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## **IFOP** has a new Executive Director

#### MR. GONZALO PEREIRA PUCHY ASSUMES AS EXECUTIVE DIRECTOR..

Lawyer from Universidad Catolica de Valparaíso, Universidad de Chile International Relations graduate. PUCV Master in Law. With extensive management positions experience, he has served as Head of National Fisheries Service Legal Department. **Customs National Director, CPPS General** Secretariat and Pacific Coastal Marine Action Plan.Executive Secretariat

He was currently working as Fisheries Development Division Head at Fisheries Subsecretariat.

Editorial committee Gonzalo Pereira P. Gabriela Gutiérrez V.

**Executive Director** Journalist

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/ Senior graphic designer



## Dr. Margarita González from IFOP exhibits at Sealice Conference

## THIS IS THE MAIN SEA LICE RESEARCH CONGRESS IN THE WORLD.

Yesterday, May 10th, Dr. Margarita González presented two papers at the XIII version of sealice Conference 2022, which takes place in Törshavn, Faroe Islands, she explained "these are papers derived from IFOP's permanent research program named Determination and Surveillance of Caligus rogercresseyi Resistance to Antiparasitics applied in National Salmon Farming, which is carried out at IFOP hydrobiological health Department".

She spoke about Caligus profiles susceptibility against temperature and light different conditions.

Dr. Margarita González commented "The oral presentation was intended to explain research findings aimed to evaluate susceptibility profile of a parasitic variant highly susceptible to azamethiphos, cultivated in IFOP, which was exposed to different postexposure incubation temperatures. This research derived from an internal technical consultation that we wanted to resolve, its response indicates that we can expand our geographical range in terms bioassays application in remote places without greater scientific equipment.

The main result is that two major responses were obtained, one technical and the other biological. The technique refers to the fact that we can carry out susceptibility bioassays in temperature ranges from 12 to 15 degrees Celsius and that we do not require



lighting, expanding our capacity to carry out bioassays in places that do not have specialized equipment. This helps our permanent program execution. The biological response is that we were able to determinate that same parasitic variant can vary profile susceptibility depending on temperature to which it is exposed, a response also observed in data derived from bioassays carried out on parasitic variants from field".

Regarding poster work, results derived from susceptibility surveillance to azamethiphos and deltamethrin in a sentinel center and which is part of the previously indicated program were presented. Results indicate that parasites present in the sentinel center have lost susceptibility to both antiparasitics over time,



which helps us to argue the relevance of considering sentinel centers in a program of the magnitude that we have. And that in turn allows to represent a particular geographical area".

"For me it marks a milestone and at the same time a recognition, since the fact that they have accepted two works, one as a poster and the other as a presentation, implies that our research is on the right track and that the information derived from these experiments is useful for the scientific community" concluded González.

## IFOP researcher, Ignacio Payá, accomplished an internship at the Marine Sciences Institute in Barcelona

WITHIN THE FRAMEWORK OF HIS PHD AT UNIVERSIDAD DE BARCELONA, FINANCED BY AN IFOP SCHOLARSHIP.

Ignacio Payá, IFOP's Resources Evaluation Departmen researcher, carried out an internship between May 1rst and 8th, at the Marine Sciences Institute (ICM-CSIC) in Barcelona (https://www.icm.csic.es), within the framework of the first year (2021-2022) of his Marine Sciences PhD program at Univer-



sidad de Barcelona (https://www.ub.edu/ portal/web/ciencias-tierra/doctorado-ciencias-mar).



His thesis on squid fishery management is being directed by doctors Joan Company and Nixon Bahamon from ICM-CSIC, and has Dr. Cristian Canales collaboration from Pontificia Universidad Catolica de Iparaíso. During this internship he worked on his research plan and the first manuscript. He also made visits to the ports of unloading and commercialization of fish on the Catalan coast, where he had the opportunity to attend electronic auctions and a meeting to deliver the results of the ICM-CSIC to the fishermen's association of the city of Vilanova i la Geltrú (https://www.llotjavilanova. com).

Mr. Payá's studies are being financed by an IFOP grant, since they are crucial for the Resources Evaluation Department. The thesis is carried out at IFOP and at ICM-CSIC, with a program of a yearly visit to ICM-CSIC.

