



SERNAPESCA

Ministerio de
Economía Fomento
y Turismo

Gobierno de Chile

Status of Fish Health in Chile



**Seminar Chile -Noruega
August 2017**

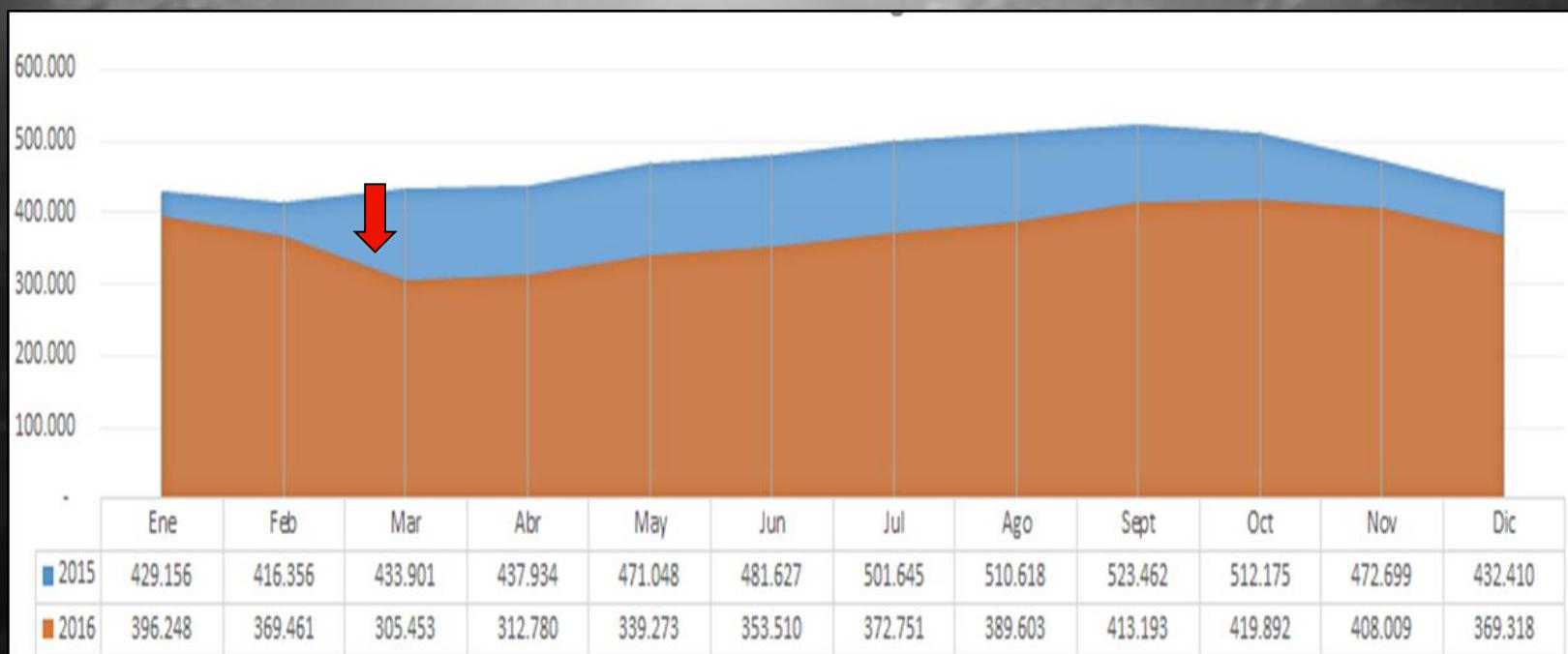


Veterinærinstituttet
National Veterinary Institute

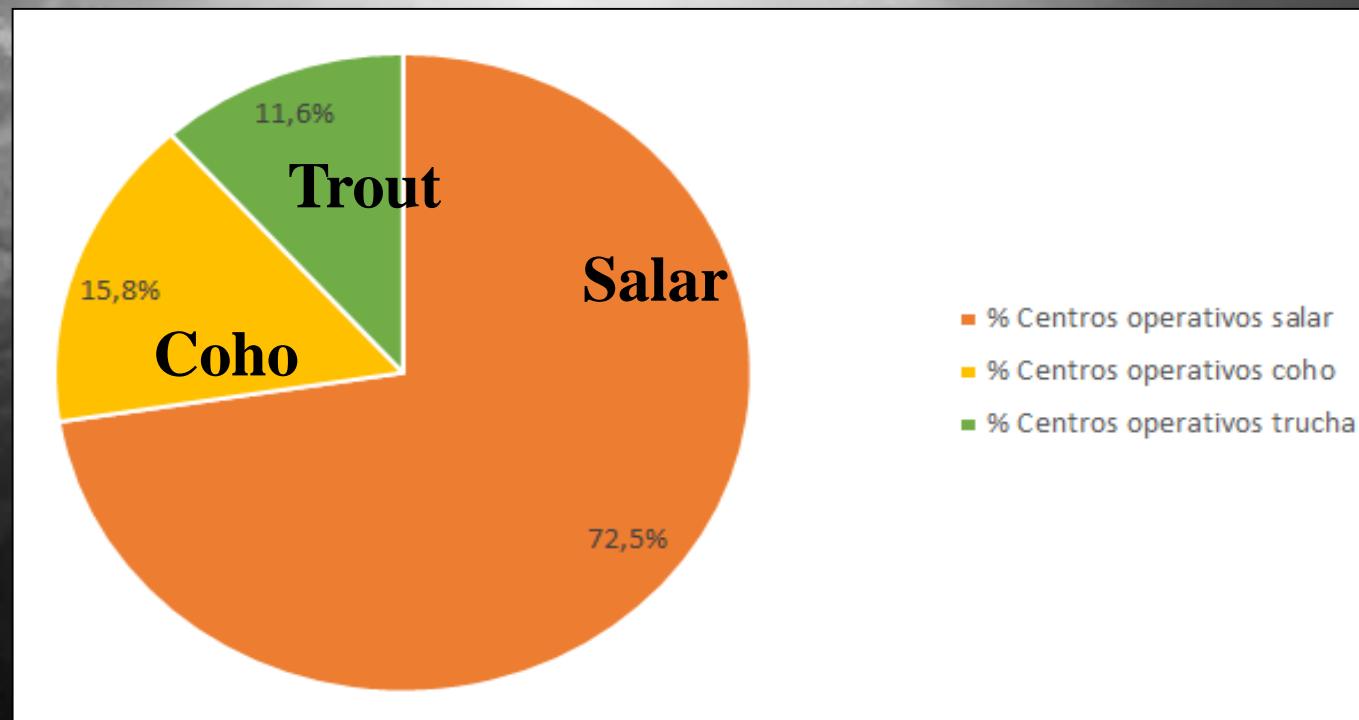
Active monthly salmon sea sites 2016

15-16

	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sept	Oct	Nov	Dic
Año 2015	360	348	349	350	351	355	339	350	351	345	329	317
Año 2016	310	297	282	263	260	263	265	270	274	276	270	268



Salmon sea sites by species 2016



Chilean Animal Health control strategy in aquatics



To prevent presence of diseases



Early detection

Immediately notification



Rapid response



Responsible and prudent use of antimicrobials products



Control and enforcement



Reporting and transparency



OIE Chile status

Country free



1. Epizootic haematopoietic necrosis disease
2. Infection with *Aphanomycesinvadans* (EUS)
3. Infection with *Gyrodactylus salaris*
4. Infection with salmonid alphavirus
5. Infectious haematopoietic necrosis
6. Koi herpesvirus disease
7. Red sea bream iridoviral disease
8. Spring viraemia of carp
9. Viral haemorrhagic septicaemia.

Diseases never reported in Chile

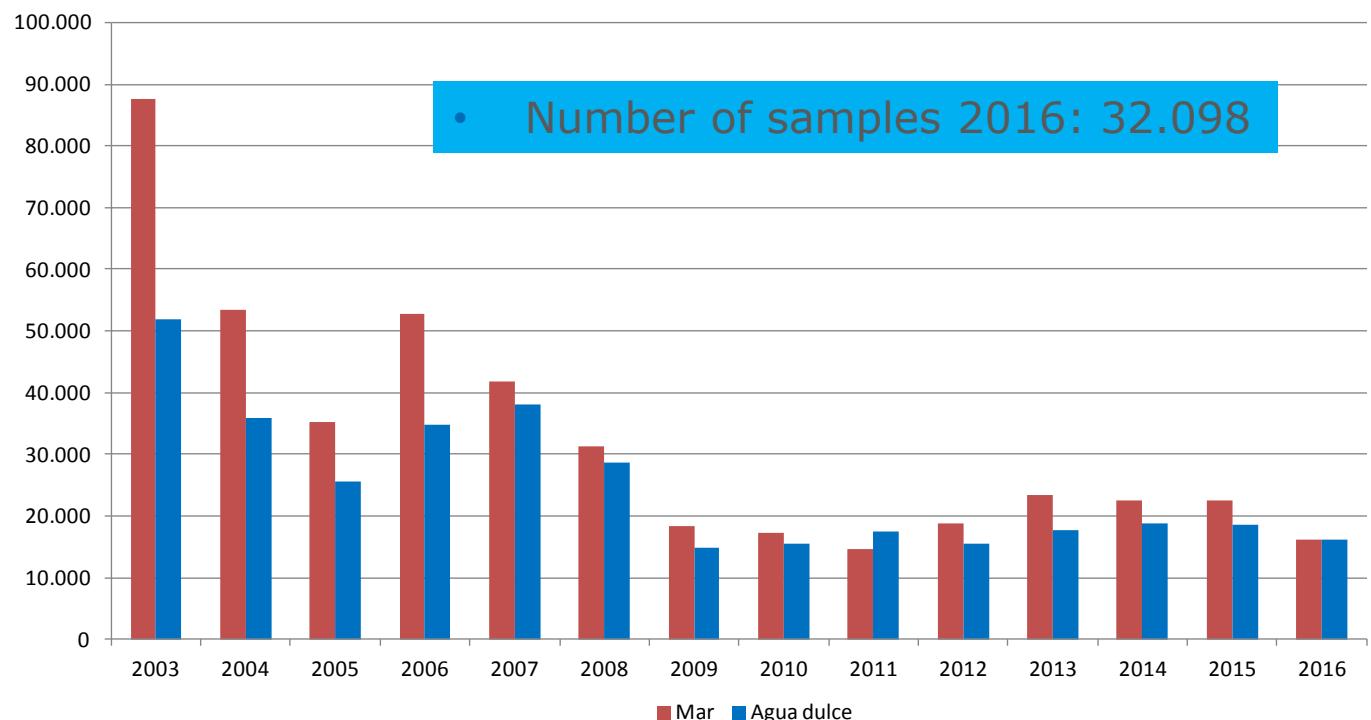
Active Surveillance

- ✓ OIE Aquatic Code and Manual based
- ✓ Since 2003
- ✓ Sampling 5% of prevalence and 95% of confidence
- ✓ Accredited laboratories
- ✓ Sernapesca supervision
- ✓ Wild testing program since 2010



Active Surveillance

Número de ejemplares analizados para EAR por año, 2003-2016.



