



Futuro de la pesca en un entorno de Cambio Climático

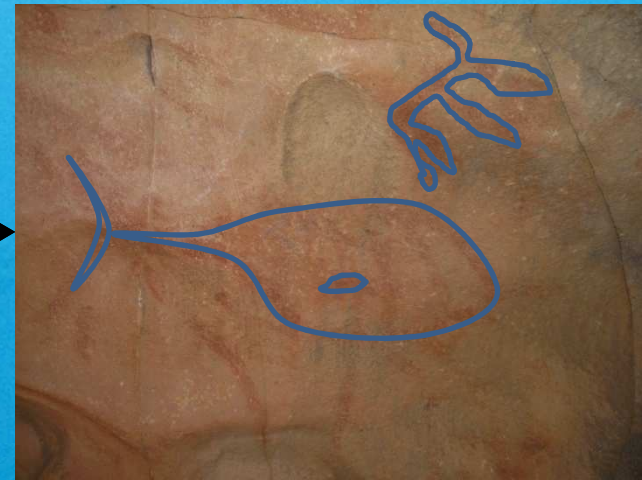
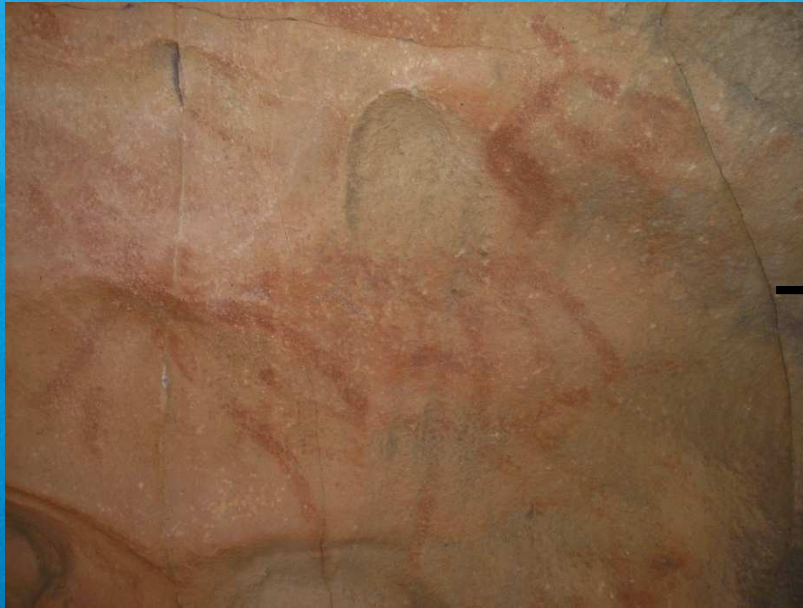
Dr. José Carlos Báez Barrionuevo

1ª Jornada de Pesca y Cambio Climático

Universidad de Huelva, Viernes 15 de septiembre 2017



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ESPAÑOL DE
OCEANOGRAFÍA**



Cueva de Atlanterra (cerca de Zahara de los atunes,
Termino municipal de Tarifa). VER EN YOUTUBE





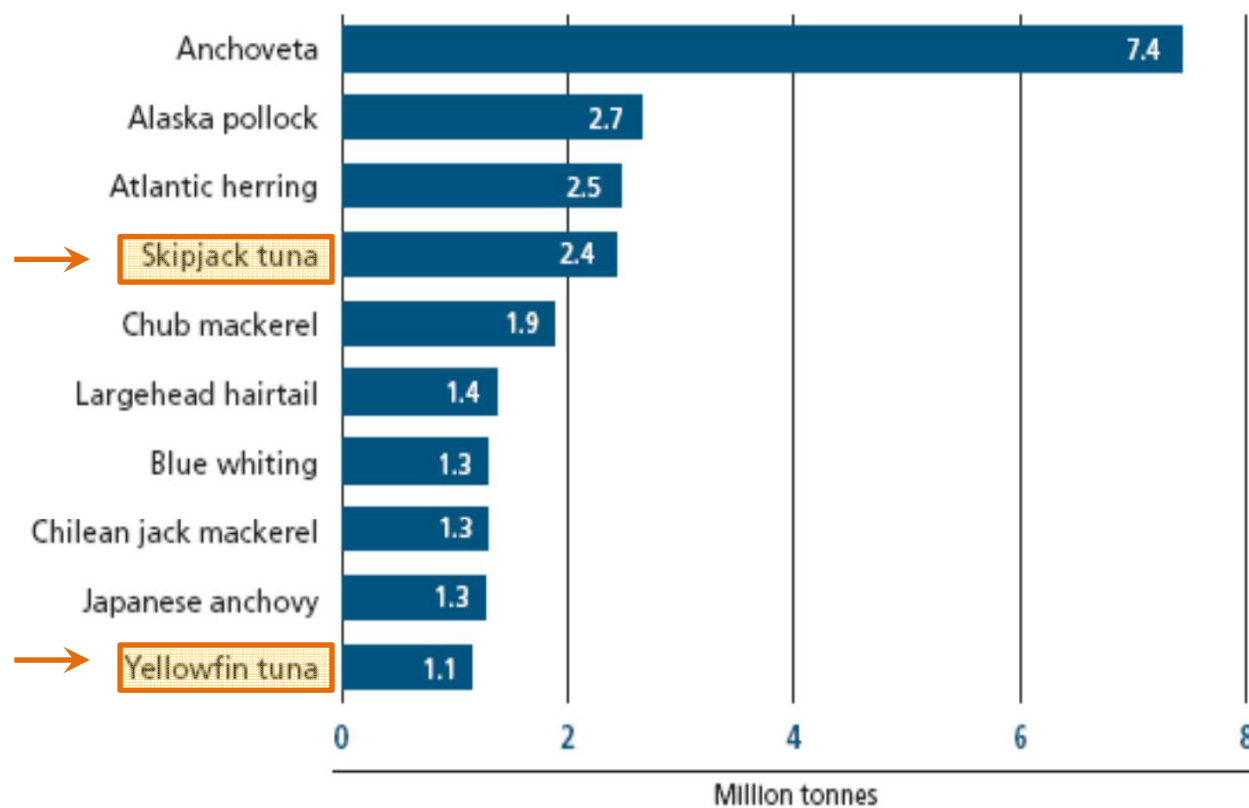
**Ciudad Romana de Baelo Claudia
II a.c.**

