

# Changes in the latitudinal and longitudinal distribution of the aggregations of jack mackerel (*Trachurus murphyi*) in the Peruvian sea during 1996 - 2007






Present by:

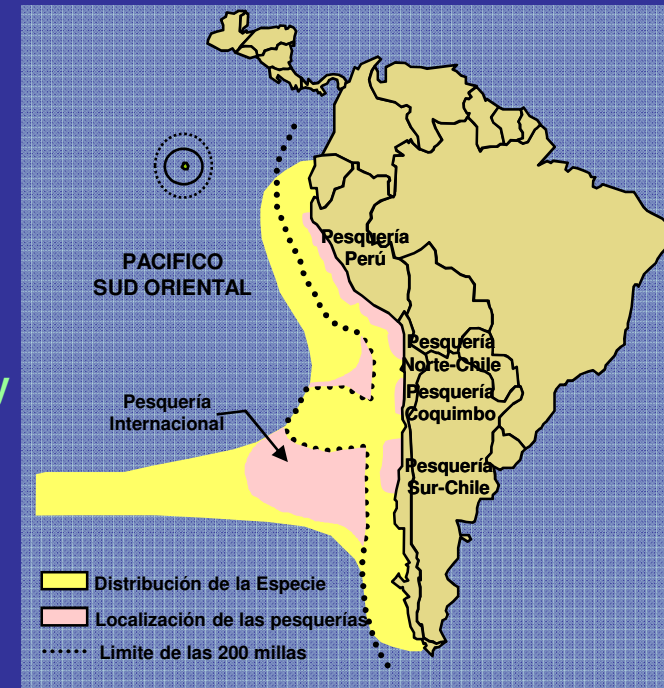
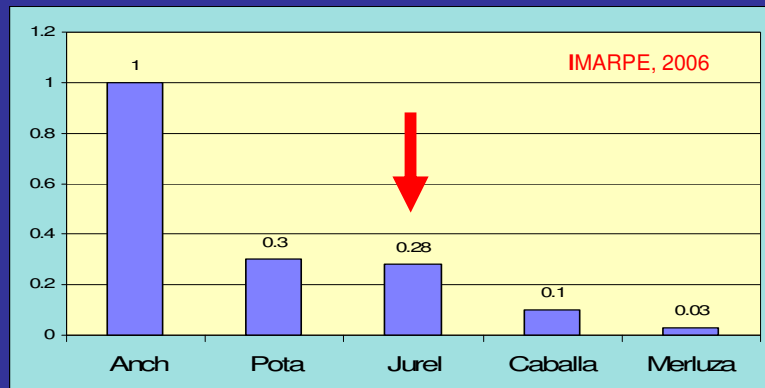
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Chilean Jack Mackerel Workshop 30 June - 4 July 2008

## Introduction:

-  Jack mackerel is a highly migratory pelagic species widespread in the South Pacific Ocean
-  In Peru, jack mackerel is found along of all the coast and it has been recorded to 200 – 350 nm.
-  According to landings of IMARPE (2006), jack mackerel represented **the third most important resource in the fishery**



Distribución y localización de las principales áreas de pesca de jurel en el Pacífico Sur (Serra, 1991)