Active Surveillance

Tipo de agua	Región	Otra	S. del Atlántico	S. coho	T. Arcoíris	T. café	Tot
Marine	10		3.660	1.959	861		
	11		7.050	600	450		
	12		1.245		240		
Fresh water	5				50	10	
	7	30	100	20			
	8		700	146	295		
	9		2.591	301	569		
	10		4.690	1.386	1.315	60	
	11		150	370	145		
	12		120				
	13		60		180		
	14		1.220	645	880		

Number of samples fresh water: 16.065

Number of samples sea sites: 16.033

Agua de mar

Nombre común	Nombre Científico
Salmón del Atlántico	<i>Salmo salar</i>
Salmón Coho	<i>O. kisutch</i>
Salmón Chinook	<i>O. tshawytscha</i>
Trucha Arcoíris	<i>O. mykiss</i>
Trucha fario	<i>Salmo trutta fario</i>
Pejerrey de mar	<i>Odonthestes regia</i>
Róbalo	<i>Eleginops maclovinus</i>

Agua dulce

Nombre común	Nombre Científico
Salmón del Atlántico	<i>Salmo salar</i>
Salmón Coho	<i>O. kisutch</i>
Salmón Chinook	<i>O. tshawytscha</i>
Trucha Arcoíris	<i>O.mykiss</i>
Trucha fario	<i>Salmo trutta fario</i>
Pejerrey agua dulce	<i>Basilichthys australis</i>
Perca Trucha	<i>Percichthys trucha</i>
Peladilla	<i>Aplochiton taeniatus</i>
Puye Grande	<i>Galaxias maculatus</i>

Active Surveillance

Wild fish

Zonas geográficas de muestreo del Programa



Región de la Araucanía



- Lago Caburga
- Lago Colico
- Lago Villarrica
- Lago Calafquén

Zonas geográficas de muestreo del Programa



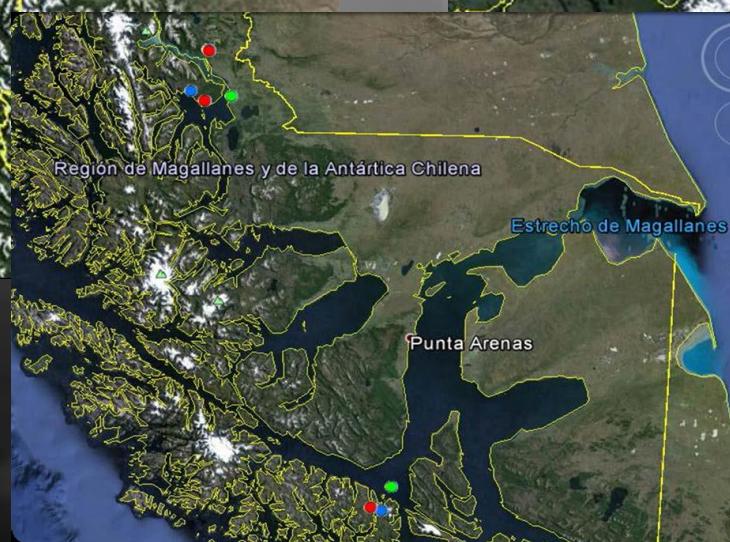
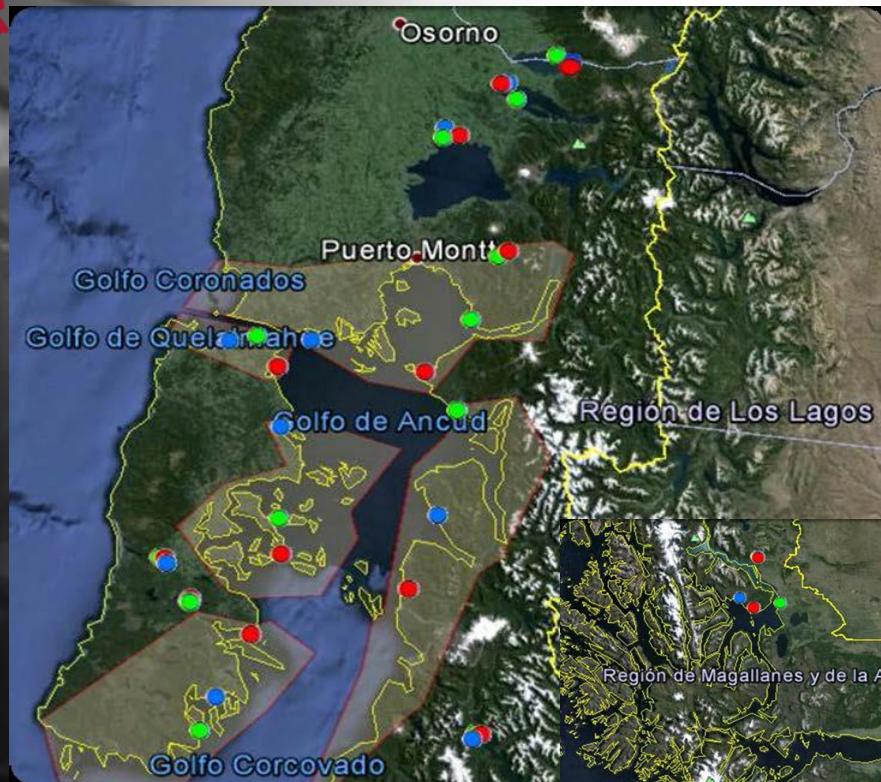
Región de los Ríos

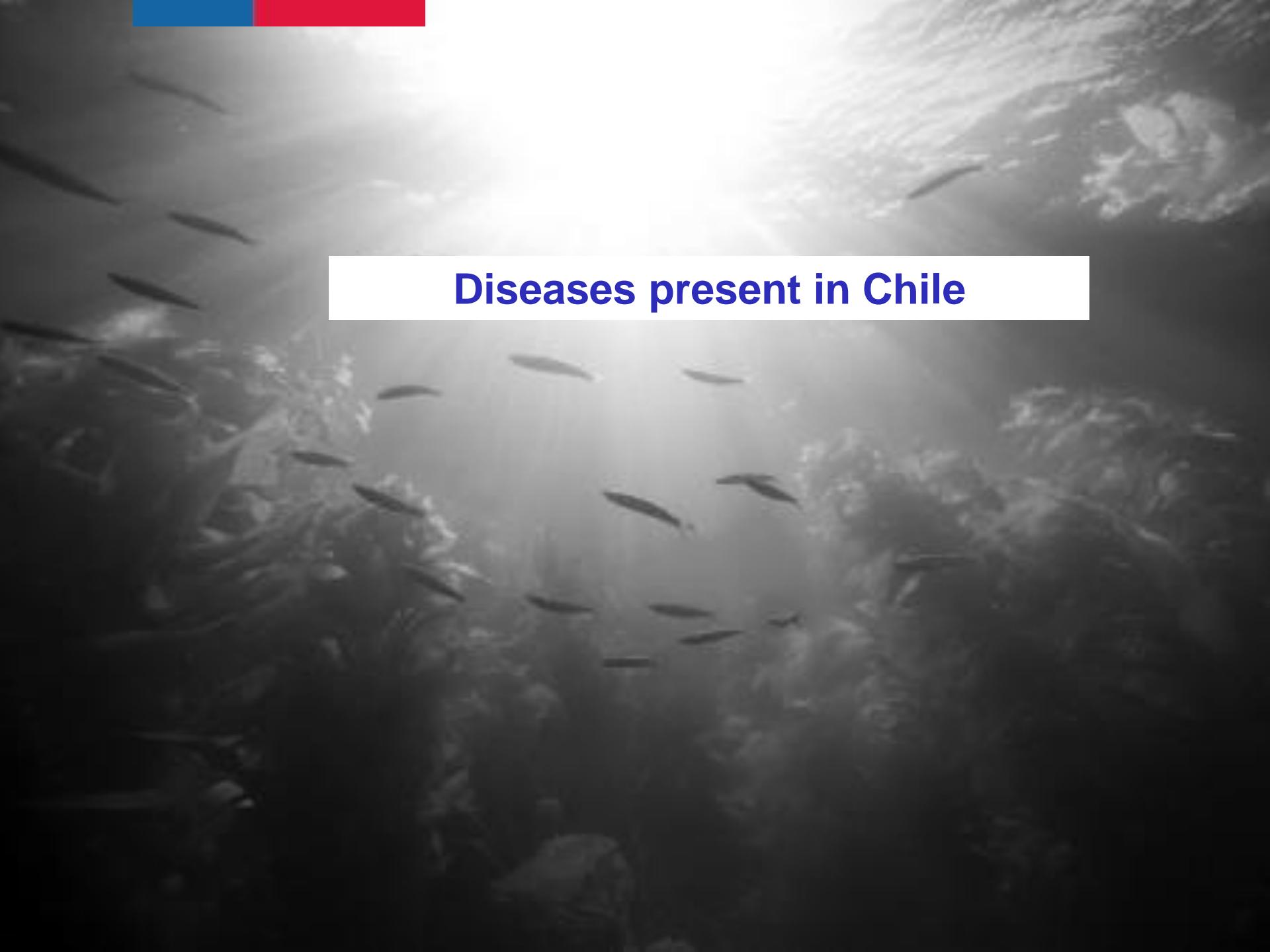


- Estuario de Valdivia
- Lago Panguipulli
- Lago Riñihue
- Lago Ranco

Active Surveillance

Wild fish

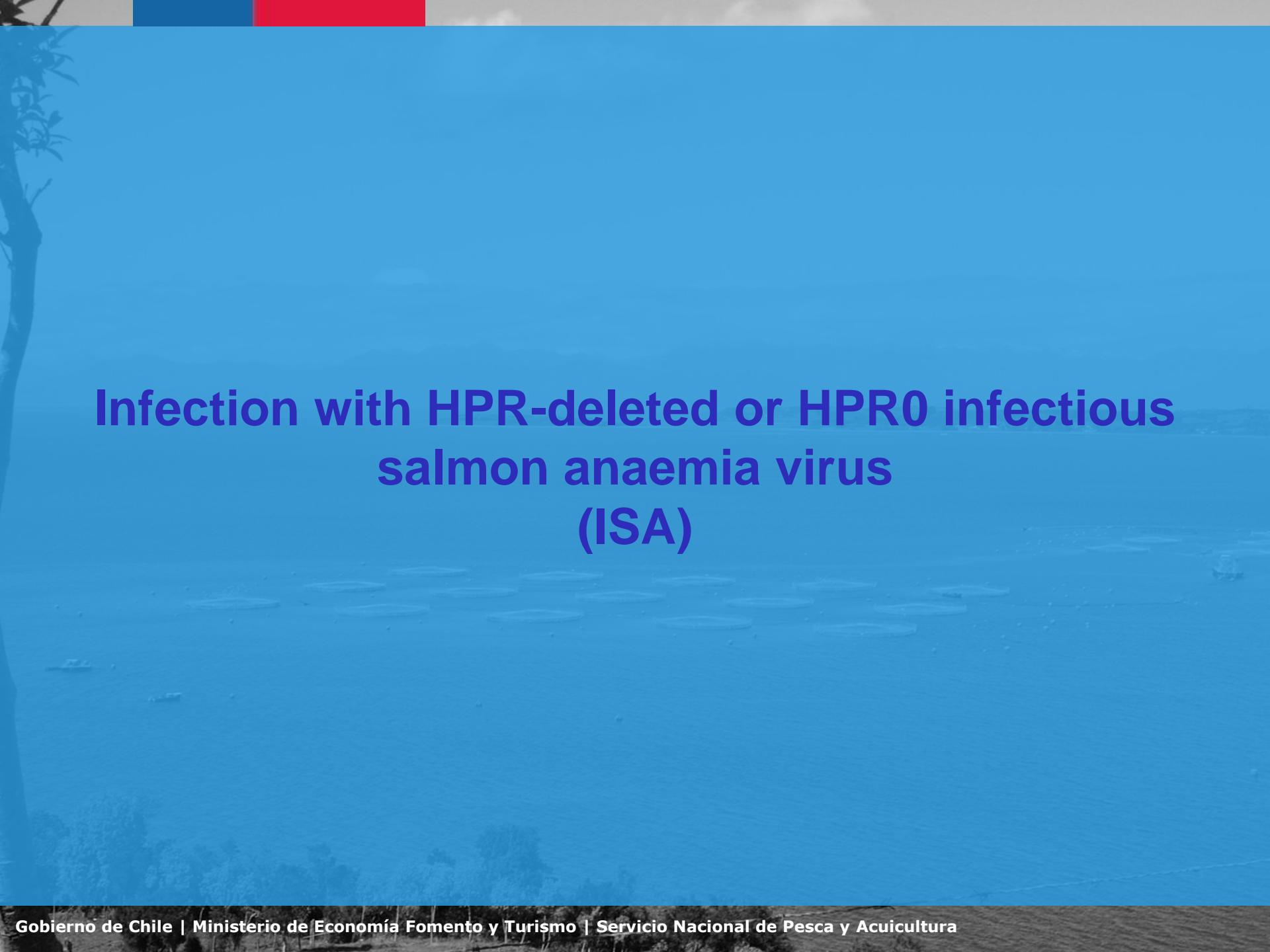


A black and white photograph showing a massive school of small fish swimming in a dense, swirling mass. The perspective is from above, looking down into the center of the swarm.