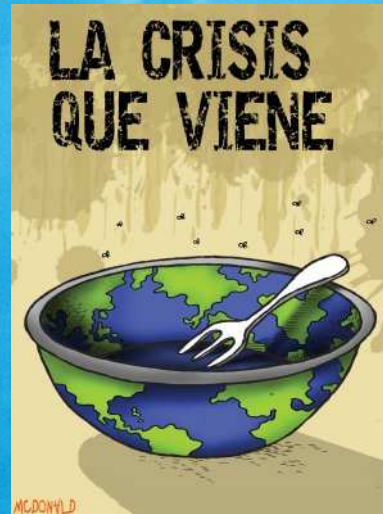


**Grabado Almadra
Siglo XVII**

Fuente FAO, 2016 Informe “SOFIA”

Marine capture fisheries production: top ten species in 2008





SCIENTIFIC REPORTS

OPEN

Evidence of discrete yellowfin tuna (*Thunnus albacares*) populations demands rethink of management for this globally important resource

Received: 22 May 2015
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P.M. Grewe^{1,*}, P. Feutry^{1,2,*}, P. L. Hill¹, R. M. Gunasekera¹, K.M. Schaefer³, D. G. Itano⁴,
D.W. Fuller³, S. D. Foster¹ & C.R. Davies^{1,*}

1 October 2005

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Net losses

Industrialized fishing
hits fish stocks

Financial markets
Vulnerability to collapse

Jaguars' ecology
Hunted by abundance

Functional genomics
The power of comparison

letters to nature

Rapid worldwide depletion of predatory fish communities

Ransom A. Myers & Boris Worm

Biology Department, Dalhousie University, Halifax, Nova Scotia, Canada
B3H 4J1

Serious concerns have been raised about the ecological effects of industrialized fishing¹⁻³, spurring a United Nations resolution on restoring fisheries and marine ecosystems to healthy levels⁴. However, a prerequisite for restoration is a general understanding of the composition and abundance of unexploited fish communities, relative to contemporary ones. We constructed trajectories of community biomass and composition of large

