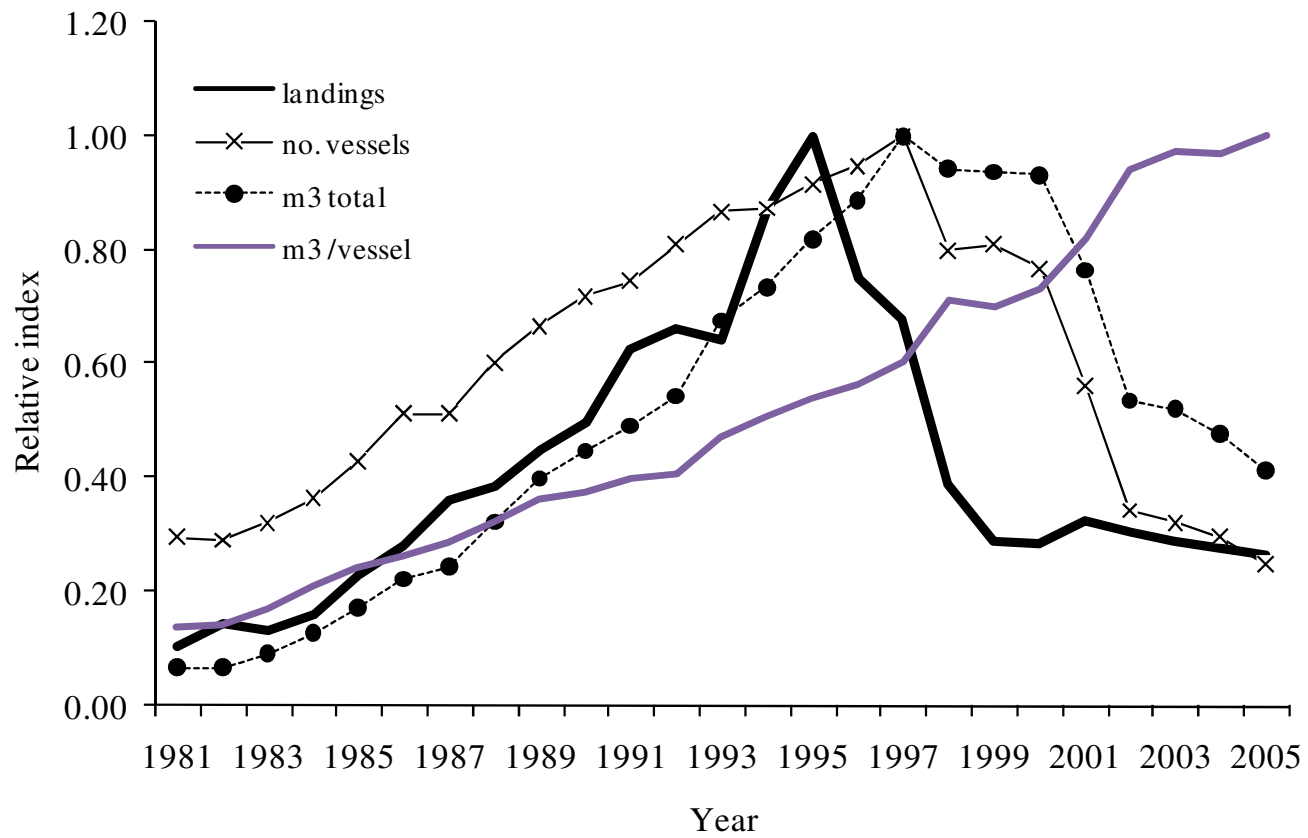


Catch per Unit Effort of Chilean Jack Mackerel  
(*Trachurus murphyi*) of the purse seine fishery off  
south-central Chile (32°10' – 40°10' S) 1981-2005

