among young people is of vital importance, taking into account that with current technology they can enhance their knowledge and thus contribute in the future.

This type of event allows us as an Institute to show to the community research



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lleagues who, through different records, are able to obtain information regarding studied species’s development and movement.

While the most successful stand was the one wich held Caligus rogercresseyi’s observation which is a native ectoparasitic copepod that affects the salmonid fish farming industry.

IFOP researchers participate as evaluators in a student Science debate organized by Explora Tarapacá

IFOP researchers, GrIFOP researchers Graciela Pérez and Marianne Lichtenberg participated as evaluators in a student debate organized by Explora Tarapacá and Universidad de Tarapacá. In addition, they participated in XVIII Explora 2022 Regional School Research and Innovation Congress .



work in different marine and fishing areas. In addition, it allows us to transmit generated knowledge”.

Graciela Pérez: background: She is an UNAP Marine Biologist, Master in Marine Sciences UCOL, Mexico. She has participated in the Explora projects since 2016 representing the institute.

Marianne Lichtenberg: She is a Marine Biologist-UDEC, MSc. (c) Biostatistics and Bioinformatics, CEMP-U. Murcia, Spain has participated in dissemination with the Explora project since 2019 representing the institute.

Hydrodynamic modeling's role in fisheries advising, aquaculture, conservation, and environmental justice

On November 22nd “The role of hydrodynamic modeling in fisheries advising, aquaculture, conservation and environmental justice” workshop was held at Diego de Almagro hotel in Valparaíso, where Dr. Lars Asplin, from the Norwegian Marine Institute explained that institution's history as well as its scientific role as public policies advisor for Norway's aquaculture sustainable development through numerical

modeling and its links with the authority and users information.

As an introduction, MSc Catherine González from Management Areas section gave a talk that included national efforts to unify ocean modeling efforts, utilities and examples of applications that can potentially help make better fisheries and aquaculture management decisions. .

As a second talk, Dr. Jaime Letelier, Fisheries Research Division Oceanography and Environment Department head highlighted integrated information importance of numerical modeling implementation and validation, especially in a climatic change context, such as through “Alert, Prediction and Observation System (S.A.P.O.) for fisheries resilience in a Climatic Change scenario” led by IFOP and which contributes to Eastern South Pacific Multinational Early Warning System for resilient fisheries jointly with Peru and Ecuador.

Among the Attendees, professionals from SUBPESCA, SERNAPESCA, SHOA, SIA and EDF Chile participated.

IFOP mussel larval monitoring program records a new period of competent mussel larvae in the Los Lagos region

IFOP's led “Larval Monitoring and Capture of Mollusk Seeds Program ” has identified, until November 17th, 2022, a significant increase in competent mussels larvae abundance (development stage prior to seed capture) which, in territorial terms, have been circumscribed in the areas of fjord and Reloncaví Sound. During the course of this season (August 2022-November 2022), the areas that have registered a greater abundance of competent larvae, above the threshold of 100 larvae /m³, are the Metri sectors (Abu.max.=1455 larvae/m³), Yates (Abu.max.=1236 larvae/m³), Cochamó (Abu.max.=1090 larvae/m³), Pichicolo (Abu.max.=445 larvae/m³), Bahía Ilque (Abu.max.=169 larvae /m³) and Hornopirén (Abu.max.=136 larvae /m³; Figure 1). In all these areas, competent



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larvae abundance increase rate is higher than that recorded during the previous period (August 2021- July 2022; Figure 2).