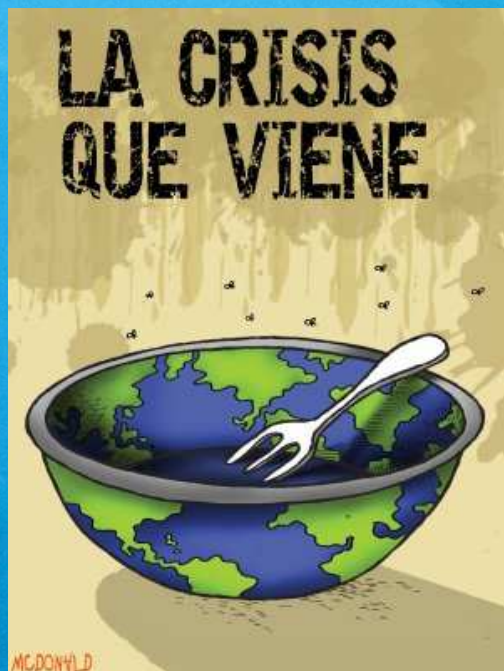
Nations Unies

Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris - Le Bourget





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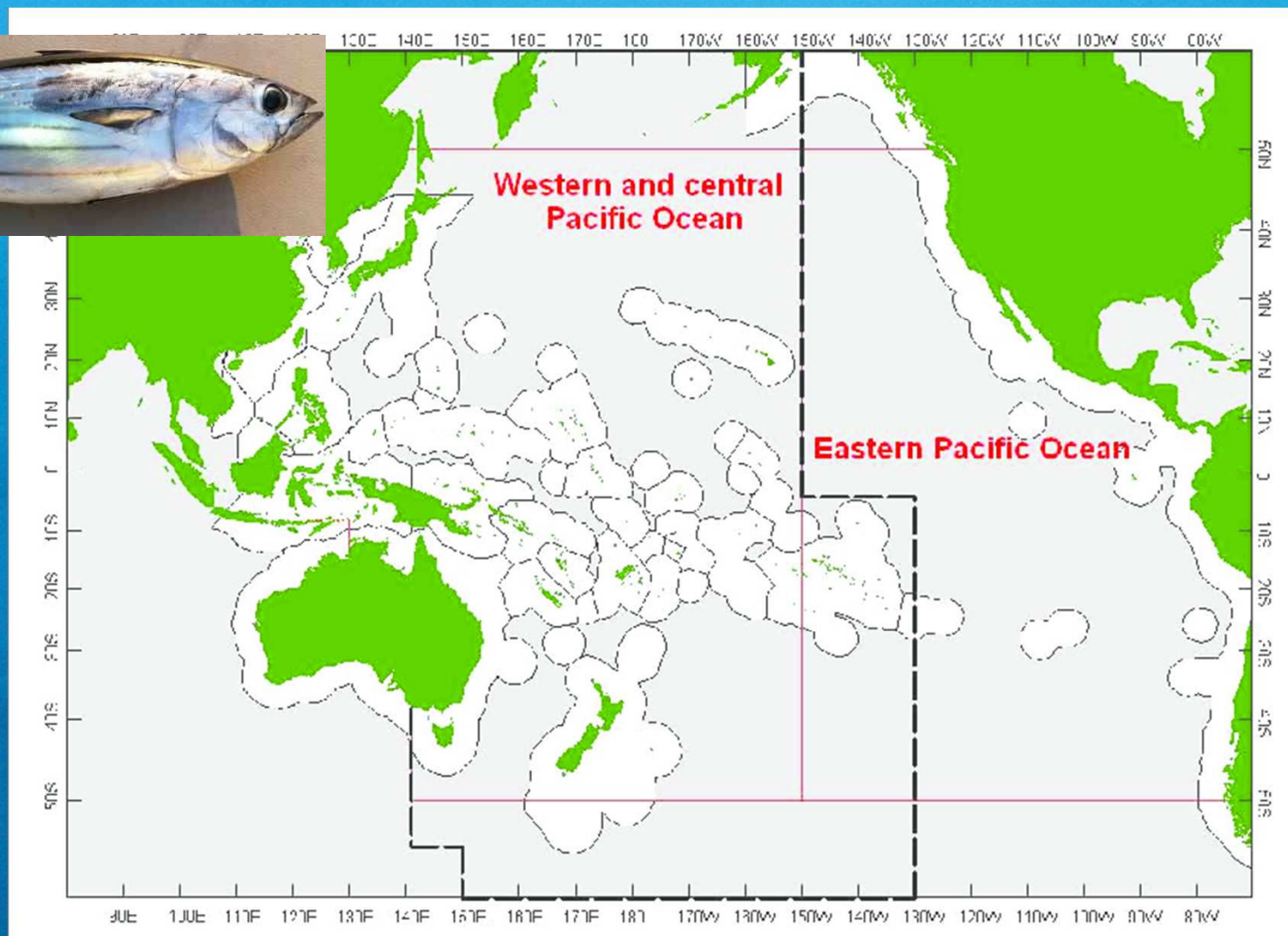


Previsiones del Cambio climático para el 2100:

1. Incremento de la SST a del mar de 3°C —→ **los tónidos tropicales se verán desplazados**
2. Descenso del pH de 0.3 unidades —→ **las larvas de tónidos son sensibles a la acidificación**
3. Concentraciones de O₂ descenderán por debajo de la capa de mezcla inferiores a [30 μmol/kg]—→ **los tónidos son sensibles a la [O₂]**
4. Disminución de la salinidad de los océanos, lo que conlleva una estratificación de las masas de agua —→ **lo que dificulta el acceso a las capas superficiales de los nutrientes necesarios para la producción primaria**



Estudios sobre el efecto del cambio climático a largo plazo: Listado (Skipjack), *Katsuwonus pelamis* desde el Pacífico



Reference	Region	Projection	Foreseen effects on abundance
Lehodey et al. (2011)	Pacific Ocean	2100	Expected to increase in the EPO, and decrease in the WCPO.
Lehodey et al. (2013)	Pacific Ocean	2100	Slight increase in biomass in the WCPO until 2050, then it stabilizes and starts decreasing after 2060. Habitat improvement in EPO.
Dueri et al. (2014)	Pantropical	2100	Changes in the distribution and increases in global biomass between 2010 and 2050. Biomass decrease towards the end of the century
Matear et al. (2015)	Western Pacific	2060	No changes expected
Woodworh-Jefcoasts et al. (2015)	Central northern Pacific	2100	Reduction in biomass by 15-30%
Yen et al. (2016)	Western and Central Pacific	2050	Increase in biomass

