



## GILL PROJECT CHILE

Gill Health Initiative Meeting 2023

Oslo, october 2023



Companies working together.....



# Agenda

- Gill standard and training
- Gill score status in Chile
- Conclusions



## Data base

	Representativity	N° Companies
Salmobench <sup>®</sup>	100%	18
Sea Lice	90%	14
<i>Piscirickettsia salmonis</i>	83%	12
Melanosis	63%	9
Gill Health	54%	6
Sustainability	40%	5

# Salmon production

Los Lagos district

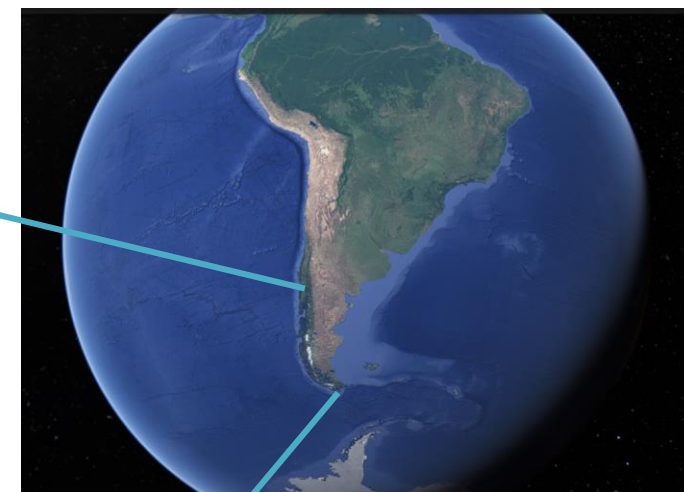
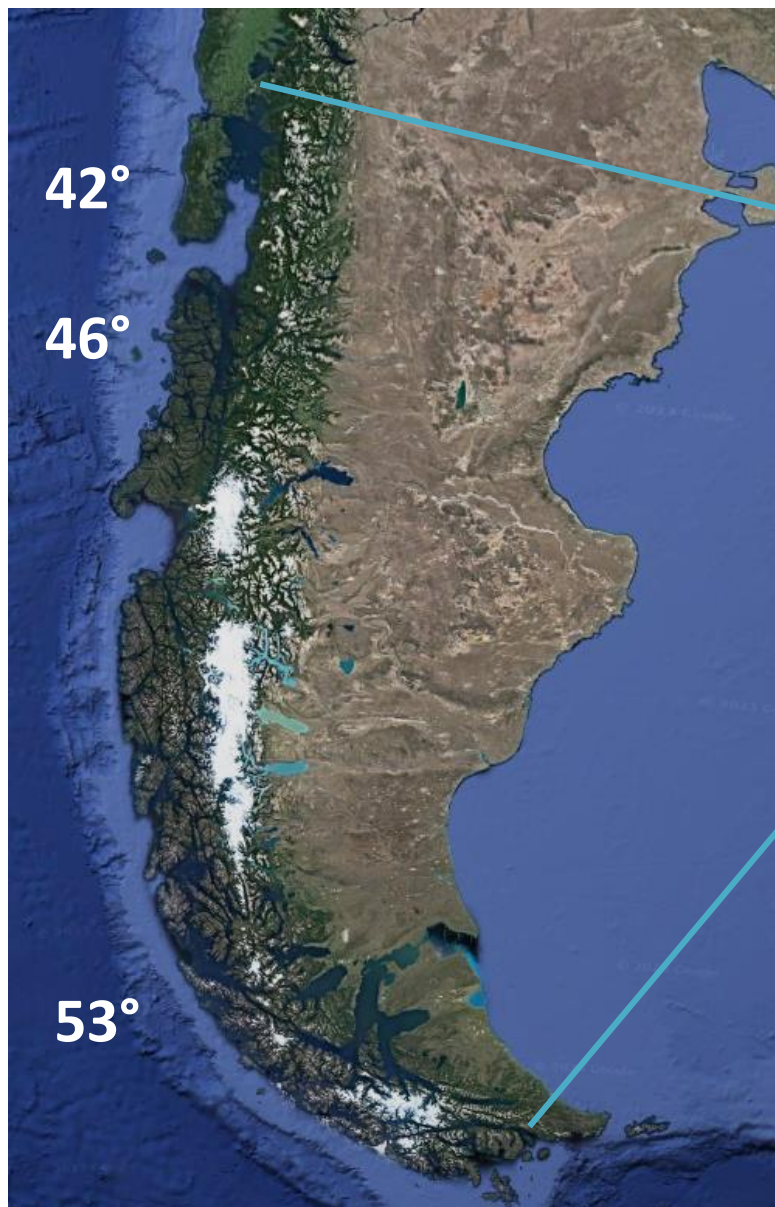
42°

