

The Surprising Behaviour of rock lobsters at the Nightingale Island (Tristan da Cunha) after the 2011 oil and soya spill from the bulk carrier OLIVA

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Where is Tristan da Cunha?



Where is Tristan da Cunha?



Some interesting facts

- World's most isolated community !
- 275 inhabitants – British Citizens
- Economy → 80%=rock lobster fishery (*Jasus tristani*)



- Single concessionaire → Ovenstone Agencies in Cape Town

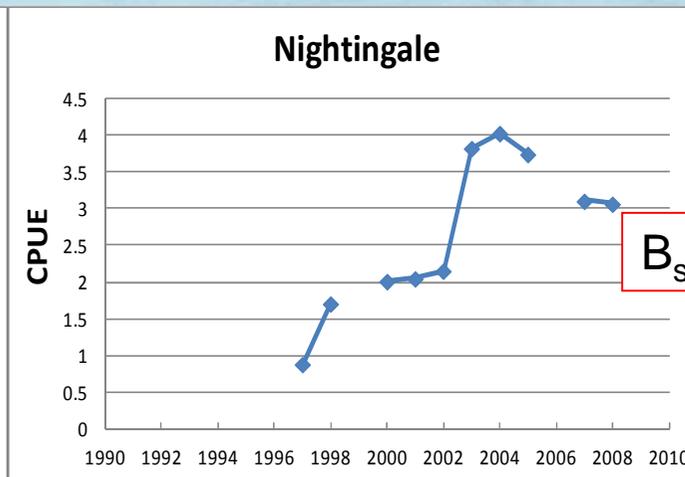
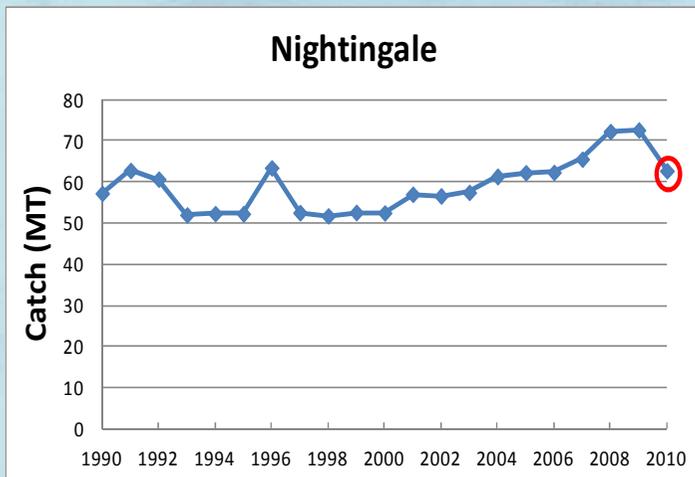
Current management of the fishery

- The 4 islands managed separately
- Different TACs and min legal size limits
- Input data:
 - Catch
 - CPUE
 - catch-at-length data
 - growth rate data
 - discarded lobsters
- Fishery-independent data: biomass surveys
- Age-structured production assessment models

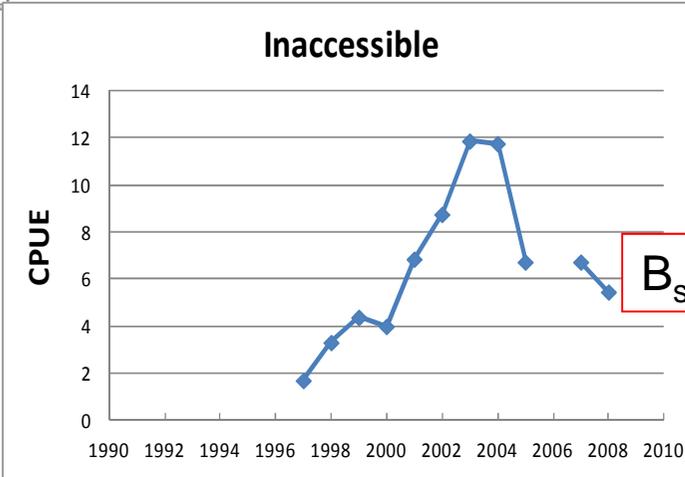
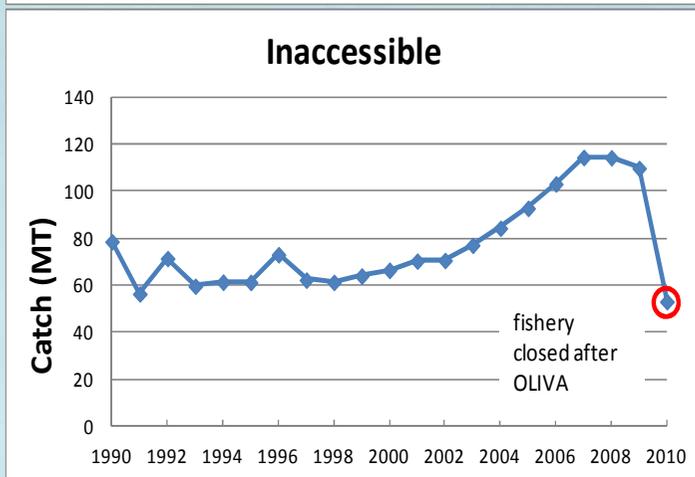


Current status of fishery at Nightingale and Inaccessible?

