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Liu your friends and colleagues remember you with deep affection

¡HUGS TO HEAVEN DEAR "CHINITO"!

Liu came of age and growth about 20 years ago. Lizandro introduced him to me, after going out to lunch he was immediately signed up for our sub-senior sport's team a junior player with his characteristics which we still didn't know was missing but it didn't matter... the three of us had lunch with Juan, every day until that he went to Talcahuano to do his master's degree, I remember that one day he asked me if I could take him to Valparaíso's terminal. because he has two boxes... one of them was his TV, the car didn't have a holder and it didn't fit anywhere, but we got to the terminal and he left... we kept in touch, but through the distane .

One day, after 2 years I think or more, he consults me from Talcahuano, if I can receive



him in my apartment for a few days while he finds a place to live in the V region, it must have been 2, 3 or 4 months that we cohabited with my uncle Germán , who also left us in November 2020 .

He fell in love, got married and has a nice family... I never saw him on a court again, always his family first and with some close friends from time to time.

One of those loyal Friends, he was always the same, never changed , always correct, always saying something thzt bothered him directly he was cordial, pleasant, kind and even tender at times.



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IFOP Director visits Puerto Montt's Aquaculture Division

FROM MONDAY, MAY 30TH AND THURSDAY, JUNE 3RD, FISHERIES DEVELOPMENT INSTITUTE (IFOP) EXECUTIVE DIRECTOR MR. GONZALO PEREIRA PUCHY, A FEW DAYS AFTER TAKING OFFICE, VISITED IFOP'S AQUACULTURE RESEARCH DIVISION UNIT. WHICH OPERATES DECENTRALIZED AND IS HEADQUARTERED IN PUERTO MONTT CITY.

During the tour, he learned about this division structure and organization, in addition to currently under development research, short and medium-term plans, in addition to knowing advanced human capital and research work support. An occasion in which he also got to know available infrastructure and equipment, work carried out through Environment, Hydrobiological Health, and Repopulation and Cultivation departments .

The opportunity was also conducive to access research centers located on Chiloé island. Putemún center, located near Castro, where a group of 25 people work in oceanographic, climate and seabed ecology. soft; Hueihue experimental center, established in Manao vicinity , a few minutes from Chacao, with a staff of 10 people. In addition to the researchers who come from Puerto Montt on a regular basis, and which supports small-scale aquaculture, climatic change, and salmon louse related research among others.

On the occasion, he also had access to the Harmful Algae Research Center (CREAN), located in Puerto Montt, a unit that focuses its work on harmful algae blooms and marine toxins



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A good person and a good friend who is still here.

With love, your friend Moncho

To pass away isn't the end, the end only comes if you forget me...

"I would like to start by talking about Liu, and describing him as an excellent professional, but above all a good friend. Liu was characterized by being rather formal in his dealings with his peers, but those of us who had the opportunity to share beyond workplace, we can unambiguously say that he was always a correct, frank, transparent and, above all, direct person, attributes which are rare nowadays. Liu was also a homebody, and when his children were born, he abandoned extracurricular activities to devote himself body and soul to his family. He was also characterized as a fighter, which he demonstrated until the last hours of his life (he never complained about his health condition). I could tell many anecdotes about a friendship that lasted for 17 years, where we shared barbecues, birthdays, elections/ voting and countless camaraderie activities that forged a sincere friendship.

Francisco your friend



knowledge and monitoring, with a staff of 25 researchers, technologists and support staff, but it also has working groups in Puerto Aysén (6) and Punta Arenas (8). The opportunity was propitious to learn about gaps, short and medium-term solution proposals, in addition to taking detailed knowledge of the existing project aimed at equipping the division with an institutional building in Puerto Montt city, which solves a long-awaited requirement.

Leonardo Guzmán, Aquaculture division's head referred to the visit in very positive terms, acknowledging that just days after assuming the Executive Directorate, he had included in his agenda visiting the technical division that develops its work, from national coverage to regional in this case, at Los Lagos region. In addition, he indicated that he was able to interact with people in charge of departments and centers as well as several researchers, leaving several tasks to be addressed, mainly aimed at resolving infrastructure issues in the short term, particularly in research centers, without prejudice to the definition of research plans that allow addressing issues that have not yet been addressed and that are part of the institutional mission.