2042

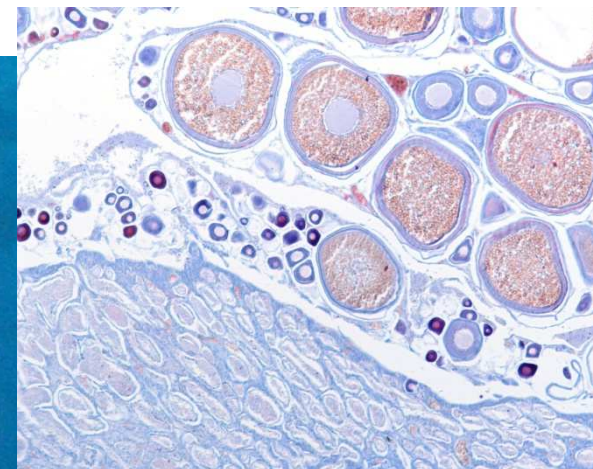
**Se jubila el trabajador que
tenía 38,5 años cotizados**



First record of intersexuality in *Euthynnus alletteratus* in the Mediterranean Sea: histological description

D. MACÍAS, S. SABER, A.M. OSUNA, R.M. CRUZ-CASTÁN, M.J. GÓMEZ-VIVES AND J.C. BÁEZ

Instituto Español de Oceanografía, Centro Oceanográfico de Málaga, Puerto pesquero s/n Fuengirola, Málaga, Spain



Primer registro de anomalía intersexual gonadal de *Trachurus mediterraneus* (Steindachner, 1868) desde el mar de Alborán

María José Meléndez-Vallejo¹, Pedro Torres¹, Fernando González-Valderrama¹, Ana Giráldez¹, María González¹, José Luís Pérez-Gil¹, José Miguel Serna-Quintero¹, Jesús Acosta¹ & José Carlos Báez²

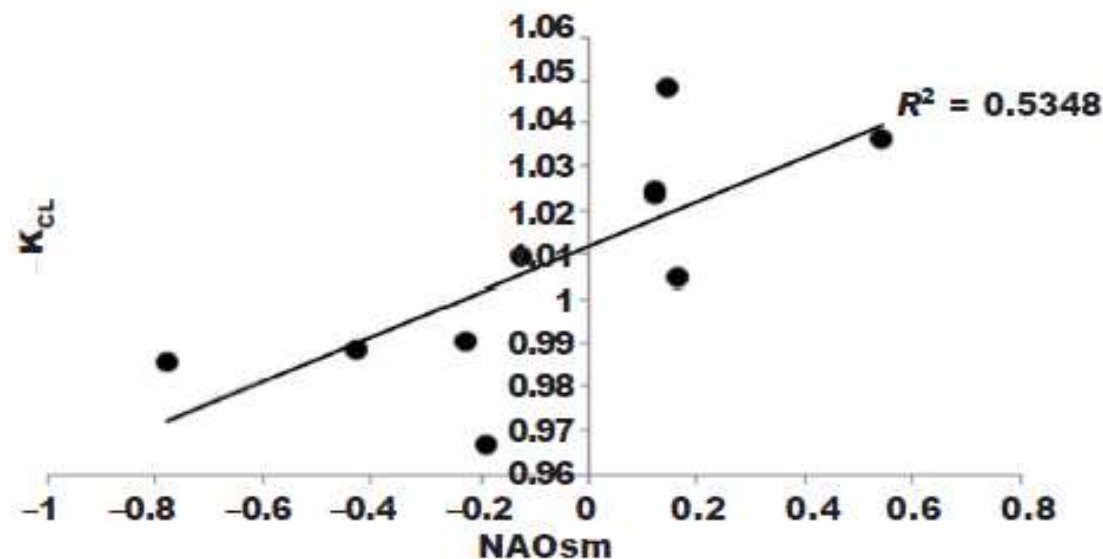
1 Instituto Español de Oceanografía, Centro Oceanográfico de Málaga, Puerto pesquero s/n 29640, Fuengirola (España).

2 Instituto Español de Oceanografía, Centro Oceanográfico de Canarias, Vía Espaldón, dársena pesquera, Parcela 8 38180, Santa Cruz de Tenerife (España).