[Note: Season 2010 is the split season from July 2010 to June 2011]



$$B_{sp}(2011)/K = 0.74 > B_{MSY}$$



$$B_{sp}(2011)/K = 0.87 > B_{MSY}$$

How are TACs currently set?

- TACs based upon Replacement Yields → ASPM
- Accepted rationale has been to keep CPUE levels at current levels (probably above BMSY)

- MSC certification June 2011 !
- Condition of certification



- MPs each with a clear cut basis for TAC decisions
- In advanced stages of developing MPs for each island



OLIVA incident !

- 16 March 2011 the bulk carrier OLIVA ran aground at Nightingale



OLIVA incident !

- 1500 tonnes of heavy fuel oils and diesel (Nightingale and Inaccessible)



OLIVA incident !

18 March 2011 – vessel broke in half and sank
all 65 000 tonnes of the soya cargo lost





OLIVA incident !

- Oiling of 4000 rock hopper penguins (Nightingale) – only ~10% survived



- Immediate closure of lobster fishery at Nightingale and Inaccessible – contamination of flesh by hydrocarbons + uncertainty regarding impact of the soya on the lobsters at Nightingale



The impact of the OLIVA incident ?

What is the impact of the oil-soya spill on the fishery - short-term and long-term ?

July 2011 - Initial test fishing at Nightingale and Inaccessible :

- maintained closure of fishery at Nightingale
- reduced TAC at Inaccessible (for start of 2011/12 season)

Precautionary measure until further test fishing and juvenile surveys could take place.

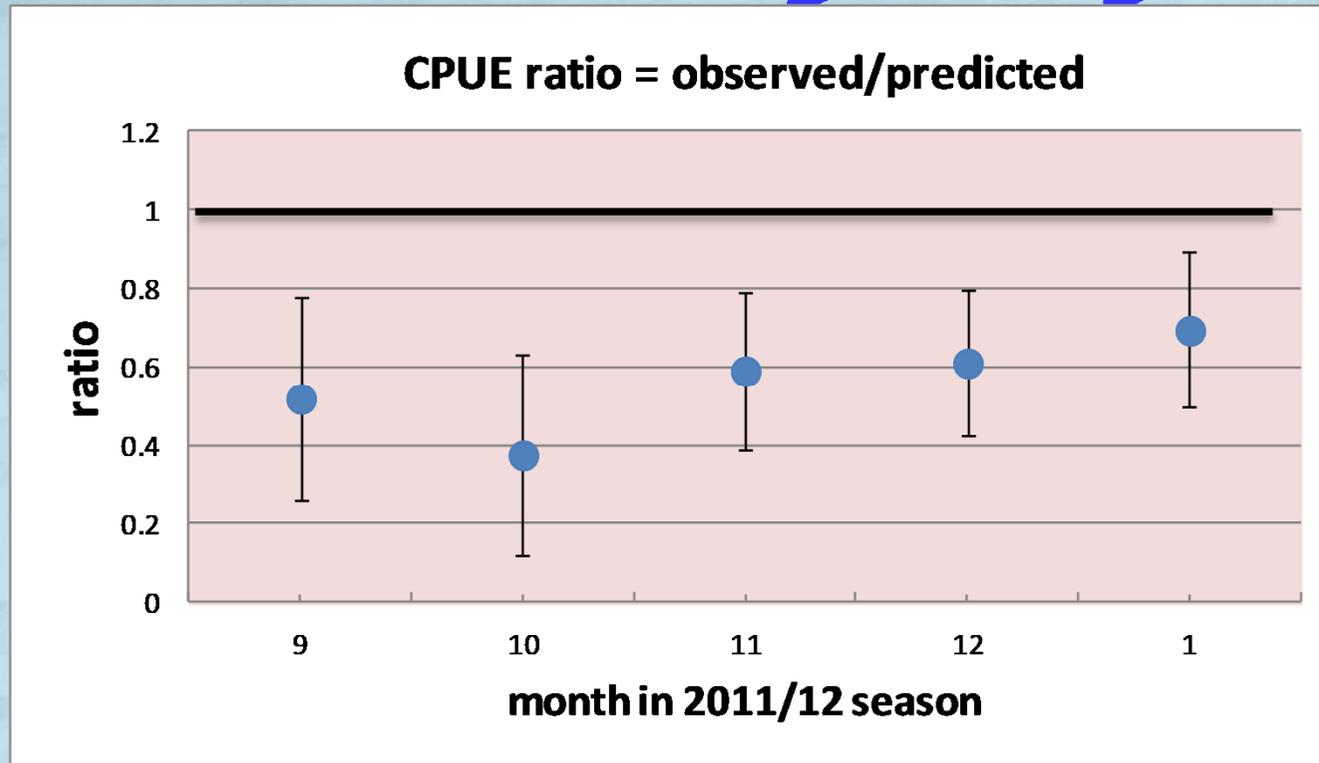
Aim of test fishing at Nightingale ?