Finally, Dr. Guzmán pointed out that the visit occurred a few days after IFOP celebrated its 58th anniversary, an institution created on May 26th, 1964.

Dr. Jaime Letelier from IFOP, participates in “The ocean under threat urgency of protecting its ecosystemic services” panel

Dr. Jaime Letelier, Oceanography and Environment Department's Head, participated as an expert at “The ocean under threat. Urgency of protecting its ecosystemic services” panel: at the “IPCC and Climatic Change IV Regional Conference, Novopangea Latin America: United for Climatic Change”, which was held online on May 26th and 27th, 2022. (<https://www.filantropiacortessolari.cl/novopangea/>)

The MERI Foundation organizes this Climatic Change Re-



gional Conference that seeks to bring citizens closer to various actors in the region, creating dialogue and collaboration instances for Climatic Change mitigation and adaptation, focusing on reports developed by the Inter-governmental Group on Climatic Change Experts IPCC.

Dr. Letelier explained the historical and current IFOP sampling efforts and which has allowed it to have one of the largest data collections and samples in Latin America. These collections are being reanalyzed from the ecosystemic approach perspective in the context of climatic change. In this work, which has been going on for 58 years, the Institute has gone from an annual diagnostic action of the abundance of fishery resources for the promotion of fisheries and aquaculture, to a comprehensive and retrospective analysis to contribute with scientific information for decision-making. decisions that allow hydrobiological resources and coastal ecosystems sustainability, and as a consequence fishing and aquaculture activities sustainable development.



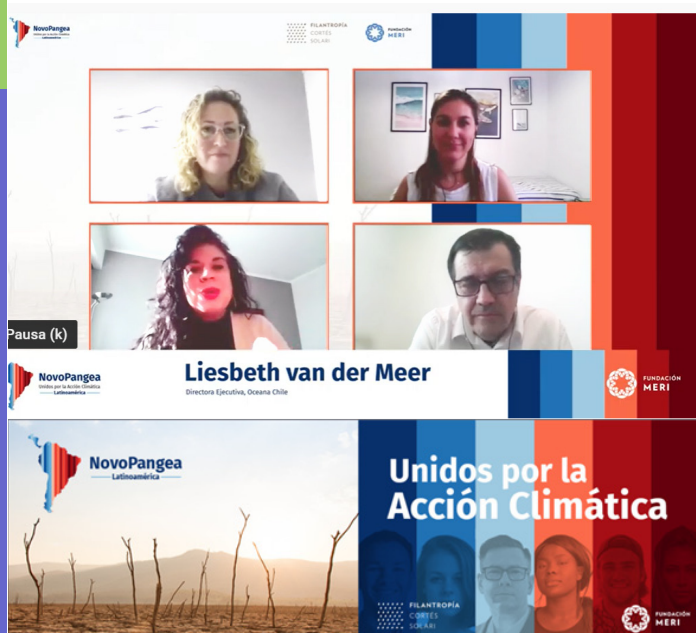
Dr. Letelier shared presentations, comments and opinions with MSc. Lisbeth Van der Mer, Oceana Chile Executive Director, and Dr. Sonia Español Jiménez, Fundación MERI Executive Director. Among the 3 panelists they agreed on the importance that political decisions have on our resources and ecosystems conservation, as well as to face climatic change, are based on data and scientific information.

Available on: https://www.youtube.com/watch?v=QLz1ntgDv_o

IFOP organizes "Pollutants in the Sea Awareness Days"

During the month of May, Aquaculture Division received an invitation to participate in the activity: "Pollutants in the Sea Awareness Days", organized by Liceo de Hombres de Puerto Montt Bicentennial inspired by the month of the sea. Whose focus awareness of the sea main problems, accompanied by photographic exhibitions, audiovisual presentations and coastal areas residents whose main source of work is the sea interviews.

Dr. Margarita González from the Hydrobiological Health Department, Macarena Herrera from the Environment Department of Aquaculture Division and from Fisheries Division, José Sepúlveda attended along with José Pérez. Those who managed to carry out a cycle of talks, which introduced the Fisheries Development Institute, to 3rd and 4th grade students, also revealing the main



IFOP holds a successful marine species exhibition at Arica's school

Between May 26th and 27th, an exhibition of marine species was held at Ford College, organized by Fisheries Development Institute, Arica Headquarters. This activity, aimed mainly at promoting the importance of scientific research and our oceans care, it is carried out every year during May, in different schools in the region.



problems that are evident in the face of waste dumped into the sea in the different anthropic activities there made. After the talks, a space was given to socialize these issues, where an interactive dynamic was generated with incentives to highlight the students participation.