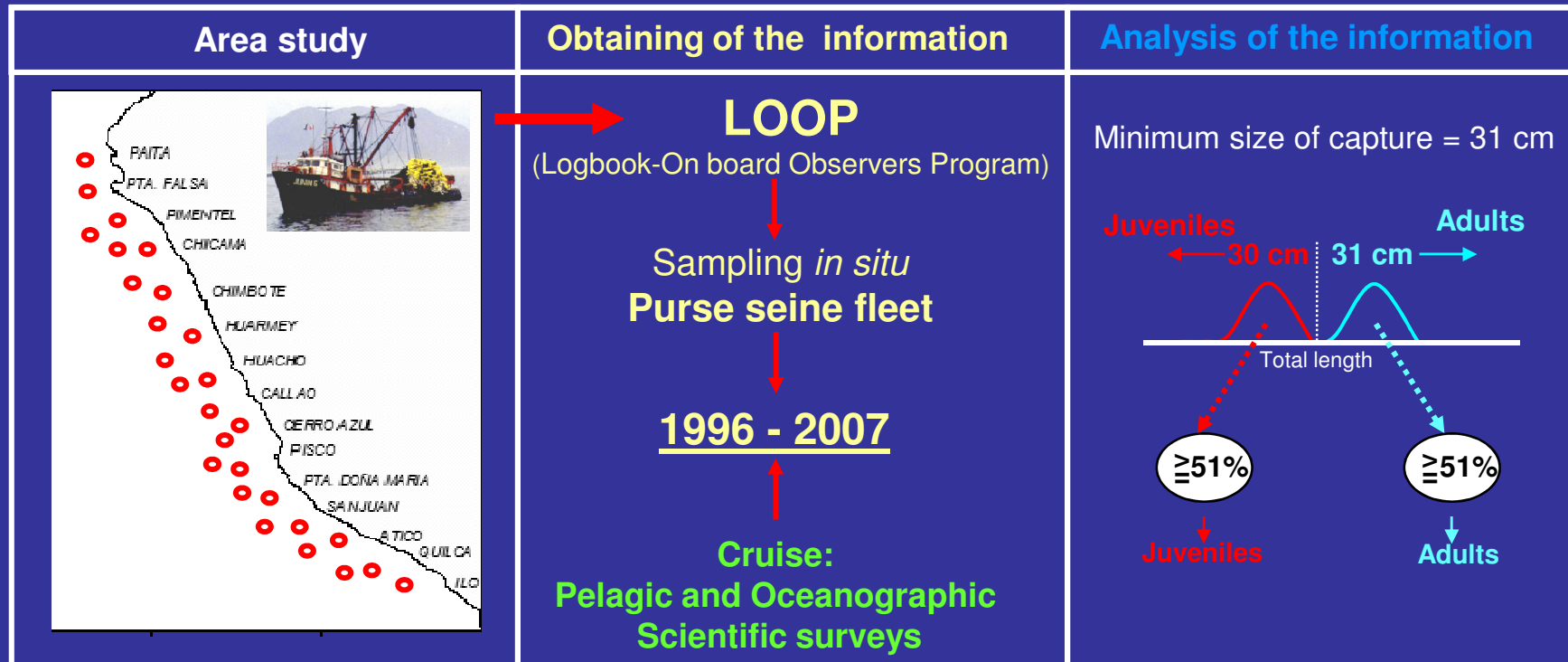
-  In the Peruvian sea is not recognized a clear pattern of migratory behavior of jack mackerel throughout its life cycle



