

# Climate Change Workshop

## Fishing Sector Adapting to Climate Change

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**SEAFOODINDUSTRY  
COUNCIL**

The New Zealand Seafood Industry Council Ltd



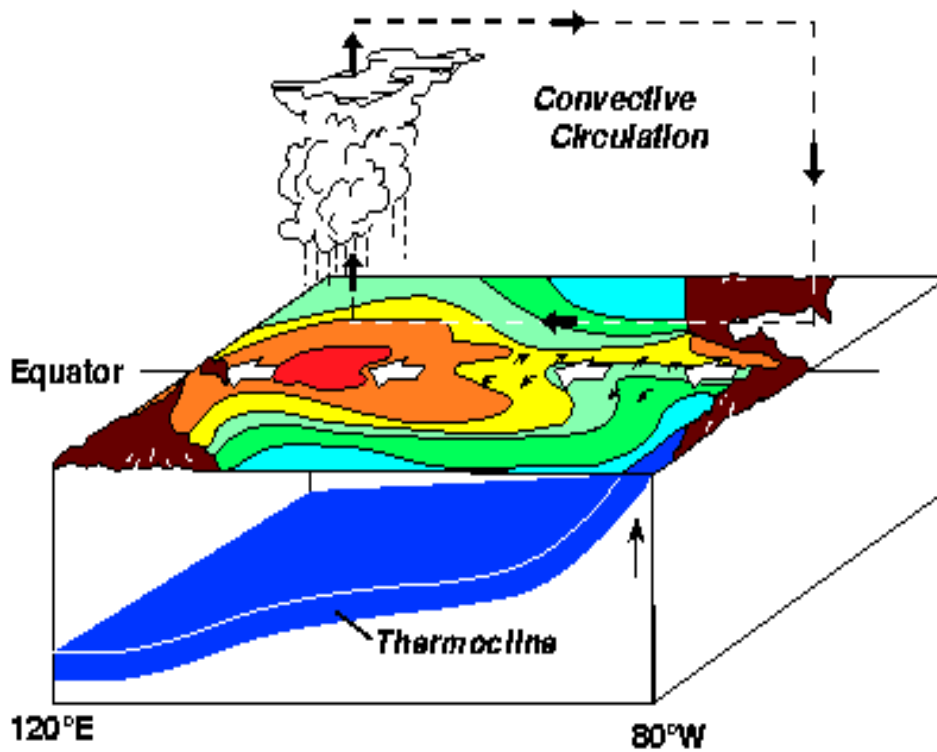
# Short term experience V Long term speculation

- AGW climate change modelling projects long term and gradual increases in ocean temperatures;
- Oceans are already subject to short term fluctuations, e.g. ENSO, that exceed the bounds of current AGW modelling;
- Indications of potential AGW impacts may be inferred from experience.