Payá mentions that "doing a PhD has been a longing since he joined IFOP in 1989, and now he has given himself the opportunity with this IFOP



scholarship. In order to access the program at Universitdad de Barcelona, I first had to update my academic curriculum, for which I completed the Master's program in Applied Statistics at Universidad Nacional de Educación a distancia (UNED) in Spain in 2017-2018 and the Master's in Sciences at the Universidad de Concepción in 2018-2020, the latter funded by the CONICYT-PFCHA/ Magíster/2018 – 22181075 scholarship from the Chilean government."

## IFOP inaugurates an interactive scientific exhibition at Castro city

THE EXHIBITION IS FOCUSED ON GROUPS OF ELEMENTARY AND MIDDLE SCHOOL STUDENTS DURING MORNINGS AND WILL BE OPEN TO GENERAL PUBLIC IN THE AFTERNOONS.

Between May 16th and 20th, at CECREA center facilities wich are located at Lillo 160 Castro, you can visit the interactive exhibition, aimed at publicizing IFOP work carried out and bringing science closer to children, young people and the community.

Dr. Alejandro Murillo from IFOP, explained



"in this exhibition the students of Castro and nearby communes from Chiloé Big Island, can go through physical and biological oceanography exhibitions. For the first part, researchers from IFOP Environment Department – (Putemún headquarters, Castro) were invited to participate, they will set up an exhibition with oceanographic equipment for samples retrieval, explaining oceanography basic concepts (salinity, currents, among others)



For the biological oceanography part, the exhibition will be in charge of CREAN center and MACH project, where concepts such as plankton in the ocean, phytoplankton diversity, main harmful microalgae and technologies used to study these processes will be presented. The exhibition will feature MACH project mobile laboratory presence as a support to show students and participants in general, the type of equipment used for taking and processing samples in the ocean, and how producing microalgae are detected. of FAN.



We will receive groups of schoolchildren from technical colleges, focused on aquaculture area, who will participate in a tour focused on their requirements and will be invited to a series of talks on Tuesday 17th, Wednesday 18th and Thursday 19th. One of these talks will be given by Dr. Gonzalo Gajardo (Universidad de los Lagos) MACH project, senior researcher who will accompany us for 2 days in the exhibition and will address one of MACH project central research topics ; interaction between harmful microalgae and bacteria in the ocean".

"The MACH-IFOP interactive scientific exhibition arose through a contact made by the



natural resources research and development center LACUY Ltda., with whom MACH has a collaboration agreement to carry out scientific dissemination in Castro and Chiloe Island. LACUY made arrangements with Castro Creation Center (CECREA) which depends on Ministry of Culture, Arts and Heritage, to hold the first organizational meetings. In this way, an interactive exhibition began to be managed, with a focus on Harmful Algal Blooms (HAB), How are these processes studied in IFOP through its Center for the Study of Harmful Algae (CREAN)? What is the approach that the MACH project is taking for the study of HABs?" Dr. Murillo concluded.

## IFOP Outstanding Biochemist Luis Norambuena accomplished an internship at Alfred Wegener Institute in Germany

THE VISIT WAS POSSIBLE THANKS TO CORFO CONTRIBUTIONS IN STRENG-THENING IFOP SCIENTIFIC CAPACITIES WHICH ARE PART OF THAT INSTITUTION PERFORMANCE AGREEMENT YEARLY SIGNED WITH THAT INSTITUTION.

During April 18th and May 13th, Biochemist Luis Norambuena, semi-senior researcher at (CREAN) Harmful Algae Studies Center belonging to Fisheries Development Institute Aquaculture Research Division carried out an internship in Germany at



Alfred Wegener renowned Institut (AWI) acting as Dr. Bernd Krock guest.

Luis Norambuena referred to his internship "My internship's main objective was to strengthen knowledge in toxins detection mainly phycotoxins new variants. During my stay we carried out extractions of culture strains and phytoplankton samples, with their extraction protocols Later we measured these extracts with SRM method (Selected Reaction Monitoring) to monitor main classes of phycotoxins in them. We carry out specific tests for each class of toxins. Finally, we performed CID (Collision Induced Dissociation) experiments on found masses and analyzed obtained spectra"

"The internship's main achievements were knowing and learning this prestigious center work methodology which will be adapted to our laboratory, which will allow us to make a qualitative change in CREAN's capacities to detect phycotoxins variants without commercial standard available. This is very important, as commercially available standard toxins are a small fraction of all existing toxins.

Another internship's achievement was the strengthening of cooperative ties with Dr. Krock and his team. Dr. Krock is a world leader in marine toxins detection and discovery " concluded the researcher.