Diseases present in Chile

Diseases presents in Chile

- ISA (OIE listed)
- IPN
- Renibacteriosis (BKD)
- Piscirickettsiosis (SRS)
- Sea lice

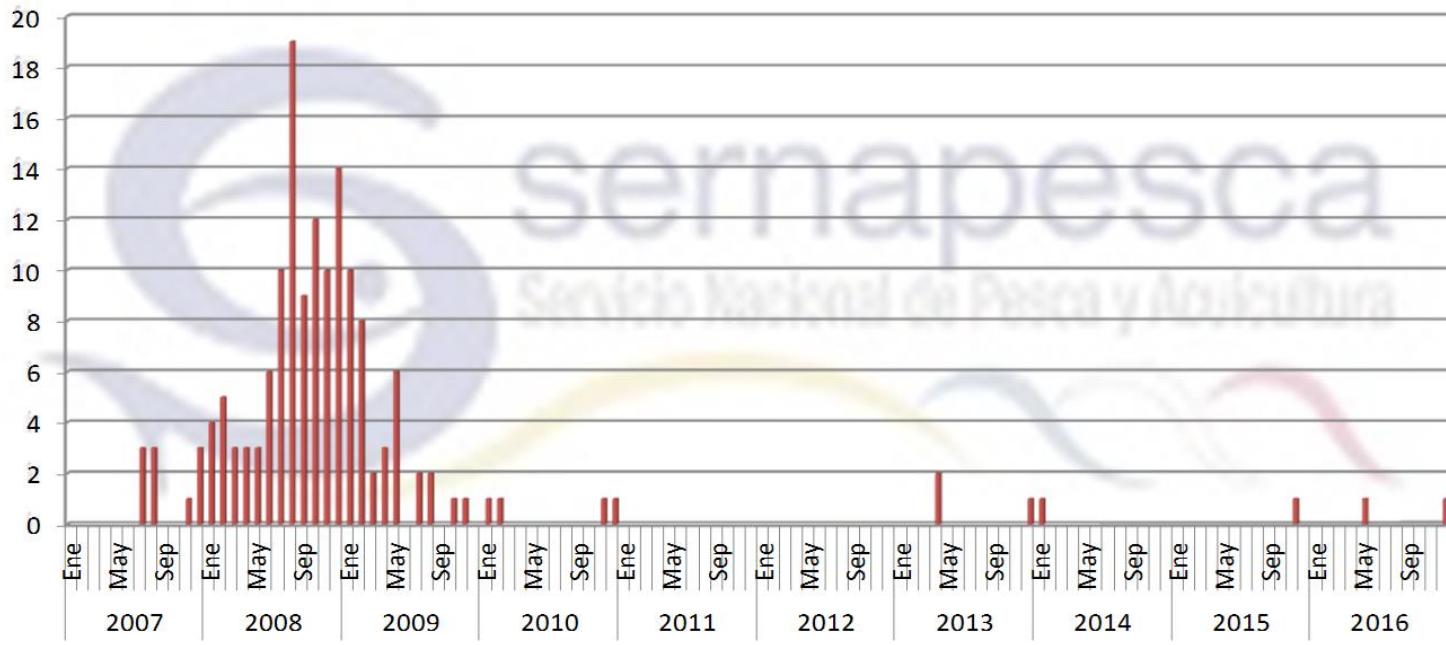


Infection with HPR-deleted or HPR0 infectious salmon anaemia virus (ISA)

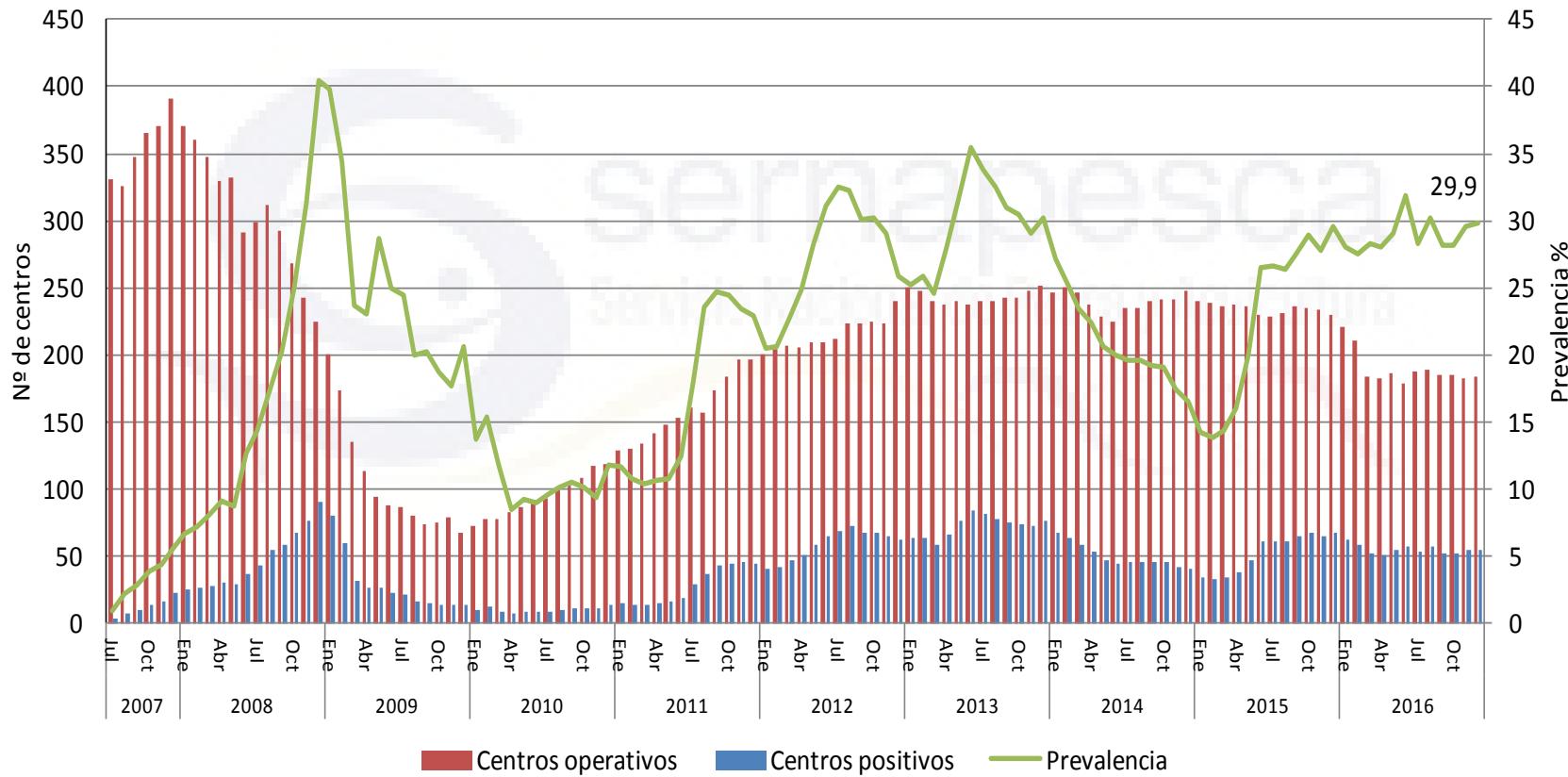
Summary status

- ✓ 2 outbreaks, 50% cases less than 2015
- ✓ Same variants (previous present in Chile) **HPR 8 y 7b**
- ✓ The cases were only into the same **macrozone** without dissemination
- ✓ Early detection and rapid implementation of control measures (with the present of the virus without clinical signs or mortality)
- ✓ **ISA HPR0**, same trend in incidence (29% monthly)

Nº de Brotes de Anemia Infecciosa del Salmón, años 2007 - 2016



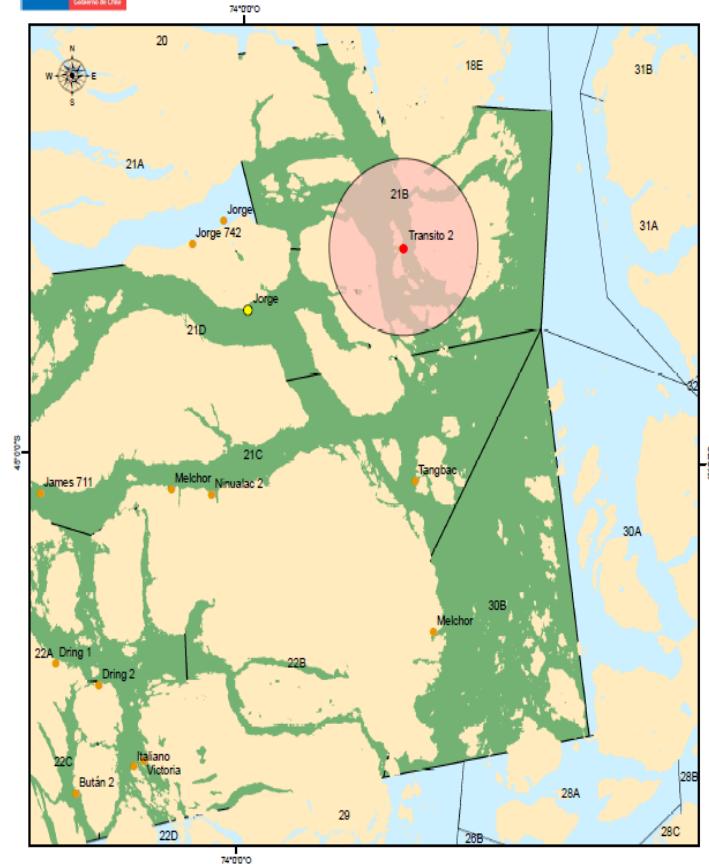
Prevalencia de Positividad de ISAv, años 2007 a 2016.



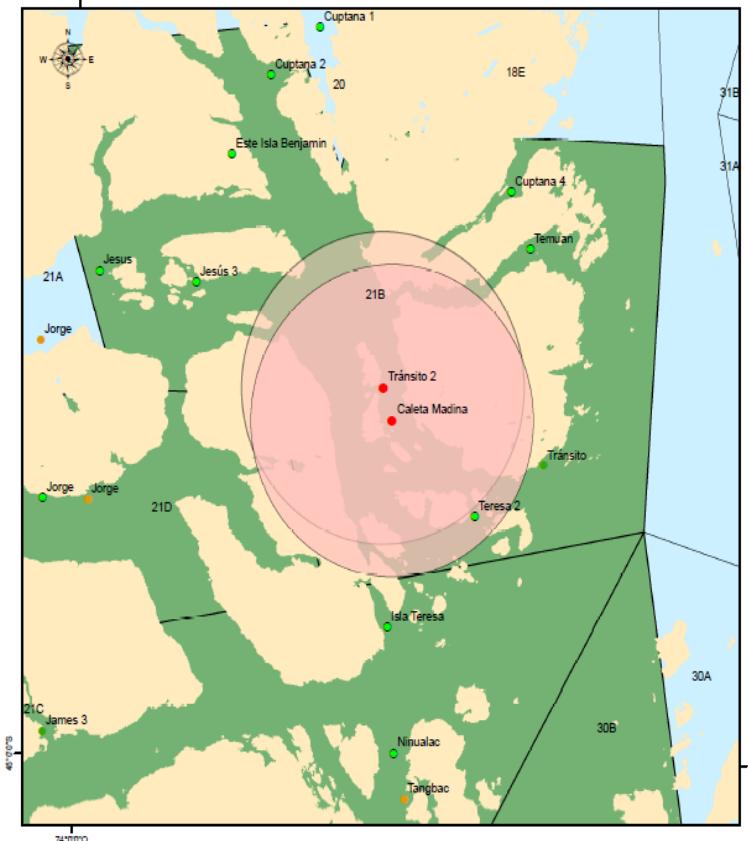
HPR0 results

Mes	Región						Total	
	Los Lagos		Aysén		Magallanes			
	Nº	%	Nº	%	Nº	%	Nº	%
Enero	1	50	1	50			2	5
Febrero	2	66,7			1	33,3	3	7
Marzo	2	40	4	67			6	14
Abril			5	83,3	1	16,7	6	14
Mayo			3	75	1	25	4	10
Junio			6	100			6	14
Julio			1	100			1	2
Agosto			2	50	2	50	4	10
Septiembre			1	100			1	5
Octubre	1	100					1	2
Noviembre	1	20	2	40	2	40	5	12
Diciembre			2	100			2	5
Total	7	16,7	27	66,67	7	16,7	41	100