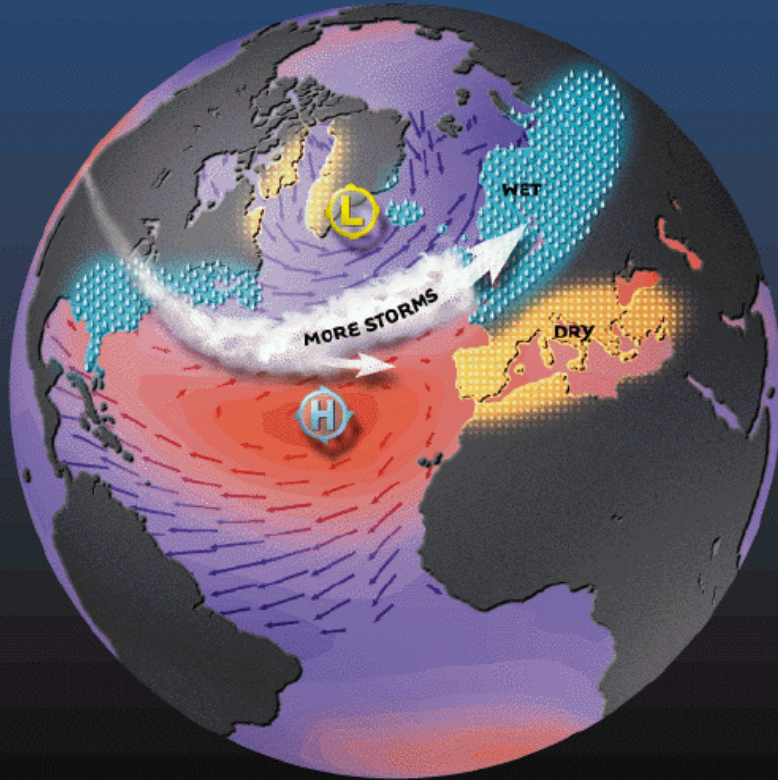


Analysis of the effect of atmospheric oscillations on physical condition of pre-reproductive bluefin tuna from the Strait of Gibraltar

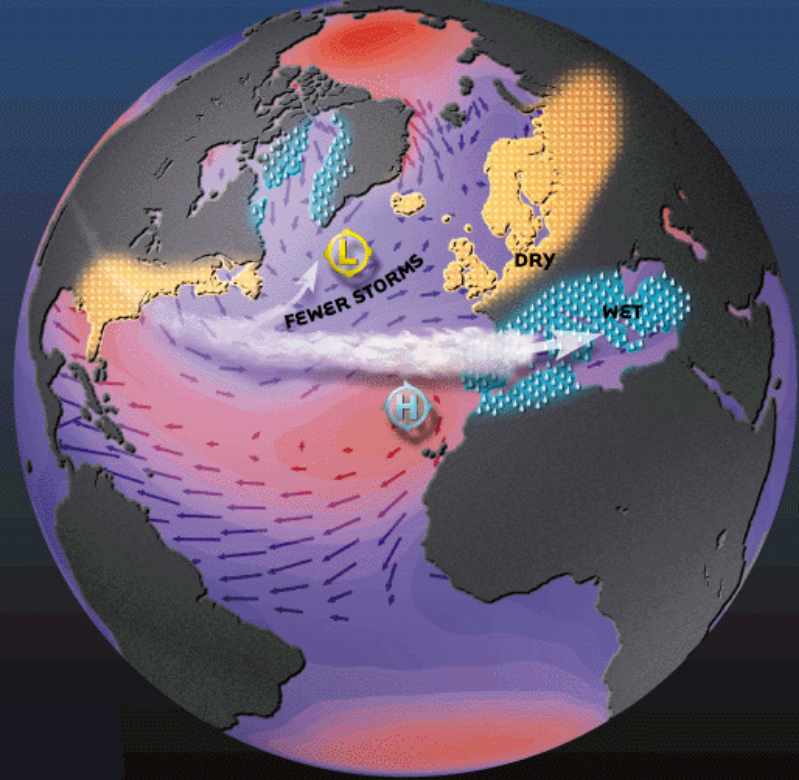
J. C. Báez, D. Macías, M. de Castro, M. Gómez-Gesteira, L. Gimeno & R. Real