## **Ifopino** IFOP Researcher Catherine González, gives a talk at a Valparaíso school

On Thursday May 19th, Valparaiso's Pablo Neruda's school had Month of the Sea Celebration with a marine education activity carried out by IFOP researcher Catherine González, with the school's teachers collaboration and Momemtum NGO and Oceanosfera Foundation teaching material support.



The activity showed chilean marine ecoregions biodiversity and explained the importance of upwelling in Chile's marine productivity, the role of the ocean in regulating climate and providing food and oxygen, and the importance of the moon. on tides and the intertidal ecosystem. The students discussed the problems that threaten life in the ocean and how to address them.

For Catherine González "marine education requires interaction between marine science researchers with teachers and education specialists so that marine culture expands and we build a society that is aware of our interdependence



with the ocean. In the development of this activity we all learned, researchers, teachers and students. Marine life sustains our life on the planet and society needs to understand it, to know risks and to make timely decisions. Marine literacy or ocean culture promotes the understanding of the influence that the ocean has on our lives and the influence that people have on the ocean."

## IFOP participates in XLI Marine Sciences Congress

WITH INTERESTING TOPICS FOCUSED ON CONSUMPTION OF SEAFOOD, MANAGE-MENT AREAS, SMALL-SCALE AQUACUL-TURE, BIOGEOCHEMICAL MODELING.

Today begins XLI Marine Sciences Congress, organized by Universidad Catolica de la Santisima Concepcion (UCSC) and Marine Sciences Chilean Society (SCHCM)

The congress will be held presencially at UCSC San Andrés Campus in Concepción city.



IFOP will participate with interesting topics focused on the Consumption of Seafood, Management Areas, Small-Scale Aquaculture, Biogeochemical Modeling.

Researchers Gonzalo Olivares and Johanna Rojas will present Calculation of per capita consumption of seafood in Chile and its usefulness for the design of public policies. This topic arises as a result of a request from Subpesca to know year after year how many seafood products Chileans consume due to the public-private strategy promoted by the Undersecretary of Fisheries and Aquaculture to promote the consumption of seafood in Chile. Chile and reach the goal of 20 kilos per person in the year 2027.

#### **Small Scale Aquaculture Presentations**

#### Small-scale crops Effect and ecological role: conservation of ecosystemic services new APE approach

Authors: Luis Henríquez-Antipa, Sebastián Cook, Francisco Galleguillos, Sandra Saavedra & Francisco Cárcamo

Emerging banks under mussel farms (BEms) in Los Lagos region were studied, observing reference sites functional differences. Data was integrated into a Loop analysis determining a co-culture stability (Mytilidae-Algae) in the ecosystem. The co-cultivation and exploitation of BEm preserve a dynamic balance, only if anthropic effects are regulated and the function of key species is protected. This Small-Scale Aquaculture (SFA) approach can contribute ecosystem services (BEms), limit the ecological footprint (use of BEms) and increase the potential of SFPA to conserve benthos function.





Small-scale farming effect and ecological role : a conservation aquaculture approach

Authors: Luis Henríquez-Antipa, Sebastián Cook, Francisco Galleguillos, Sandra Saavedra & Francisco Cárcamo

In Los Lagos Region, emerging banks were characterized under different scales mussel farms, observing differences with reference sites. This information was integrated into a network analysis model determining co-culture (Mytilidae-Algae) stability within the ecosystem. Although results suggest that cultivation and the subsequent exploitation of the underlying bank can preserve a dynamic equilibrium, the effects of cultivation and the function of key species should be regulated, highlighting the self-regulation of anthropic effects. This type of approach in APE could contribute with ecosystem services (Generation of banks), regulation of the ecological footprint (Use of banks), increasing the potential of conservation APE (Benthic habitat functioning).

### Biological attributes of populations of Durvillaea incurvata distributed from Chiloé to Valparaiso: gender proportion, growth and associated community

Gutiérrez Alfonso, De la Fuente Lucia, Henríquez-Antipa Luis, Valenzuela Cristian, Zúñiga Andrea, Paredes-Mella Javier.



Cochayuyo is the most important edible macroalgae in Chile. Its landing has increased from 6,048 tons. (2010) up to 11,458 tons (2018). Reproduction, growth and community structure of 5 populations (33°S to 42°S) were measured, defining cultivation and management aspects. Latitudinally, D. incurvata remains fertile throughout the year and with great reproductive and community similarity. This facilitates cultivation and management (spaced removal, minimum size of crampons and/or individuals). Key species that cohabit with D. incurvata (L. berteroana, C. concholepas, Fissurella spp.) should be included in the management plan.



