





Maximum sustainable yield (MSY) and optimum effort of fishing of jack mackerel (*Trachurus murphyi*) and pacific mackerel (*Scomber japonicus*) in Peru (1997-2006)

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Chilean Jack Mackerel
Workshop

Introduction:

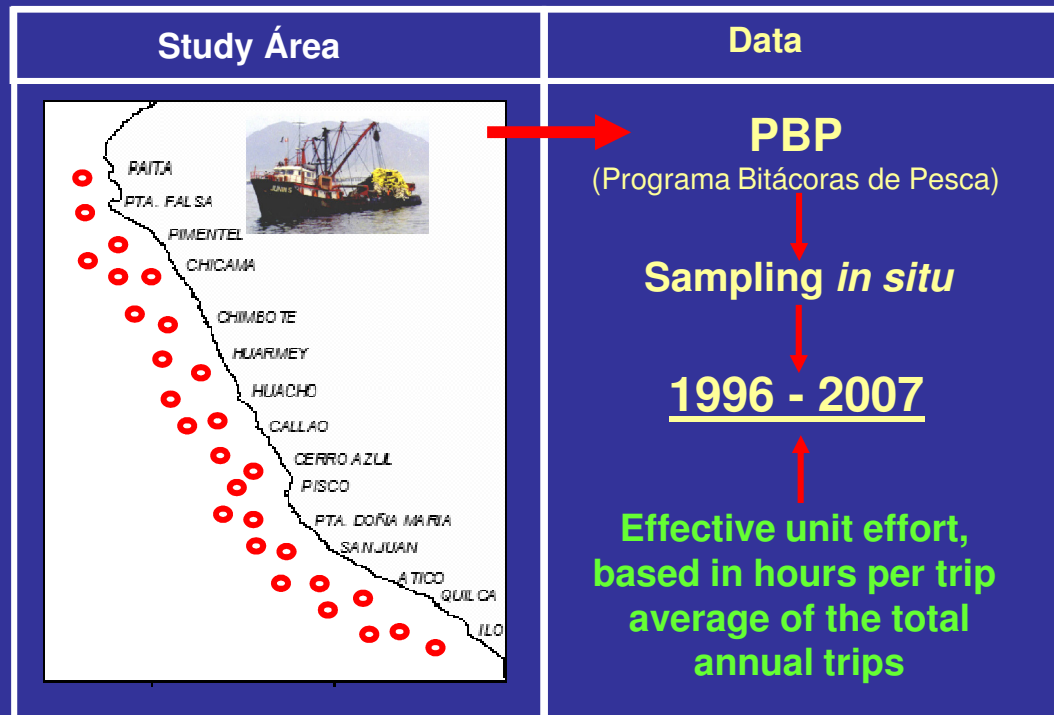
-  **Industrial fleet works over both species jack mackerel and pacific mackerel**
-  **The model is apply to a multispecific stock, similar to other fisheries, as a practical form to stablish a reference point for management (Ref. D. Pauly).**
-  **We assume that environmental conditions are affecting on similar way to both species.**
-  **CPUE obtained could be considerer as availability index of jack mackerel and pacific mackerel on peruvian coast..**