Zonificación Centro en Brote
Centro Tránsito 2 - ACS 21B
PSEVC-ISA Mayo 2016



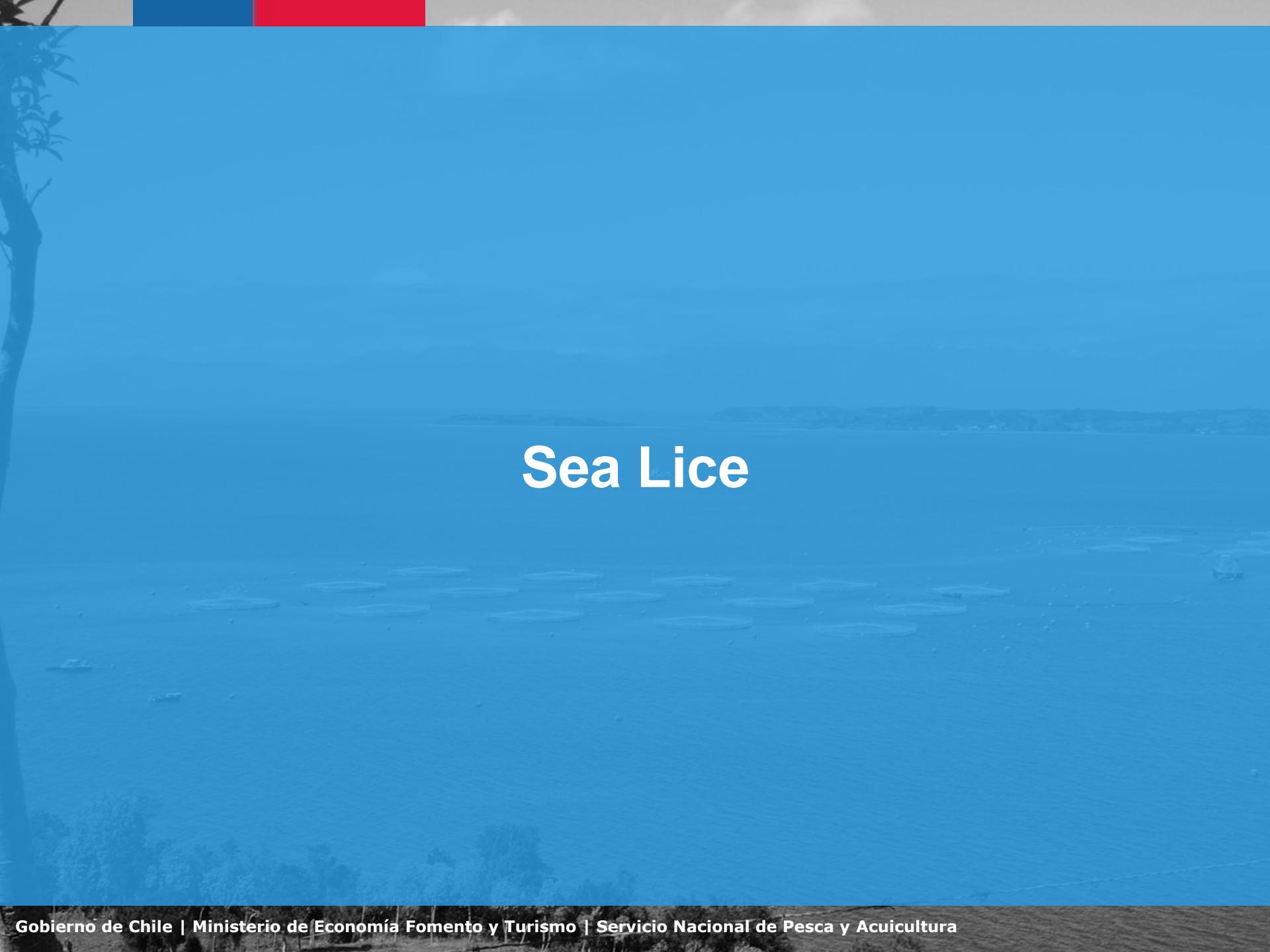
Zonificación Caso Confirmado Otros HPR
Centro Caleta Madina - ACS 21B
PSEVC - ISA Septiembre 2016



Compartment

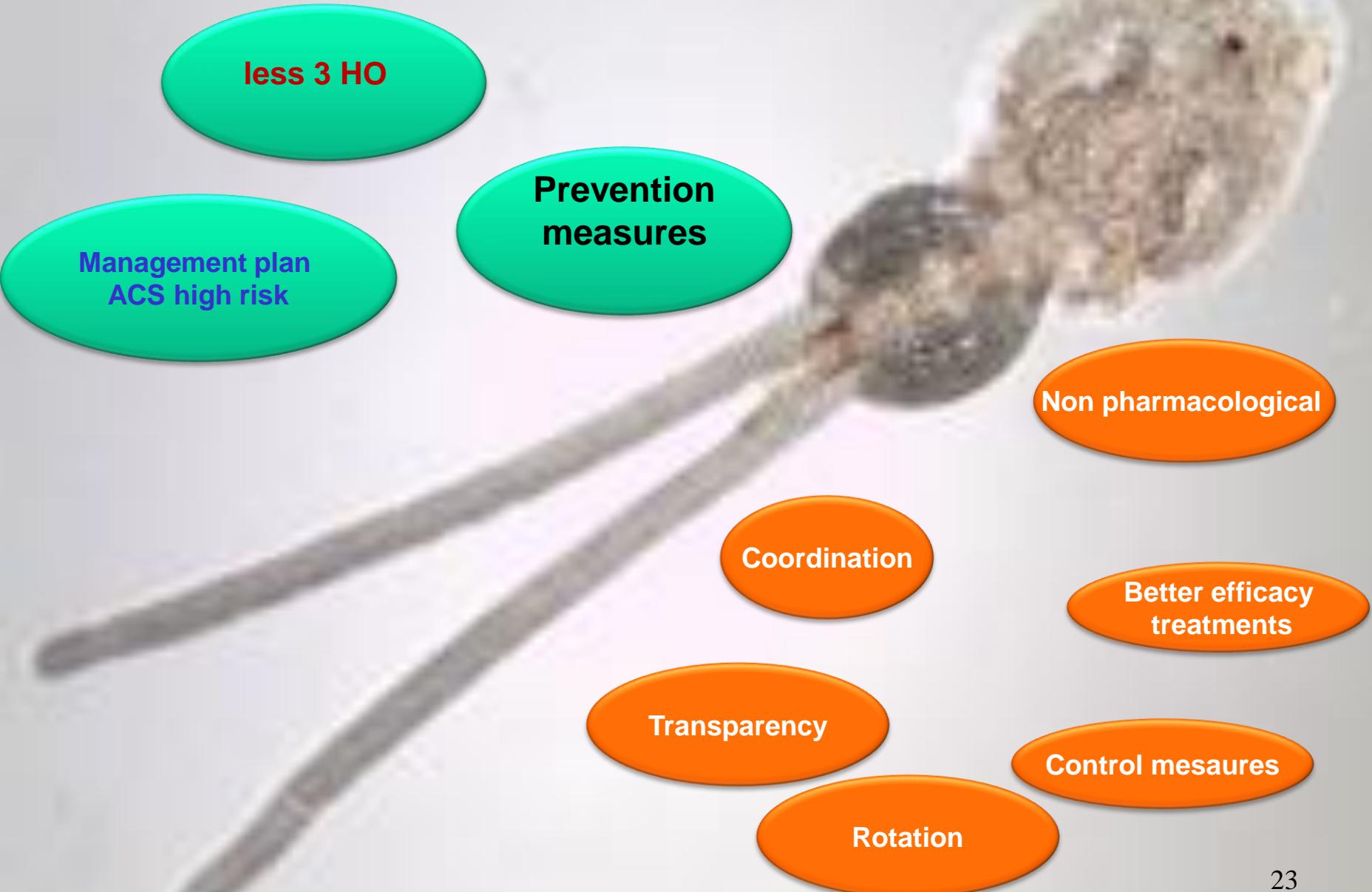




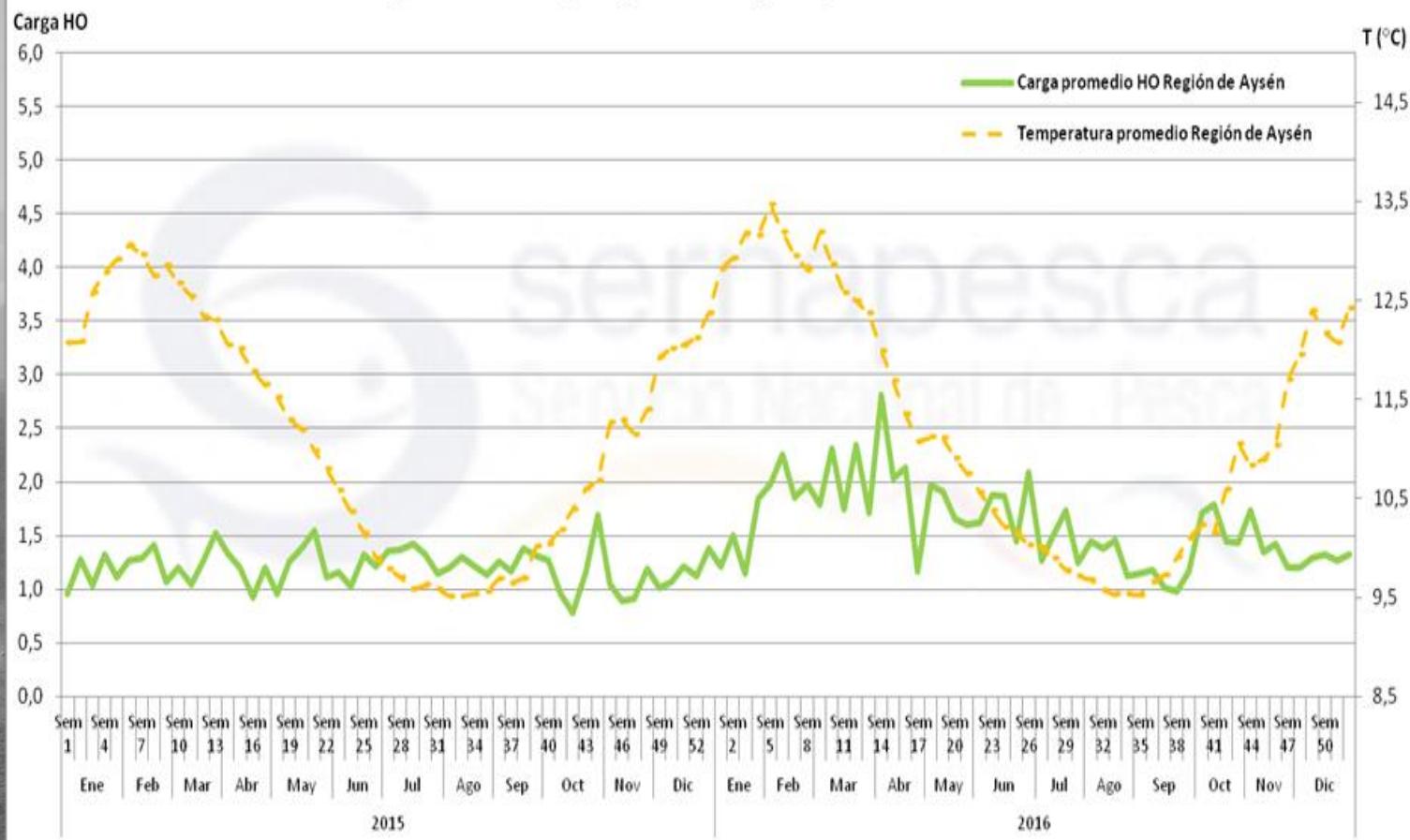


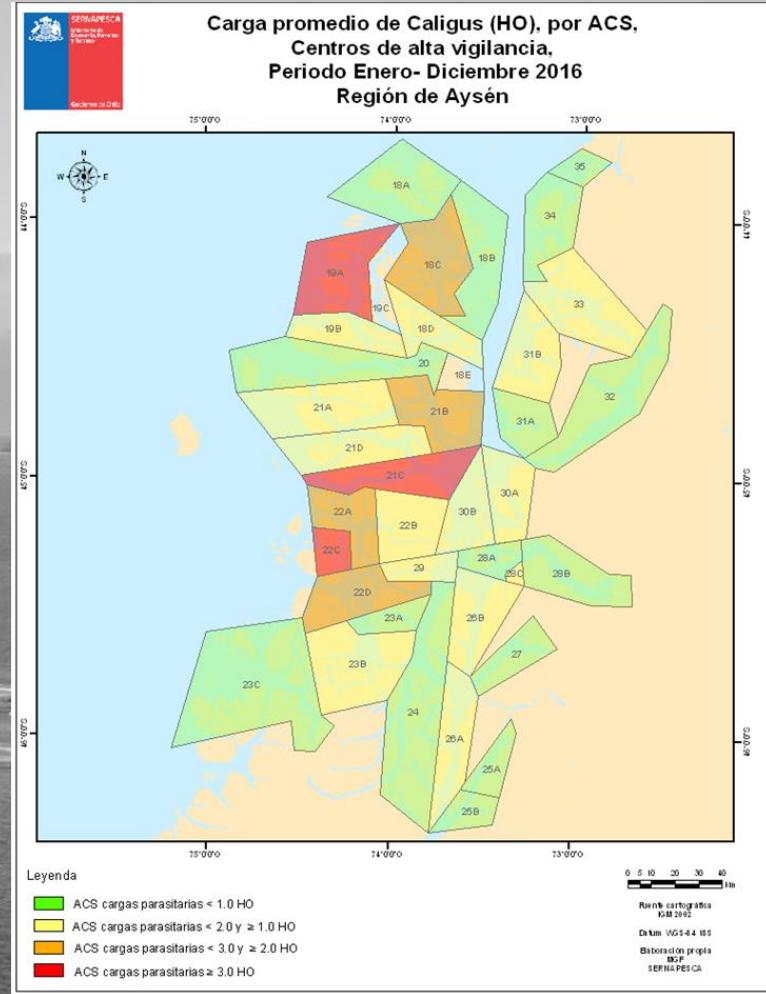
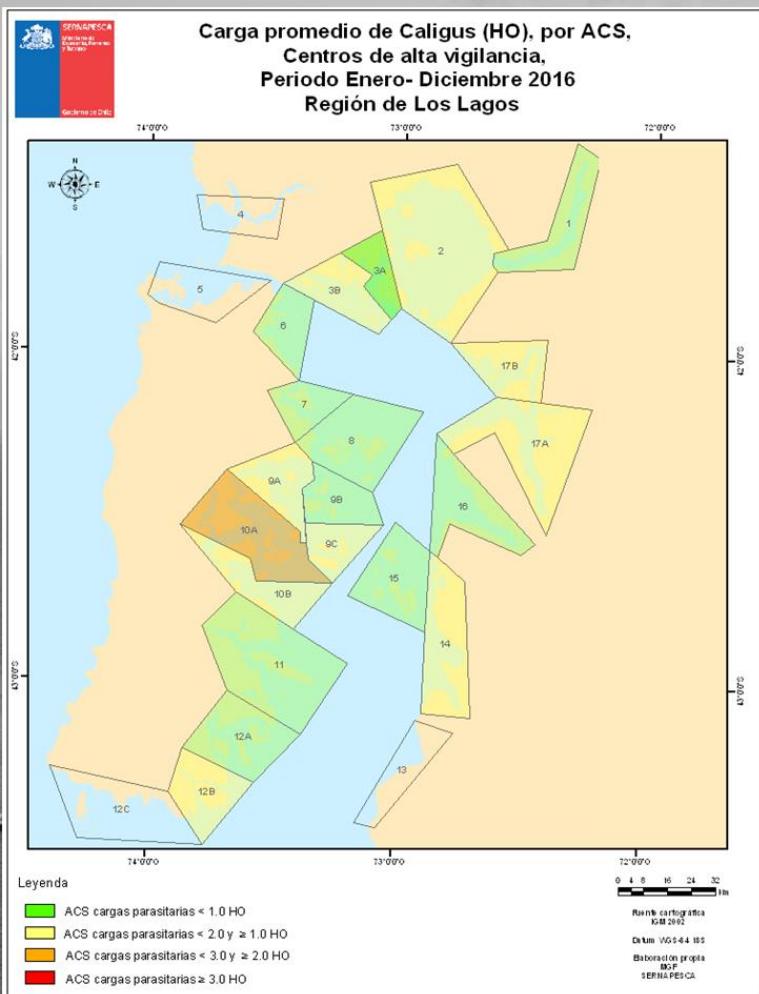
Sea Lice