## Objective:

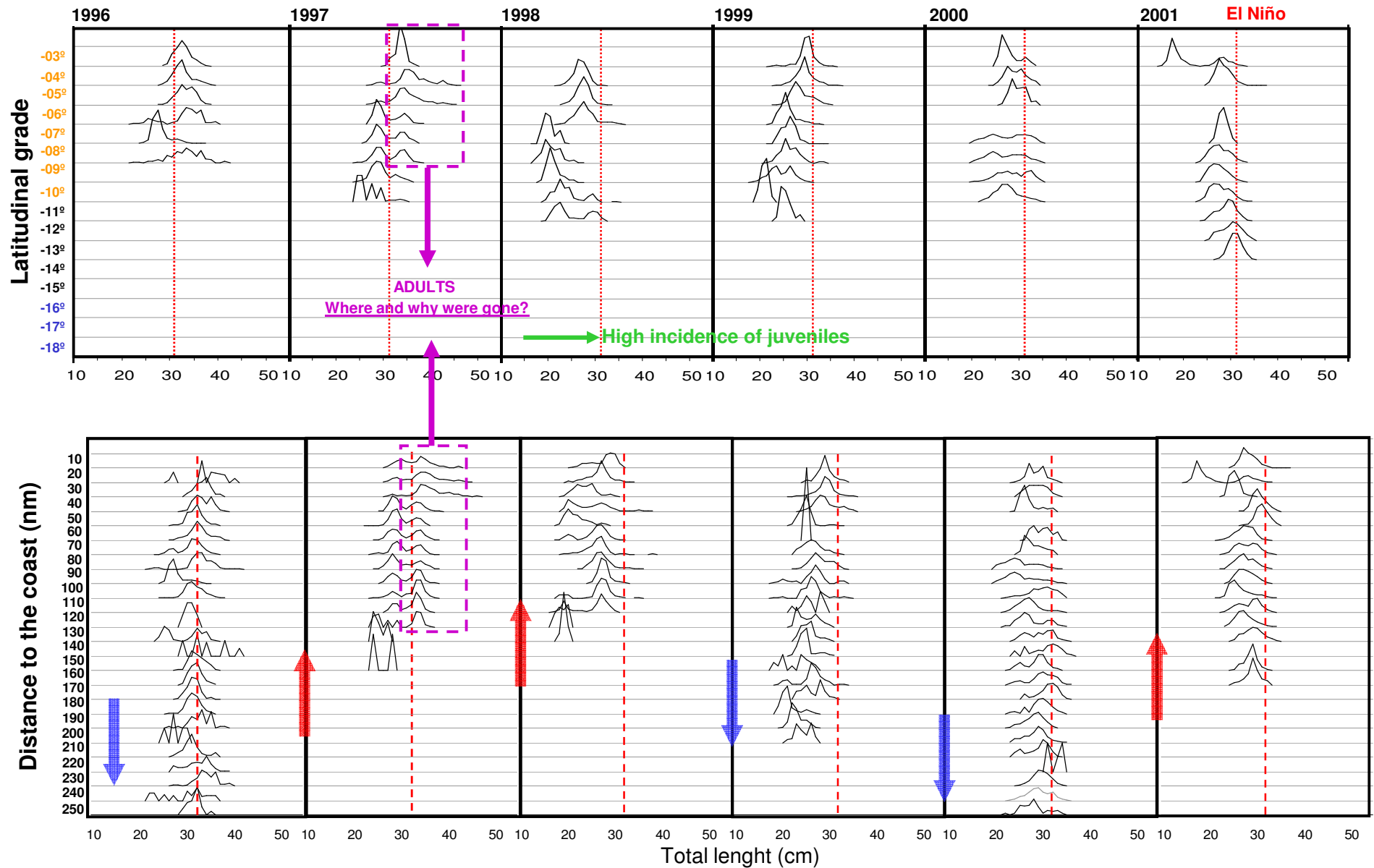
To describe the changes in the latitudinal and longitudinal distribution of jack mackerel in the Peruvian Sea during 1996 - 2007 and their relationship to the dominance of some types of water masses.