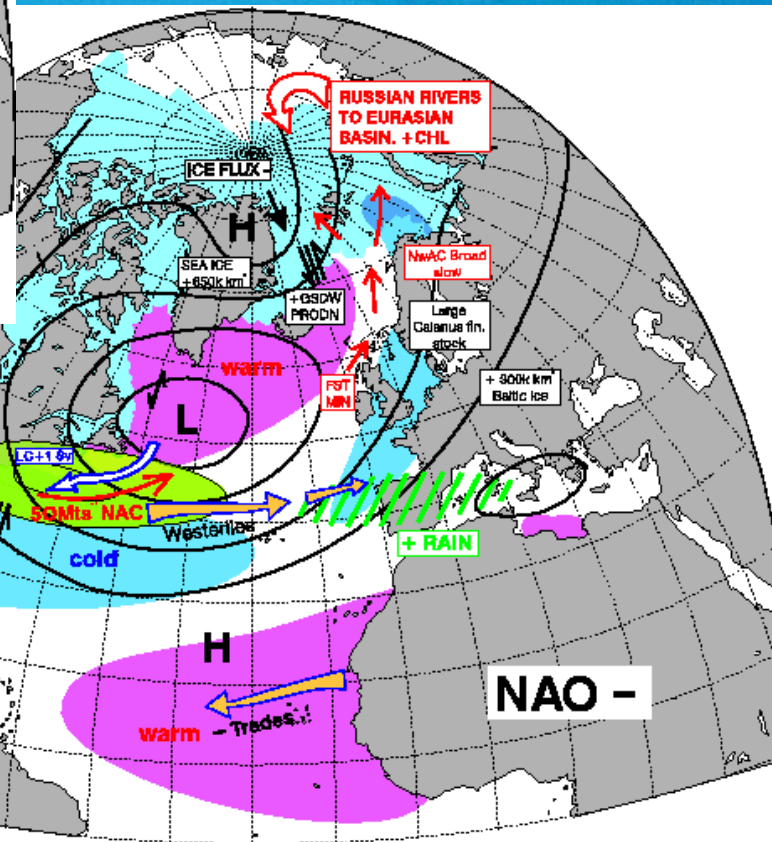
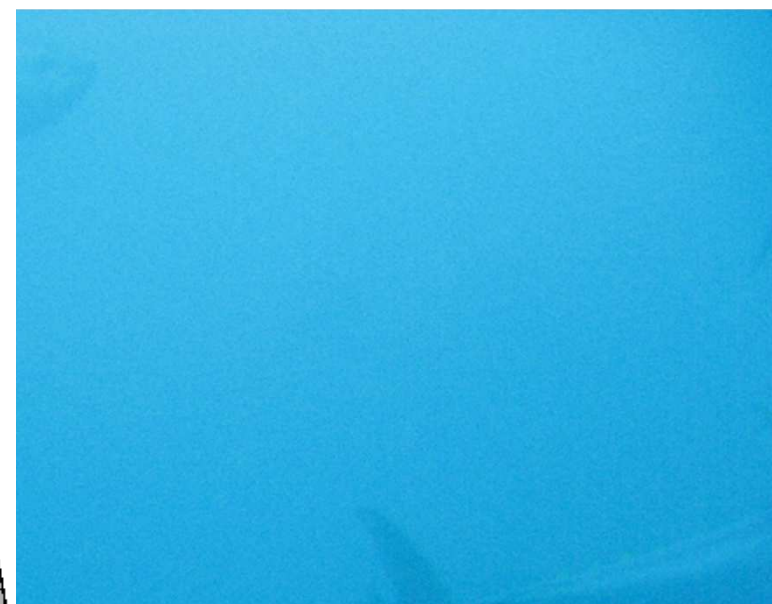
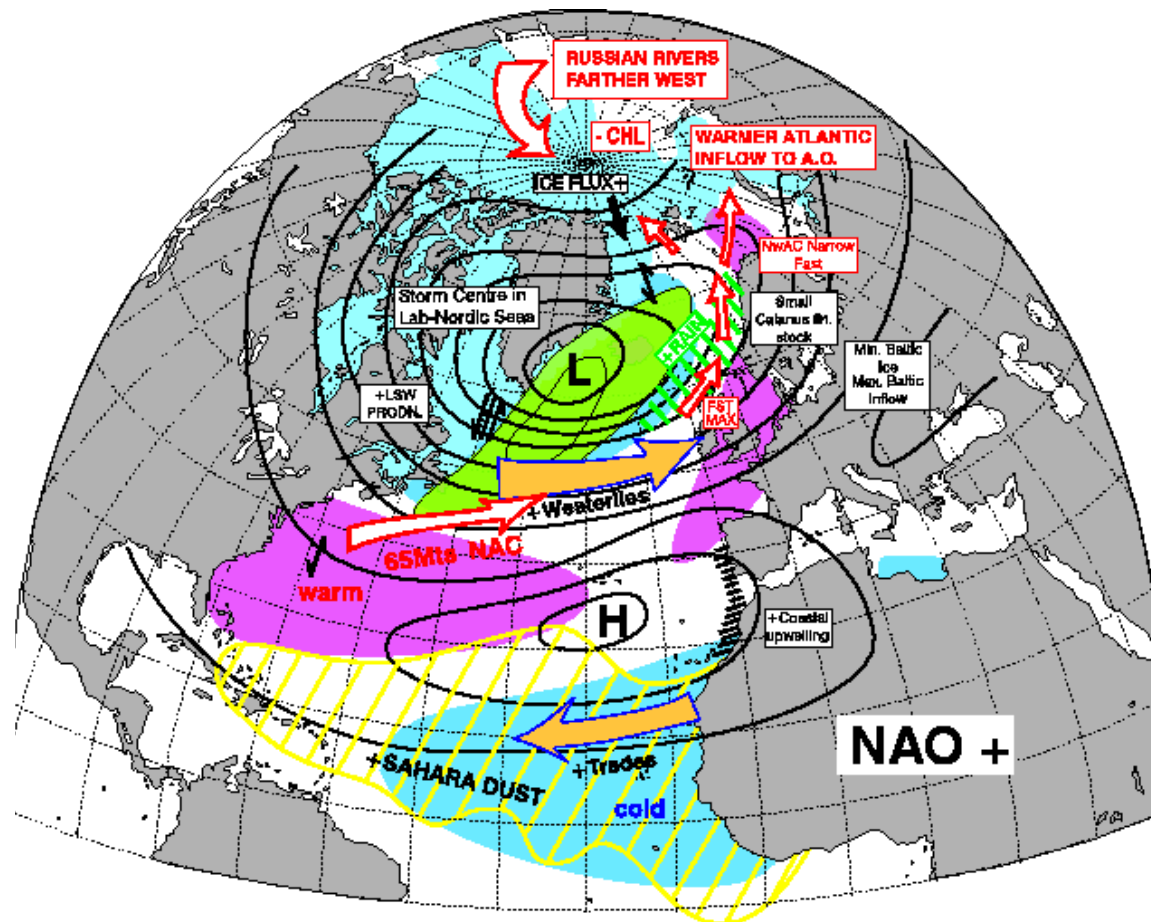