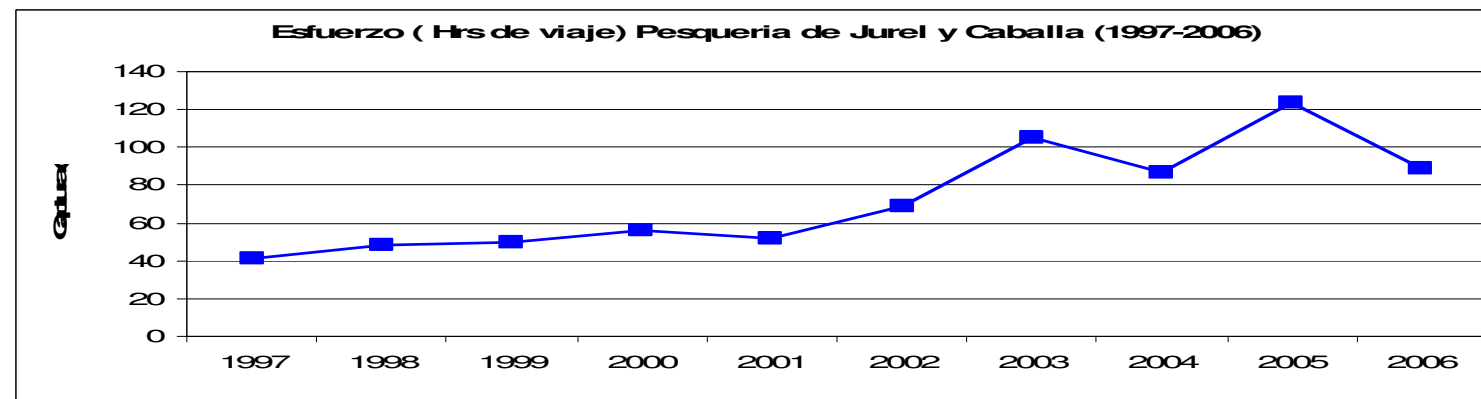
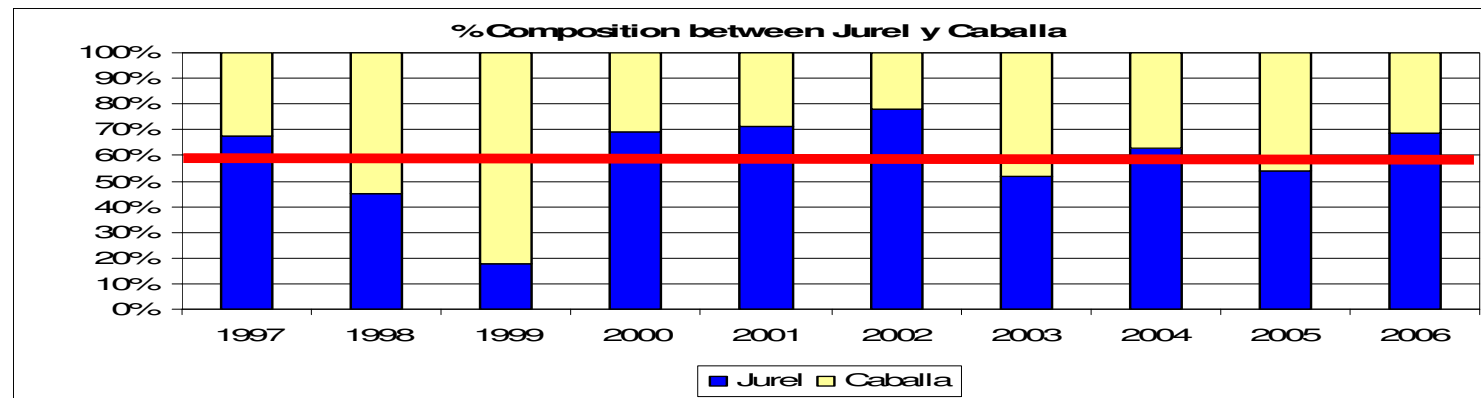
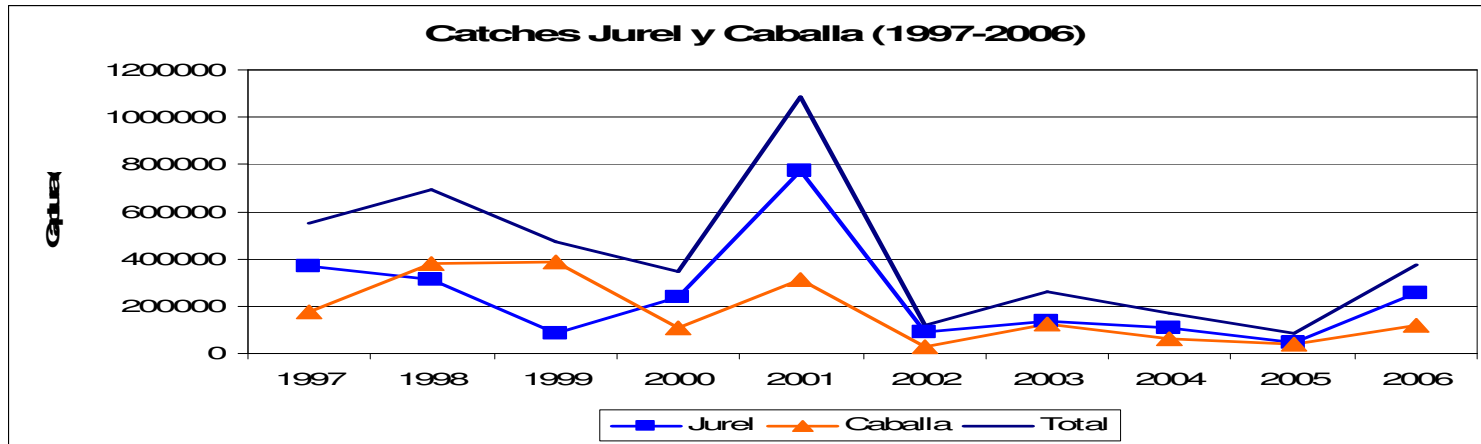
GOAL