To tell us what the impact of the OLIVA has had on the fishery

Done: July, Sept, Oct, Nov, Dec (2011) + Jan (2012)

Soya  sank – rotted – black sludge – still there
10 months after the sinking of the OLIVA

Results of test fishing at Nightingale



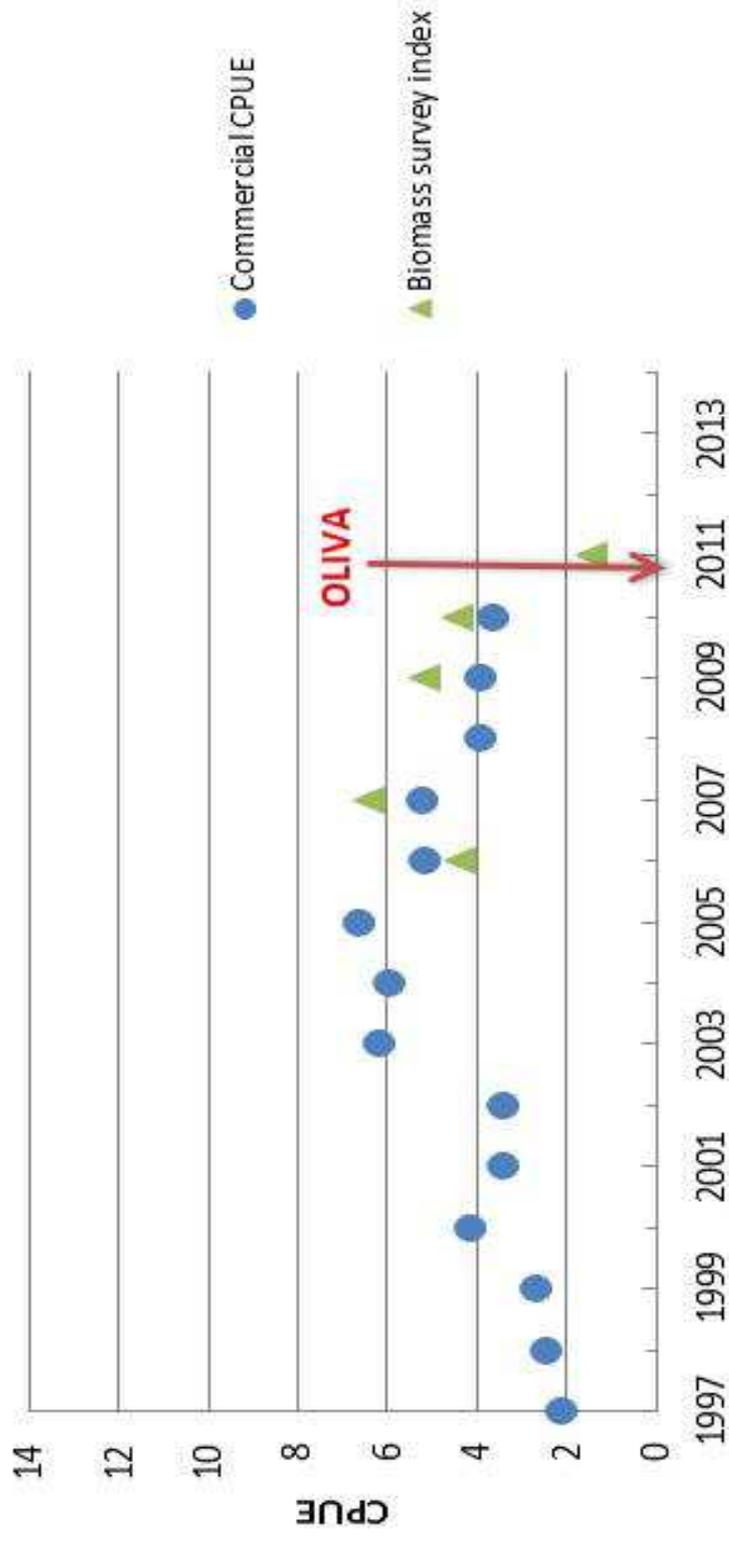
Shows around a 40%-50% decline in CPUE (resource biomass) subsequent to the OLIVA incident. Why?

death?

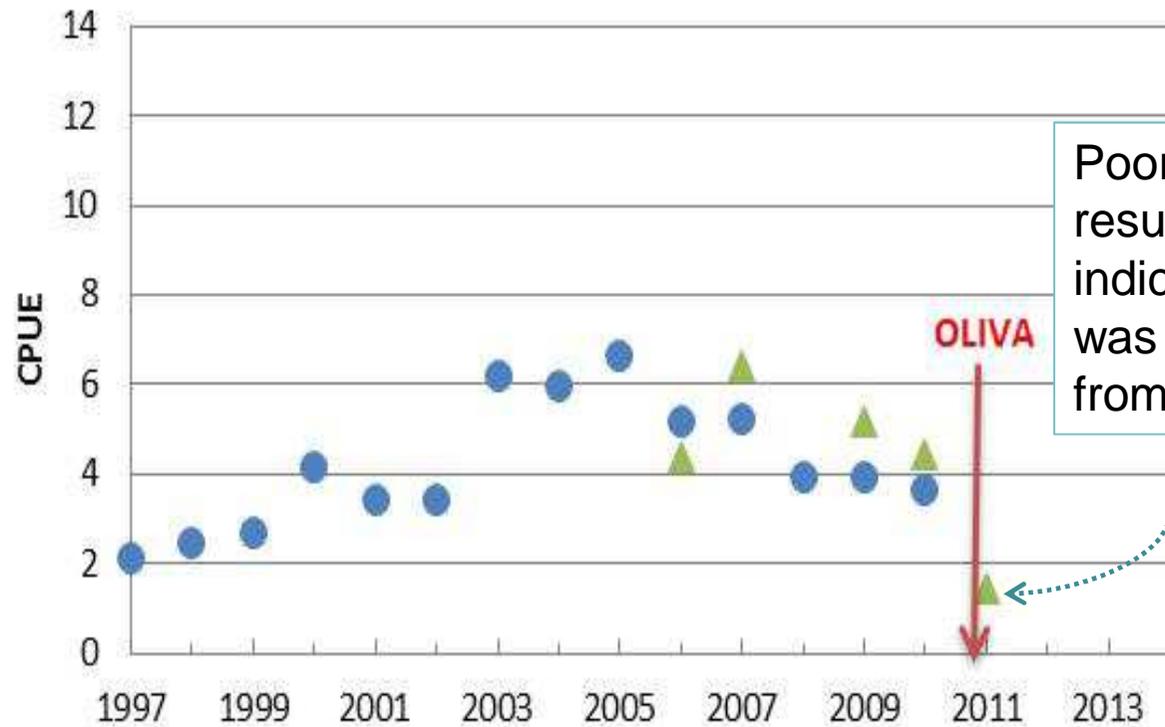
move away?