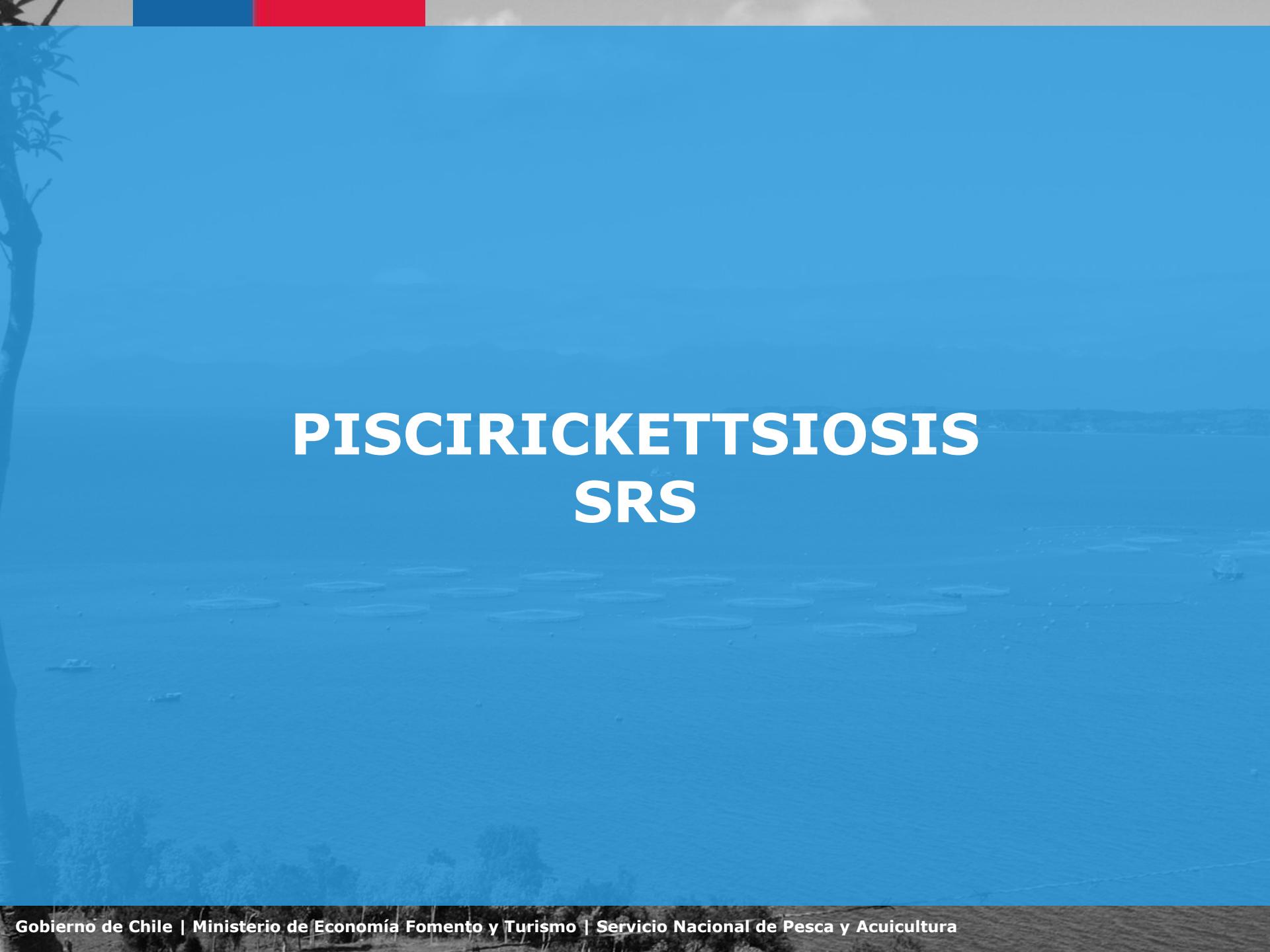
Good results



Cargas promedio de caligus (HO) y temperatura, según semana, Región de Aysén, años 2015-2016



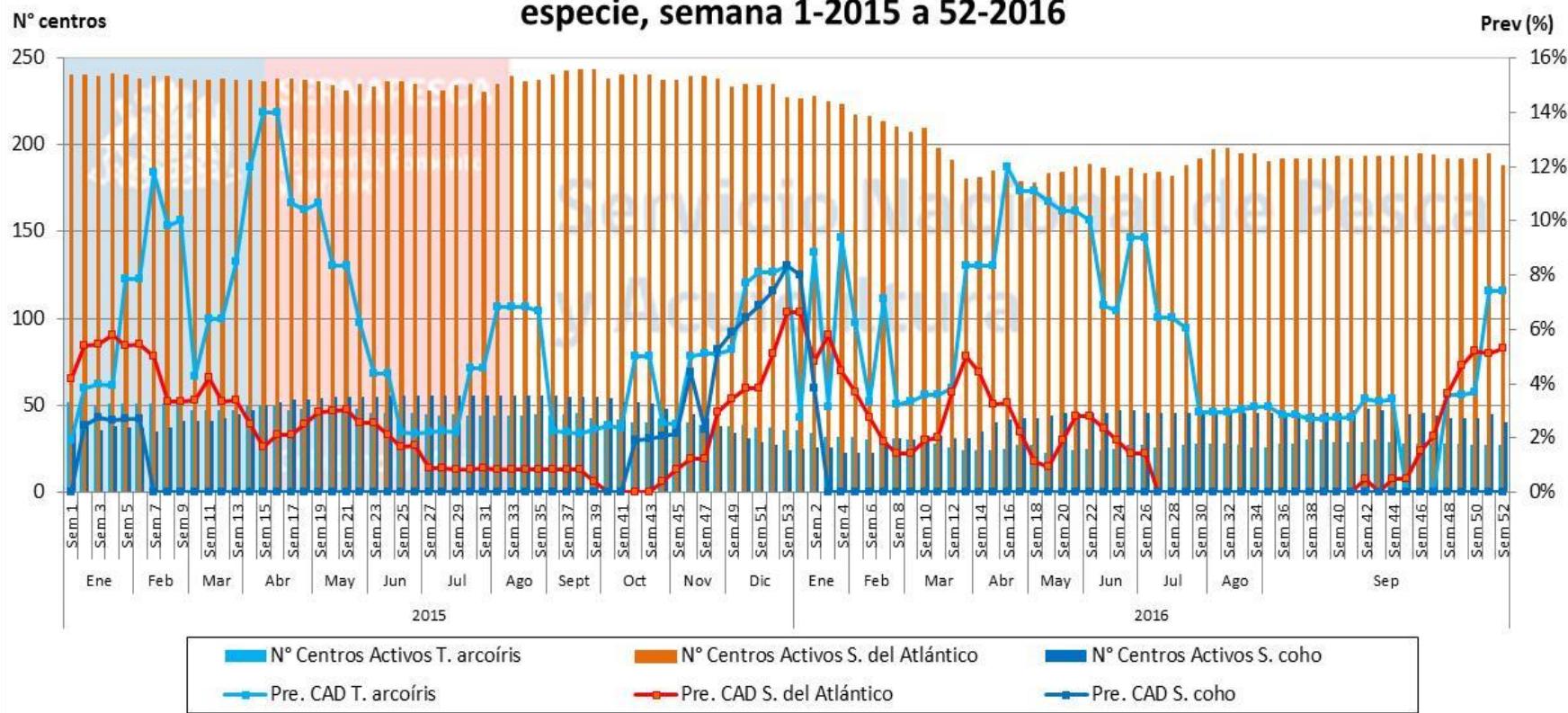




PISCIRICKETTSIOSIS SRS

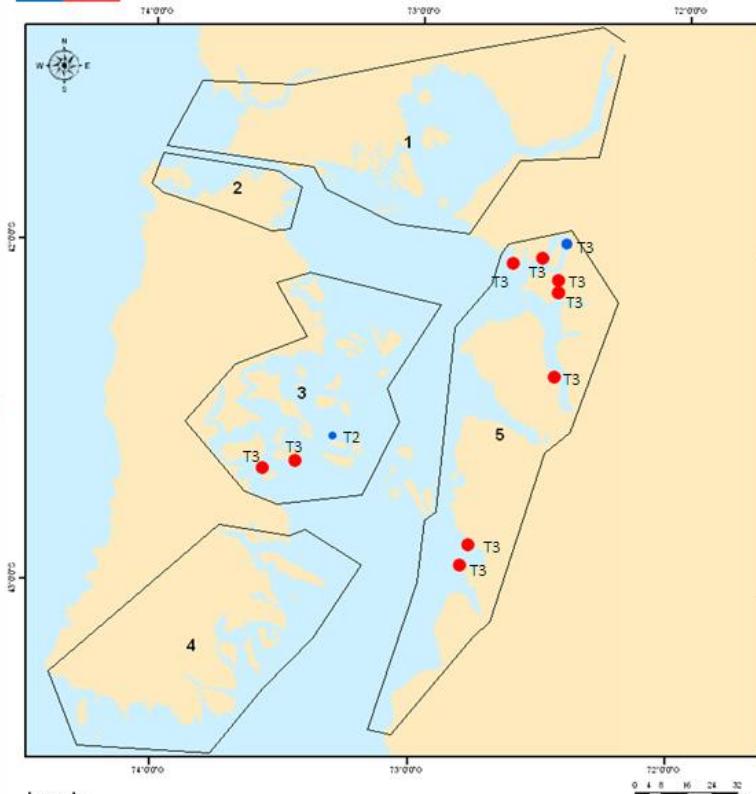
- ✓ Seasonal presentation
- ✓ Trout has the higher prevalence.
- ✓ Magallanes has not the disease.

