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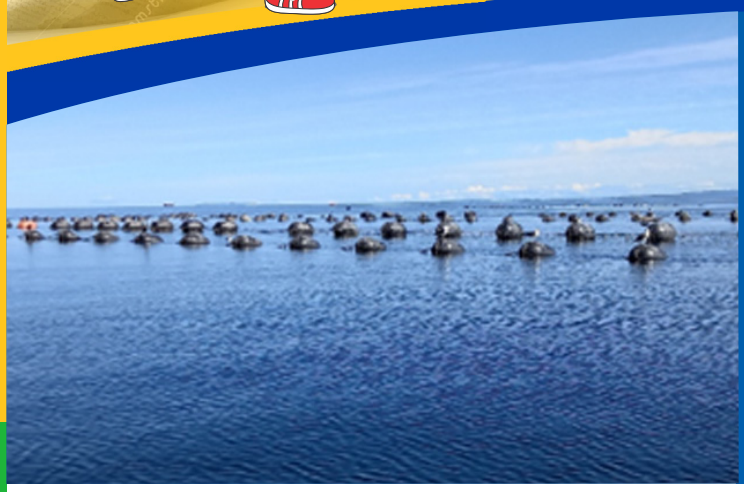
El Ifopino



IN THIS NUMBER

IFOP offers a talk at Pozo Almonte's school in Iquique

Researcher Marianne Lichtenberg, participated at Marine sciences carnival , offering a talk at Pozo Almonte school. Marianne explained "The presentation was about " Anchovy ovaries histological technique", talking to young people about how this technique was developed and the importance that the information that can be obtained from it has for science. It was explained to them in a simple and highly interactive language for easy understanding. The listeners were 8th graders from a school in Pozo Almonte, a town located in Tarapacá's region. The students enjoyed the activity and that was reflected in the questions they asked me. With this, they were encouraged by the importance of science for resources protection and IFOP's significant work carried out throughout the country".

Marianne Lichtenberg, is a Fisheries Development Institute researcher in the North Zone Pelagic Fisheries Monitoring Project. She has been working for 5 years on anchovy reproductive analysis in the north central zone (Atacama and Coquimbo). The analysis consists of anchoveta ovaries (plates) histological readings interpretation in order to know their reproductive status through microscopy. These microscopic results are obtained thanks to histological technique performed by IFOP at Iquique's base.

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IFOP researcher participates in world class conference on marine mammals

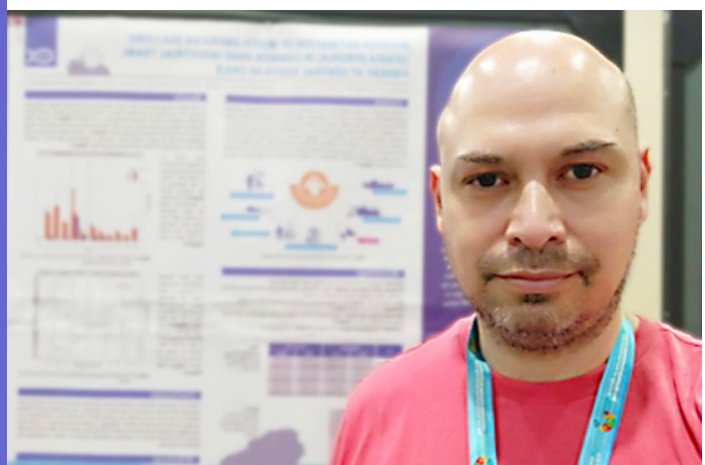
IFOP RESEARCHER PARTICIPATES IN WORLD CLASS CONFERENCE ON MARINE MAMMALS.

During August, the World Conference on Marine Mammals "24th Biennial Biology of Marine Mammals Conference" was held, an instance in which Marcelo San Martín Quinteros, a researcher from the Fisheries Development Institute (IFOP), participated.

This biannual event is organized by "The Marine Mammalogy Society" and is the main global meeting and addresses a variety of topics related to marine mammals, including interactions with fisheries and bycatch. This year more than 1,800 attendees from 92 countries participated.