decreased catchability?

Nightingale CPUE

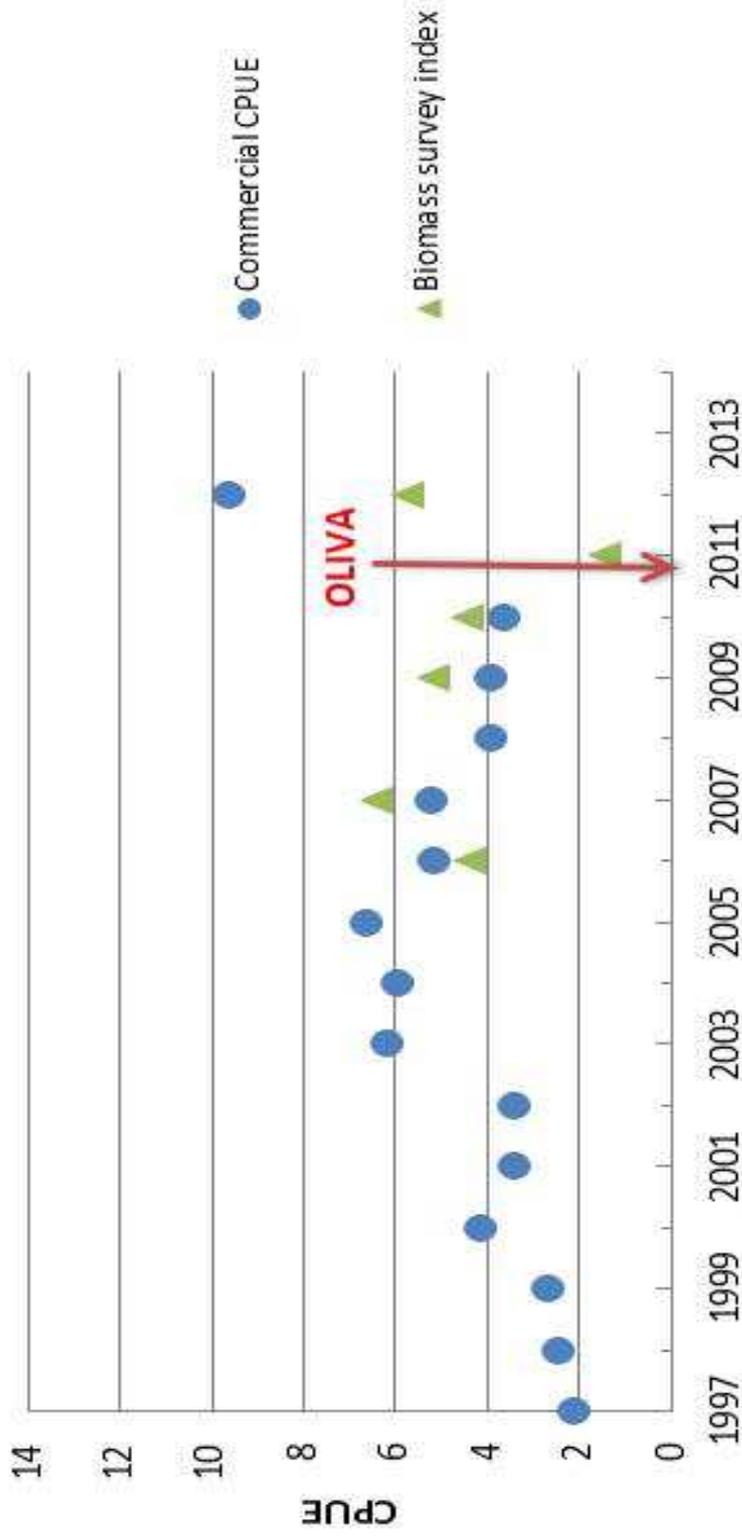


Nightingale CPUE

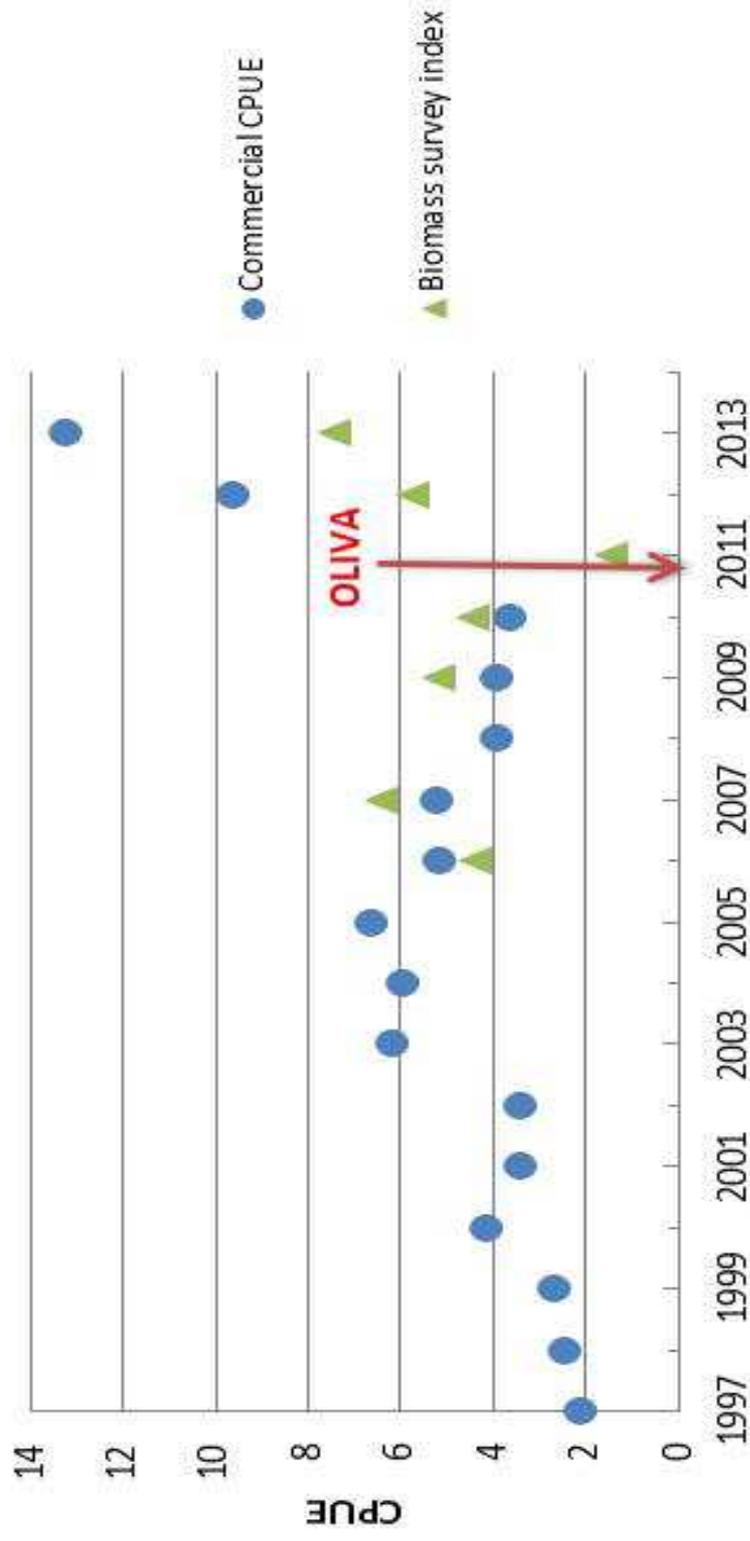


Poor 2011 survey results thought to indicate lobster death was most likely impact from the soya