Prevalencia semanal de centros CAD y N° de centros activos según especie, semana 1-2015 a 52-2016





**Centros de Alta diseminación (CAD)
PSEVC-Piscirickettsiosis
Región de Los Lagos, año 2016**



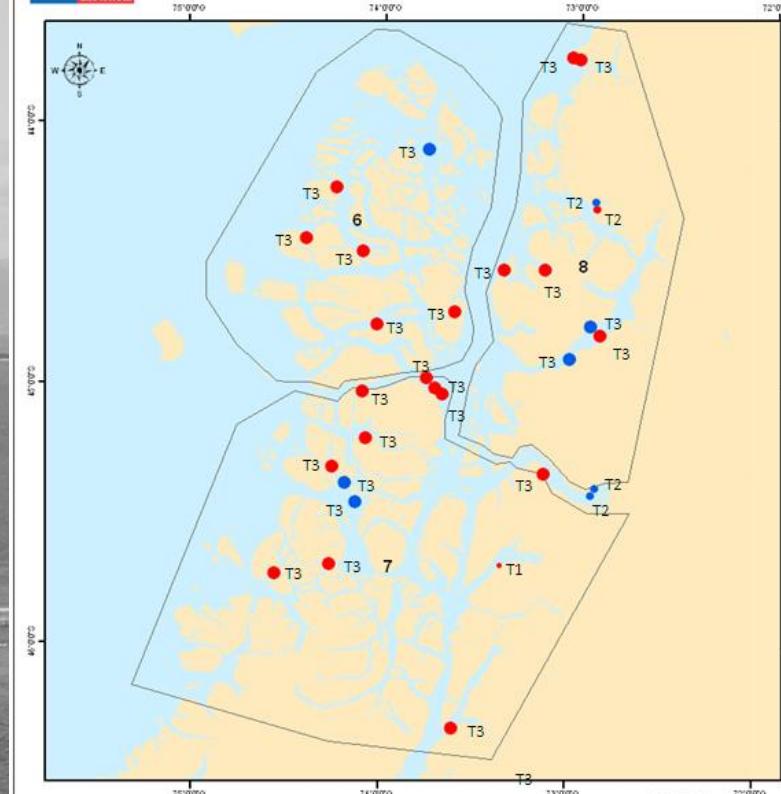
Leyenda

- S. del Atlántico T2
- Trucha arcoíris T2
- S. del Atlántico T3
- Trucha arcoíris T3

Rumbo cartográfico
KML 2002
Datum: WGS-84 IES
Bibliografía propia
SERNAPESCA



**Centros de Alta diseminación (CAD)
PSEVC-Piscirickettsiosis
Región de Aysén, año 2016**



Leyenda

- S. del Atlántico T1
- Trucha arcoíris T2
- S. del Atlántico T2
- Trucha arcoíris T3

Rumbo cartográfico
KML 2002
Datum: WGS-84 IES
Bibliografía propia
SERNAPESCA

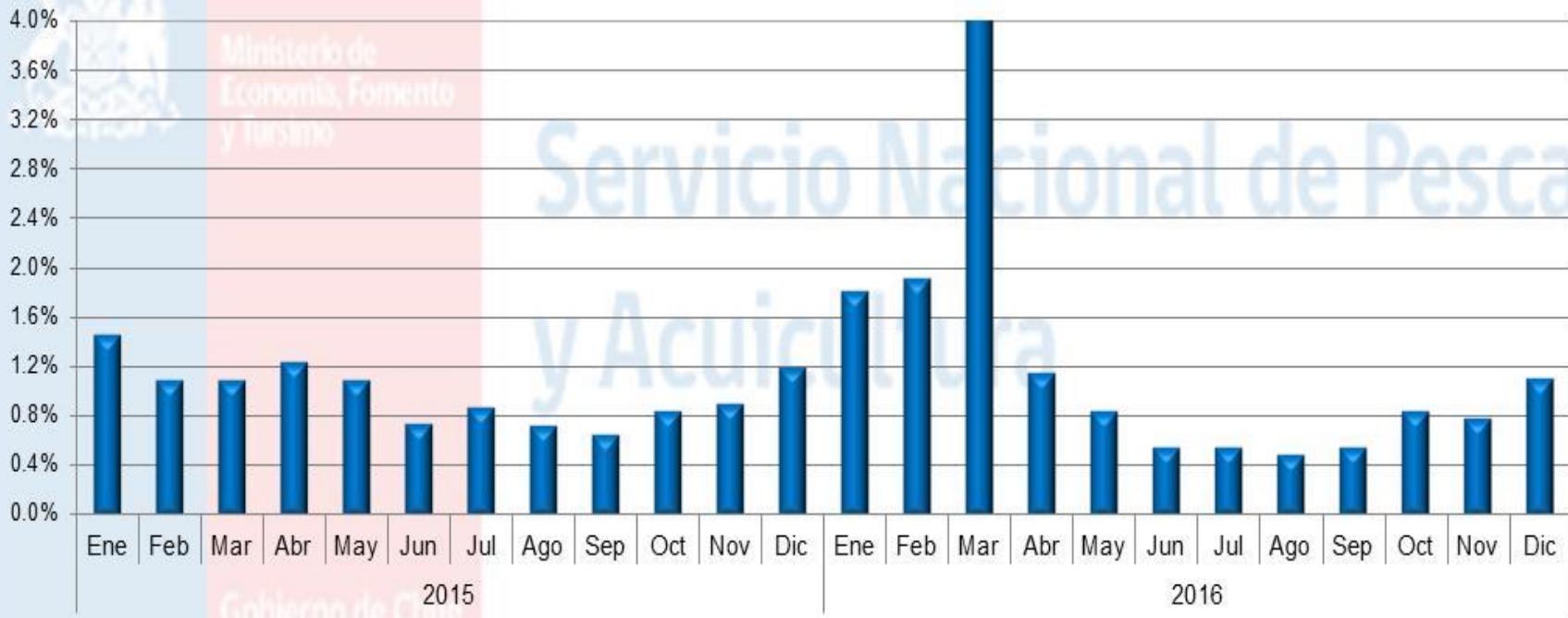
Pasive surveillance

PASIVA

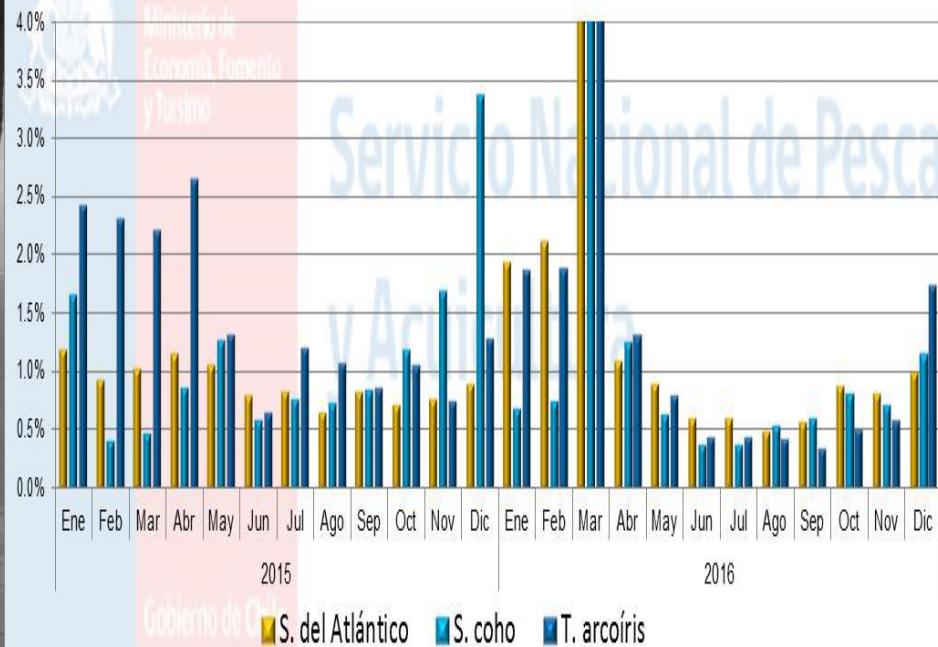
- Weekly mortality report
- Mandatory notification



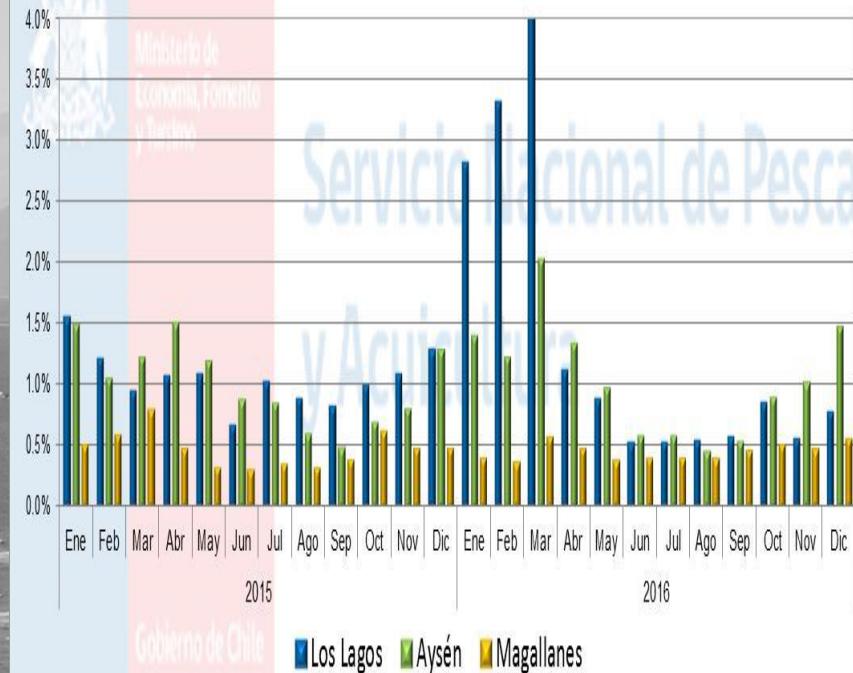
Ser... Porcentaje mortalidad mensual centros de mar, SIFA 2015 - 2016



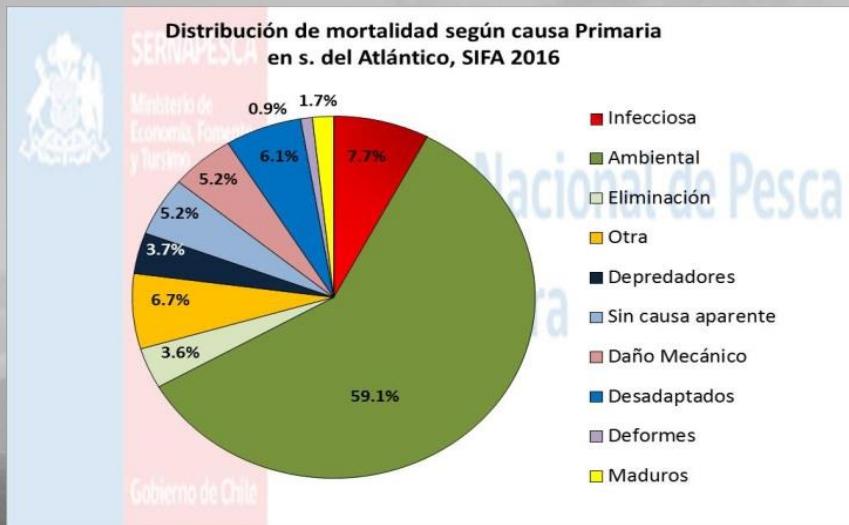
Porcentaje de mortalidad mensual centros de mar por Especie, SIFA 2015 - 2016



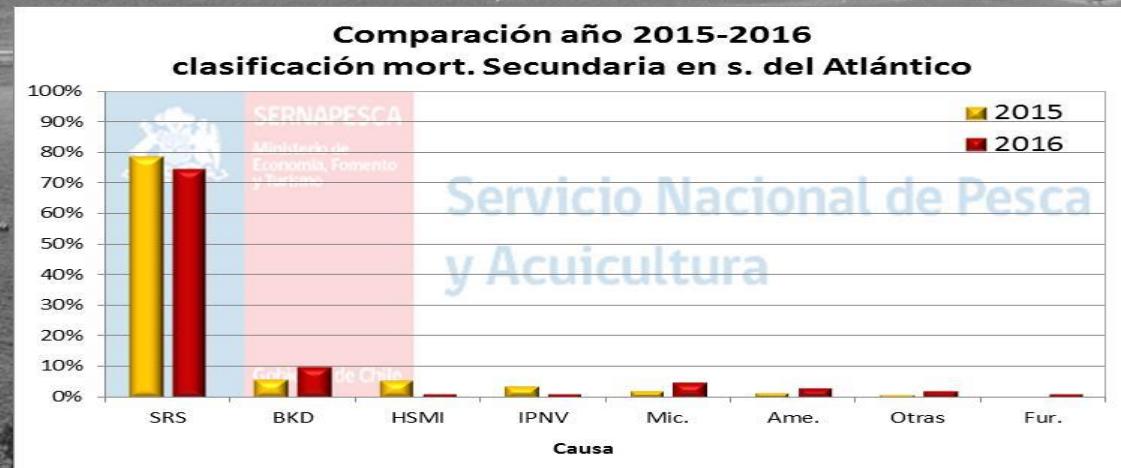
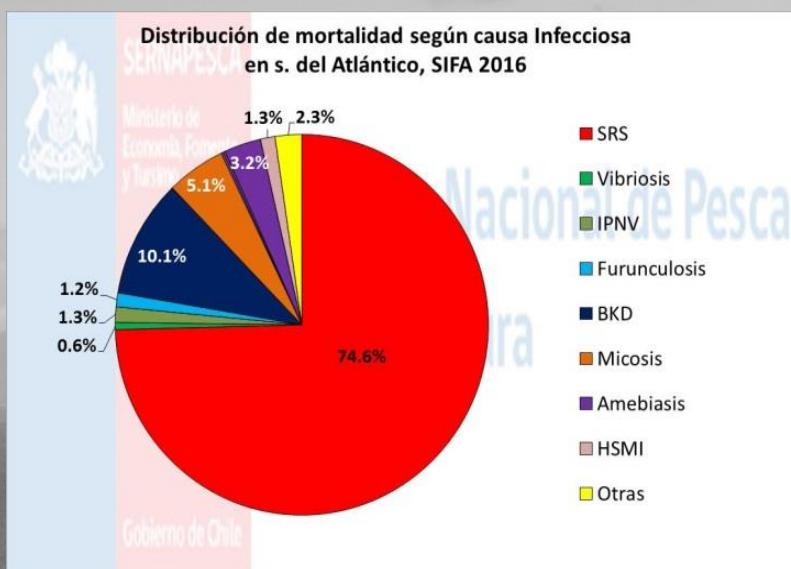
Porcentaje mortalidad mensual centros de mar por Región , SIFA 2015 - 2016