Aysen district

46°

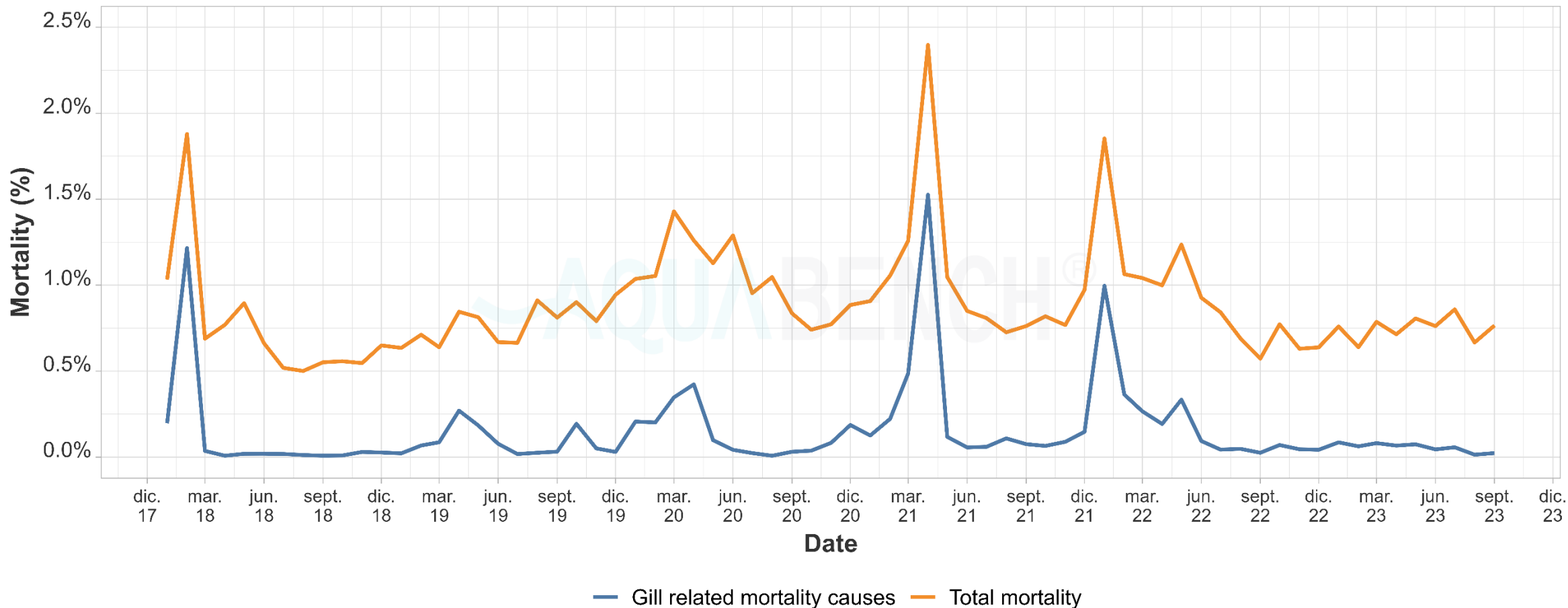
Magallanes district

53°



# Historical gill related mortality causes

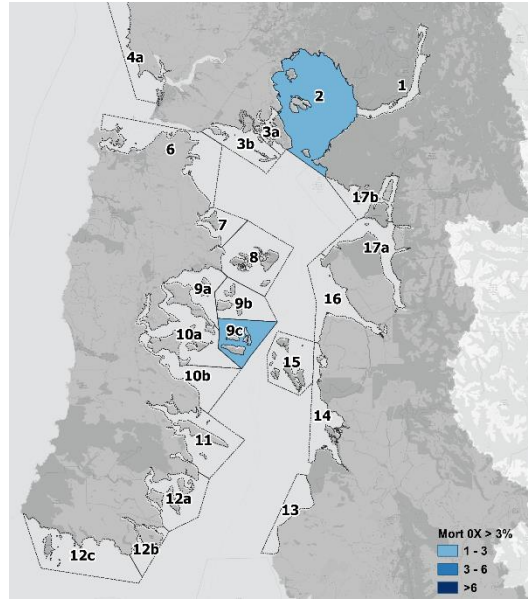
## Atlantic salmon, 2018 - 2023



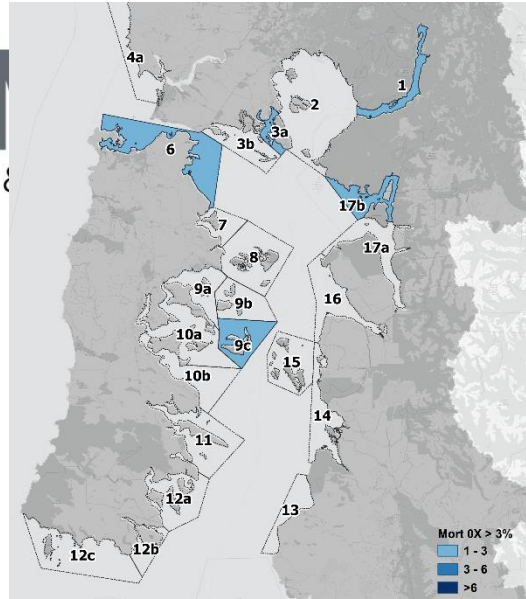


# Low oxygen mortality. Month with >3%\* mortality. Los Lagos District

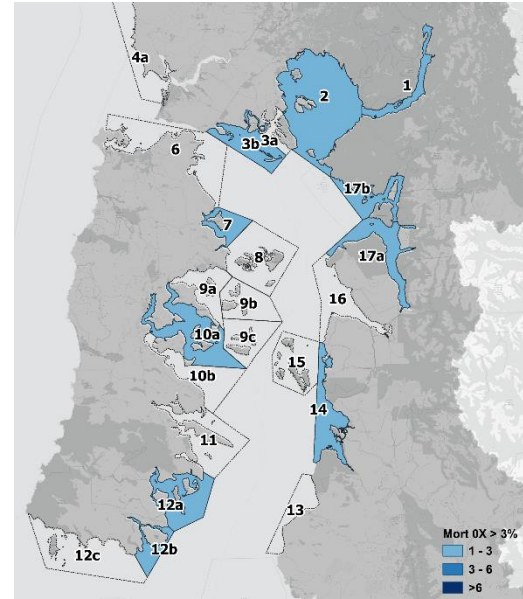
2010



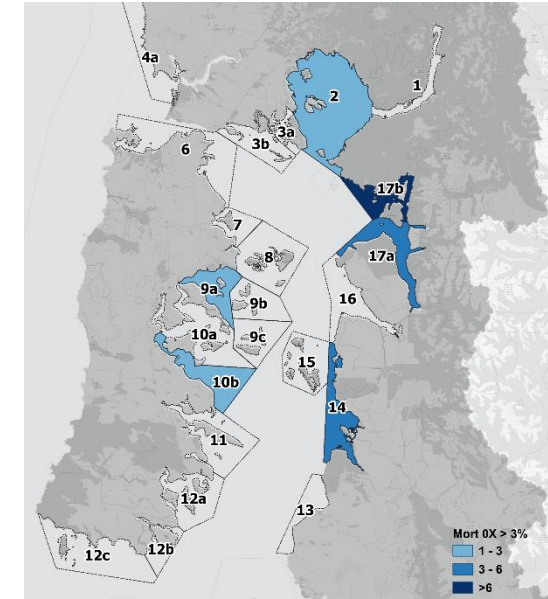
2012



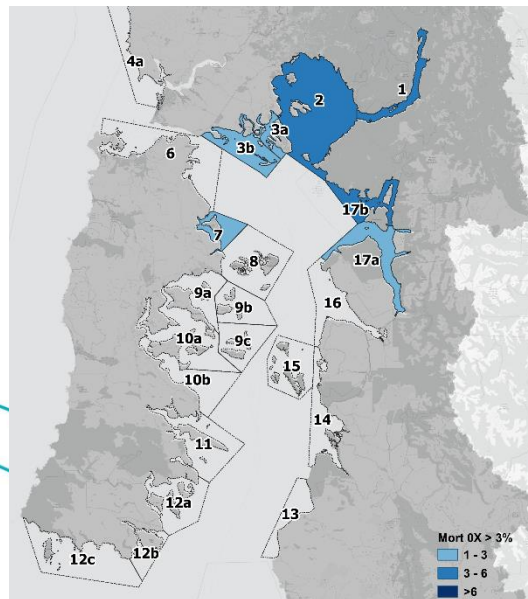
2014



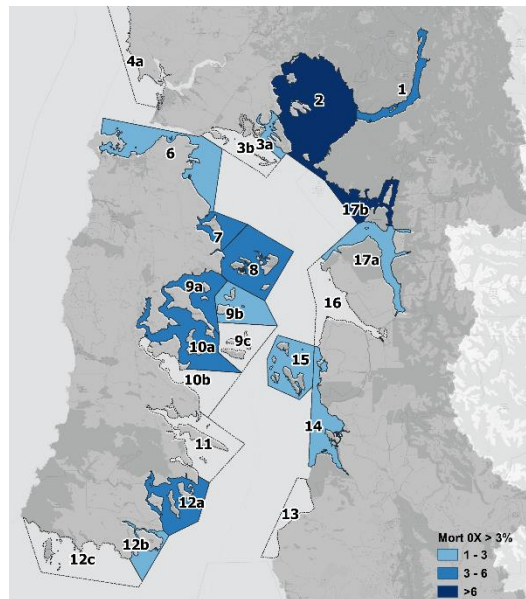
