



IN THIS NUMBER

- Margarita González from IFOP was selected as one of the 50 2019 Young Leaders from Los Lagos Region **1**
- IFOP researchers develop workshops with children from El Alerce community in Puerto Montt **2**
- Sharks, stingray and chimaeras course offered by IFOP **3**
- IFOP delivers 2018 Harmful Algal blooms and Marine toxins in the Pacific Ocean from Biobío to Aysén Management Program results **4**
- Abate Molina set sail to investigate anchoveta current state IFOP researcher was trained in Canada **5**



Margarita González from IFOP was selected as one of the 50 2019 Young Leaders from Los Lagos Region

Margarita González Gómez. Marine Biologist and Aquaculture Sciences PhD, who is also a researcher at Hydrobiological Health Department belonging to Aquaculture Research Division of Fisheries Development Institute, was nominated by Sandra Marín and Adolfo Alvial, two important actors belonging to the academy and to the aquaculture field in Los Lagos region, to be subsequently selected by El Llanquihue newspaper as part of the 50 2019 Los Lagos Region Young Leaders.

Margarita commented "this award belongs to Llanquihue newspaper, which published its final results in its 134 Anniversary edition. For the nominations different institutions participated, later, the newspaper selected young people that is considered as outstanding and exceptional, being by themselves considered the future of the region. The chosen ones were selected because they have stood out strongly in their fields, being from very diverse areas such as Chilean Navy, GOPE Police, IFOP "



"For me it was a great honor to have been chosen as part of the 50 leaders, only in my dreams I thought it could happen," says Margarita. "It is very pleasant and it fills me with pride that such important people in our field consider that I stand out in my work, and even more, that Llanquihue newspaper, the most important in my city, has preferred me. I feel very proud and I hope to continue being a contribution to the scientific community."

As mentioned in the Journal, Margarita has approximately 12 years of experience, achieving presentations at national and international conferences, as well as 11 publications in journals of scientific interest and participation in 18 research projects. She was the first student to obtain a doctorate degree in the Aquaculture Sciences of



Comité editorial

Luis Parot D. / Director Ejecutivo
Gabriela Gutiérrez V. / Periodista

Diseño gráfico

Mario Recabal M. / Diseñador Gráfico Senior



Margarita González Gómez

the Austral University of Chile PhD Program, and currently leads the Caligus resistance to antiparasitic agents Permanent Monitoring Program that IFOP carries out, which It is financed by Economy Ministry, Development and Tourism, through the Undersecretariat of Fisheries and Aquaculture.

IFOP researchers develop workshops with children from El Alerce community in Puerto Montt

THE ACTIVITY IS AN INTERACTIVE EDUCATION ALTERNATIVE FOR CHILDREN AND YOUNG PEOPLE TO LEARN ABOUT THE SEA, IT TAKES PLACE ON SATURDAYS BETWEEN 2 AND 6 PM.

A team of professionals from Puerto Montt Research & Aquaculture Division, consisting of Carlos Velásquez, Carolina Aguirre, Loreto López, Luis Henríquez, Patricio Mejías and Sebastián Cook, together with the group of professors Paulo Regulus Freire, which have been carrying out a series of actions to disseminate the marine sciences in "Alerce's Free School" for some time the activities take place on Saturdays, in the neighborhood headquarters located downtown Peñihues 1 from Alerce's community..

Among carried out actions we can mention presentations, practical experiments and thematic games to

introduce children and young people, from Alerce's community, in the marine world, field and laboratory work, but especially in southern Chile's marine biodiversity mysteries and curiosities. These young researchers initiative has had the support of many Division colleagues, who facilitate in one way or another that the group can carry out the educational dynamics.