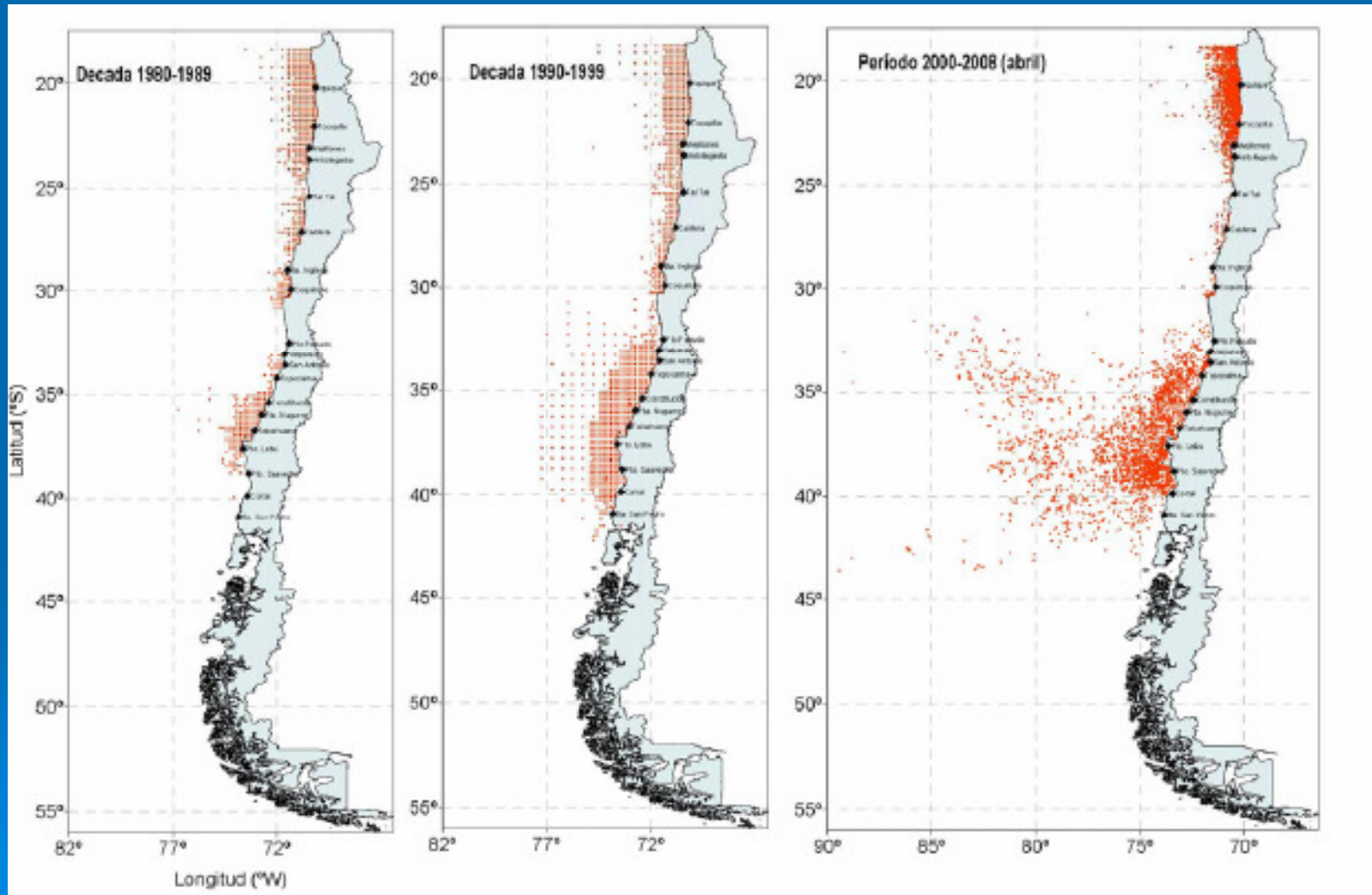
Cristian Canales (ccanales@ifop.cl), Leonardo Caballero y Antonio Aranís