AMERB Connectivity Mosaic and self-recruitment between Fresia and Ancud (Handling, Management and Sustainability of Coastal Zones)

Author: Catherine Gonzalez

Larval dispersal of loco, sea urchin and limpets was simulated from 56 Management Areas (AMERB) between Fresia and Ancud, a biogeographical transition zone where 50% of the national quota of loco is landed. High spatial variability was observed in connectivity dynamics identifying a high percentage of sites where self-recruitment predominates. 12 AMERB would contribute more than 50% of studied area larvae, while 1 AMERB stands out for its contribution of limpet larvae.



Towards an hydrodynamic models repository on Chilean coast (Physical Oceanography Module)

An hydrodynamic models survey developed for the coast of Chile was carried out. 67 models based on 12 different computational codes were found. 17 models had high resolution (greater than 3 km) and 19 were climatological. Models Overlapping was observed, duplicating modeling efforts in the same coastal area and lack of models in many areas. The need to create a national repository of hydrodynamic models will be discussed.

### Biogeochemical modeling in a changing ocean: advances and challenges in northern Ppatagonia

Author: Dr. Jurleys Paola Vellojin Furnieles

The oral presentation contemplates showing the results of work carried out up to date on biogeochemical modeling implementation such as NPZD and PISCES for northern Patagonia coastal system ( $40 - 50^{\circ}$ S). In addition, the potential of biogeochemica facing environmental contingencies (i.e., anoxic zones or harmful algal blooms) is highlighted.

## The problem is not larvae, the problem is losses: mytilid seeds X-ray uptake

Authors: Stuardo Cristina, Oyarzún Marina, Herrera Macarena, Segura Cristian, Opazo David

Being mussel farming the second aquaculture activity in Chile, it is important to know factors that influence it. Within the framework of the Monitoring and Surveillance Program on mussels larval availability for aquaculture activity sustainability in chilean southern zone. Carried out by IFOP, different follow-ups have been carried out on mussel seeds collection, taking into account not only larvae supply, but also collectors settled seeds loss, this being a crucial factor in the amount of seeds that can be harvestedd at the end of a season.

## IFOP organizes Harmful Algae Blooms Symposium in Chile

Within the framework of the XLI Congress of Marine Sciences, the researcher Pamela Carbonell from IFOP will be the organizer of the Harmful Algae Blooms Symposium in Chile: 50 years of history, building a path towards ICHA 2025. It will be held on Wednesday, May 25th, between 08:30 a.m. to 11:45 a.m. at Universidad Catolica de la Santísima Concepción (UCSC) headquarters

The symposium objective is to integrate the state of knowledge in our country about HABs, assess the level of understanding processes that trigger or inhibit them, and to identify gaps in knowledge and technologies in order to mitigate or control blooms and their impacts. , account for challenges in terms of governance based on scientific evidence and with community participation

On the occasion, Dr. Leonardo Guzmán IFOP Aquaculture Division 9



#### Head will present "Alexandrium Catenella Distribution and abundance in fjords of Chile"

Authors Leonardo Guzman. Gemita Pizarro, Oscar Espinoza, Javier Paredes, Pablo Salgado, Pamela Carbonell, Cristina Hernández, María Angélica Tocornal and María Isabel Banciella.

The first record of this microalgae and paralytic shellfish toxin (MPT) was in Magallanes in 1972. An apparent expansion from south to north (55° to 36°S) has since occurred, contradicted by historical and biological data. TPM outbreaks have caused 36 deaths and some 300 poisonings, but since 2000 there have been no fatal cases, until 2022.

(i) interannual variability in A. catenella density and shellfish toxicity are characteristic; (ii) also temporal and spatial differences between macro-regions and within them; (iii) the highest toxicities increase with latitude, but since 2015 this trend has been discontinued; (iv) there are differences, according to latitude, in the periods of increase in the density of A. catenella and outbreaks of TPM occur; (v) during blooms (>300,000 cells L-1) it is numerically dominant, but is usually <1% of the total phytoplankton abundance; (vi) densities in the Pacific are lower than in fjords; (vii) the 2016 bloom in the north of the fjords, expanded towards the Pacific; (viii) that of 2018 showed that the density increases can be explained by passive transport of mobile phase by winds from the S and SE and (ix) the 2022 bloom remained restricted to the southern area of Aysén.