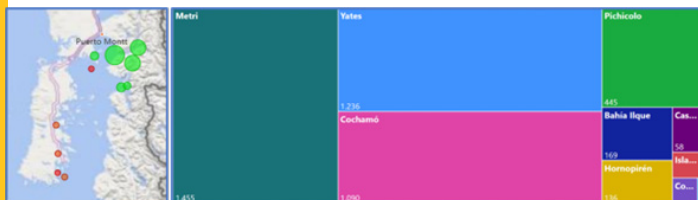


Figure 1: Scheme that represents the geographical areas with greatest competent mussel or mussel larvae abundance

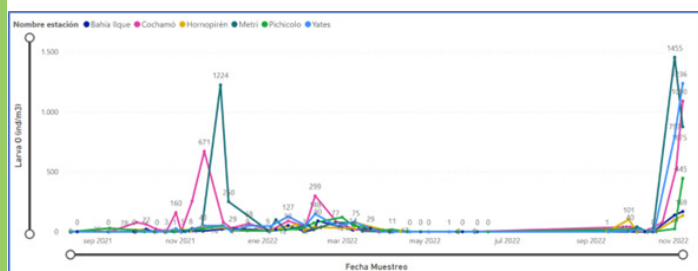


Figure 2: Inter-annual 2021-2022 season and 2022-2023 season comparison in abundance of competent larvae of mussels, in Metri, Yates, Cochamó, Pichicolo, Bahía Ilque and Hornopirén areas..

In Estero Castro's case where last year there were practically no competent mussel larvae abundance events which had a uptake of seeds, direct impact this year a positively different situation is evident, since to date registered a maximum of 34,000 pre-competent larvae/m3 and 58 competitive larvae/m3 (Figure 3), which corresponds to 260% and 820% more larvae, respectively, compared to the maximums recorded in the previous season.

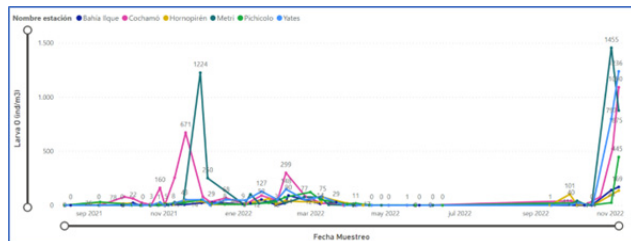


Figure 3: Inter-annual comparison between 2021-2022 season and 2022-2023 pre-competent larvae abundance season (D larvae + Umbonate larvae) and Competent (eye larvae) in Estero Castro.



Cristian Segura, IFOP's researcher, comments that "we are very happy with larval abundance mussels records for this 2022-2023 season, but at the same time we are expecting collection of seeds both in collectors that supply the mussel industry as well as the incorporation of new recruits in the natural banks results . In this sense, a good seed collection season could be expected, but at the same time, progress must be made in collection efficiency in the context of avoiding potential landslides from collectors as much as possible, through productive strategies (eg. thinning or splitting of collectors) and commercial (eg sales of seeds in the smallest possible sizes)", the researcher pointed out.

Macarena Herrera, IFOP Researcher, pointed out that "we are in constant communication with mussel farmers and Subpesca, who have shown great interest in our results, which can be followed permanently, graphically and interactively, through our visualization platform, which is publicly available at www.ifop.cl (banner: Mussel larva monitoring). Our work team will continue to work hard on larval monitoring plan for mussels and environmental variables at the 12 stations in Los Lagos, 3 stations in Aysén and 1 station in Magallanes, as well as in the evaluation of seed collection in Yates and Estero. Castro," said the professional.

"Although this is a Fisheries Undersecretariat permanent Program it does not seek to predict catch or to indicate favorable set dates, an effort is made to periodically report the results through the platform where interested parties can consult." mentioned José Videla Cofré, collaborator of the Larval Monitoring Program led by IFOP.



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Chile will host international Otolith congress

OTOLITHS ARE CALCAREOUS STRUCTURES THAT ALLOW DETERMINING FISH POPULATIONS AGE, MIGRATORY PATTERNS, MICROEVOLUTIONARY AND ECOLOGICAL CHANGES IN 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.

Instituto de Fomento Pesquero (Fishing Promotion Institute) is organizing the 7th International Otolith Symposium 2023 (7th IOS in its initials in English), which will take place between October 9th and 13th, 2023 in Viña del Mar, Chile.

This event brings together world scientific leaders in marine biology and ocean sciences, to present the state of progress of scientific research in fish biology using otoliths as a focus of study.