Instituto de Fomento Pesquero (IFOP)-Chile

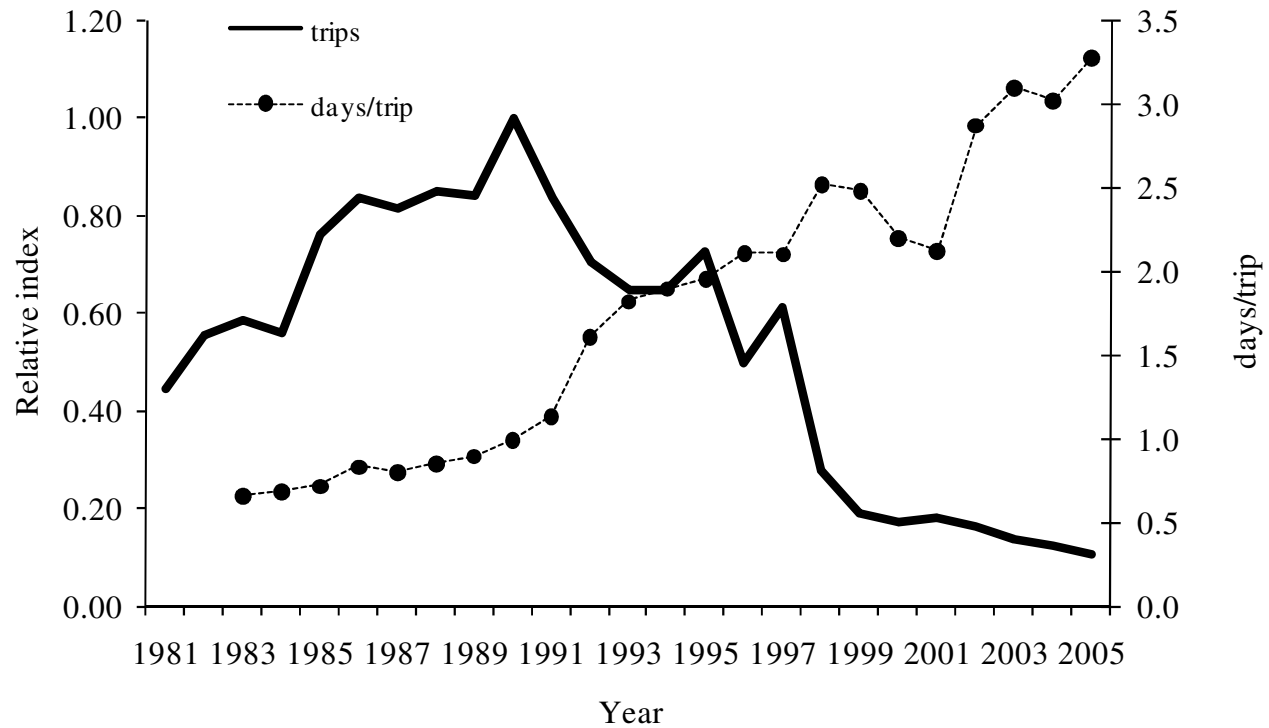
# Relative evolution of the purse-seine fleet fishing for jack mackerel in the southern-central zone of Chile.