Discussed topics included: application of antiparasitics used in salmonid aquaculture and release into the environment, microplastics with their respective effect on marine organisms and the main contributions to scientific activity from the Sampling Management Scientific Observer Program.



On this occasion, the exhibition was attended by approximately 250 elementary and middle school students and their teachers. The presentations and the exposition were in charge of IFOP's scientific observers Daniel Fuenzalida, Ladislao Carrasco, Oscar Contreras and Patricio Muñoz. During the event, interesting topics related to the species life's history, conservation and biodiversity of hydrobiological resources and the importance in the care of the different ecosystems were addressed.

During the activity, children and young people listened attentively to the presentations and were delighted to



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learn about different marine species, including, among them, main fishing resources of Arica and Parinacota region. In general, students and teachers valued the experience of learning more about the oceans and their resources, topics that are sometimes quite unknown to us and to a large part of the community.

Along the same line, Hernán Padilla, IFOP's regional head highlighted the importance of this type of activity and the high interest shown by students who attended the exhibition. In addition, he stated that our Institution strives every year to bring science a little closer to students of Arica and Parinacota region. These instances help young people to visualize scientific work importance and ideally become interested in this area of knowledge, since it is in science where progress is most required in our country. At the same time, we seek to make the community aware of the important public role that IFOP performs, supporting the country's sustainable development of fishing and aquaculture sector.

It should be noted that the exhibition was initially scheduled only for Thursday, May 26th, but due to the interest generated in the educational community by IFOP's exhibition. It was decided to extend it one more day.

IFOP holds Patagonian toothfish workshop

During May, Strategic Research Programs carried out its diffusion by Fisheries Development Institute, in this occasion it was about *Dissostichus eleginoides* specie known as deep-





sea cod. This time the workshop aimed at Industrial Cod Fleet.

This activity was carried out electronically, for which a program was structured with the aim of having a conversation space between researchers and fishery users around different research topics on which IFOP is currently working.

Erik Daza IFOP Head in Magallanes region indicated that “this dissemination instance is part of IFOP’s strategic objectives and we consider it very relevant since it allows us to strengthen conservation and sustainable exploitation links of Patagonian toothfish among actors. I am grateful for companies participation and researchers teams with whom we organized this activity”.

Alejandra Valdebenito IFOP field coordinator, said “This instance allowed to expose in a clear and summarized way this Department Scientific Observer role and the sampling work they carry out on board the different industrial cod longline vessels that operate in southern fishery. austral toothfish; she also explained how data is integrated sequentially for scientific research generation and collaborative work carried out with the industry, which adds value to information collection which is of common interest for conservation and development in the medium and long term. After several years without being able to meet for various reasons, this workshop was a good opportunity

to take up mutual challenges for resource and fishery sustainability.”

Renato Céspedes Institute’s Senior Researcher, mentioned “as a work team, it is highly relevant to disseminate our work directly to shipowners and fleet personnel, in order to show our results in fishery and biological indicators, which are nourished by our Scientific Observers embarked aboard fishing vessels recorded data. For example, presenting indicators trends and changes such as catches size structures, allowing these instances to generate knowledge feedback among the scientific world and fishermen. I hope that we can repeat this instance during this year, more in situ in Punta Arenas, with direct presence of fishing skippers, captains, pilots, engine, floor and deck people”.

Cristian Vargas Researcher from discarding and bycatch in demersal fisheries research program pointed out “2015-2020 main period results period shown in the framework of data collection Capture and Discard, Accompanying Fauna, Incidental Captures of Birds and Marine Mammals and Marpol in the industrial cod fishery that operates between 47° and 57°LS”.

Elizabeth Palta, economics section head added that “the activity made it possible to adjust and complement economic area of fisheries research results, along with establishing ways of collaborative work with the industry.



Inter-institutional and scientific work allows studies to be carried out on stranded species in Arica and Parinacota region

A NECROPSY WAS CARRIED OUT ON SEVERAL SPECIMENS OF MARINE FAUNA THAT HAVE STRANDED IN THE AREA AND THAT WERE KEPT IN THE IFOP FACILITIES.