## Methodology:

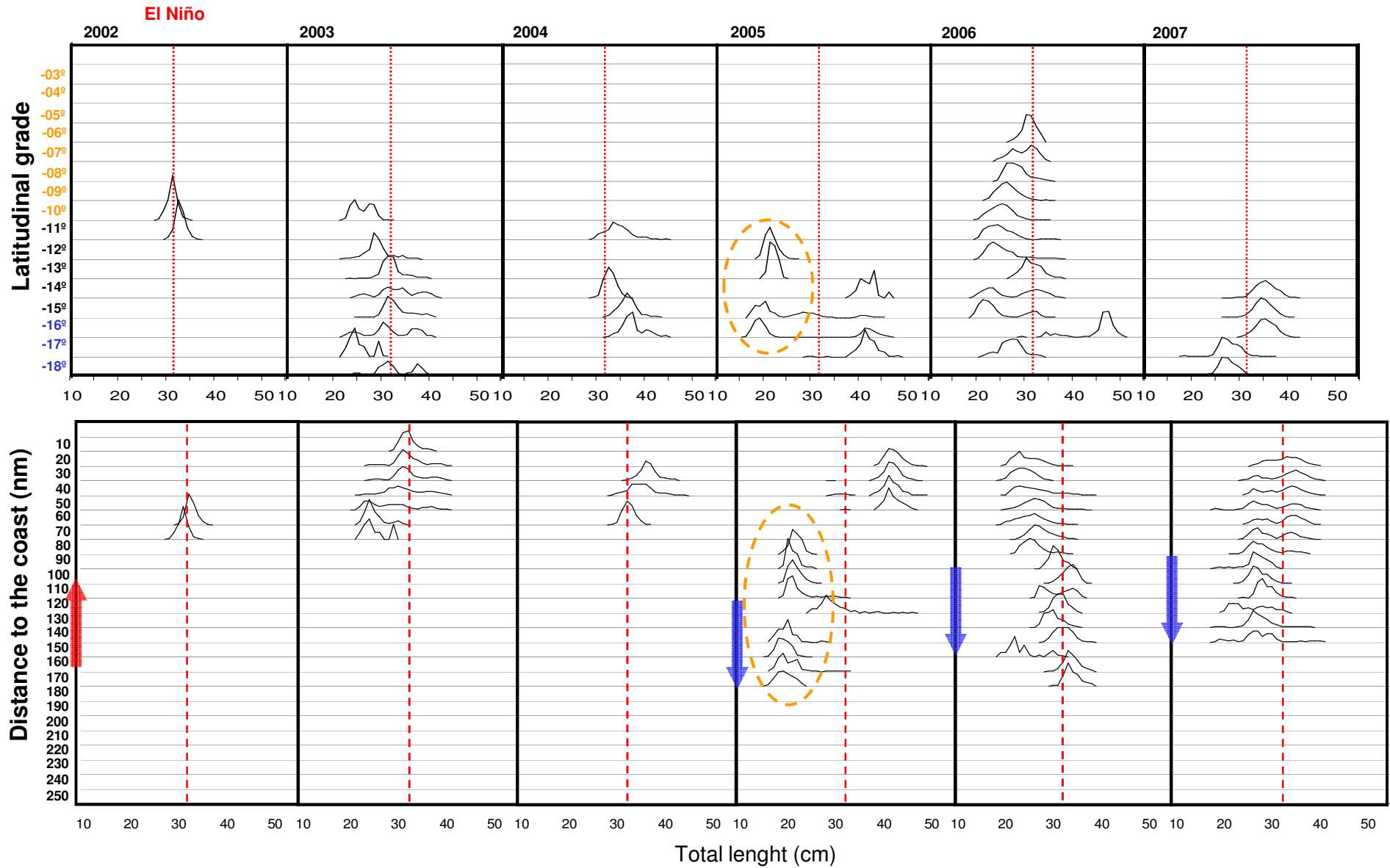


# Results:

## Latitudinal and longitudinal size composition of jack mackerel catches

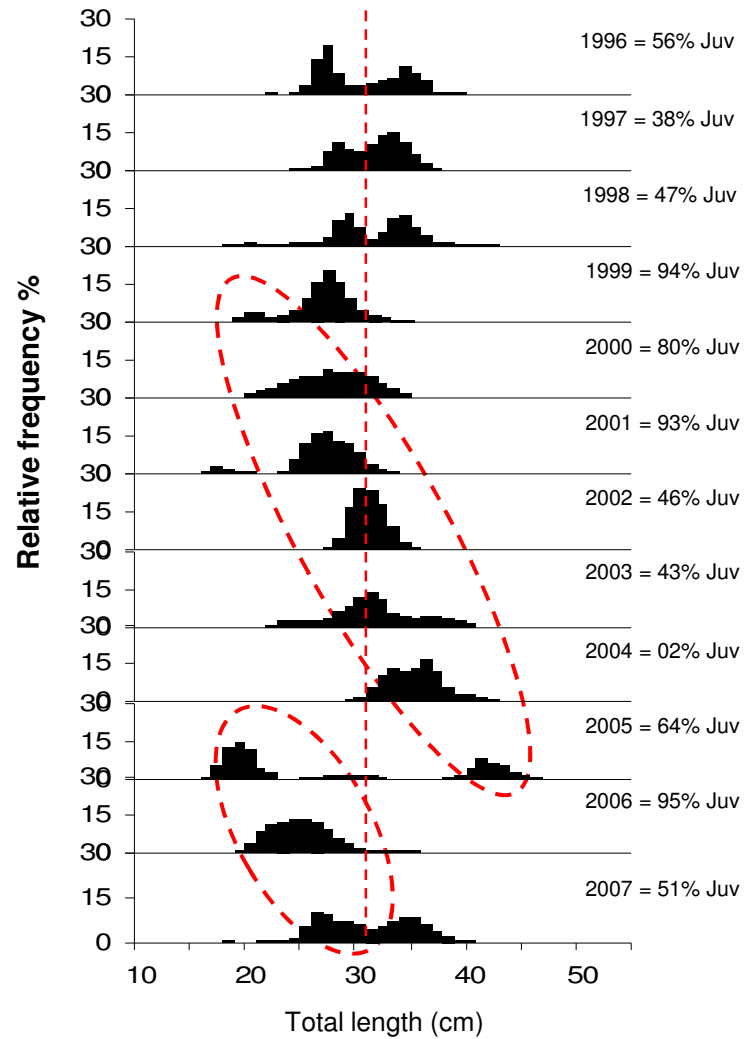


# Latitudinal and longitudinal size composition of jack mackerel catches



The smaller sizes were located to the south extreme of their distribution