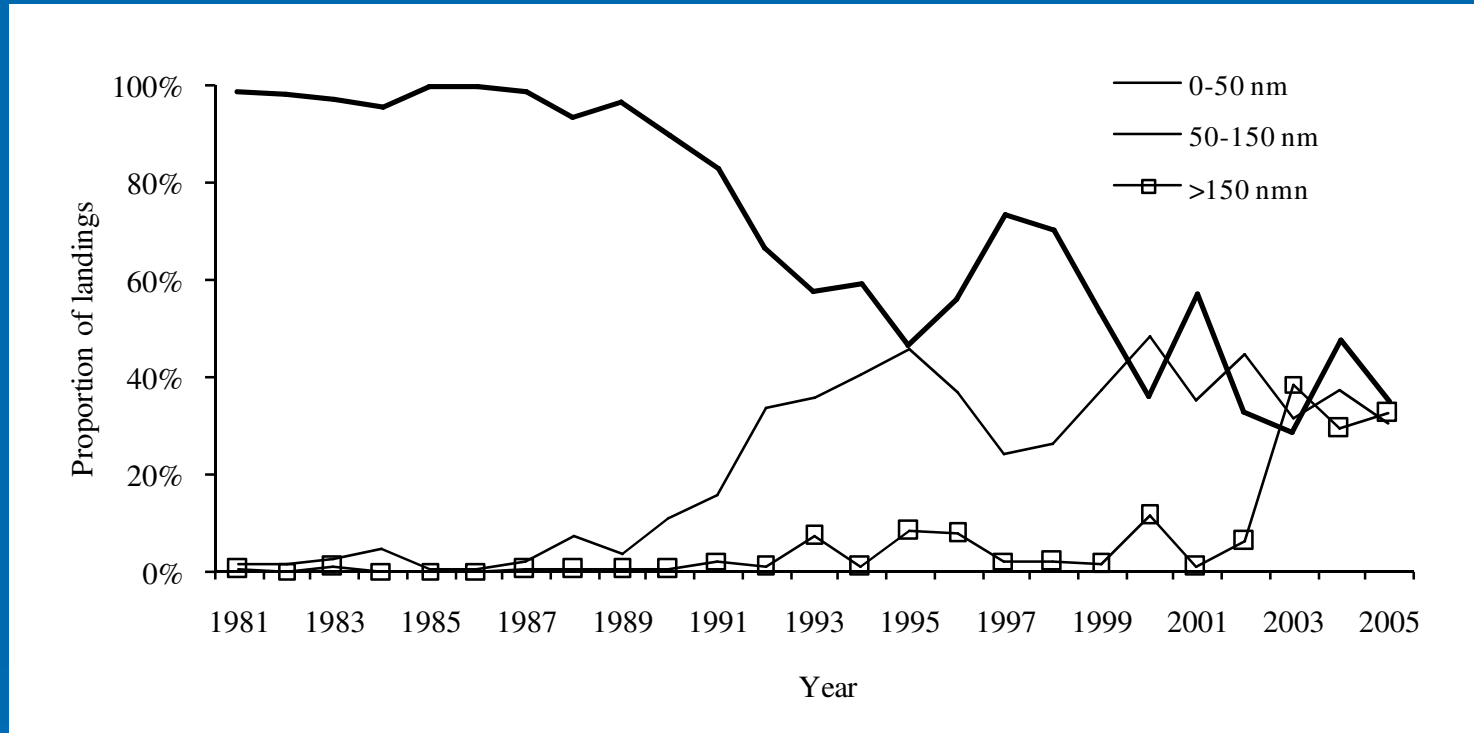
# Relative evolution of the purse-seine fleet fishing for jack mackerel in the southern-central zone of Chile.



## Evolution of the trips length of the purse-seine fleet fishing for jack mackerel in the southern-central zone.



## Annual proportion of jack mackerel catches according to distance from the coast..



CPUE model (Caballero y Aranis, 2005)

$$\ln(CPUE)_{i,j,k,l} = \mu' + \alpha'_i + \beta'_j + \gamma'_k + t'_l + \varepsilon'_{i,j,k,l}$$

$\alpha$  year,  $\beta_j$  month,  $\gamma_k$  area,  $t_l$  haul capacity

$$CPUE = \text{landings} / \text{trips}(+)$$

Catch success model

$$\ln\left(\frac{p}{1-p}\right)_{i,j,k,l} = \mu + \alpha_i + \beta_j + \gamma_k + t_l + \varepsilon_{i,j,k,l}$$

Expected CPUE (1)