North Atlantic Oscillation



North Atlantic Oscillation

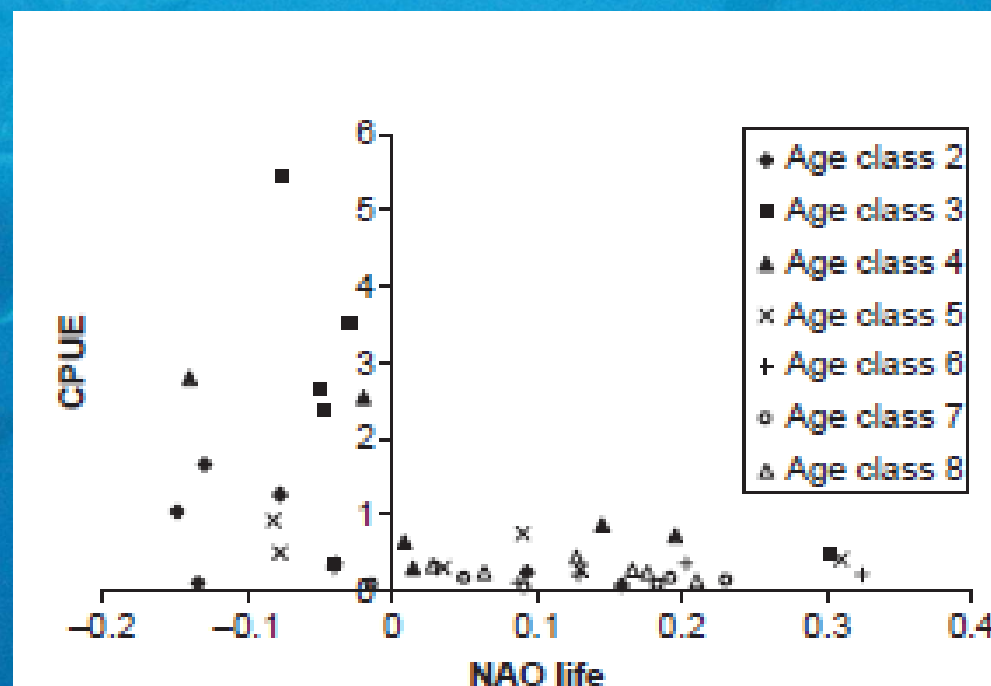
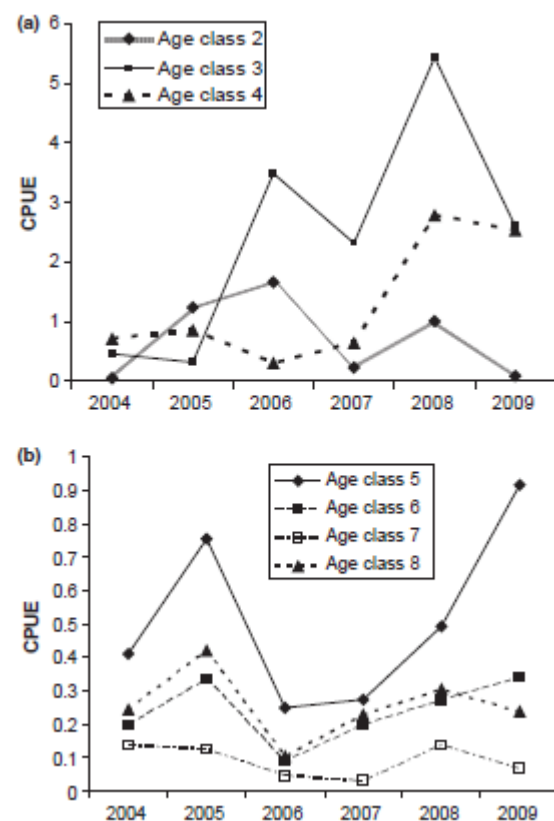