Calculate maximum sustainable yield (MSY) and optimum effort (OE).
by applied Surplus Production Model, tipe Fox, based on catch and effort data
In the jack mackerel and pacific mackerel fisheries for period 1997 - 2006

METHODS



Results

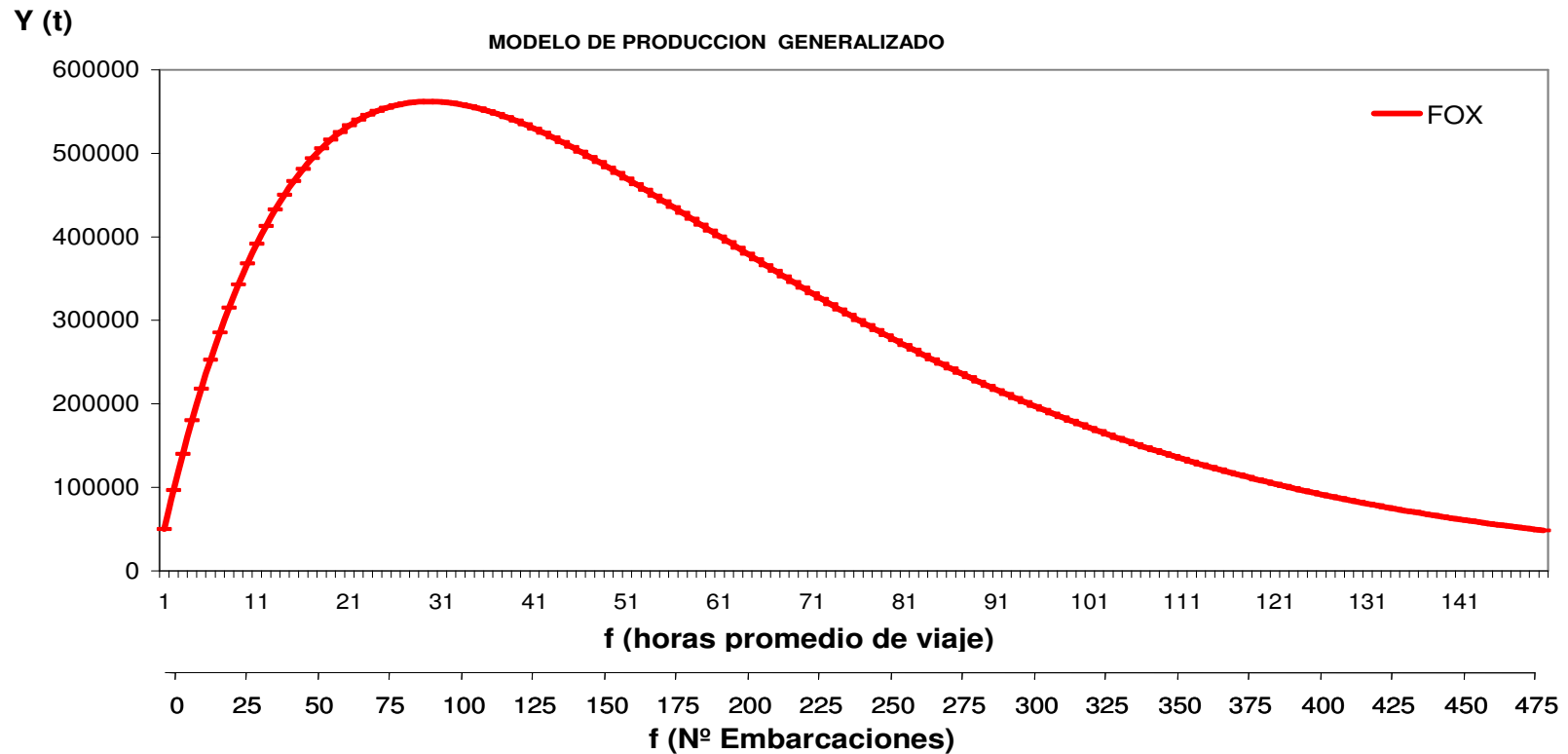
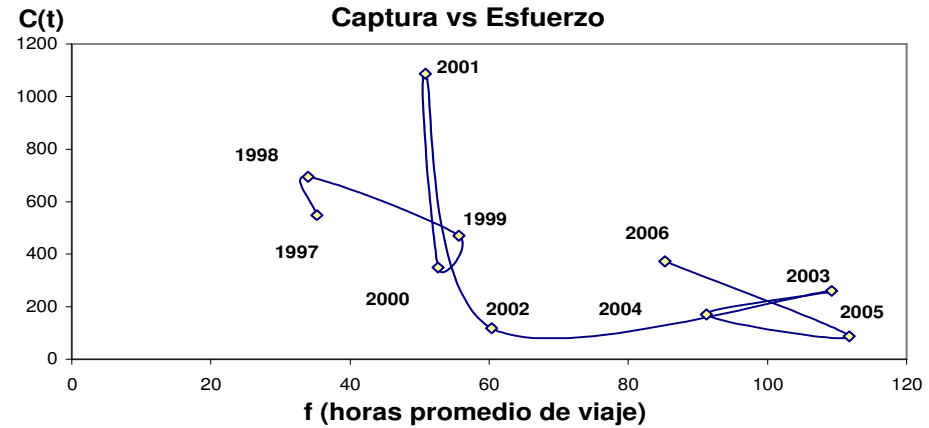


Results


DATOS
 Capturas (t):
 Esfuerzo:


JUREL + CABALLA
 Durac. Vjs Prom año (hrs)
 Nº Emb

Modelo	FOX
m (parámetro ecuación)	1.00
n	10
r	-0.85
r ²	0.69
MRS (t)	562 170
Limite Sup	618 925
Limite Inf	469 185
Nº Emb	86



Conclusions:

 **MSY for both species Jurel + Caballa was 562 thousands tons, with limits between 469 thousands tons and 619 thousands tons, showing $r^2 = 0.69$ and Optimum Effort = 30 hours per trip in average.**

 **From MSY and optimum effort obtained, it was calculated for management, the number of boats and holding capacity necessary. For these results we use some indicators as number of annual trips average, efficiency (catch between holding capacity displacement) and number of trips by vessel by year.**