TPM density and concentrations variability are analyzed considering oceanographic and meteorological data from the last 15 years, suggesting that climatic and oceanographic variables may be the main explanatory factors. Financing: Undersecretary of Economy and Smaller Size Companies-Undersecretary of Fisheries and Aquaculture.

### Contrasting behavior of the most frequent toxic dinoflagellates in Chilean Patagonia: *Alexandrium catenella* and *Dinophysis acuminata*

Authors: Javier Paredes-Mella, Jorge I. Mardones, Luis Norambuena, Gonzalo Fuenzalida, Gissela Labra, Oscar Espinoza-González, Leonardo Guzmán.

Alexandrium catenella and Dinophysis acuminata are two toxic thecate dinoflagellates that inhabit contrasting environments in Chile. This work shows formal identification of *A. catenella* from its northernmost record that occurred on the coast of the Bío-Bío Region. In addition, for the first time he managed to cultivate *D. acuminata* in Chile, which allowed knowing ecophysiological attributes of growth, toxin production and morphological variation.

# Community dynamics of Phytoplankton in contrasting environments of the southern coast of Chile

#### Author: Gonzalo Fuenzalida

Studies based on environmental DNA (eDNA) sequencing have revealed the immense diversity of microorganisms throughout the oceans. In this work, the molecular diversity of phytoplankton communities and their temporal variation in two biogeographical areas



with contrasting oceanographic characteristics are described: Fjords/Channels versus the exposed Pacific Ocean.

Diversity, abundance and distribution of dinoflagellate cyst assemblages in surface sediments of Magallanes (Patagonia, Chile) in relation to environmental parameters (oral presentation)

#### Author: Pablo Salgado

The resistance cysts of dinoflagellates recorded in sediments obtained in the fjords and channels of Magellan during the CI-MAR-25 Fjords and PROFAN oceanographic expeditions carried out in 2019 are studied, and they are related to environmental parameters obtained in said campaigns aimed at interdisciplinary study of Harmful Algal Blooms. (FANs).

#### *Scrippsiella precaria* Resistance Cysts distribution (Dinoflagellata) in Biobío sediments before january 2022 flowering.

#### (poster presentation)

The distribution and abundance of resistance cysts of the dinoflagellate species *Scrippsiella precaria* in sediments of the Biobio region prior to the great flowering of the species that occurred in January 2022 in the Gulf of Arauco is studied. This study is part of the Monitoring of harmful algal blooms and marine toxins carried out by the IFOP in central-southern Chile.

#### **CREAN Roles and projections in FAN re**search and operational actions

Authors: Oscar Espinoza-González, Leonardo Guzmán, Pamela Carbonell, Gemita Pizarro2, Claudia Zamora, Emma Cascales, Valentina Besoaín, Carolina Medel, Javier Paredes-Mella, Jorge I. Mardones, Pablo Salgado, Luis Norambuena, Gonzalo Fuenzalida, Rodrigo Martínez, Elías Pinilla, Osvaldo Artal, Héctor Tardón, Mauricio Palma.



From the CREAN of IFOP, operational and scientific research actions related to HABs and their effects are planned, projected and executed in the oceanic and fjord systems of Chile. This presentation addresses the main results regarding the implementation and use of new techniques for detecting microalgae and biotoxins, based on molecular identification by qPCR and metabarcoding, detection of cytotoxins through cell lines, detection of biotoxins by LC- Mass and LC-FL, ecophysiological rates and use of physical-biological models. In addition, projections and challenges in understanding HAB events in central and southern Chile are discussed.

Financing: Undersecretary of Economy and Smaller Companies – Undersecretary of Fisheries and Aquaculture.





## The conservation crisis remains the highest priority at ACAP's Seventh Meeting of the Parties (MoP7)

The Seventh Meeting of the Parties (RdP7) to the Agreement on the Conservation of Albatrosses and Petrels (ACAP) has concluded, in agreement with all Parties, that much work remains to be done to address threats to populations of Albatrosses and Petrels. sea birds. The meeting was chaired by Gaia Puleston from Australia.

In her welcoming remarks to RdP7, Her Excellency The Honorable Barbara Baker AC, Governor of the State of Tasmania, reflected on the task they face, saying: "The world watches as you work together to conserve endangered albatrosses and petrels. The future of these species depends on their collective efforts. I hope that all participants in the Seventh Meeting of the Parties can successfully ensure that a solid foundation is laid on which ACAP can continue to build in the next triennium."