2016



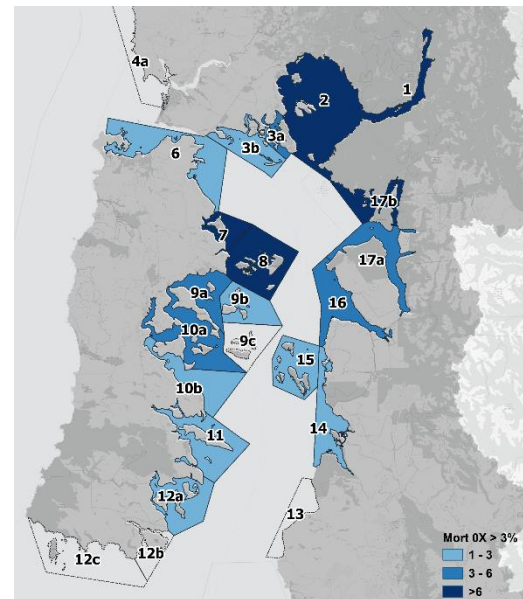
2018



2020



2022

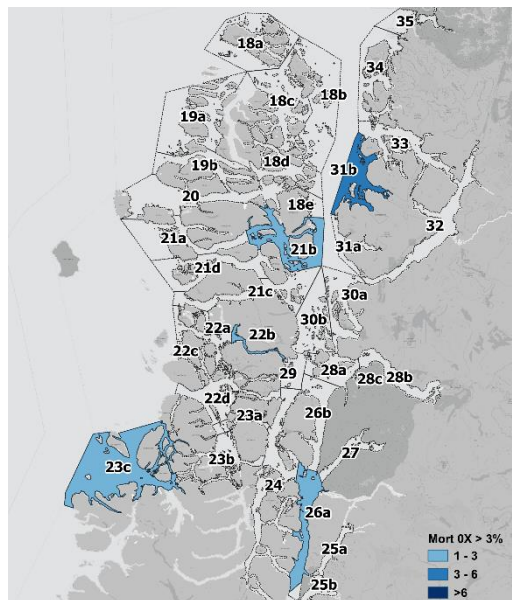


Even Years

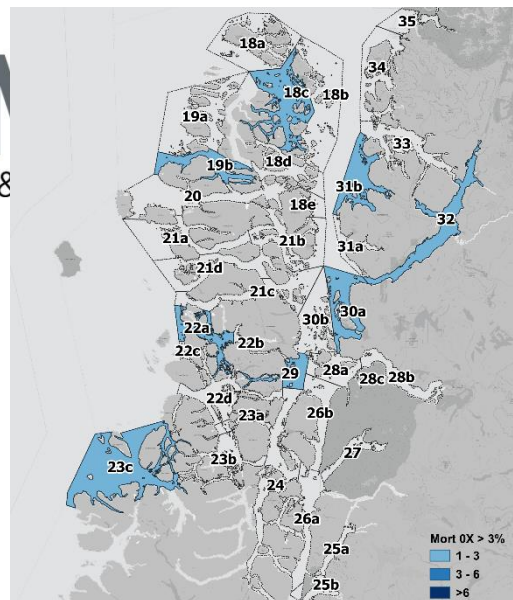
\* > a 3% del total de la mort. del mes

# Low oxygen mortality. Month with >3%\* mortality. Aysén District

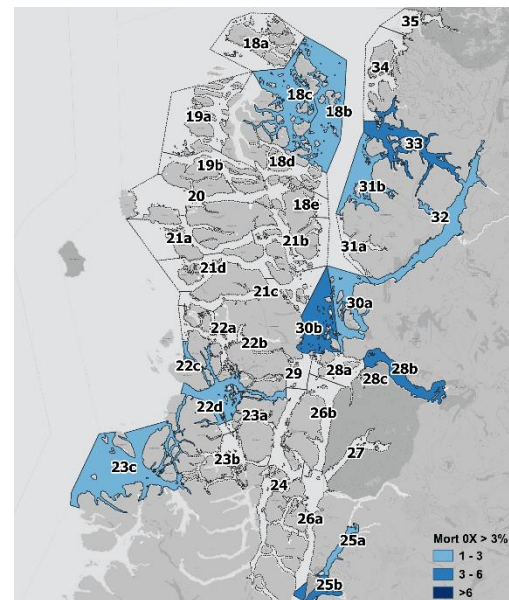
2010



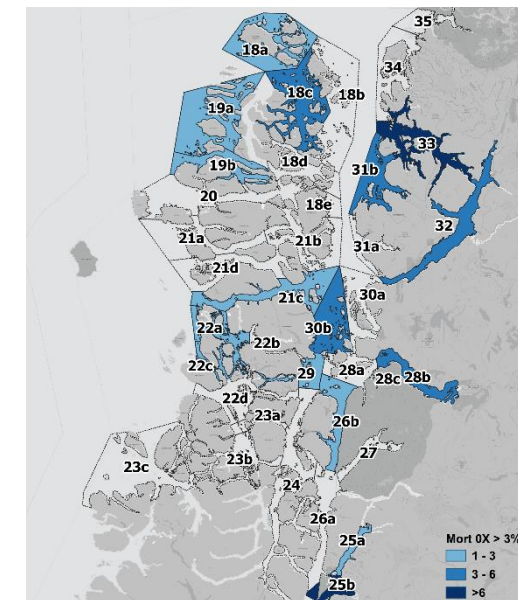
2012



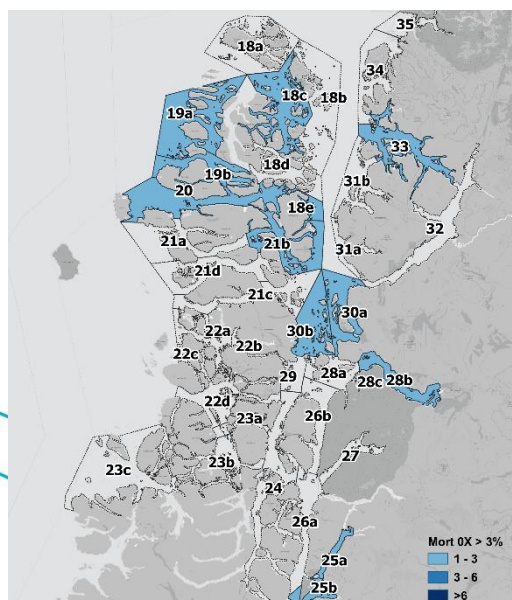
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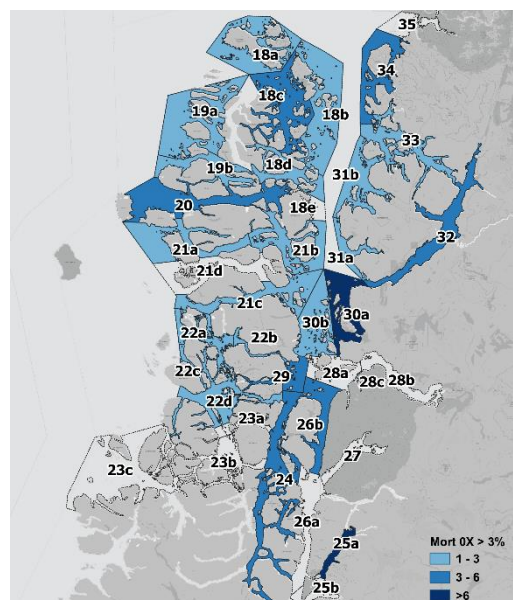
2016