On the occasion, the researcher presented results of the bycatch in the industrial trawling fishery in the south central zone of Chile, which are part of one of the main objectives of the discard and bycatch project in these fisheries that is carried out by IFOP's Fisheries Assessment Department.

According to researcher San Martín, "along with showing the world our work, these instances allow us to learn about the latest research that is being carried out worldwide on marine mammals, both from an ecological perspective, as well as on the state of conservation and risks to which these species are exposed". In this context, for Marcelo San Martín Quinteros "the work we present aroused great interest from the attending researchers"; And, in this line, for the researcher of the institute "it was gratifying to see that our results of the evaluation of bycatch in our fisheries, the result of the work carried out for several years, are recognized with great relevance by colleagues from other countries, including of those most developed in fisheries research. Participation in instances like this allows us to continue advancing as an institute and position ourselves as a benchmark not only at the national level"



Interview: César Jorquera Monsalve, San Vicente Fishermen's Association's President

TELL US ABOUT YOUR LIFE LINKED TO THE SEA.

Born and raised in Caleta Chome, Talcahuano was a whaling settlement, then the crisis came and my family had to dedicate to artisanal fishing. During early 1980s my parents decided to leave Caleta Chome and moved to live in Talcahuano, always linked to the sea, I spent

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two years studying at the university, we didint have eough money to move foward with my study plan in those years, so I dedicated myself to work as a boat's crew member. We traveled through much of Chile, it was five months working albacore, five cod, we got to Guamblín Island with cod fishing, the other two months we dedicate ourselves to conger, here in San Vicente

Any experience at the sea that you remember until today

Many, learning from adults, I was an apprentice who had to do everything, on the boats they paid us less, half than the most experienced. I had to pay a share and after a year of being an appretice I became an expert and earned the same as everyone else.

As a negative experience I remember September 15th, 1995 on Guafo Island when we were in cod fishing in the Yolanda Jesús, my grandfather's boat, we were on the verge of death, I noticed how tragic the situation was when I saw my uncles, expert wolves of sea were crying above the deck, since we were about to turn around, it was a very strong storm, the sea caught us, the boat was crossed and the sea hit us from all sides.

How did you get into union activity?

After 1998, I retired from fishing because it was a bad time in the fishing activity and I started working on land, I have done all kinds of jobs in my life, in 2008, my brother invited me to work with him on a pelagic boat contributing with my knowledge of logistics and administration, to see its proper maintenance and thus get the most out of the boat, with the fewest days lost due to regular failures ; at that time I took advantage of getting into the union issue, since the system forces you, you have to keep track of quotas, distribution, you have to always be informing the authority, since this fishery is highly regulated, there is permanent information that has to be shared with the associates, after the Fishing Law, in force until today , we must always be working so that the changes do not affect the fishermen.

How is your relationship with IFOP?

At the beginning there was a lot of skepticism, since we considered that the quotas that were being delivered with the Fisheries Law were very limited and then we began to realize that the Law had changed, since now the quota was related to scientific criteria. , there we began to get to know and be closer to IFOP, it is a mutual relationship between fishermen and IFOP scientists. We began to participate in the meetings that IFOP invited us and to exchange knowledge and mutual experience.

How was the Safa Project born?

The SAFA project was born out of the transversal need for pelagic fishing in the Biobío Region. We considered that the studies being carried

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out were not sufficient for decision-making, there were many spaces left that we felt were not covered by research, there We turned to the Regional Government, with the majority of the trade union organizations in the region so that the Government will be able to finance a program that will complement what the IFOP was already carrying out, in order to have more and better knowledge about the resource.

I want to congratulate IFOP, since there is a very good relationship, we need each other. We would love for Chile to later have exclusive research vessels, coastal boats for shore bias, we as fishermen need to know the scientific information.

Hopefully we can change the extractive model, that is, this fishery is structured by calendar year from January to December, and there are many cases in which a good-sized resource is caught in December, without eggs, but since there is a fixed ban in January, it cannot continue capturing, by changing the biological year model, we believe we can make better use of the resource

Thank the Regional Government, because it reached into its pocket so that this complementary study could be carried out.