# Size composition of jack mackerel catches by biological year



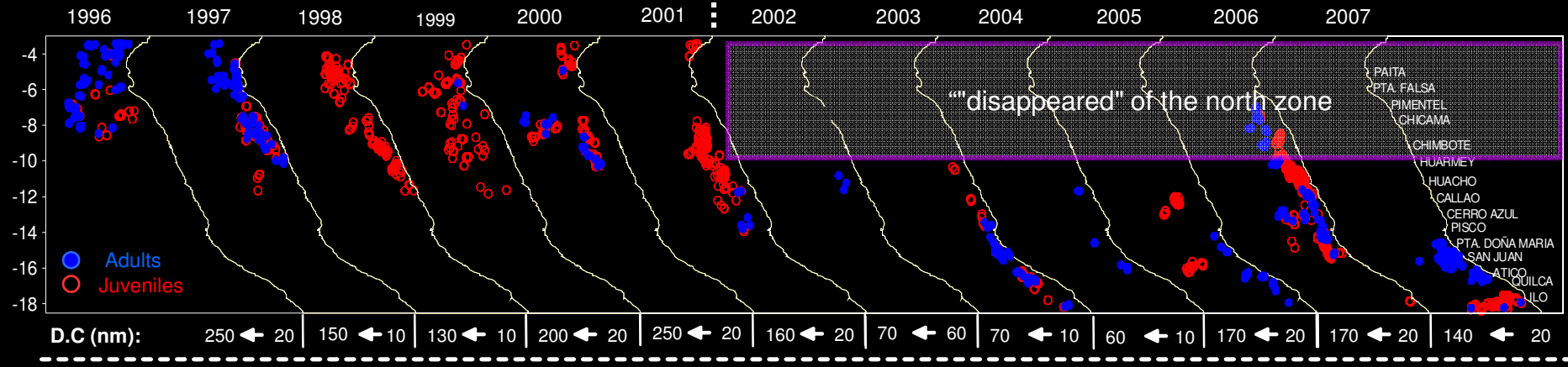
From 1999 to 2005, the juveniles observed in 1999 could have constituted the group of the following years. This would indicate that jack mackerel stayed in Peruvian waters.