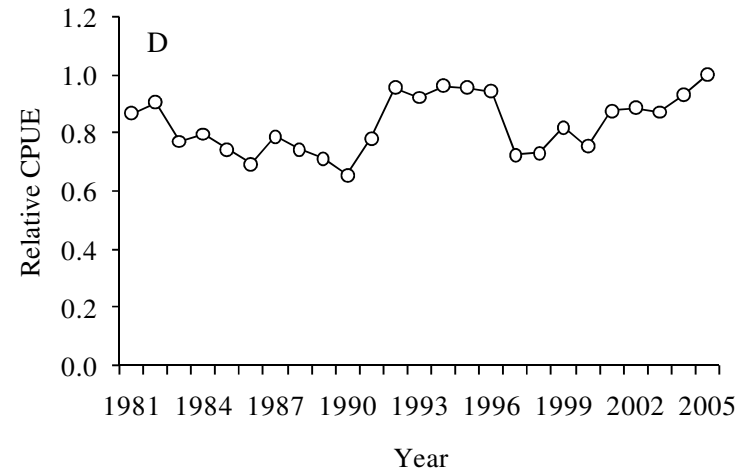
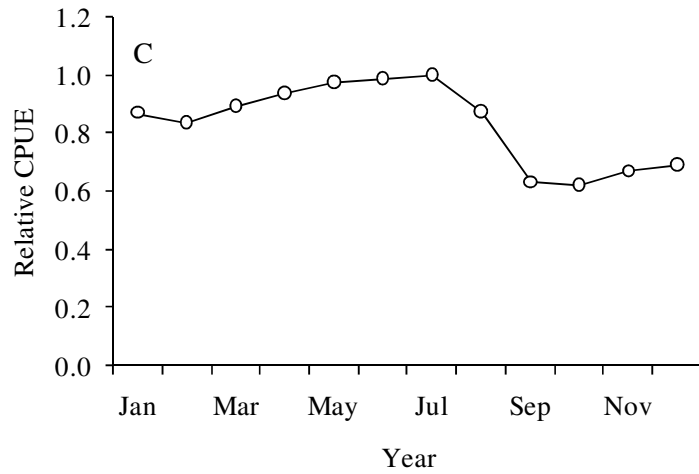
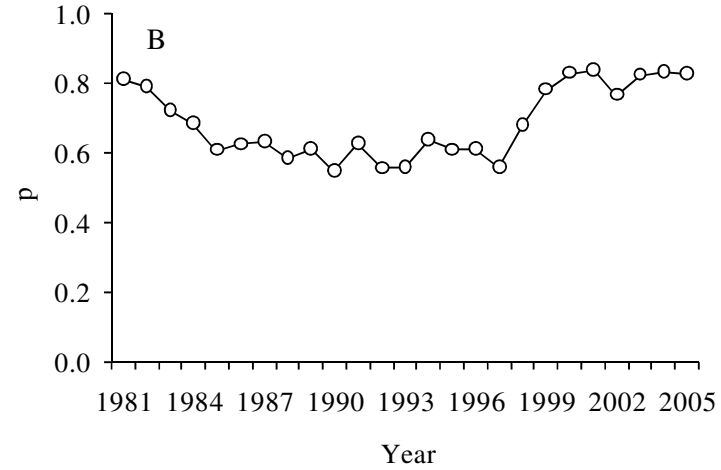
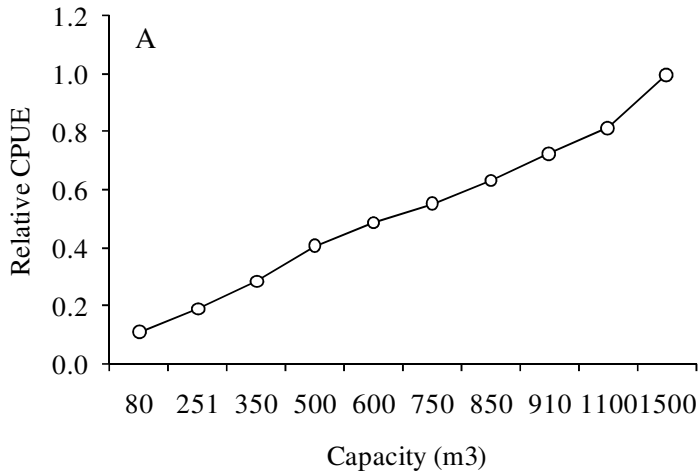
$$p = \text{trips}(+) / \text{trips}(total)$$

$$CPUE_i = \exp(\mu + \alpha_i + 0,5\sigma^2) \exp(\mu' + \alpha'_i + 0,5\sigma'^2)$$

Alternative expected CPUE (2) (present document)

$$CPUE_i = \exp(\mu + \alpha_i + 0,5\sigma^2)^{-1} \exp(\mu' + \alpha'_i + 0,5\sigma'^2)$$

# Results (Caballero y Aranis, 2005)



# Results

