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IFOP's research focuses on ecosystemic exploitation of spider crab in Magallanes

During 2019 first semester, Wildlife Conservation Society Chile (WCS) and Fisheries Development Institute (IFOP), signed a Collaboration Agreement with the aim of carrying out joint actions in the field of Research and innovation for artisanal fishing development in Magallanes region.

Both institutions collaborative work has its first results. With The Walton Family Foundation (WFF) support, they will carry out a research "Assessment of fishing gear and proposal for improvement for ecosystemic spider crab (*Lithodes santolla*) exploitation in Magallanes Region".

IFOP researcher Erik Daza Valdebenito research's head explained "Crab fishery (*Lithodes santolla*) has been carried out since 1928 in Magallanes and Chilean Antarctic region. Currently artisanal fishing fleet operates from Castillo channel in the north to Wollaston islands in the south, traveling more than 10,000 km² of coastline in the fjord and canal system during fishing season that runs from July 1st to November 30th each year. New markets openings and rising sales prices in recent years, in addition



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to interesting economic remuneration offered by this fishery, has constantly generated expansionary pressures from industrial and artisanal sectors, which have been expressed in an increase in fishing effort and in installed capacity in the region, it is estimated that more than 6,000 people would work directly and indirectly in the production chain.

This fishery management requires incorporating measures that consider ecosystemic approach application mentioned in Fisheries and Aquaculture General Law. In this context,



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the study will allow a pilot experience development to incorporate alternative escape trap mechanisms . The objective is to facilitate male specimens release under legal minimum catch size (12 cm long cephalothorax) and species that are part of the accompanying fauna associated with fishery. On the other hand, we will carry out field tests with artisanal fishermen, to evaluate the interaction of fishing gear used with large marine cetaceans. The final objective is to recommend mitigation measures to the Management Committee, the Sectoral Authority and to provide updated scientific information on the requirements for the export of this resource to the North American market. The study will be carried out during the year 2020, the final results will be delivered during the second half of 2021, considering the region health evolution.

IFOP and ATF Chile are developing an Identification Guide for seabirds in Chilean sea fishing areas

Jointly carried out by a researchers enthusiastic group from Fisheries Development Institute (IFOP) and Albatross Task Force (ATF-Chile) demersal's discard project. This guide contains approximately 50 species of pelagic and coastal seabirds, with morphological characteristics that help their identification.

This material's main objective is to support scientific observers, researchers and fishermen in the identification of incidentally caught seabirds in commercial fishing operations. This makes it possible to improve Chilean fisheries bycatch information collection, together with contributing to the knowledge of this important group of species and the necessary actions to reduce these birds mortality .

Luis Adasme, one of this work authors , stated: "We appreciate IFOP scientific observers important collaboration, marine life renowned researchers and photographers – both Chilean and foreign – who provided graphic material to achieve a document of high technical and visual quality The guide is in full color and excellent teaching material".



IFOP signs an agreement with Universidad de Chile

IN ORDER TO COLLABORATE IN HIGH RESOLUTION OCEANOGRAPHIC AND ATMOSPHERIC MODELING

Fishing Development Institute (IFOP) signed a collaboration agreement with Universidad de Chile's National High Performance Computing Laboratory (NLHPC).

This agreement aims to establish a mutual collaboration relationship, experiences transferring, and joint research between both institutions, in issues related to ocean and atmosphere numerical modeling in southern Chile. In turn, the agreement will allow IFOP to use, through remote access, computing capacity of NLHPCmanaged supercomputer .

The agreement also seeks to promote high-performance computing infrastructure use by the scientific community and encourage its use by the State. The use of su-





percomputers is making a difference in topics such as; climatic change, flowering of harmful algae, circulation and ocean acidification, among others. The agreement will last two years.

Dr. Osvaldo Artal from IFOP referred to the agreement "Challenges in ocean numerical modeling are huge and more computer resources are needed in order to be able to explore and investigate main regional and local environmental characteristics of our southern sea. Access to this super-computer will allow us to improve the current operational oceanographic and atmospheric forecast models that IFOP releases daily to the community on CHONOS information system web portal (www.ifop.cl/chonos). Also, this greater resource will allow us to start developing and implementing new biogeochemical models to gain knowledge of variables such as oxygen and nitrate in the region."

IFOP Punta Arenas delivered food supplies to local families



As part of the 56th Fishing Development Institute Anniversary, workers from Magallanes region, delivered on June 1st, food supplies to families going through difficult times in Punta Arenas, due to Coronavirus world crisis which affects our country as well.

In this regard Marcela Jaramillo Vargas who is in charge of administration, pointed out: "This activity called Blessings Day, was carried out with the workers support, translated into provisions and contributions in money, which was destined for low-income families. This is a way of being grateful for being healthy with our families, and having good lives, a situation that not everyone has at the moment. The beneficiary families were very happy and grateful with this gesture, which as a Base fills our hearts with joy, and leaves us very satisfied."