Cumulative effect of the North Atlantic Oscillation on age-class abundance of albacore (*Thunnus alalunga*)

By J. C. Báez^{1,2}, J. M. Ortiz de Urbina¹, R. Real² and D. Macías¹





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Research Paper

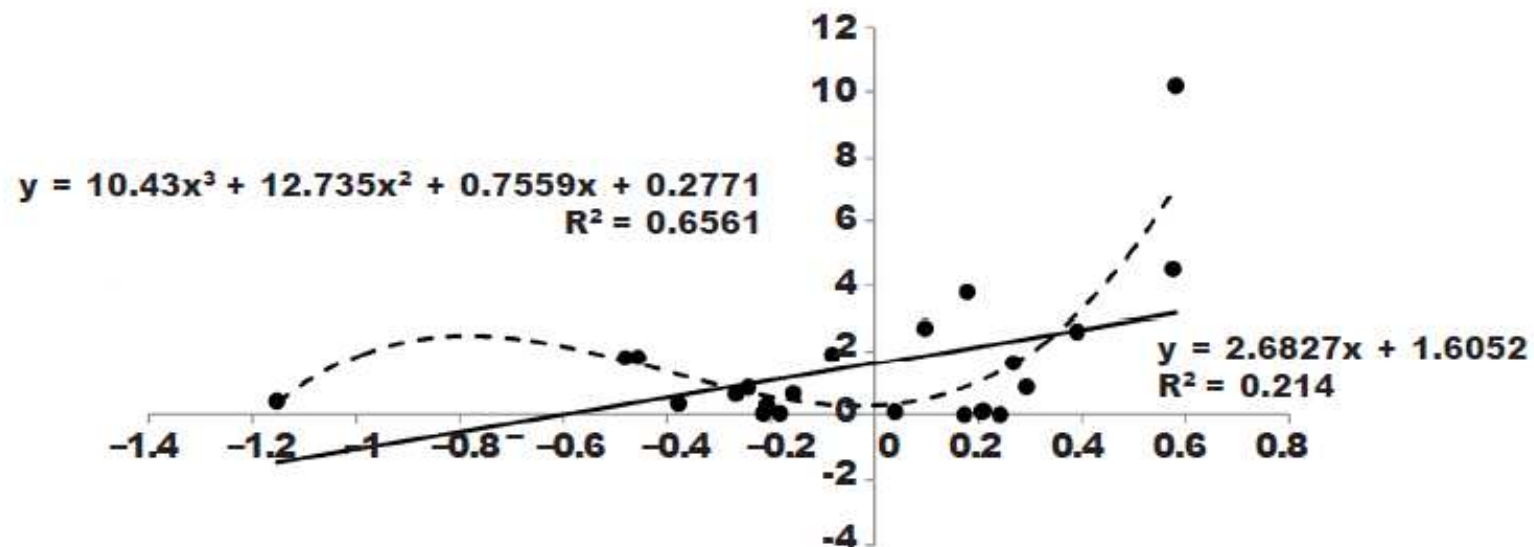
North Atlantic oscillation affects the physical condition of migrating bullet tuna *Auxis rochei* (Risso, 1810) from the Western Mediterranean Sea

Pedro Muñoz-Expósito^{a,b}, David Macías^a, José María Ortiz de Urbina^a,
 Salvador García-Barcelona^a, María José Gómez^a, José C. Báez^{c,d,*}

Atmospheric Oscillation Index	Condition Index	Spearman's Rho
Age Class 1		
NAO _{py}	Le Cren	0.257
NAO _{py}	Kmean	0.312
NAO	Kmean	0.316*
Age Class 2		
NAO _{py}	Le Cren	0.333
NAO _w	Le Cren	0.336
NAO _{pw}	Le Cren	0.302
NAO _{acum}	Le Cren	0.295
NAO	Kmean	0.413*
NAO _w	Kmean	0.268
Age Class 3 +		
NAO	Kmean	0.673*
NAO _w	Kmean	0.302

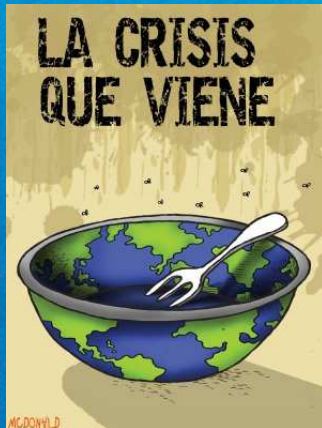
Effects of the North Atlantic Oscillation on Spanish catches of albacore, *Thunnus alalunga*, and yellowfin tuna, *Thunnus albacares*, in the North-east Atlantic Ocean

C. J. Rubio, D. Macías, J. A. Camiñas, I. L. Fernández & J. C. Báez





Gracias por su atención



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