It is held every five years and has been held on six previous occasions: 1st South Carolina, USA (1993), 2nd Bergen, Norway (1998), 3rd Townsville, Australia (2004), 4th Monterey, USA (2009), 5th Mallorca, Spain (2014) and 6th Keelung, Taiwan (2018).

Local committee conveners are: Francisco Cerna Troncoso (IFOP) and Guido Plaza Pasten (PUCV), email for inquiries: 7th.ios2023@ifop.cl.

Information about the event is available on the website: www.ios2023.cl.

Ancud Sampling Center Scientific observers enhance their teamwork

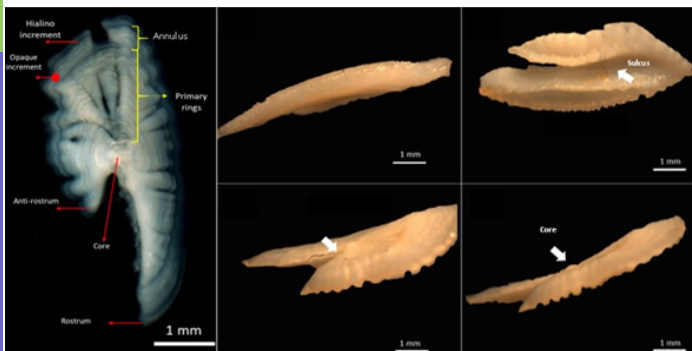
On November 15th and 16th, a face-to-face Teamwork workshop was held, dictated by coach Mónica Matte, the activity was organized by Human Resources Department Training Area and Sampling Management Department. In the workshop held in Hueihue, 15 Observers from the towns of Yuste, Quetalmahue, Ancud, Quemchi, Dalcahue and Queilén, who work in the projects, actively participated; Monitoring of Benthic Crustaceans, Monitoring of Benthic Fisheries and South Austral Demersal Monitoring. The activity led by its Field Coordinator: Vivian Pezo, was attended by the South Austral General Coordinator, Héctor Huerta, and field support from Human Resources, through Jasna Martínez.



During the day, they worked on various topics, including Dynamics Gamification, Coaching Principles, VIA Test, Organizational Commitment, Conversation Design, Teamwork, among other topics. This activity is framed within the activities of Human Resources Department's Training Area Skills Training Program.



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Last 2022 Abate Molina Cruise will investigate Anchovy

BETWEEN ARICA PARINACOTA AND ANTOFAGASTA REGIONS.

El miércoles 23 de noviembre a las 23 horas, zarpó de-sOn Wednesday, November 23rd at 11:00 p.m., Abate Molina scientific vessel set sail from Valparaíso's port, with Fisheries Development Institute professionals and technicians who will sail for a month investigating anchovy. The ship's captain is Enrique Quiero and as head of the cruise is fishing engineer Francisco Leiva

The scientific cruise's general objective is: To carry out hydroacoustic prospecting between Arica and Parinacota and Antofagasta Regions to evaluate anchovy stock present in the study area.

The specific objectives are:

- To carry out 41 acoustic transects between Arica and Papos bay
- To evaluate the shore bias (between 21° and 22° LS) with an artisanal boat.
- To carry out a sufficient number of reconnaissance fishing sets to characterize anchovy stock
- To carry out oceanographic stations in the study área

Aysén schools carry out a scientific visit to IFOP laboratories

Colegio Santa Teresa and Gabriela Mistral Basic School of Aysén, visited IFOP headquarters in the area, within the framework of Universidad Austral Explora Aysén activities.



Aysén schools carry out a scientific visit to the IFOP laboratories.

During the activity, a "What is the Red Tide" presentation was made addressing basic and general concepts, then microalgae were observed under a microscope, identifying main microalgae that produce marine toxins. Each visit lasted approximately 90 minutes. The students were received by Alejandra Lafon IFOP headquarters head and those in charge of carrying out the activity with the students were analysts Luis Iriarte and Lorena Ramírez.