Doctoral Thesis with IFOP data

"PREDATORY INTERACTIONS AND ENVIRONMENTAL VARIABILITY AS CONTROL MECHANISMS FOR EUPHAUSIIDS ABUNDANCE AND DIVERSITY IN HUMBOLDT CURRENT SYSTEM".

On Monday, August 22nd, at 10 am, Macarena Díaz Astudillo successfully presented at Universidad de Concepción her Ph.D. degree thesis in oceanography.

His thesis called "Predatory interactions and environmental variability as control mechanisms for the abundance and diversity of euphausiids in the Humboldt Current System" raises questions about the environmental influence on the planktonic dynamics of euphausiids and their link with anchoveta del north of Chile.

Dr. Jaime Letelier, head of Oceanography and Environment Department and evaluation committee member, pointed out that this high-level investigation, with two international publications, allowed to give a new value to IFOP historical samples using state-of-the-art technology such as a ZooScan and a new point of view to re-examine what we currently know and take for granted about our marine ecosystems.

Dr. Ramiro Riquelme-Bugueño, Academician of the Natural and Oceanographic Sciences Faculty of Uiversidad de Concepción, mentioned that Dr. Díaz's research "is pioneering in contributing to a better understanding of the larger-scale climatic impacts on a key component of the marine ecosystem off the coast of Chile such as euphausiids, popularly known as krill. In addition, the thesis points to one of the most unknown aspects

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in this group of organisms, which is the predator-prey interaction between them and the anchoveta. In this sense, Dr. Díaz makes a very original and pertinent contribution to ecological, ecosystemic, fishing and environmental interests that will undoubtedly be a frequently referenced piece of study"

Interview to Victoria Rubio Talcahuano's Siparmar union'd President and AG Conapesca President

I AM A FISHERMAN'S DAUGHTER AND VERY PROUD OF HAVING PROGRESSED THANKS TO MY PARENT'S WORK.

An industrial civil engineer by profession and also an artisanal fisherwoman, mother of five children who are her greatest pride. She tells us that her eldest is an architect and has a master's degree in sustainability, the only boy is finishing industrial civil engineering, her other daughter is in her fourth year of med school and the two girls, eleven and thirteen years old, are still at school and accompany her to all activities and meetings that her position as President implies.

During the interview she gets emotional because memories from her childhood come to her mind and she tells us "on stormy days I would ask about my dad whereabouts and he was always on the dock looking at the boat, which he built, I liked to see the sea and how my father worked.

The Marco Polo (their boat) is the pillar of our family, thanks to our boat and the enormous work of my parents, I was able to go to university and graduate, it has to do with the responsible effort of my parents who also managed what they generated with artisanal fishing

How has been your experience in fishing issues being a woman?

At first it was complicated, since it is not an area in which many women participate. The few who participated were women of great character. I did not have that kind of character at the beginning and it is not easy to enter a world where almost everyone is a man. , finally one earned a place as years go by and it is shown that one as a woman is capable and little by little I feel that they were valuing me, for my work.

I fully joined artisanal fishing world in 2003 because my dad asked me to accompany him to a meeting at GA (gremmial associatio)that we were at at that time, I really like numbers and I began to worry about statistical issues and everything whatever number I was in charge of checking it. I started getting into regulations

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issues and I was learning. At first I didn't know much about fishing, I'm an industrial civil engineer, I hadn't planned to work in fishing, but helping my father created the opportunity.

How do you evaluate your relationship with IFOP?

It is a good relationship, we need each other (fishing world and research), IFOP needs data and information that comes from the experience that we as fishermen can deliver. In 2004 I began to relate to them. I like the work that IFOP does. I think all the research they do is very useful. I also know that if we don't give them the right information, generated reports won't be good.So understanding that in the sector has It cost a lot, creating trust has been quite a feat, this is a joint effort that brings benefits to all of us. That is why the bonds of trust that we are forming are important, we deliver data and IFOP will use that information to be able to better understand what is happening with our resources. It is everyone's responsibility to take care of our resources. My dad always had that vision of caring for the resource, what I like about the conversations with the IFOP workers is that I have learned a lot, there are many things that I did not know, both about biology and fishing issues and they the time and patience to explain.