The activities offer an alternative to children between 5 and 13 years old to spend the afternoon learning about Patagonia's birds and marine invertebrates, learning about recycling, global climatic change effects on red tide. They have also been taught complex concepts such as waste management, ocean acidification and oceanography, as well as doing demonstration activities with autonomous diving equipment, magnifying glasses and microscopes, aquariums and fixed samples, emphasizing surrounding ocean's beauty and importance and their capacities to know and take care of it. IFOP researchers with children and teachers; have managed to coordinate coastal garbage collection activities in Lenca's beach (Carretera Austral), from where a large amount of garbage was removed

Finally, the Communication and Scientific Dissemination Institute's Group would like to thank Research



and Aquaculture Division researchers and colleagues in particular: Carolina Barrientos, Cristina Ríos, Claudia Pérez, Claudio Díaz, Cristina Stuardo, Francisco Cárcamo, Gastón Vidal, Jaime Reyes, José Luis Pérez, Leonardo Guzmán, Macarena Herrera, Nicole Pesse, Rodrigo Cid and Sergio Elgueta, who have unselfishly collaborated to carry out the workshops whose ultimate goal is that today's children can know, learn, appreciate and in the future to take care of our country marine environment.



Sharks ,stingray and chimaeras course offered by IFOP

Between January 29th and 31st, in San Antonio, Valparaíso's region, III Biology and Anatomy of Chondrichthyes Workshop was held, offered under Monitoring of Highly Migratory Resources – Ecosystemic Approach's project, the monitors of the activity are Dr. Patricia Zárate and Valparaíso University professor, Francisco Concha. This workshop main objective is to strengthen knowledge of approximately 25 IFOP scientific observers in biology, anatomy and sharks sampling , stingrays and chimaeras.

Dr. Patricia Zárate referred to the course "This activity is a training to scientific observers in regard to Chondrichthyes, a group of marine animals that is made up of sharks, stingrays and chimaeras. In this workshop we offer theoretical classes in which we deal with issues related to these organisms ecological role in marine ecosystem, current conservation state of these species in Chile and in other parts of the world, their fisheries situation and relevant biological aspects. In the practical sessions we deal with a wide variety of animals, from those that live in deep waters to those that live on sea surface, and we focus on their form and on different body systems such as reproductive, digestive, circulatory and respiratory .

IFOP scientific observers participate in the activity, they have the important role of collecting fisheries biological information from fisheries in Chile both aboard fishing vessels and at docks throughout the country. They are in charge of identifying, measuring and taking samples of all captured species, this information is fundamental for IFOP developed projects In the course there are 25 scientific observers who carry out this work in pelagic and demersal fisheries that take place between Arica and Lebu.

Juan Carlos Guerrero, scientific observer narrated "the course focuses basically on recognizing the digestive, reproductive and circulatory systems of chondrichthyes, this is in charge of Dr. Patricia Zárate. Today we were studying the stomach content of a tile and we found a mackerel, in other species we found cod, squid, sharks species are very varied since we have a very long coast in our country. Finally, I want to highlight the quality of this course since it serves us a lot and gives us more and better information about the studied species".

Daniel Fuenzalida, scientific observer explained " this workshop's objective is to unify criteria with all



IFOP's scientific observers, throughout the country, here we learn both chondrichthyans internal and external anatomy, and we improve our knowledge to be able to identify different species, this is a fun workshop because we have different species and that allows us to work and learn a lot. "

Francisco Concha, Universidad de Valparaíso's professor, mentioned "we are participating in a chondrichthyan training to refresh their knowledge of internal and external anatomy, here they learn to identify deep species, other pelagic, using some keys that exist In literature, they were reinforced which keys or important characters to be able to identify species, such as in which fins to fix, what measurements to do, what happens with the teeth, what happens with proportions, in internal anatomy we see maturity states, stomach contents, and in the reproductive part if females are gestating.