Luis explained "it is a very pleasant experience to be able to share and disseminate part of IFOP's carried out activities with the school community, especially in red tides study field since it allows us to contribute a grain of sand to knowledge and dissemination of red tide events in the region".

Dr. Lafon added "As an Institute we are open to being able to coordinate the visit of students or give talks in schools to share and transfer our work in the Region".



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IFOP researcher is awarded a scholarship from Conservation of Antarctic Marine Living Resources Commission

DEVELOPING A KRILL FISHERY STOCK ASSESSMENT MODEL IS MAURICIO MARDONES'S OBJECTIVE, IFOP RESEARCHER AND UMAG DOCTORAL STUDENT, WHO WAS AWARDED A CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES COMMISSION'S SCHOLARSHIP (CCAMLR) TO CARRY OUT HIS PROJECT.

Mauricio Mardones, Fisheries Development Institute (IFOP) researcher was awarded a Conservation of Antarctic Marine Living Resources Commission's scholarship (CCAMLR). This scholarship aims to promote young scientists who carry out research in specific areas of interest to the Scientific Committee of the Commission and its working groups participation.

As Mauricio Mardones pointed out, his project objective is to advance quantitative methodologies to understand krill population dynamics and its management approach, which is currently being discussed in the CCAMLR Scientific Commission. "It is a great opportunity to learn more about this important fishery in a high-latitude ecosystem context, and also as a great academic and scientific challenge to rise to," he said.

"Having the possibility of working with INACH and the Antarctic Department of the National Oceanic and Atmospheric Administration, United States (NOAA) researchers is very relevant for my doctoral project, since these groups are developing high-level science. level around krill and its fishery in the Southern Ocean. Having this type of interaction will improve the quality of academic and scientific work, and in turn, would allow me to better understand and contribute to the fisheries management of this important species of the Antarctic ecosystem," said Mauricio.



Mauricio is doing his doctorate in Antarctic and Sub-Antarctic Sciences at Universidad de Magallanes (UMAG), under academic supervision from researcher PhD César Cárdenas from Chilean Antarctic Institute and BASE Millennium Institute. This project is developed in the context of Antarctic fisheries, related to aspects of stock assessment, management and climatic context.

The scholarship will be used for participation in meetings (3) of the CCAMLR Working Groups during 2023-2024, one month of work at INACH and two months of internship with researchers from the NOAA Antarctic Department, in La Jolla, California, USA.

"The work that Mauricio intends to do is highly relevant research, it fits perfectly into the discussions that have taken place in the CCAMLR Scientific Committee since 2019, which are related to krill fishery new management strategy. In this sense, for some years the importance of evaluating this strategy once it has been implemented has been discussed and Mauricio, through his expertise in resource evaluation in Chile, was interested in developing this topic," said Dr. César Cárdenas.

Without a doubt, what Mauricio will do is one of the most relevant topics of the discussions that will take place in the coming years regarding the Working Groups and the discussions of the Scientific Committee in relation to krill management", said César Cárdenas.

Since 2015, Mauricio Mardones has been a researcher in Resource Evaluation Department and is currently working on benthic and demersal fisheries-methodological approaches within the department, with an emphasis on conceptualization, exploratory analysis, data visualization and application of integrated models to understand the dynamics of exploited marine populations and thereby provide recommendations for sustainable management."