# Changes in the distribution of jack mackerel

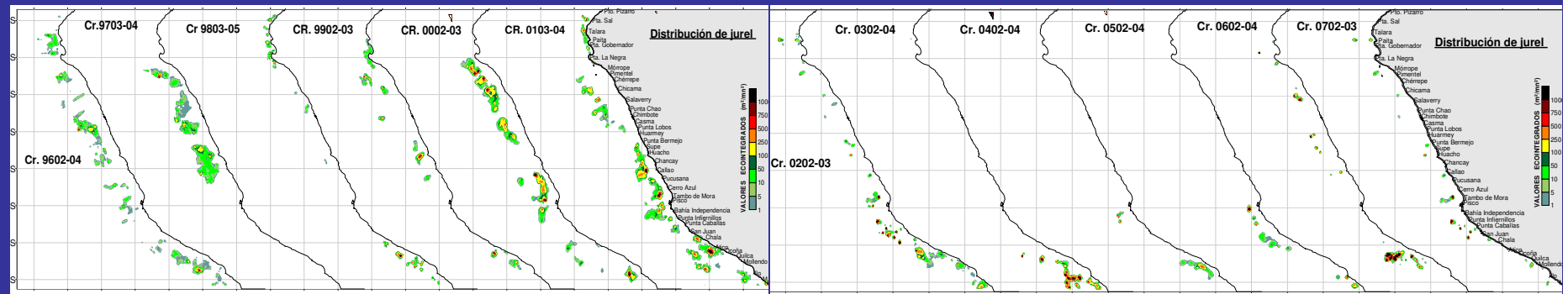
## Purse seine fleet – fishing sets

Scenario 1

Scenario 2




## Acoustic survey

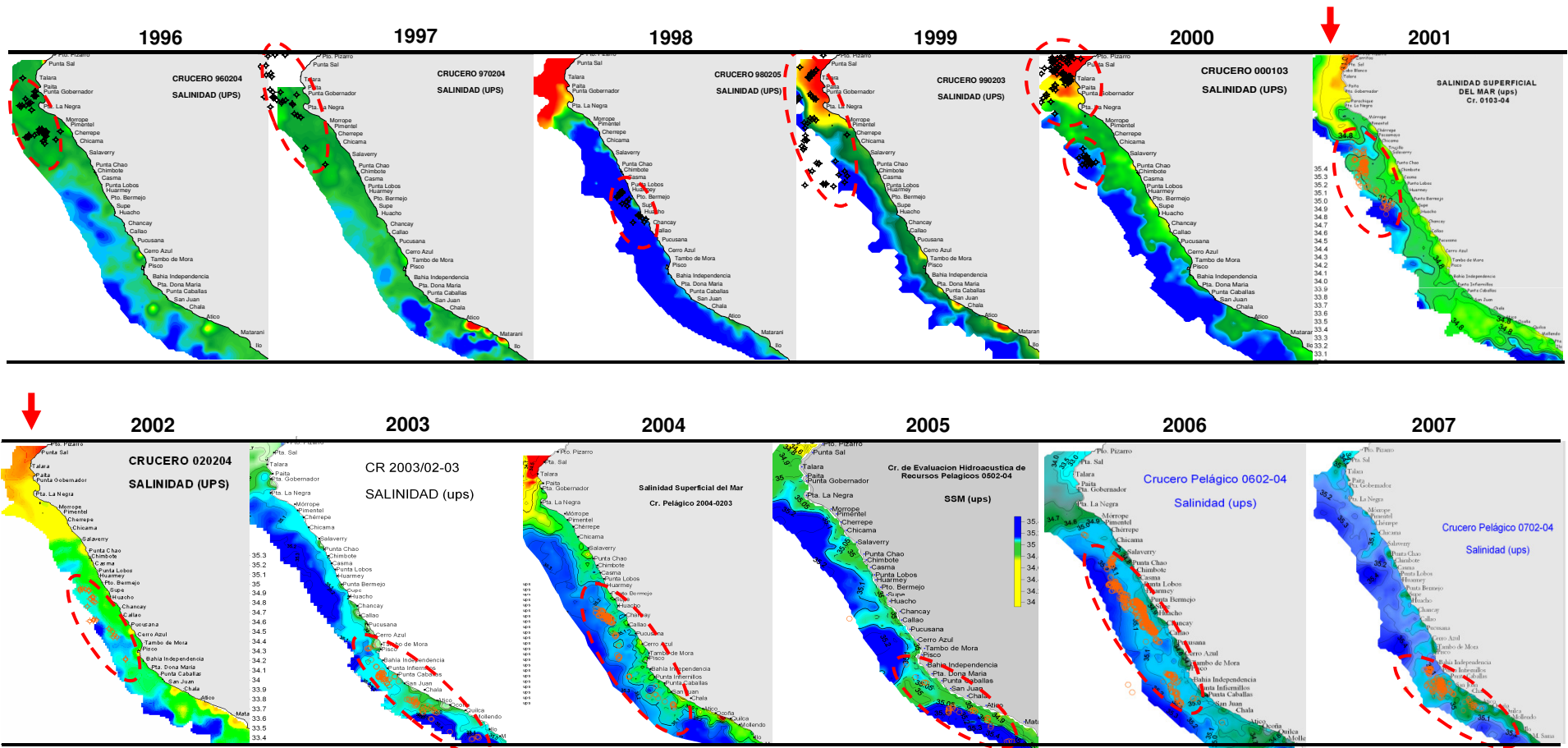


# Jack mackerel and its relation with water masses

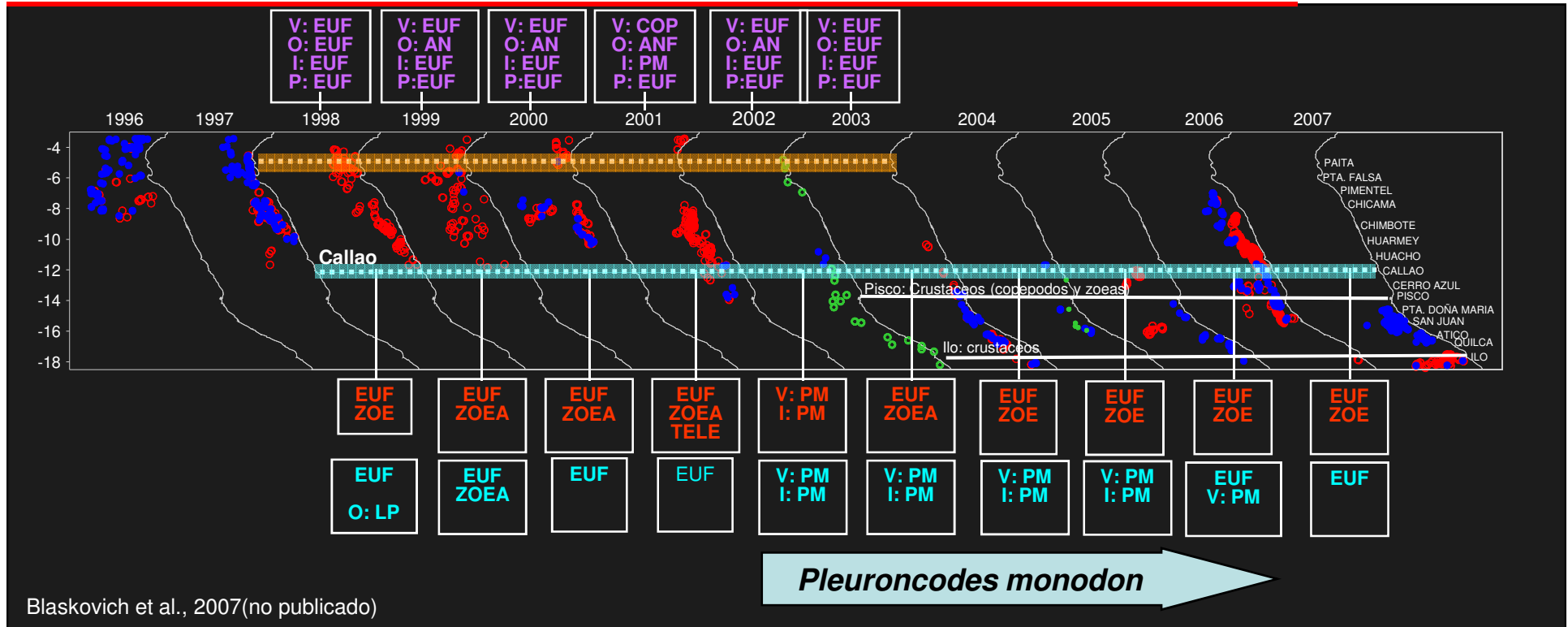
The data analyzed of jack mackerel and water mass corresponded **only to summers**

Purse seine fleet  
Fishing set: 

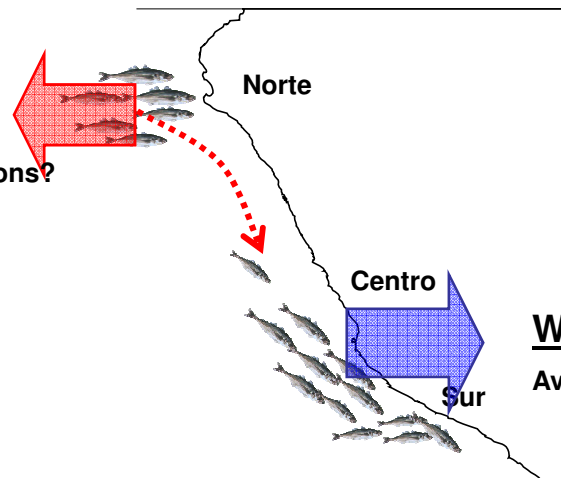
Cruise survey



# Alimentación







**Why "disappears"?**  
 Unfavorable oceanographic conditions?  
 Predation?



**Why stay there and why not return?**  
 Availability of food and favorable oceanographic conditions?

## Conclusions:

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-  The latitudinal distribution of the catches of jack mackerel clearly showed a change in the distribution of this resource, probably from north to south since 1998.
-  Since **2002**, jack mackerel passed definitely to have a central-south distribution, **“disappearing” in the north.**
-  Hence, we define two scenarios:
  - Scenario 1 (1996-2001): north-central distribution**
  - Scenario 2 (2002-2007): central-south distribution.**
-  The change in the distribution of jack mackerel to the south was partially determined by environmental conditions and the convergence of other factors such as food.



Thanks you !!!!!