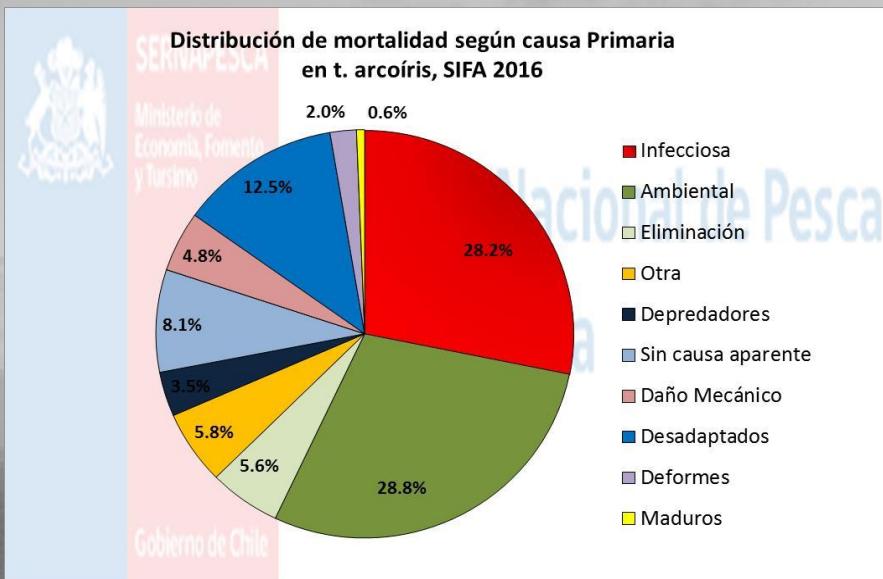


Atlantic Salmon

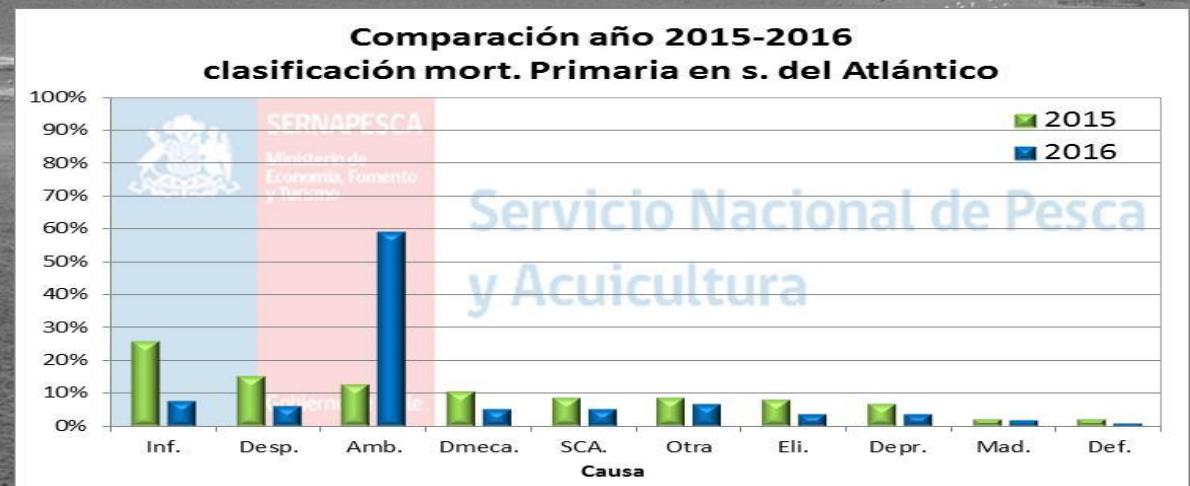


Atlantic Salmon

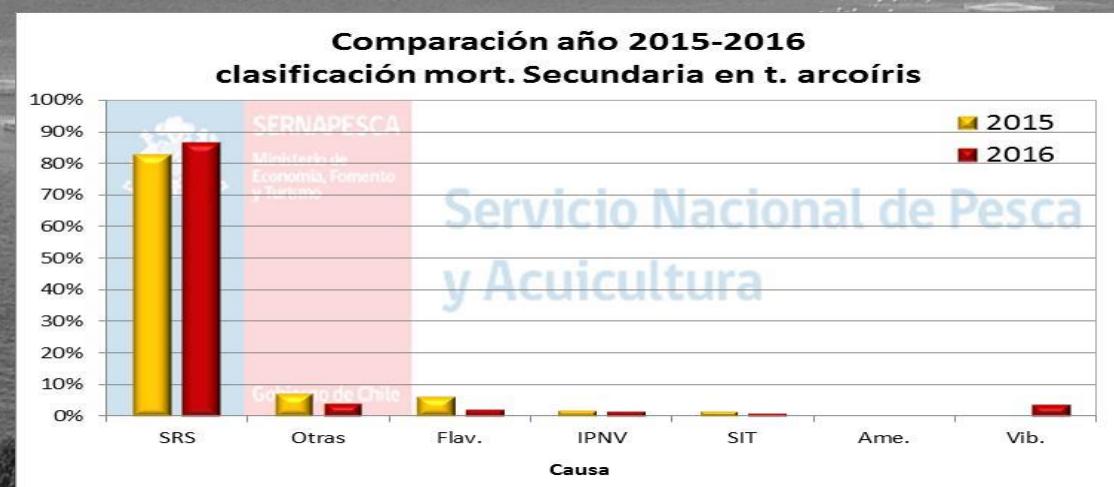
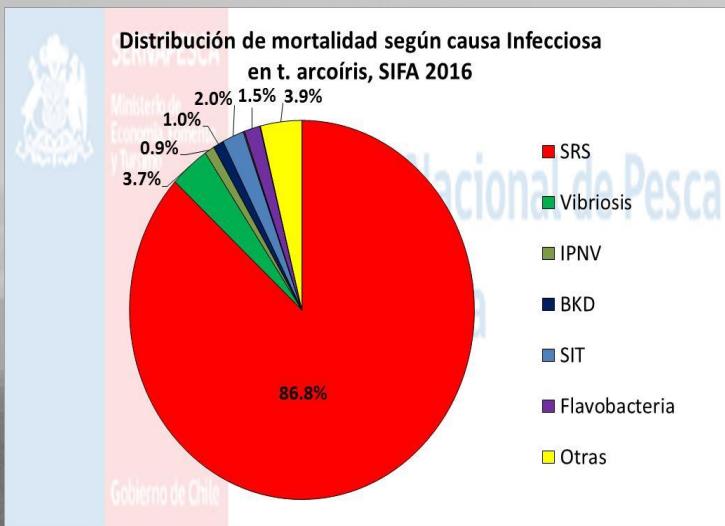




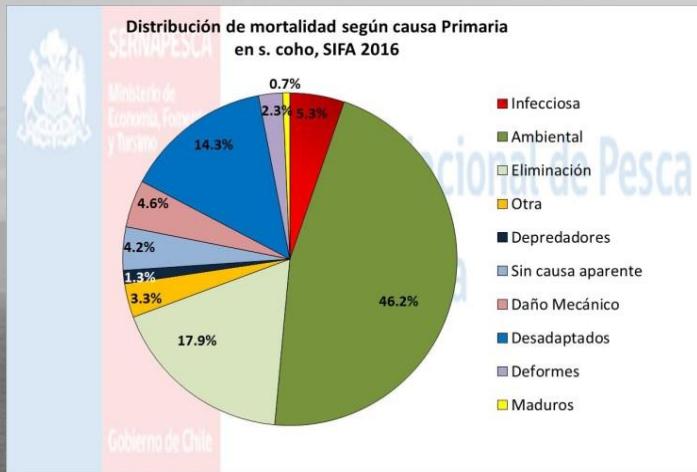
Trout



Trout



Coho salmon





SERVICIO NACIONAL DE PESCA Y ACUICULTURA

Manual de la Normativa Excepcional Aplicable Ante Eventos de Mortalidades Masivas

Noviembre 2016



New regulation to control masive mortalities



Our main challenge:



General Sanitary Program

The program covers four areas and sets specific actions to be taken in the veterinary field.



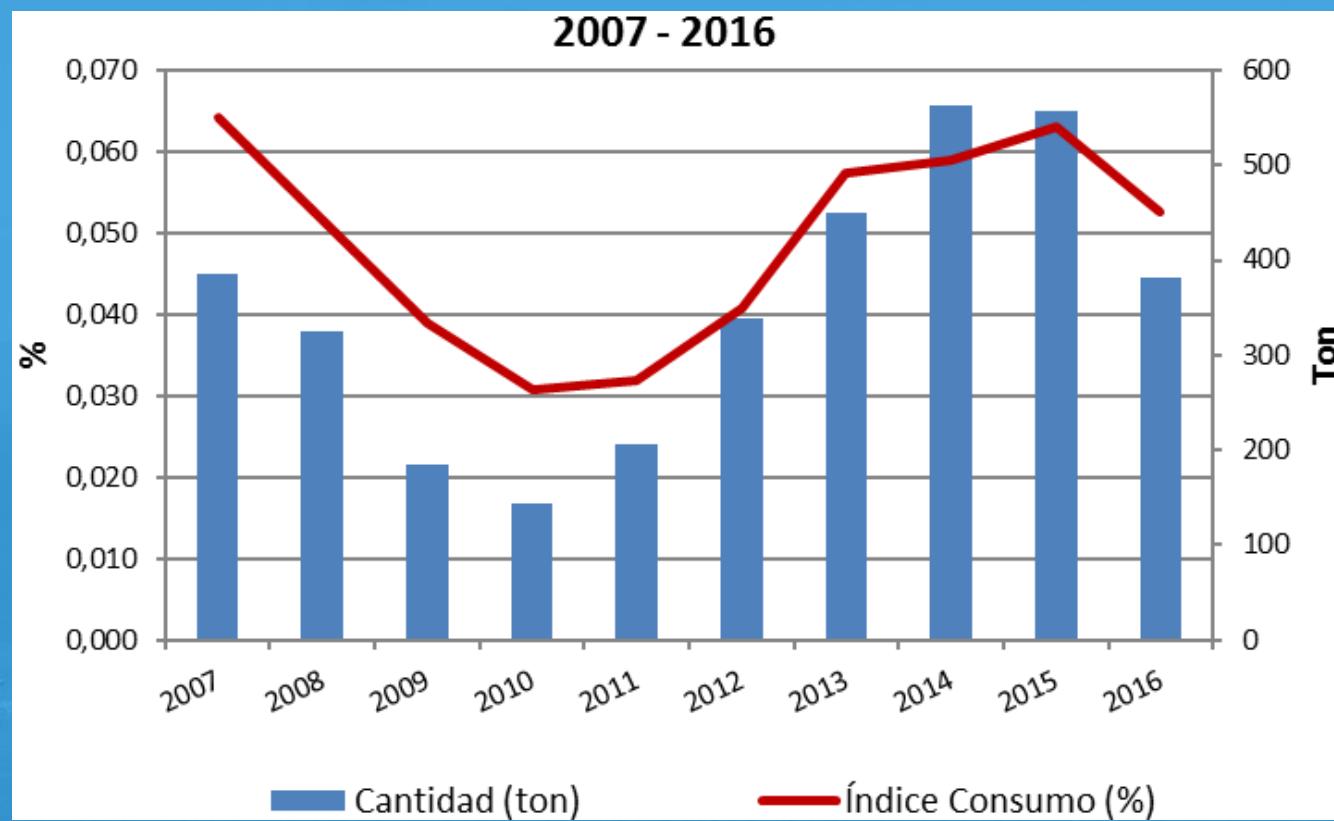
Promote its rational use

To secure availability and increase effectiveness of antimicrobial agents

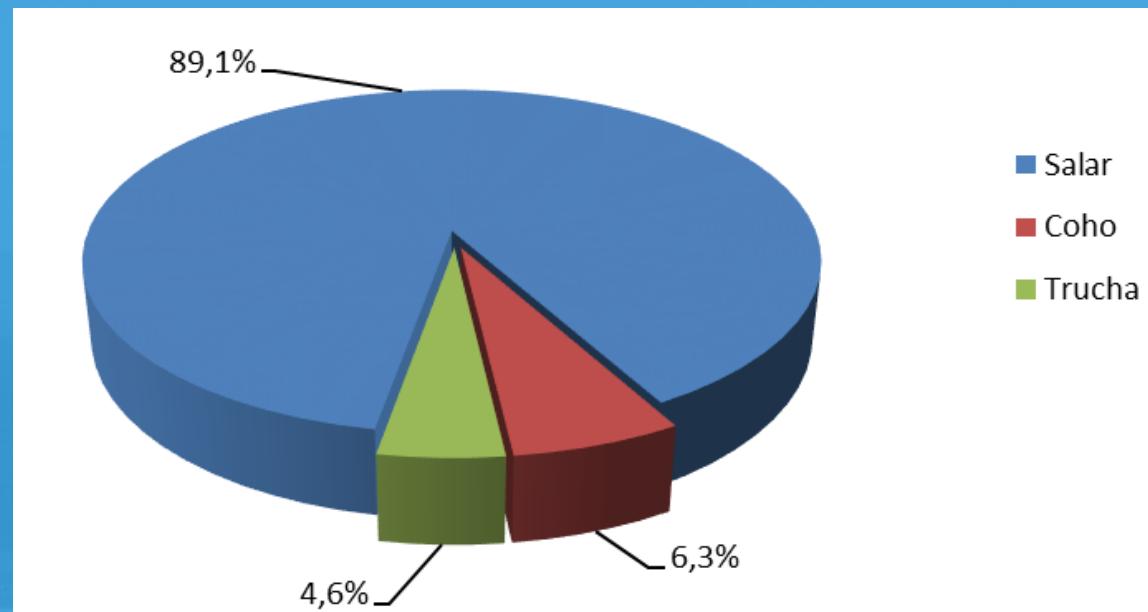
Promote animal welfare
Economic need to control diseases that affect salmon farming, especially SRS.