IFOP researcher Mauricio Mardones

Photography: I. Milenio BASE/ C. Barrientos



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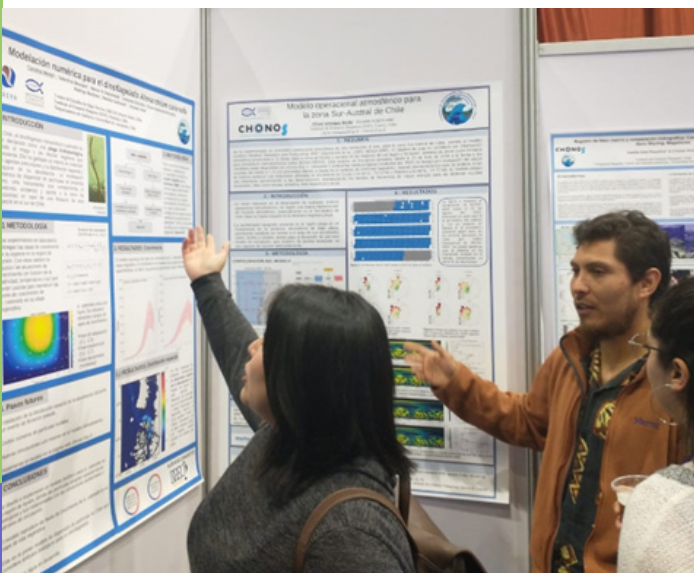
IFOP participation at 6th Physical Oceanography, Meteorology and Eastern South Pacific Climate Congress

Fisheries Development Institute Oceanography and Climate group Researchers belonging to Patagonia Coastal Research Systems Center based in Putemún (Castro), participated during the week of November 21st to 25th, in the Eastern South Pacific physical oceanography meteorology and climate 6th edition congress. This event was organized by the Ocean-Atmosphere Dynamics Working Group (DOCA) of National Oceanographic Committee (CONA) and Universidad de Los Lagos i-mar Center this important congress took place Puerto Montt's Arena facilities. IFOP's scientists presented through oral presentations and posters part of their research, mainly focused on the country's southern seas oceanographic processes research.

talog of oceanographic and atmospheric information within CHONOS), Camila Soto (Wind influence on residual circulation in Patagonian Channels and Fjords) and Cristian Ruiz (Sea ice record; Hydrographic comparison and double diffusion; Navarro fjord case study, Seno Skyring, Magallanes).

In addition Oceanography and Climate group, represented by Cristian Ruiz and Pablo Reche, presented the special session "Knowing Chilean Patagonia oceanographic observation system. CHONOS, with the aim of making the audience aware CHONOS IFOP's oceanographic information system new version. This new version, in addition to improvements over existing applications, incorporates the novelty of a new start interface that allows more intuitive and dynamic access to information and a new tool for cataloging oceanographic observations and measurements, named CRUISES.

Complementing CHONOS oceanographic portal diffusion IFOP Oceanography and Climate group set up a stand to promote this web platform and to answer questions from congress participants. In the words of Luis Avello "During the duration of the congress and particularly after the special session IFOP stand was well received with numerous participants interested in learning more about CHONOS oceanographic platform environmental information."



Osvaldo Artal, PhD in Physical Sciences, orally presented the presentation entitled Tidal variability effect on a constriction system water column stratification which shows how the water column is completely mixed every 15 days during periods of syzygy regulating water exchange between of the Corcovado Gulf and Ancud Gulf basin through Paso Desertoires.

The poster works were in charge of Carolina Medel (Dinoflagellate *Alexandrium catenella* Numerical modeling), Oliver Venegas (MOSA-WRF operational forecast), Luis Avello (CRUISES: An online ca-



Cristian Ruiz presenting the special session CHONOS

One of the congress conferences (Using current model results in Norwegian salmon industry management) was given by Lars Asplin, a Norway Marine Research



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to pathogens spread in salmon farming. According to Pablo Reche, Lars Asplin's visit "was a great opportunity to learn about Norway's reality especially in salmon farming associated problems which are in many aspects similar to what happens in Chile since IMR has extensive experience solving these challenges through oceanographic numerical modeling".

Lars's visit was possible thanks to " BIOGEOCHEMICAL RIVER INPUT INTO FJORD SYSTEMS ROLE MODELLING IN CHILEAN PATAGONIA" Fondecyt project led by PhD. Andrés Sepúlveda and as co-investigator PhD. Osvaldo Artal from IFOP.



IFOP stand in congress.

Institute (IMR) researcher who showed interest to visit Putemún (Castro) IFOP facilities after the congress. During this visit visions and methodologies were exchanged on common themes between Chile and Norway, especially in terms of industry management due to biosanitary problems related



Lars Asplin (left) in a meeting with IFOP researchers at the Putemún (Castro) facilities.

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