What is your relationship with Safa project?

This project is born from us fishermen, by this I mean our Conapesca GA, which we saw as a good opportunity to promote research by applying for a project with funds from the Regional Government (GORE) and incidentally this also allows us to help productive activity Since artisanal fishermen generate income for the region, that is why this investment in research is so important.

The Safa project will study reproductive and recruitment bans in the fishing reserve area where Biobío region operates, it will improve knowledge about the common sardine and anchoveta resources, sartisanal fleet of the ince sampling is expanded. It is two years long.

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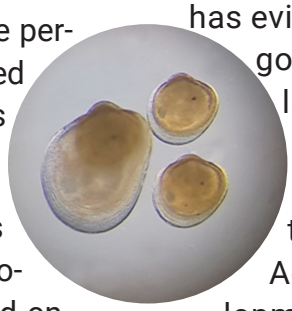
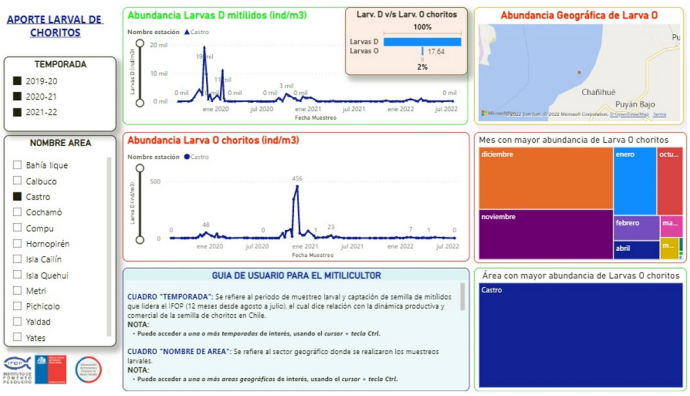
IFOP will hold a monitoring larvae and collection of mytilid seeds workshop

On Monday, September 26th, between 9:30 a.m. and 12:30 p.m., Fisheries Development Institute (IFOP), will hold a workshop to disseminate “Monitoring and Surveillance Program on the larval availability of mussels for the sustainability of the aquaculture activity in the southern southern zone of Chile, IX stage 2021-22”results, a study that has been carried out since 2013 and is part of the permanent monitoring programs carried out by IFOP and defined by Fisheries and Aquaculture Undersecretariat.



In the workshop, IFOP professionals associated with the monitoring program, will offer presentations focused on describing mussels seeds collecting activity , from mussel farmers point of view, as well as larvae and seed shedding monitoring capture and efficiency can be indicators for the industry. In addition, they will present abundance of larvae in the inland sea of the X Los Lagos Region’s results, with special emphasis on the last season. And at the workshop’s end, a new online reporting system that will make it easier to understand what is happening at the moment for decision-making associated with seed collection will be shown .



Mytiliculture and seed collection

Mussel farming is the second most important aquaculture activity at the national level (420 thousand tons, 2021), Chile is currently the main exporter of mussels worldwide (100 thousand tons, 2021). This industry is developed mainly in Los Lagos region, and depends entirely on larvae of the mussel or Chilean mussel (Mytilus chilensis) collection from the natural environment, through the activity known as seed collection. Historically, this activity has evidenced various territorial events of good/bad seed collection. Given the lack of information necessary to understand a key natural process for mussel farming sustainability, the Undersecretary of Fisheries and Aquaculture asked Fisheries Development Institute to develop a monitoring program that would allow monitoring, describing and, ideally, understanding natural variations in mytilid larvae abundance, both in areas where seed collection is carried out and in areas where it is not, within the Los Lagos, Aysén and Magallanes regions. The creation of this monitoring program seeks that the authority and the mussel farming sector have timely information on the variability in the availability of mussel larvae for seed collection and identify new potential areas where to develop the activity. Since its implementation in 2013, the monitoring program has operated uninterruptedly and is projected as a permanent activity for the generation of base knowledge that contributes to the sustainability of the seed collection activity and, therefore, to the national mussel farming industry.