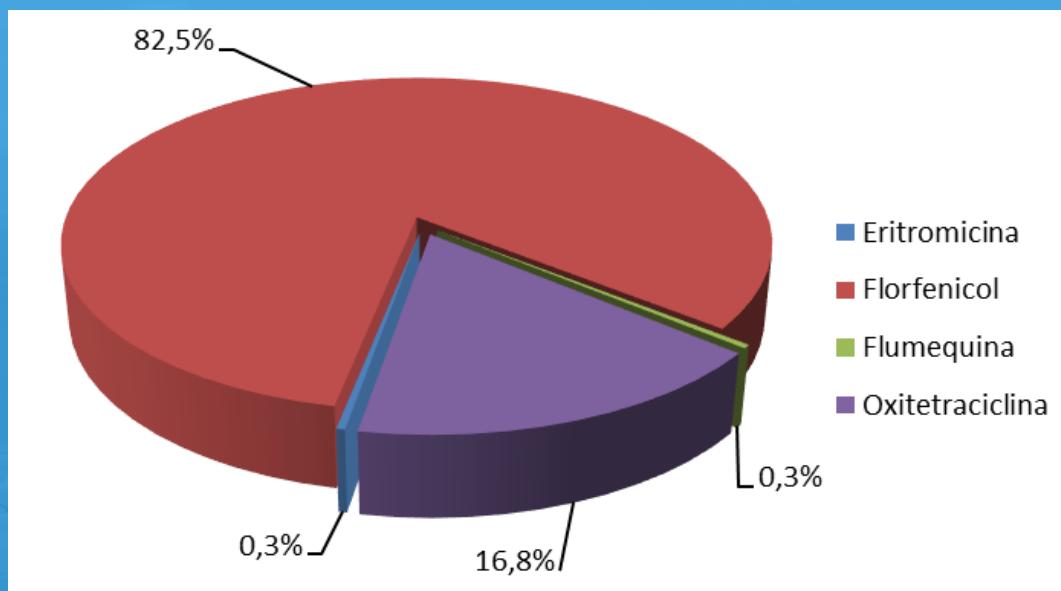
Monitoring and prevention of AMR

Strengthening control of antimicrobial residues in products



- The lowest consumption index of the last 4 years





Antimicrobial free program



**Servicio Nacional de Pesca
y Acuicultura**

[Inicio](#) [Usuarios Sectoriales ▾](#) [Descargas y Publicaciones ▾](#) [Regiones](#) [Quienes Somos](#)

Sernapesca lanza programa de certificación de salmones libres de antimicrobianos y antiparasitarios

Jueves, 18 de Agosto de 2016 10:10





CER-FAR/MP1/Agosto 2016

ANEXO 3

FECHA: <i>DATE</i>	
NÚMERO CERTIFICADO: <i>CERTIFICATE NUMBER</i>	

CERTIFICADO OFICIAL

PRODUCTO LIBRE DE USO DE ANTIMICROBIANOS Y/O ANTIPARASITARIOS

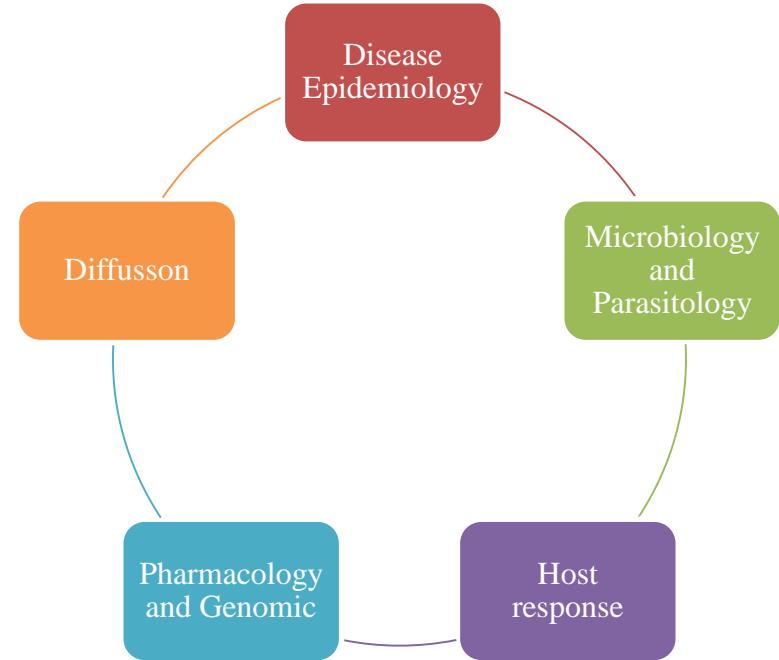
OFFICIAL CERTIFICATE FOR

FISH PRODUCTS FREE OF ANTIMICROBIALS AND/OR ANTIPARASITICS TREATMENTS

Nombre centro de cultivo: <i>Fish farm</i>	
Código RNA: <i>RNA* Code</i>	



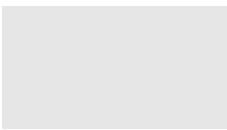
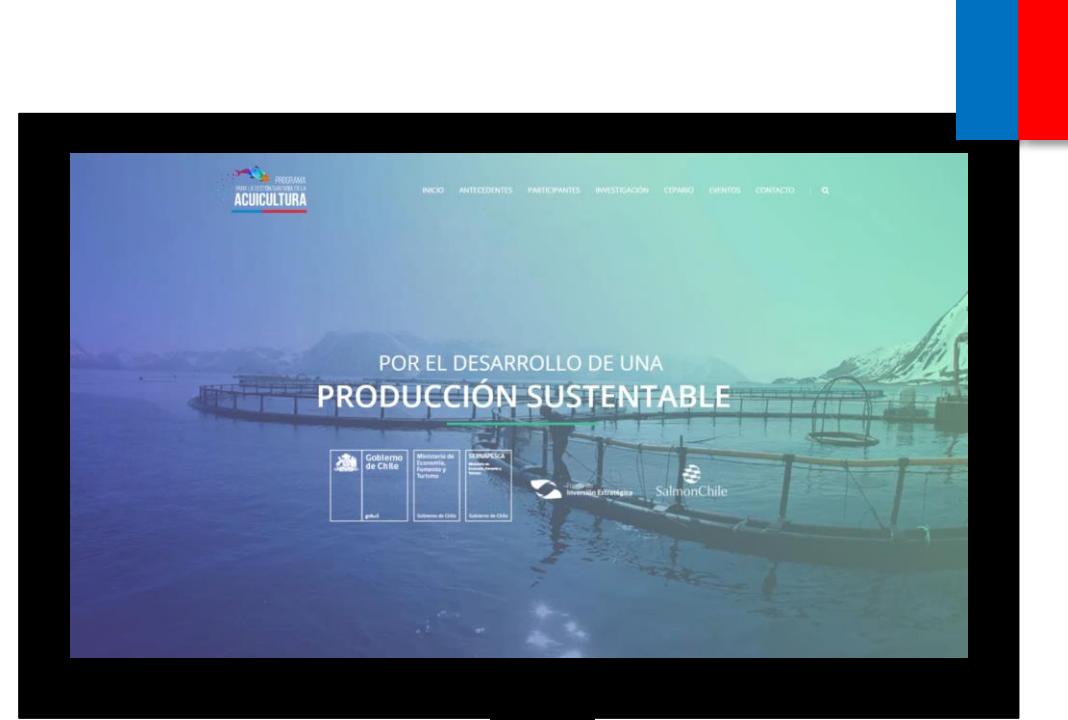
Public and strategic research



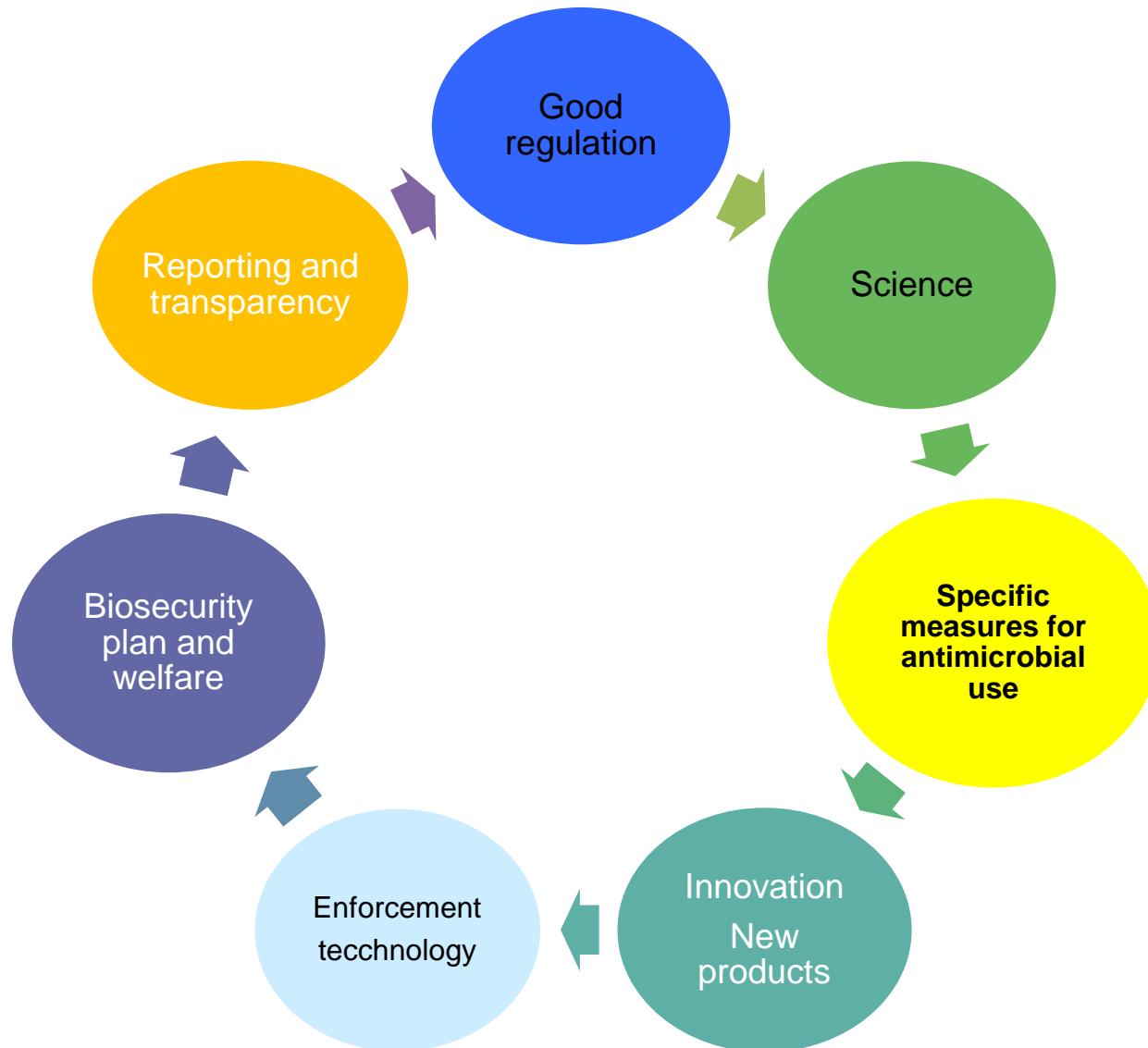
- Focuses on disease (SRS), prevention and monitoring of resistance and to extend the effectiveness of antimicrobial agents
- New center for salmon diseases, Budget US\$ 24 MM
- Center aimed at process and build predictive models with sanitary and environmental data, Budget US\$MM 9 with CSIRO Australia



PROGRAMA PARA LA GESTIÓN SANITARIA EN LA **ACUICULTURA**



Summary Fish Health Strategy





**Thank you for your
attention**