Covid-19 Effects on national fisheries and aquaculture sector

Through a videoconference held on June 2nd, Fisheries Development Institute announced its main results of "EFFECTS OF COVID-19 ON THE NATIONAL FISHERIES AND AQUACULTURE SECTOR" research. The activity brought together a large group of professionals from both institutions, led by Luis Parot, IFOP Executive Director and José Pedro Núñez, Undersecretary (s) of Fisheries and Aquaculture, who together with highlighting IFOP timely response pointed out the need to continue



Reloncaví Estuary in Los Lagos region, up to Mariotti islets, in the extreme south of Magallanes and Chilean Antarctic region. It currently has 228 sampling sites, which are visited periodically, with 9 smaller vessels support, to collect samples of water, phytoplankton, shellfish, as well as hydrographic and meteorological information. The



monitoring pandemic effects in national fishing and aquaculture sector.

The report was prepared based on data collected by the Covid-19 survey and official Sernapesca statistics. Professionals from IFOP economic area IFOP, led by researcher Elizabeth Palta, disclosed sectoral economic indicators variations affected by the country's health emergency.

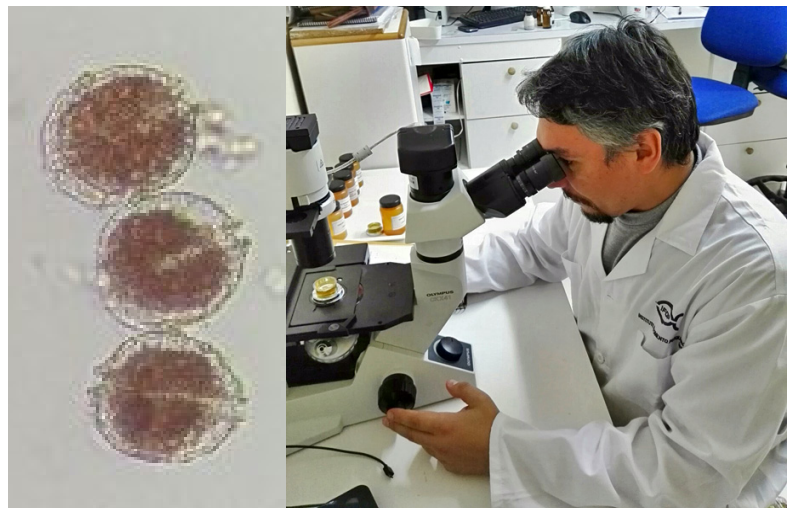
National Fjords Red Tides Workshop

TELEMATICALLY ORGANIZED BY FISHERIES DEVELOPMENT INSTITUTE AQUACULTURE RESEARCH DIVISION

Friday 12th, between 09.00 and 12.00, RED TIDE MANAGEMENT AND MONITORING PROGRAM IN THE FJORD SYSTEM IN CHILE, XIII STAGE, YEARS 2019-2020 closing workshop will be telematically held led by Dr. Leonardo Guzmán.

Research started in May 2006, and has been ongoing until now. Its main objective is to have a timely system of periodic sampling, harmful microalgae and marine toxins detection and quantification according to southern Chile fjords and channels geographical reality. This research is part of the Basic or Permanent Program, according to Fisheries and Aquaculture law established framework which is executed by Fisheries Development Institute in agreement with the Economy Undersecretariat and Smaller Companies, acting as technical counterpart to the Fisheries. and Aquaculture Undersecretariat .

The investigation is carried out covering national fjords and channels entire extension, between



samples of shellfish to evaluate marine toxins are analyzed in Regional Ministerial Secretariats of Puerto Montt, Puerto Aysén and Punta Arenas laboratories.

The workshop includes 6 presentations with data that span a period of 5 to 12 years, covering all or sectors of southern Chile fjords and channels, considering various aspects such as spatial-temporal configurations of phytoplankton microalgae species between 2007 and 2019 by Dr. Gemita Pizarro, phytoplankton assemblies comparison between two depth strata in the Patagonian fjords northern end using a 5-year series, by Dr. Rodrigo Martinez; For the same geographic sector, a presentation only referred to harmful dinoflagellates by Dr. Javier Paredes, which addresses a series of time that begins in 2013; Next, 5 harmful taxa of Alexandrium, Dinophysis and Protoceratium distribution and abundance in fjords and channels between 2007 and 2019 by Dr. Leonardo Guzmán will be addressed; In addition, a new contribution will be made to the distribution and abundance of dinoflagellate resistance cysts in superficial sediments in Los Lagos, Aysén and Magallanes regions, by Dr. Pablo Salgado, and finally, a presentation on a harmful species of genus. Karenia, touching on various biological aspects, and which has caused problems, since late 1990s, to productive activities and affected the country southern macrozone ecosystems.