In 2019, the ACAP Advisory Committee declared a conservation crisis, which continues to be the most serious threat facing the 31 protected species, with thousands of albatrosses, petrels and shearwaters dying each year as a result of fishing operations. the fisheries.

Implementation of ACAP Best Practice recommendations on seabird bycatch mitigation by ACAP Parties, non-Party Range States and, crucially, Regional Management Organizations was identified Fishing (RFMO) as a critical element for the conservation of these majestic seabirds.

ACAP has developed a comprehensive series of Best Practice Recommendations guidelines and fact sheets that include proven mitigation measures that can be implemented by coastal states and countries fishing in distant waters.to reduce seabird bycatch. These are available in multiple languages and can be accessed through the ACAP website.

Encouragingly, a growing number of RFMOs and other bodies have adopted ACAP Best Practice measures in their operations, leading to a reduction in seabird bycatch as a result of longline and trawling.

Progress was also recorded in addressing seabirds land-based threats, particularly with programs aimed at eradicating invasive feral species.

Dr. Michael Double, who chairs the Advisory Committee (and is also the Vice-Chair of MOP7), highlighted in his report to Parties the compelling need to engage with RFMOs and other organizations to adopt ACAP Best Practices for fisheries in order to prevent albatross and petrel populations from further decline.

"The Advisory Committee continues to recommend that Parties, Range States and RFMOs promote and implement best practice seabird mitigation measures; to improve seabird bycatch data collection and reporting ; implement priority monitoring and carry out follow-up studies; and continue to implement invasive feral species eradication schemes at breeding sites," he stated.

Improving this critical information is vital for the development of specific conservation priority actions going forward.

COVID-19 pandemic impact on ACAP activities was noted, so progress on some of them

slowed down. Now that restrictions around the world have been eased, it is hoped that ACAP will be



able to resume its key activities, including the resumption of its grant and internship program and continued contact with RFMOs.

ACAP Executive Secretary Dr Christine Bogle commented that "this Mee-

ting of the Parties reaffirmed the

of Albatrosses and Petrels commitment of ACAP Parties and

partner organizations to seek to protect these unique birds from the threats they still face".

#### Background

#### Parties (member countries) of ACAP and other states

ACAP currently has 13 member countries (known as Parties). Its objective is to achieve and maintain a favorable conservation status for albatrosses and petrels. This effort has the support of various non-Party States and non-governmental organizations (NGOs). Currently, ACAP lists 31 species of albatrosses and petrels, most of which are classified as globally threatened.

The Parties are Argentina, Australia, Brazil, Chile, Ecuador, Spain, France, Norway, New Zealand, Peru, United Kingdom, South Africa, Uruguay. Non-Party Range States with jurisdiction over breeding sites for ACAP-listed species are the US, Japan and Mexico. Non-Party States that regularly participate in ACAP meetings are Canada and Namihttps://www.acap.ag/en/resources/ bia. parties-to-acap

#### **ACAP Structure**

Agreement Secretariat headquarters are located in Hobart, Tasmania, Australia. It consists of an Executive Secretary, Dr. Christine

Bogle from New Zealand, a Science Officer, and an honorary Chief Information Officer based in Cape Town, South Africa. ACAP is governed by regular Meeting of the Parties (MoP) Sessions, normally held every three years. The Meeting of the Parties is advised by an Advisory Committee (AC) that

normally meets twice every three years. The Advisory Committee is supported by three Working Groups, the Seabird Bycatch Working Group (GdTCS), which deals primarily with threats at sea, Stocks and Working Group Conservation Status (GdTPEC), which deals primarily with threats on land, and Taxonomy Working Group (WGTT), which reviews the taxonomic status of albatrosses and petrels.

#### What is marine bycatch?

Bycatch, or bycatch, in longline fisheries occurs when birds attack baited hooks, mostly during setting; then they get caught in them and drown when the line sinks to the fishing depth. In trawl fisheries, birds feeding on discards behind vessels can strike trawl lines. trawl lines and paravanes and be injured. In the event that they collide with the towing cables, the birds can be pulled underwater when their wings become entangled in them; they can also become entangled in nets during casting and retrieval.

#### What is a mitigation measure?

A mitigation measure is defined as a modification to the design of fishing equipment or operations to reduce the probability of taking seabirds.

Source: ACAP news





Agreement on the Conservation