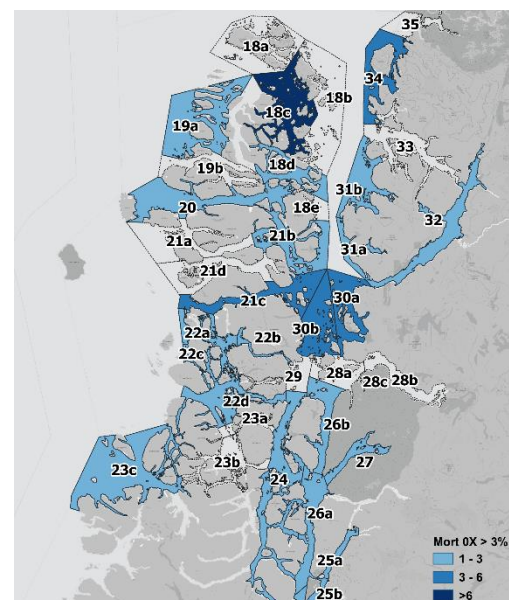
2018



2020



2022



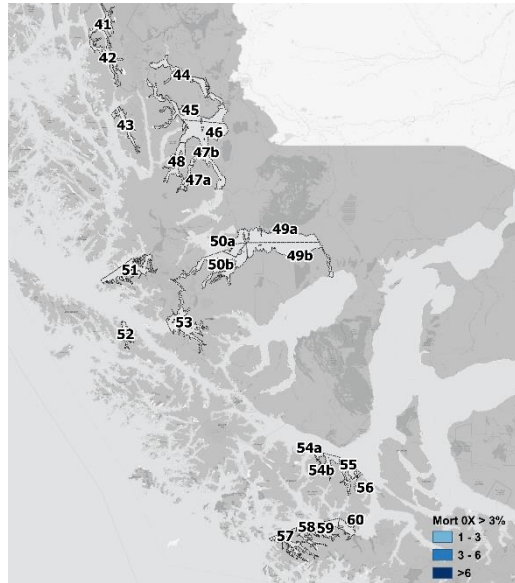
Even years

\* > a 3% del total de la mort. del mes

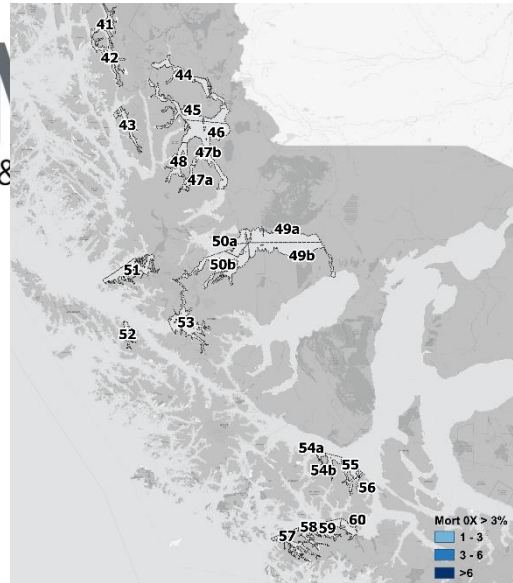


# Low oxygen mortality. Month with >3%\* mortality. Magallanes District

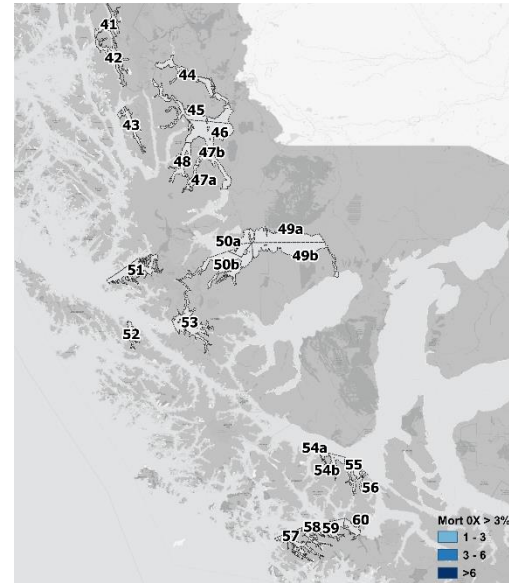
2010



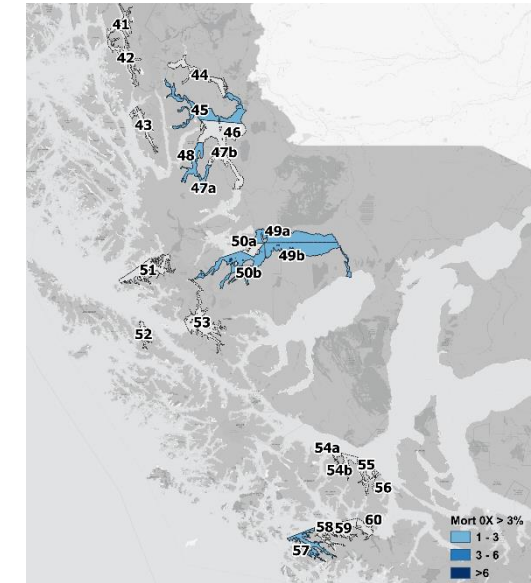
2012



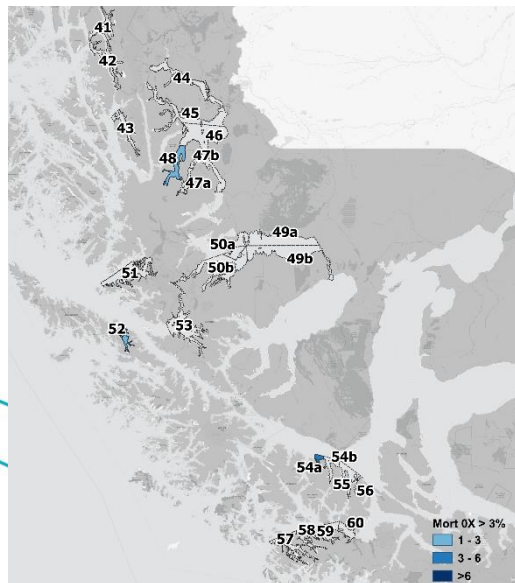
2014



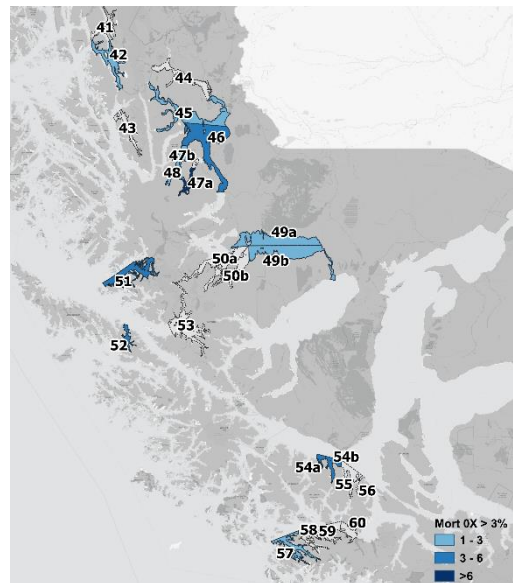
2016



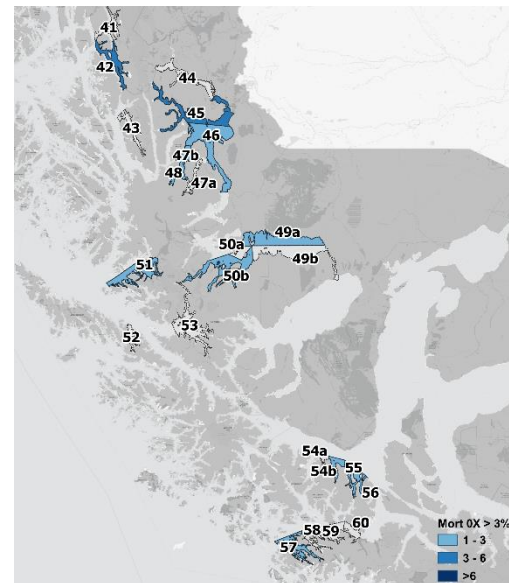
2018



2020



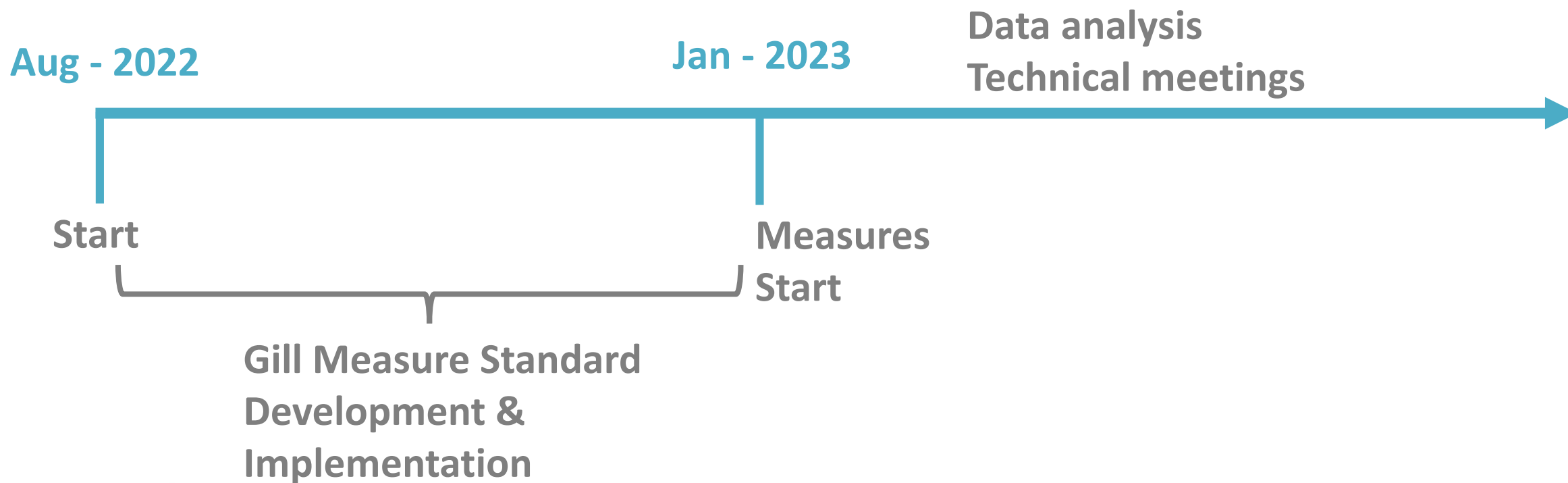
2022



Even years

\* > a 3% del total de la mort. del mes

# Project timeline





# GILL SCORE ONLINE TRAINING

—— July 2023

# Sampling

The cages to be sampled are the same as for weekly Sea Lice

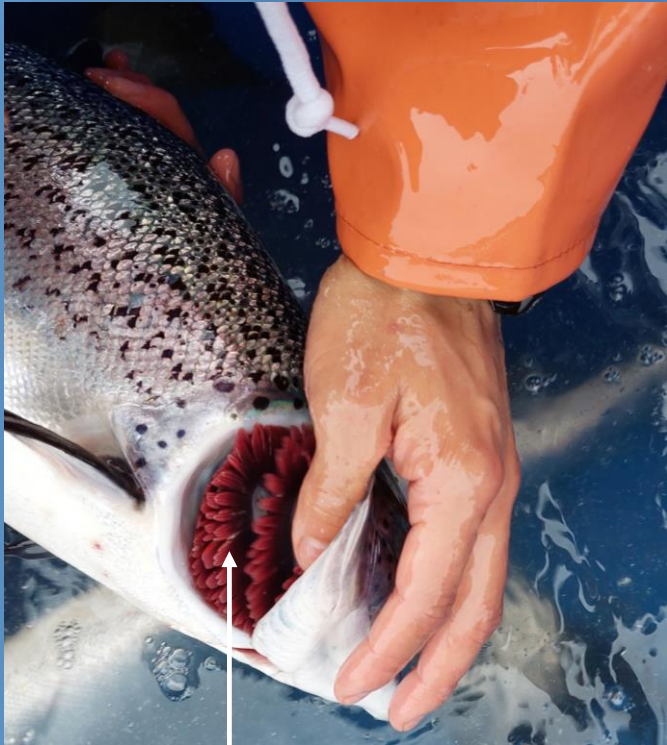
10 fish x 6 cage, total 60 fish

Sampling without food





# How to determine the Score



Observe the first and second gill arches of both flanks



Flank with the most damage  
reported



# How to determine the Score

Score	0 Normal	1 Mild	2 Moderate	3 Serius	4 Severe
% Affected area	0%	Less tan 25%	Between 25 y 50%	Between 50 y 75%	Greater than 75%
<b>Description</b>					
<b>Gill</b>	Healthy Red	slightly pale	Slightly pale	Severely pale	Very severeely pale
<b>Whitish bulbs</b>	No alterations	mild	Moderate	Abundant	Many
<b>Arches and lamellae</b>	Integrity	Mild damaged	Mild damaged	Damaged and shortened filaments	Severely damaged and shortened filaments
					