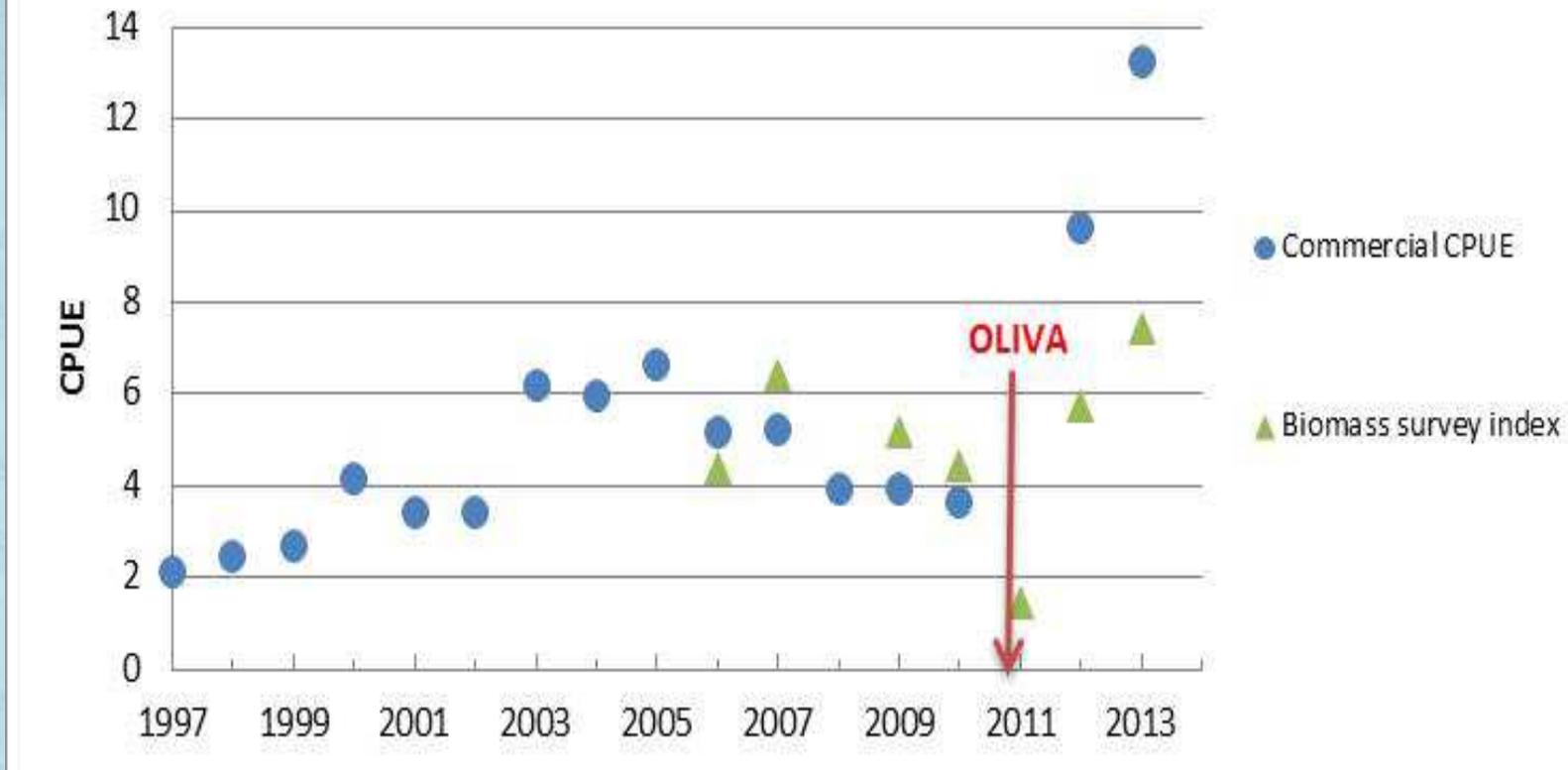
Nightingale CPUE



Nightingale CPUE

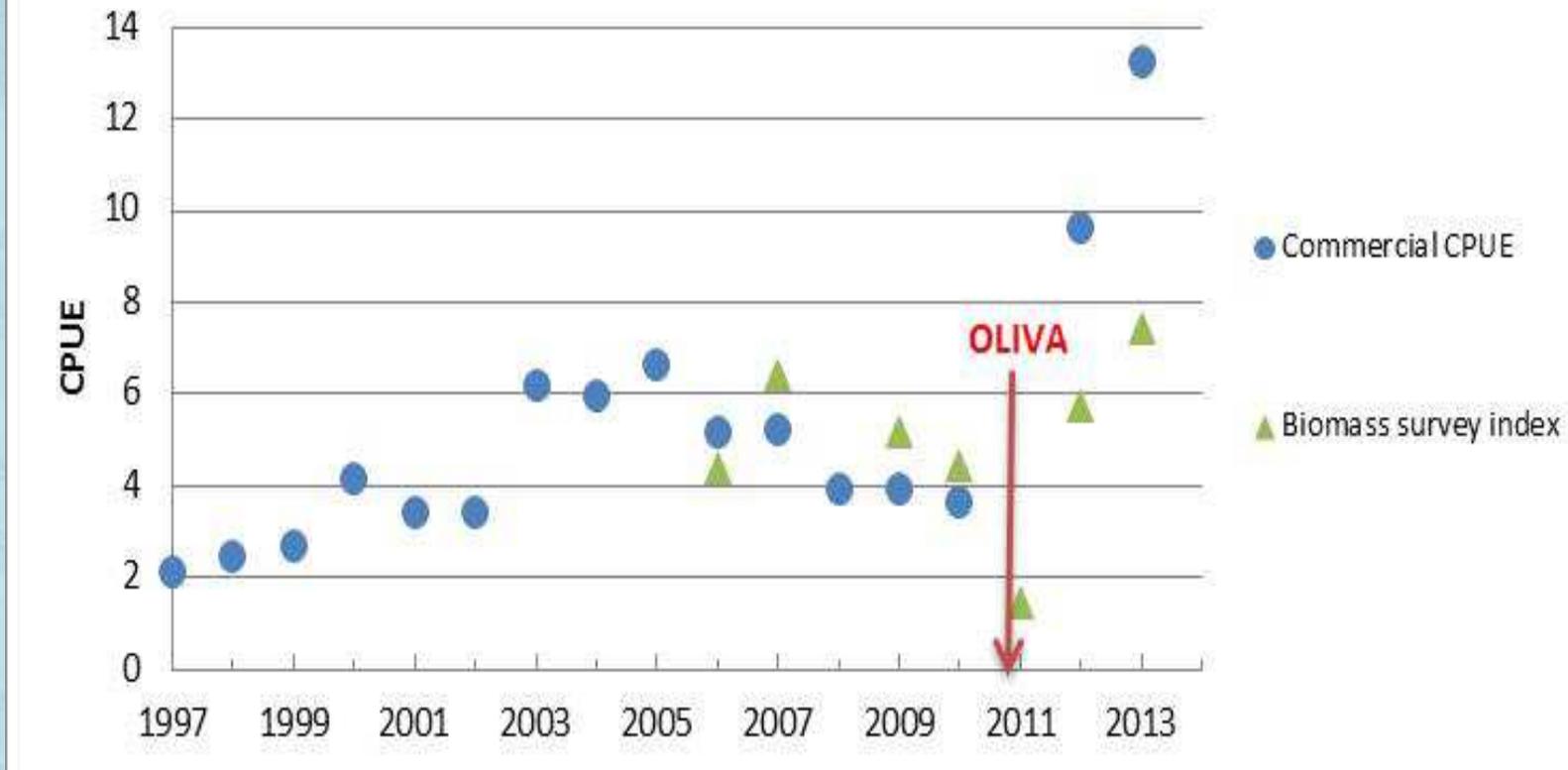


Nightingale CPUE



SO, EVENTUALLY, IS SOYA TO LOBSTERS WHAT THE SPINACH IS TO POPEYE OR THE MAGIC POTION TO ASTERIX THE GAUL?