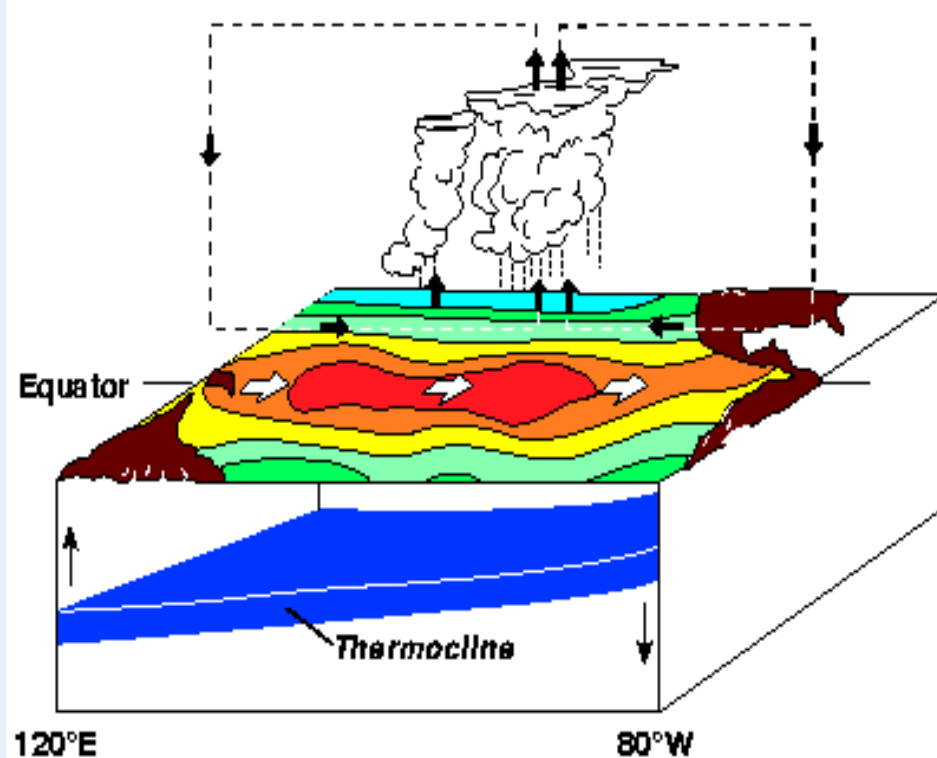


# ENSO Effects

## Normal Conditions



## El Niño Conditions



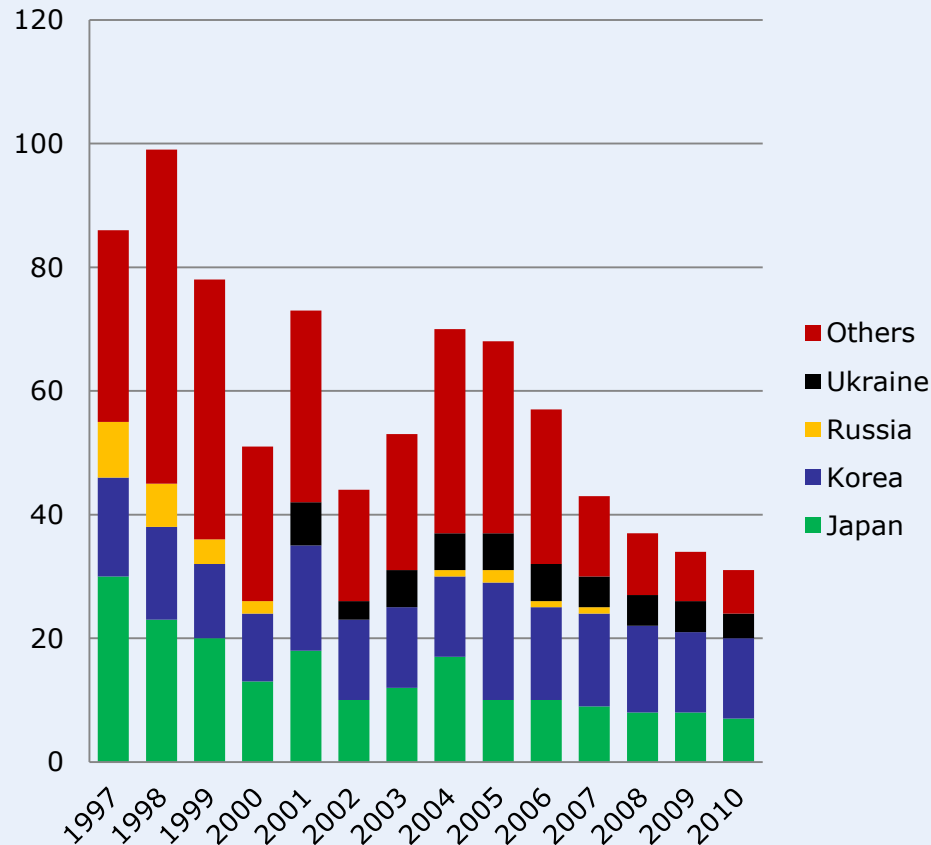
# Potential & Actual Challenges

- **Potential Challenges:**
  - Changes to fish stock location
  - Changes to fish stock abundance
- **Actual Challenges:**
  - (Dis)Incentives to discourage use of fossil fuels and refrigerants