## How to determine **Score 4**

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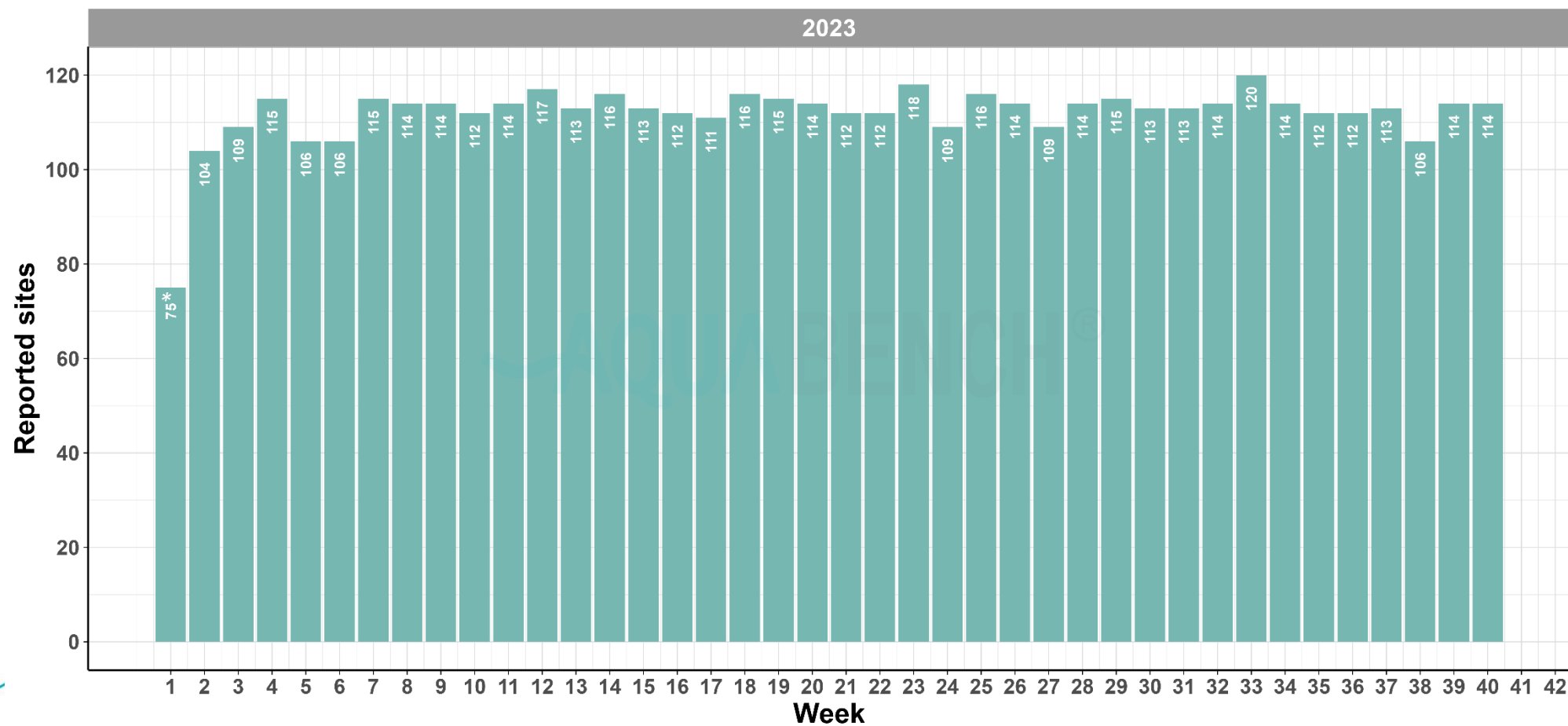


# GILL STATUS



# Data base

➤ ≈ 250.000 measures

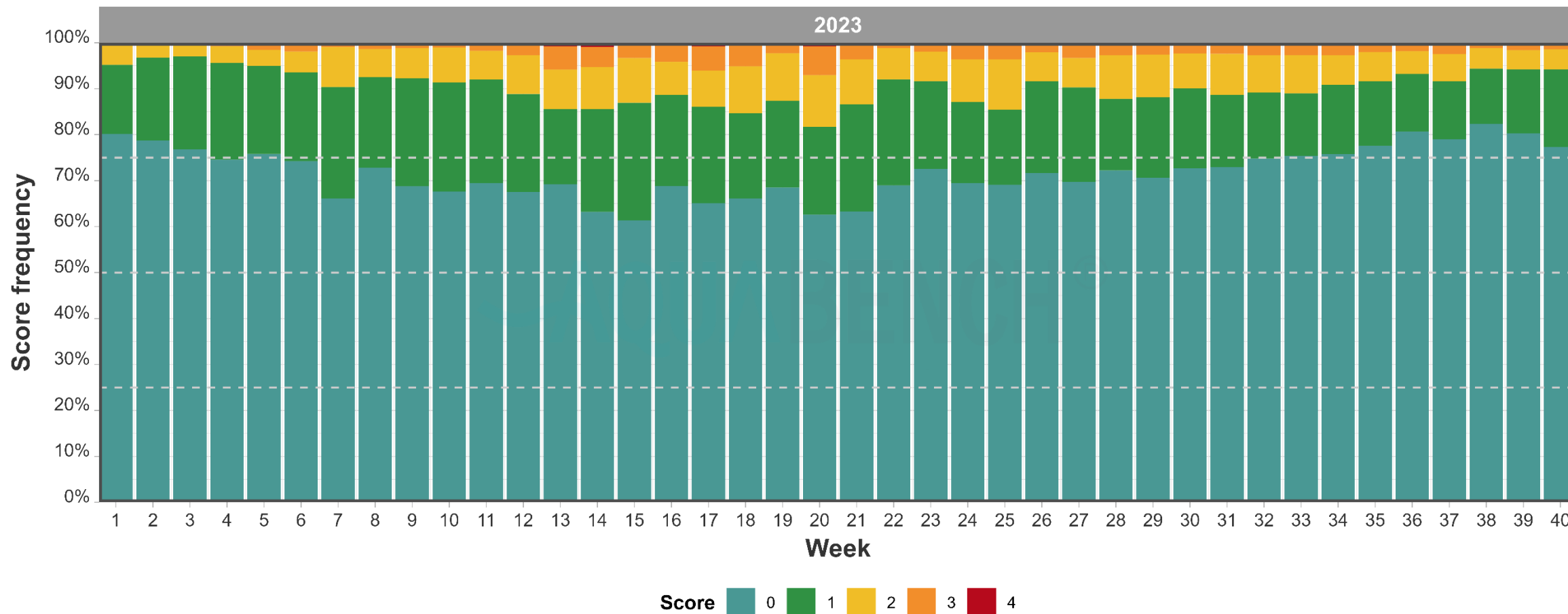


\* Semana 1-2023 se recibió información de 5 empresas.



# Weekly gill score distribution

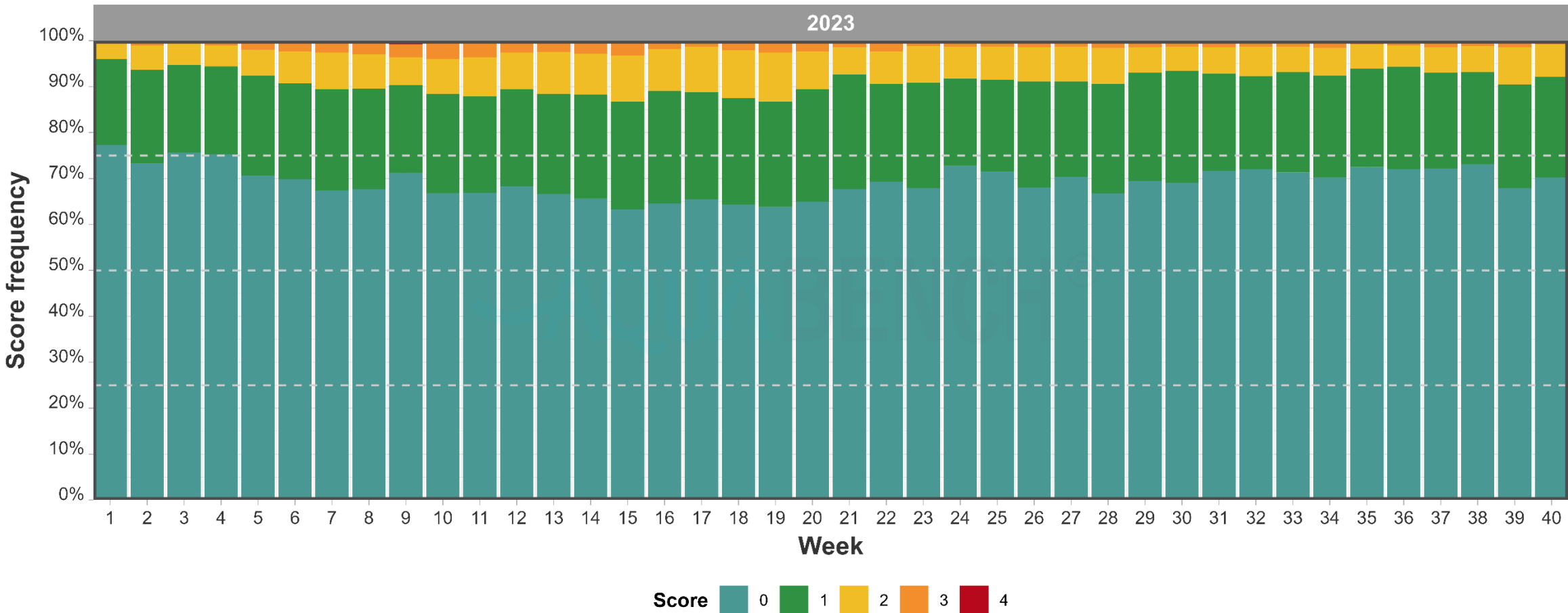
Los Lagos district, Atlantic salmon. Year 2023