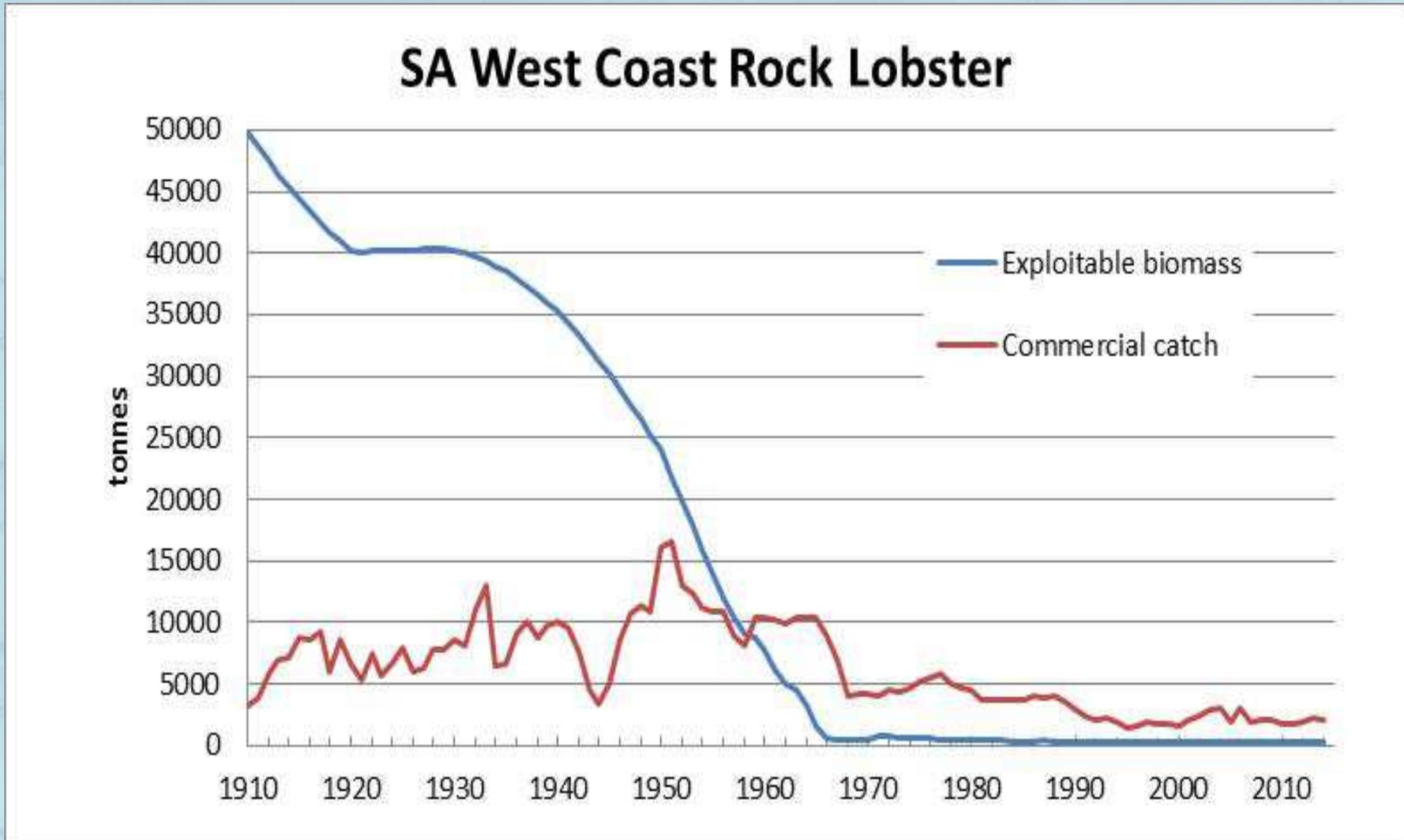
Nightingale CPUE



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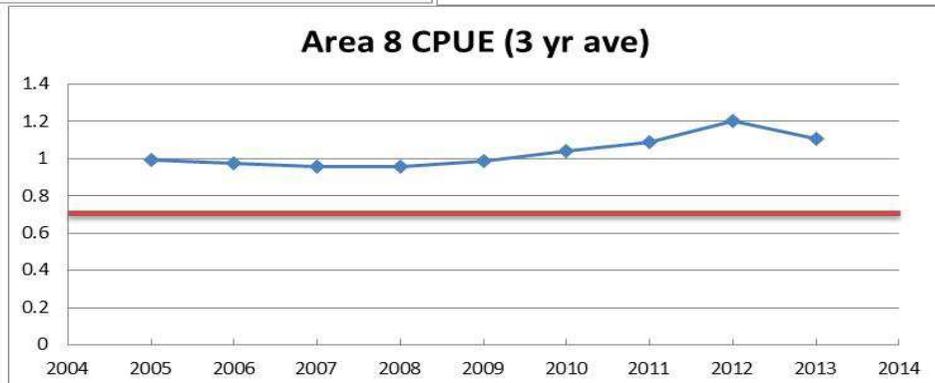
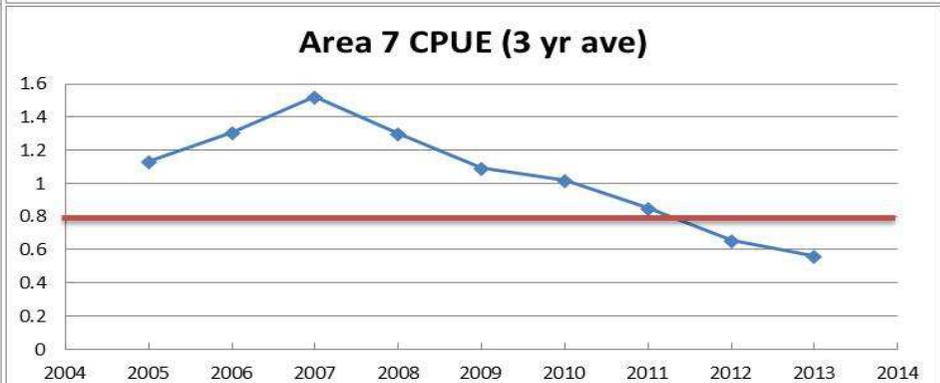
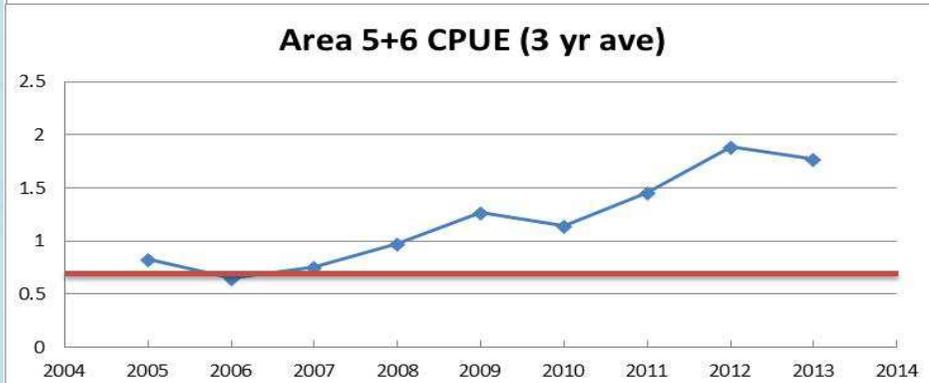
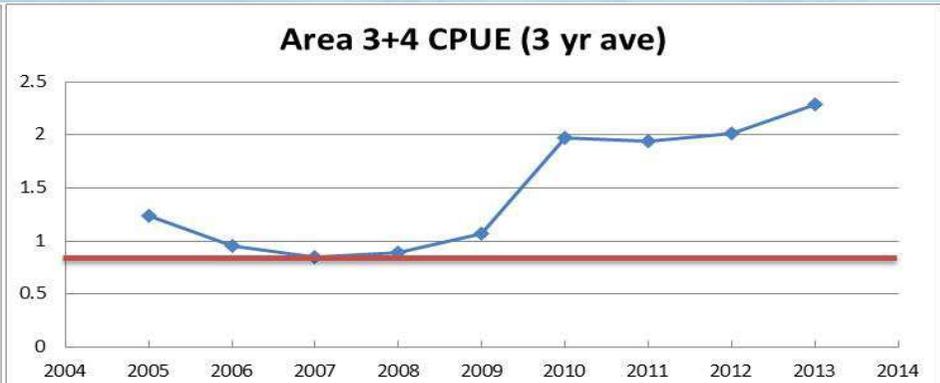
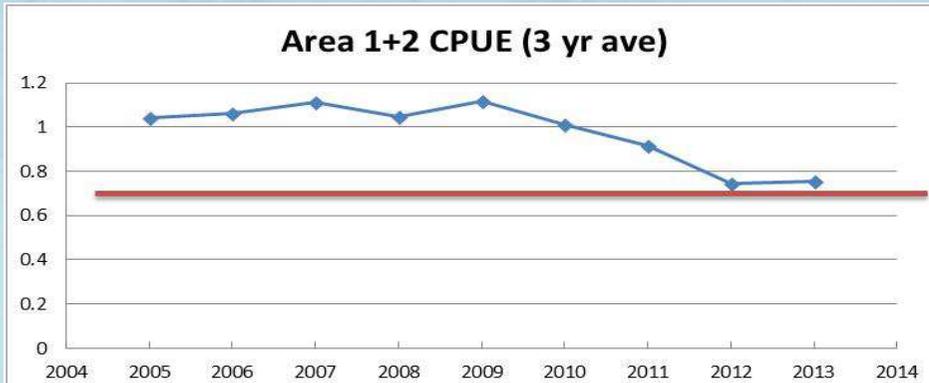
BUT HOW LONG DOES IT LAST?

SA West Coast rock lobster – Catch and Biomass



Heavily depleted resource !

SA West Coast rock lobster



Slide 24

DS7

We need another slide before this one showing the WC lobster catch and biomass trend since 1910.

Probably better for resource as a whole, not every area.

Have statement underneath:

Heavily depleted resource

and add 2012/13 and 2013/14 TACs

Doug Butterworth, 2014/10/19

- Does the Nightingale experience point to a lateral thinking solution to our local lobster crisis?

- Does the Nightingale experience point to a lateral thinking solution to our local lobster crisis?
- Run a dozen bulk carriers full of soya aground at various strategic positions along the west coast (just take the oil off first)!

Thank you for your attention !