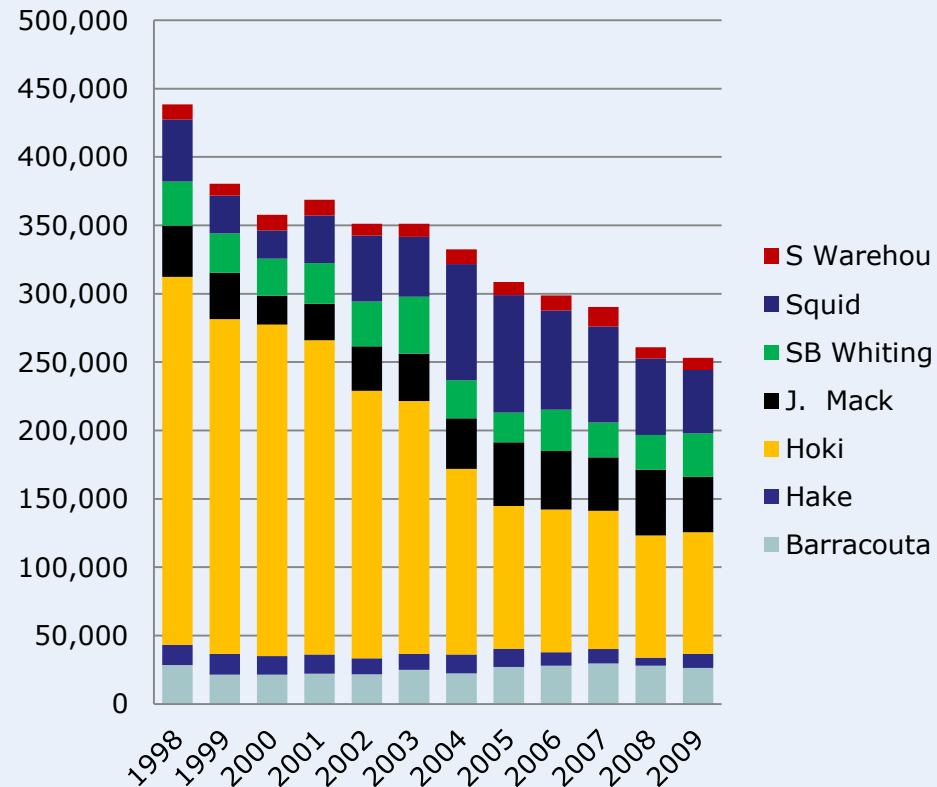


# Fleet Changes and Catches

## NZ Chartered Fishing Fleet



## Key NZ EEZ Mid-water Landings



# Adapting to Fish Stock Location Changes

- Stocks may move towards temperate and higher latitudes;
- Changes in locational abundance would put pressure on access and allocation understandings between States and their commercial stakeholders;
- Mobile capital and national/local community interests may clash.



# Adapting to Fish Stock Abundance Changes

- Wild stock abundance fluctuates naturally for many reasons;
- Management and allocation models should enable stakeholders to adapt to changes in sustainable abundance;
- Rights-based systems transfer abundance fluctuation risks to stakeholders if they enable transferability and rationalisation.



# Oil Reliance

- Fuel is one of the highest vessel operational costs;
- Strong incentives already to make savings.
- Engine efficiencies and gear modifications.

## Crude Oil

\$70.65

▲0.61

0.87%

17:48 PM EDT - 2010.05.23





# Fossil Carbon Reduction

- Fishing is a minor emitter compared to other food producing sectors.
- NZ bringing in an ETS for transport fuels that will include fishing vessel use
- By 2015 ETS will cover all carbon and related emissions – refrigerants a significant contributor too.
- Alternatives fuels not practicable yet.



# The Future?



- Photomontage -