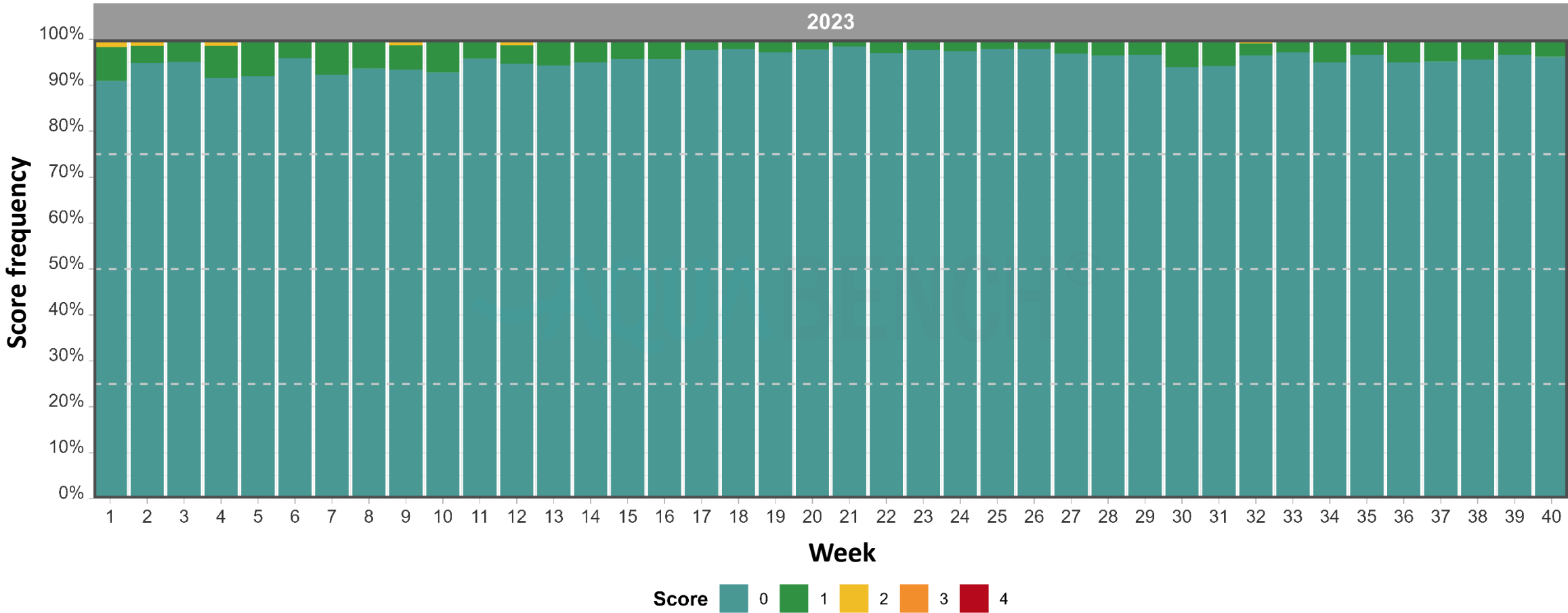
# Weekly gill score distribution

Aysen district, Atlantic salmon. Year 2023



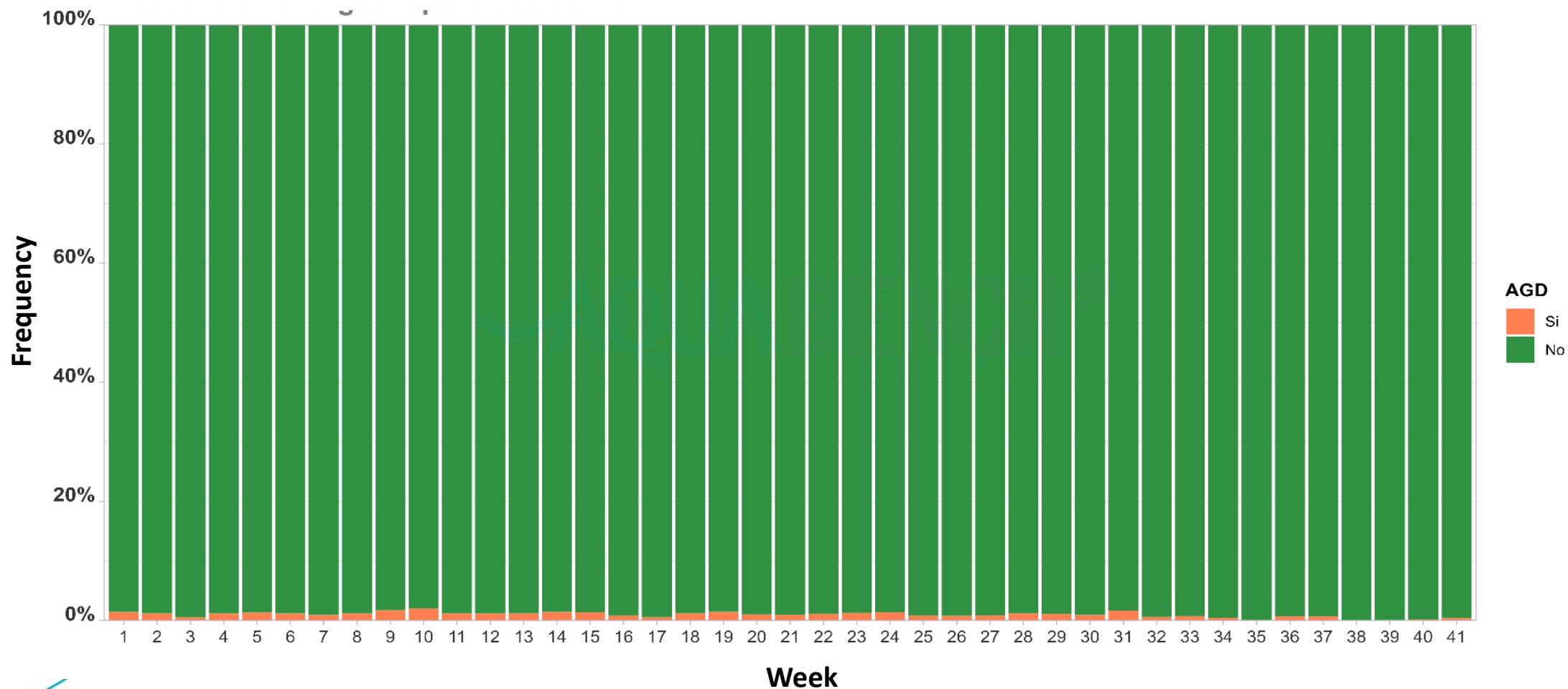
# Weekly gill score distribution

Magallanes district, Atlantic salmon. Year 2023

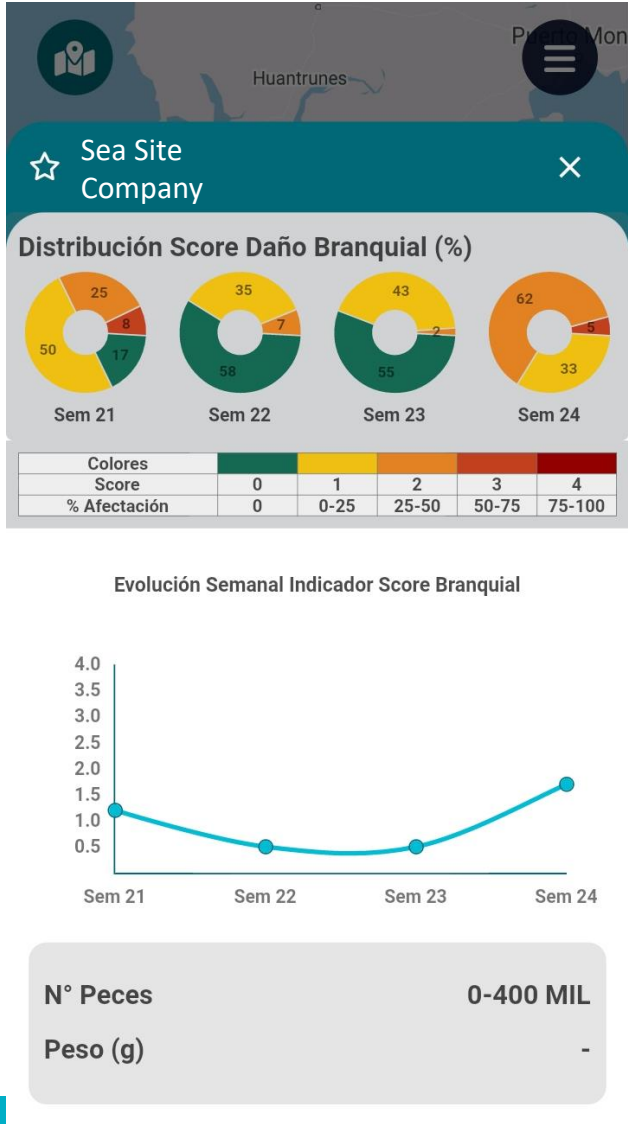
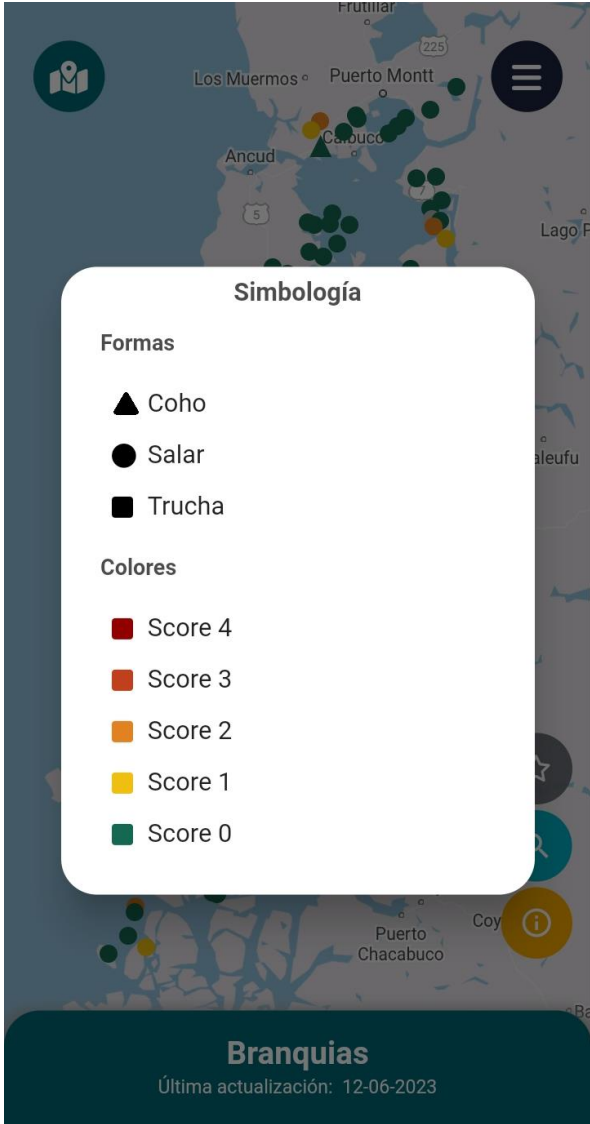
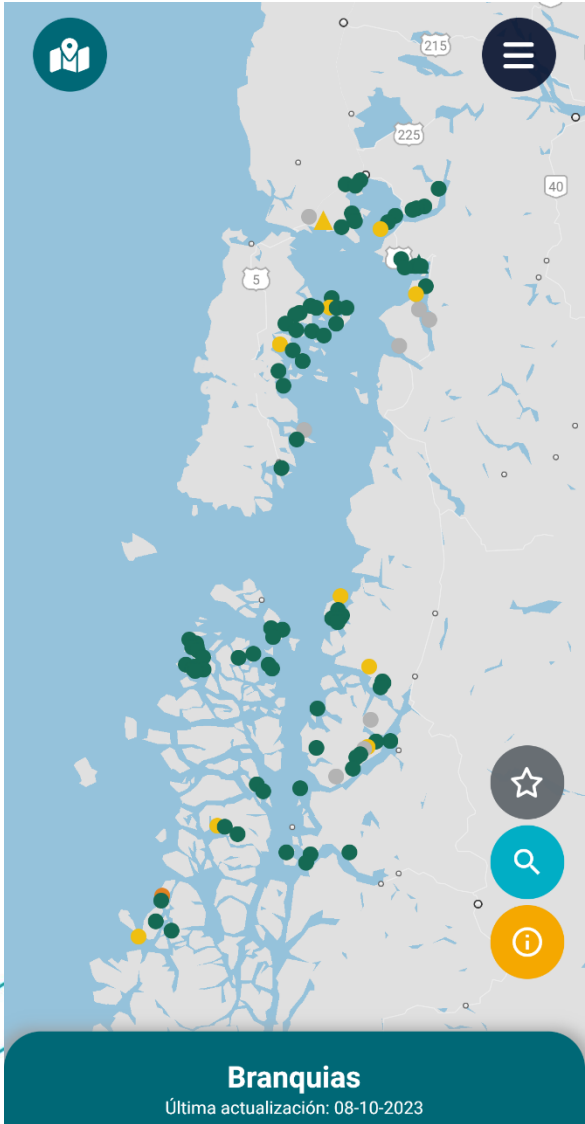