Patricia Zárate, concluded "the importance of studying chondrichthyans is that they have a very important ecological role in the sea, they are top predators, that is, they are at the top of the trophic chain and have few predators, they regulate the populations of their prey that are in the ecosystem. The removal of these top predators has shown around the world that it can be catastrophic in



VOLVER



some environments, since they indirectly affect the species that are found in the lower trophic levels, which are often of commercial interest “

IFOP delivers 2018 Harmful Algal blooms and Marine toxins in the Pacific Ocean from Biobío to Aysén Management Program results

On January 7th and 29th , in the cities of Puerto Montt and Concepción, Fisheries Development Institute held a workshop to spread out results of “2018 Harmful Algal blooms and Marine toxins in the Pacific Ocean from Biobío to Aysén Management Program (I Stage) ” research.

Dr. Oscar Espinoza, IFOP Center for the Study of Harmful Algae (CREAN) Chief, referred to the project “ this research objective is to have an opportunity Paralyzing Venom Poison (VPM) , Diarrhetic Venom of the Shellfish (VDM) and Amnesic Venom of the Shellfish (VAM), sampling, detection and periodic quantification system in addition to the identification and quantification of harmful microalgae species primary sources of toxins indicated. The program also monitors spatial and temporal variability of total phytoplankton, oceanographic and meteorological variables, in each of the stations of the 67 sampling stations arranged in perpendicular transects (2, 5 and 10 miles) to the Pacific Ocean coast. between Biobío region and Aysén region. The study has a work group composed of 18 people, including professionals and technicians who perform functions

as field samplers, qualitative and quantitative phytoplankton analysts, nutrient analysts, toxin analysts and researchers. ”

Dr. Espinoza added “The results and background information reported by this study constitute an important information source for understanding hydrobiological pests dynamics, public health and its relationship with possible impacts on productive activities in Pacific Ocean coastal zone. , based on this study, we consider it is important to study in depth aspects such as phytoplankton communities dynamics and harmful species in field and their relationship with atmospheric – oceanographic processes (upwelling and coastal subsidence), which determine favorable or unfavorable scenarios for the presence of Harmful Algal Blooms and which regulate occurrence, coverage and intensity of the harmful microalgae species and the associated marine toxins.

During 2019 second stage will continue researching, which a change on its name to: Harmful Algal Blooms and Marine toxins in the Pacific Ocean of South Central Chile management and monitoring Program (36 ° – 44 ° S), stage II, 2019 – 2020 “



VOLVER



Abate Molina set sail to investigate anchoveta current state

Today February 11TH at 10 am and for 25 days, a team of 28 professionals and technicians from Fisheries Development Institute set sail from Valparaíso, aboard the B / C Abate Molina, with the objective of; Characterize and evaluate present anchoveta resource stock between Atacama region and Coquimbo region, through hydroacoustic method, during maximum recruitment period.

The cruise's study area will be between Paposo road, in Antofagasta Region, up to Pichidangui, the southern limit of the Coquimbo Region.

Leading the scientific expedition Francisco Leiva fishing engineer, captain of the boat is Enrique Quiero

A report is made with the scientific cruise information on resources state.



IFOP researcher was trained in Canada

Alejandro Yáñez, Marine Biologist and Master of Science (Fisheries mention) from Universidad de Concepción. Currently working at Fisheries Development Institute, making crustaceans stock assessment, this being his main interest area along with quantitative ecology and state-space models.



Between January 28 and February 1, IFOP researcher Alejandro Yáñez, participated in "Template Model Building (TMB) for advanced fish stock assessment" workshop held at the International Council for the Exploration of the Sea (ICES) in Halifax, Canada .

The objective of the course was to train professionals who assisted in the use of the TMB tool by applying the SAM state-space model.

Alejandro commented on the training "it will allow me to develop the use of models with random effects in my activities and to implement them in TMB, aiming to this tool development in stock assessment models.

Being able to participate in courses abroad always leaves something positive. The improvements in the International Council for the Exploration of the Sea (ICES) are of a very good level and quite demanding. In addition, it is a good opportunity to meet other researchers who perform functions similar to those that you perform and share experiences and know the realities of other research institutions worldwide "