With Sernapesca Arica officials presence together with maritime authority, Fisheries Development Institute (IFOP) staff, members Universidad de las Americas (UDLA), Universidad Santo Tomás (UST) and thanks to Universidad de Tarapacá (UTA), who were this meeting hosts, which was managed by Pablo Valladares (Faculty of Sciences biology department academican), giving up his Applied Zoology laboratory facilities for this important research work.

Necropsies were carried out on 4 marine mammals specimens corresponding to two black or spiny porpoises (*Phocoena spinipinnis*), a dwarf whale (*Kogia sima*) and a chungungo (*Lontra felina*) which will allow knowing their stranding and death probable causes, giving an starting point to future research and to protection measures and campaigns strengthening towards these animals.

Sernapesca Arica Regional Director Christian de la Barra Rob, highlighted how interesting it was to participate in this instance as an institution, given that it allowed active knowledge to be transmitted to Sernapesca regional staff and, in this way, to be able to attend and respond to its community regarding strandings observed in the area.

Frederick Toro Universidad Santo Tomás academic explained these



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The intervention made it possible to contextualize deep-sea cod fishery in the national productive scenario, through indicators such as employment, production, landings value, exports value, together with national cod fleet estimate structure cost ”.

Eduardo Infante Global Fishing Company Manager declared “Excellent opportunity to share, talk and dream. All opinions that as a whole seek to agree on a reality around a common desire, to configure a sustainable present to keep cod fishing eco-systemically sustainable”.



work at Arica and Parinacota region. These necropsies coordination is an important advance in this matter, since it allows us to have more information on potential causes that caused these dead animals presence on the coastline. IFOP has been part of this inter-institutional network since its creation in 2020 and in the face of the stranding events that occurred in the area, it has played an active role in the sampling and custody of protected species.

Source: Sernapesca

necropsies importance which involves chilean native species and have different degrees of conservation and scientific knowledge, such as the case of the dwarf whale, which very little information is known thus making it possible to obtain data on these species biology and establish the stranding cause.

In addition, he delved into some stranding causes such as the spiny porpoise or the dwarf whale case where everything would indicate drowning as a probable cause, due to macroscopic findings. In the chungungo's case, histological and toxicology analyzes had to be carried out, since nothing evident was found.

Sernapesca regional director also indicated that it served as an instance to generate and strengthen inter-institutional ties with specialists with great expertise in necropsies, especially of cetaceans.

Hernán Padilla Esparza, IFOP Regional Head highlighted the importance of continuing to strengthen Protected Fauna Stranding Net-

Researcher Ellen Hines, from San Francisco State University, USA, will make a presentation within the framework of Assessment of the Risk of Incidental Capture of Marine Mammals in Chile project

The presentation will take place on Wednesday, June 22nd at 3:30 p.m., using Google Meet platform (meet.google.com/smc-zxig-pgy).

IFOP in 2021 signed an agreement with San Francisco State University, to study interactions among fishing activities and marine mammals. One of this study central objectives is to determinate where are more likely to occur interactions areas between marine mammals and fishing activities. In this way, it is expected to pro-



vide information to fishing administrative authority in Chile, aimin for this interaction reduction.

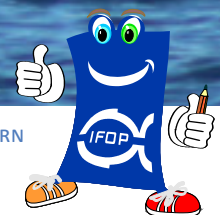
From 2016, United States began the establishment of a regulation "US Marine Mammal Protection Act "(MMPA Rule), which requires countries that export fishery products to comply with bycatch standards equivalent to those of that nation.

Our country therefore has to carry out necessary research and adjustments in order to continue exporting our fishery products. As a contribution to this challenge, "Marine Mammal Bycatch Risk Assessment" project (financed by Lenfest Ocean Program, LOP) was born, in which jointly with Univer-



sidad de Valparaíso professionals and Fisheries and Aquaculture Undersecretariat .

Dr. Carlos Montenegro, Head of Fisheries Development Institute's Fisheries Assessment Department referred to the project as an "excellent opportunity for IFOP researchers to use new methodologies to assess risk of interaction between marine mammals and fishing activities, through a project financed by LOP, San Francisco State University, led by Dr. Ellen Hines, who jointly with her team developed ByRA tool, Universidad de Valparaíso with its specialists on marine mammals team led by Dr. Maritza Sepúlveda and support from colleagues from Fisheries and Aquaculture Undersecretariat".



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