# AGD prevalence

Atlantic salmon. Year 2023

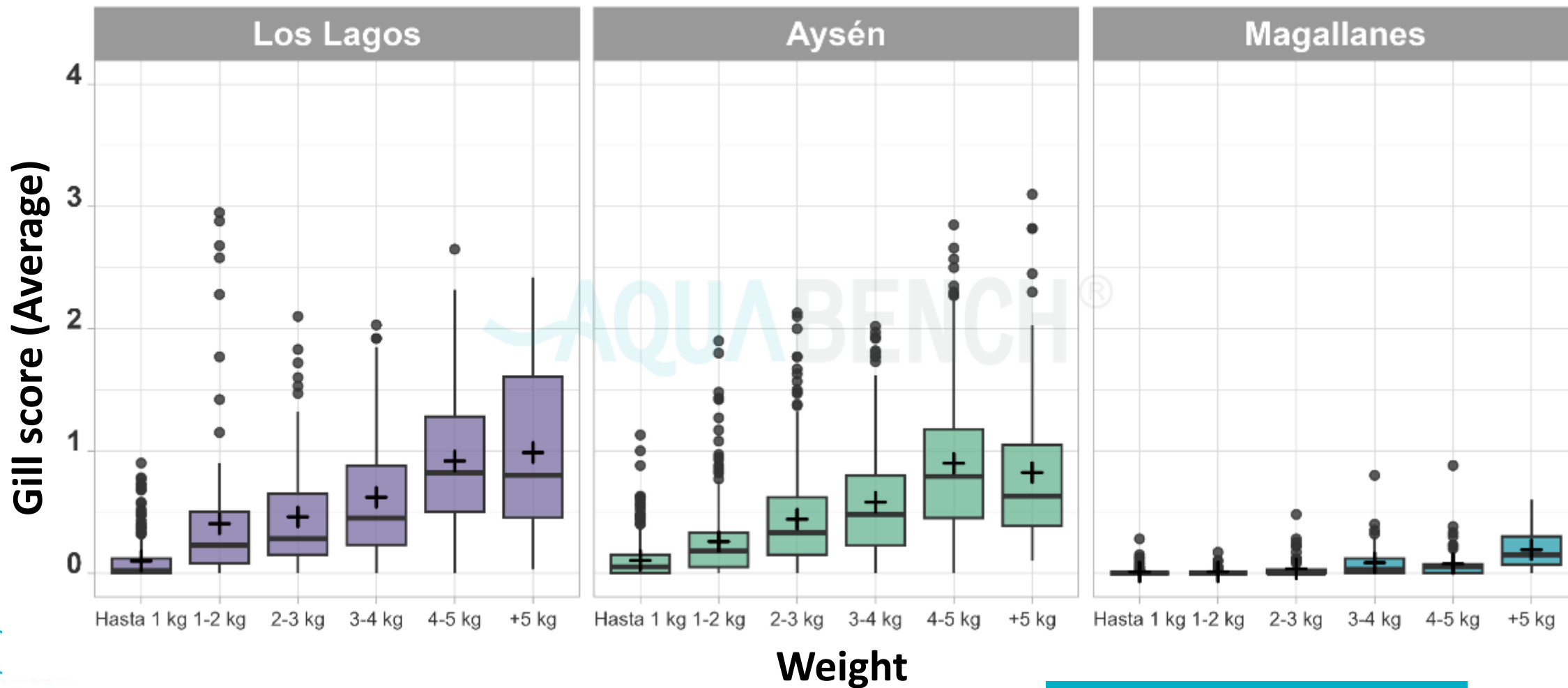


# Smartphone App



# Average weight versus gill score

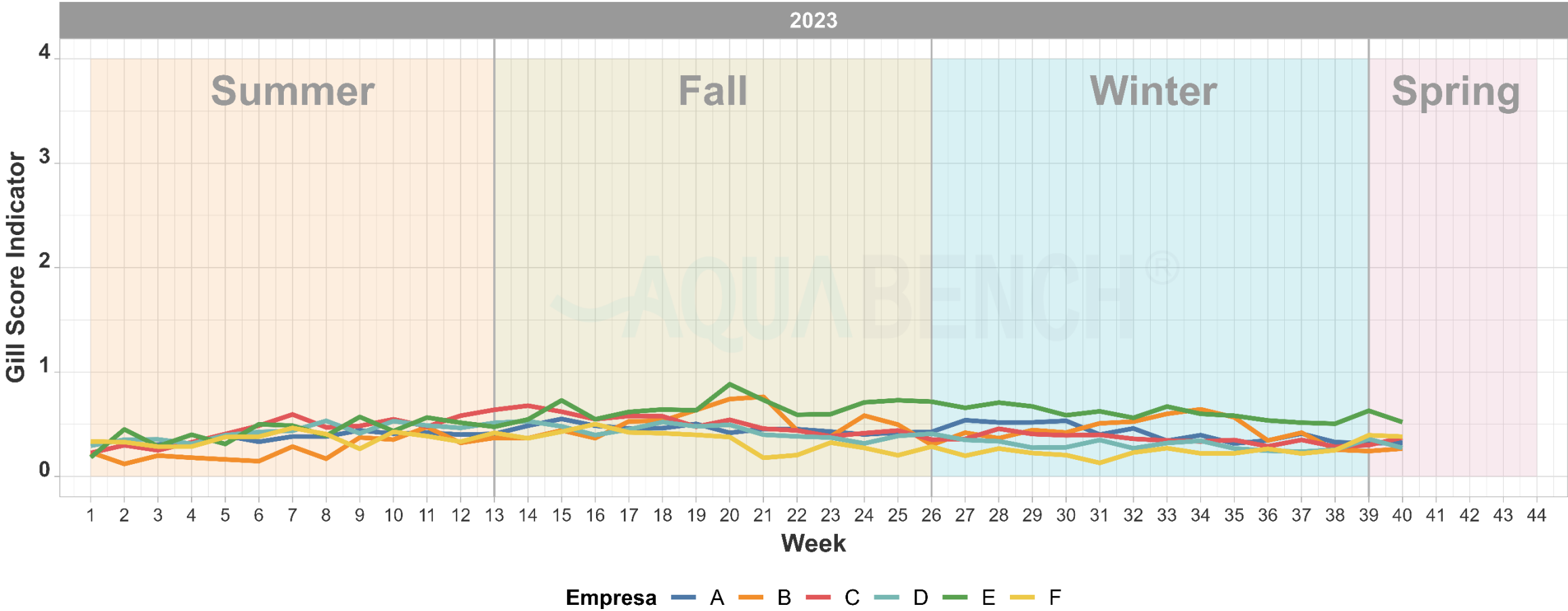
## By district





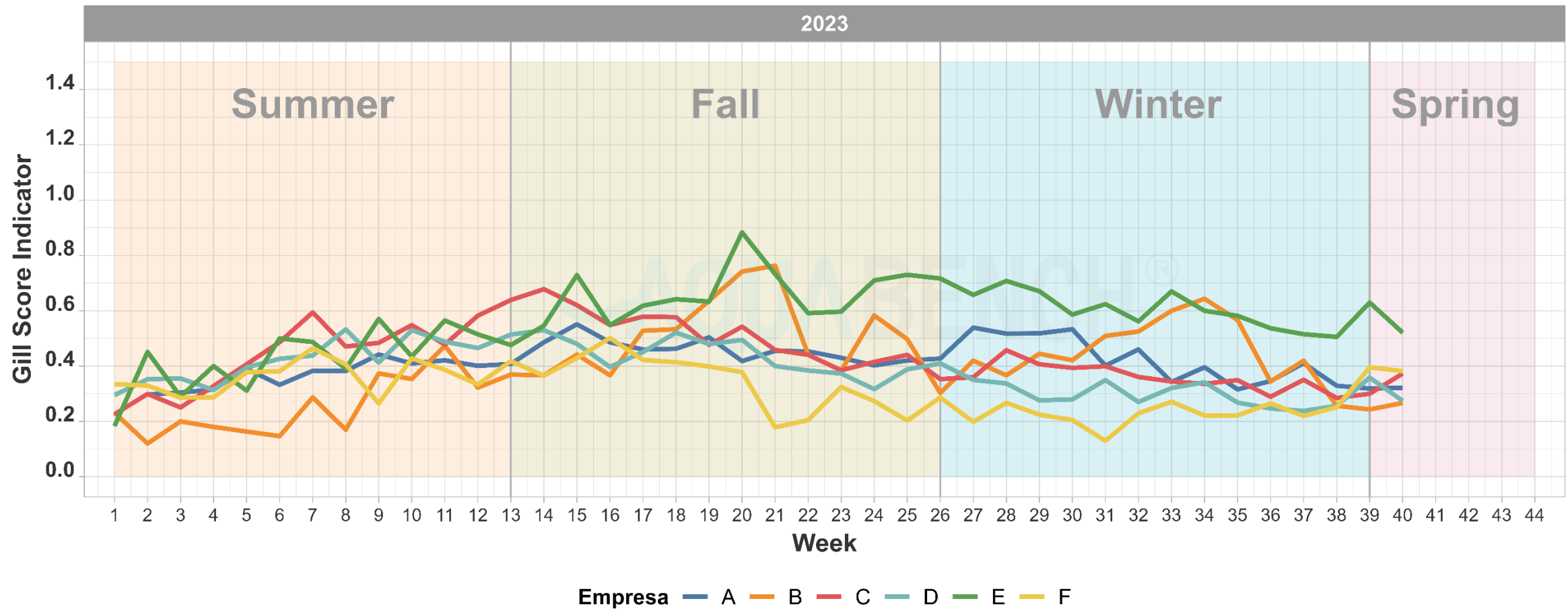
# Gill score evolution by company

Los Lagos and Aysen district, year 2023

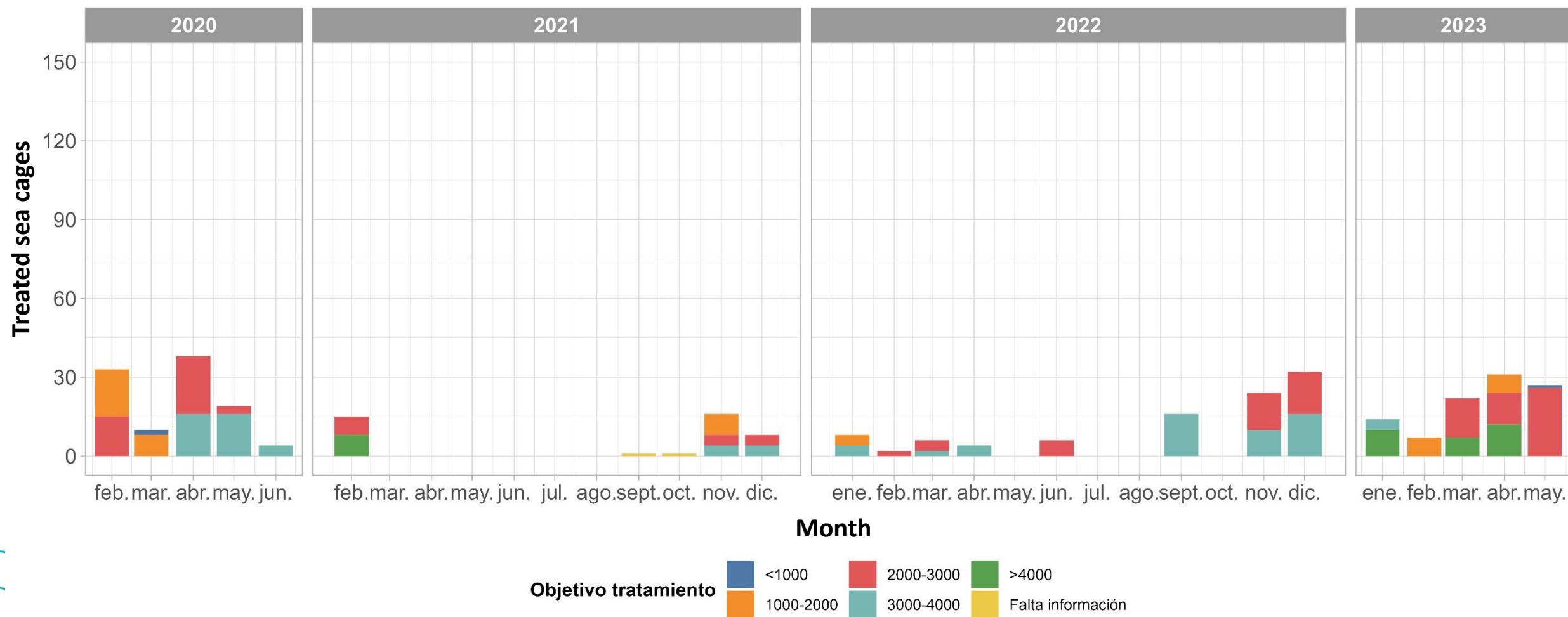


# Gill score evolution by company (Zoom)

Los Lagos and Aysen district, year 2023



# Hydrogen peroxide use for gill treatments



# Conclusions

- Effective standardization of gill score
- Training and visits to maintain data quality
- Continually technical meeting between the companies to share good practices.
- 2023 good gill Health status
- Challenges
  - Standardization of treatment evaluation
  - Statistical analyses to determine risk and preventive variables
    - Oxygen
    - Net cleaning / antifouling practices
    - Functional diets
  - Sharing online environmental data



## ACKNOWLEDGMENT

