Western and Central Pacific Fisheries Commission

1st Scientific Committee meeting
Noumea, New Caledonia
8-19 August 2005

Diet of large pelagic predators of the Western and Central Pacific Ocean

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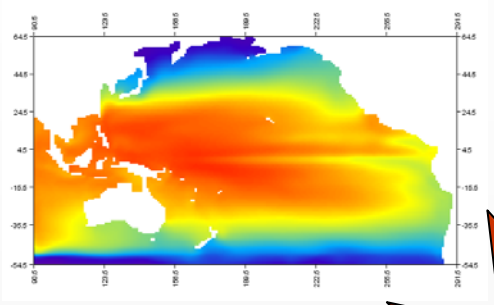
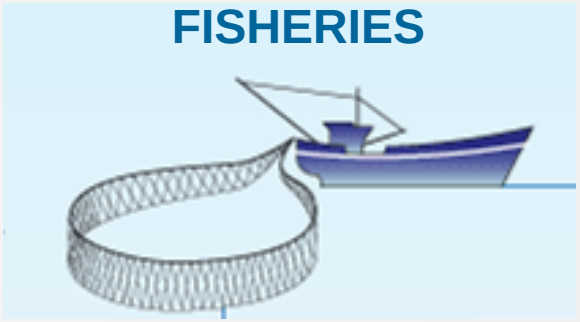
Oceanic fisheries programme
Programme pêche hauturière

Ecosystem approach of fisheries management

ENVIRONMENT

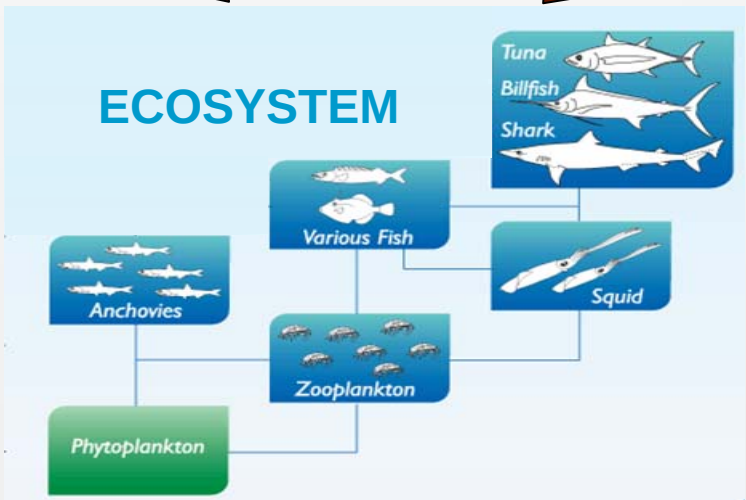


FISHERIES



IMPACT

ECOSYSTEM

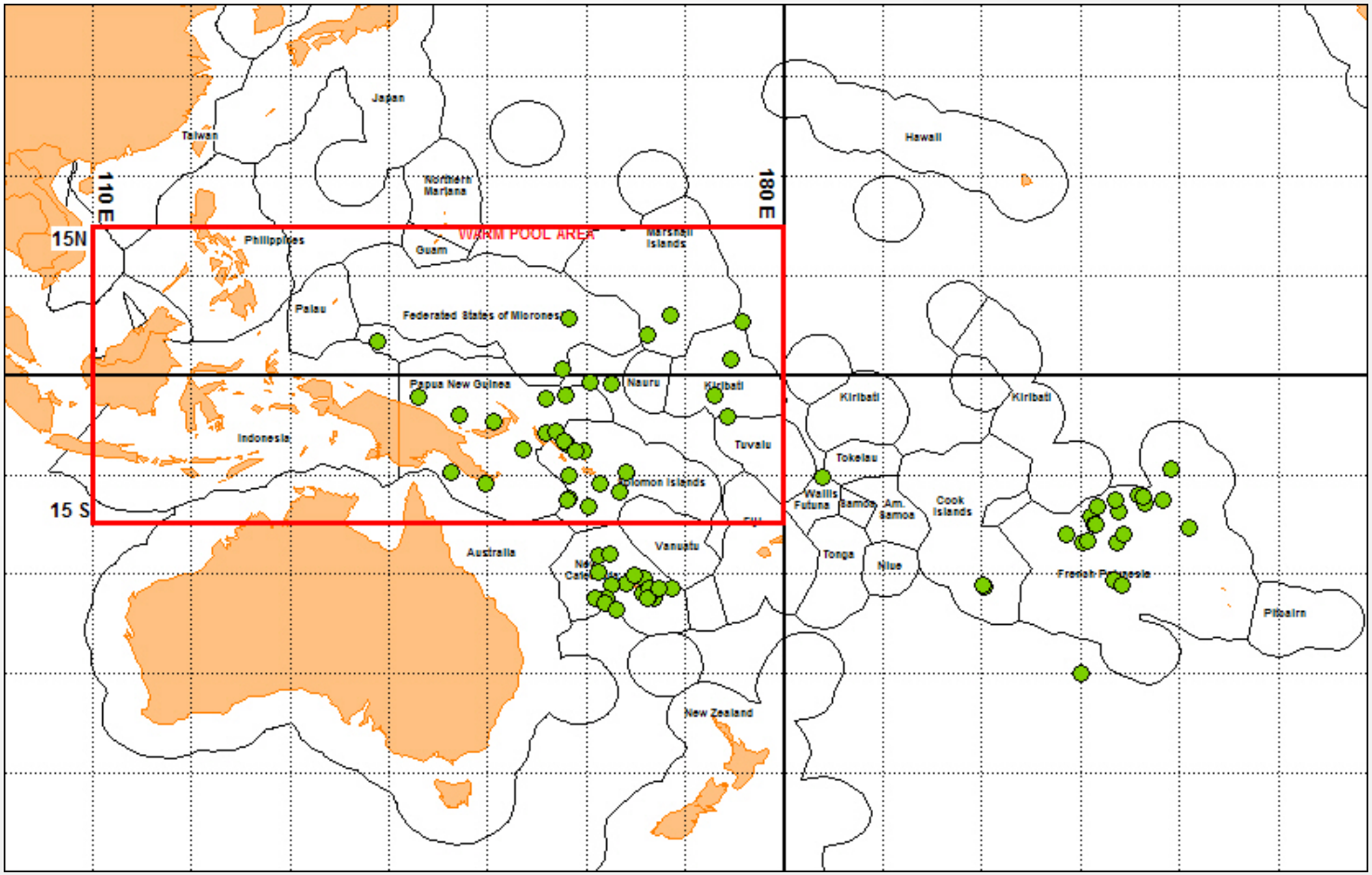


Understand the functioning of the ecosystem

TROPHIC INTERACTIONS

In collaboration with the observer programmes

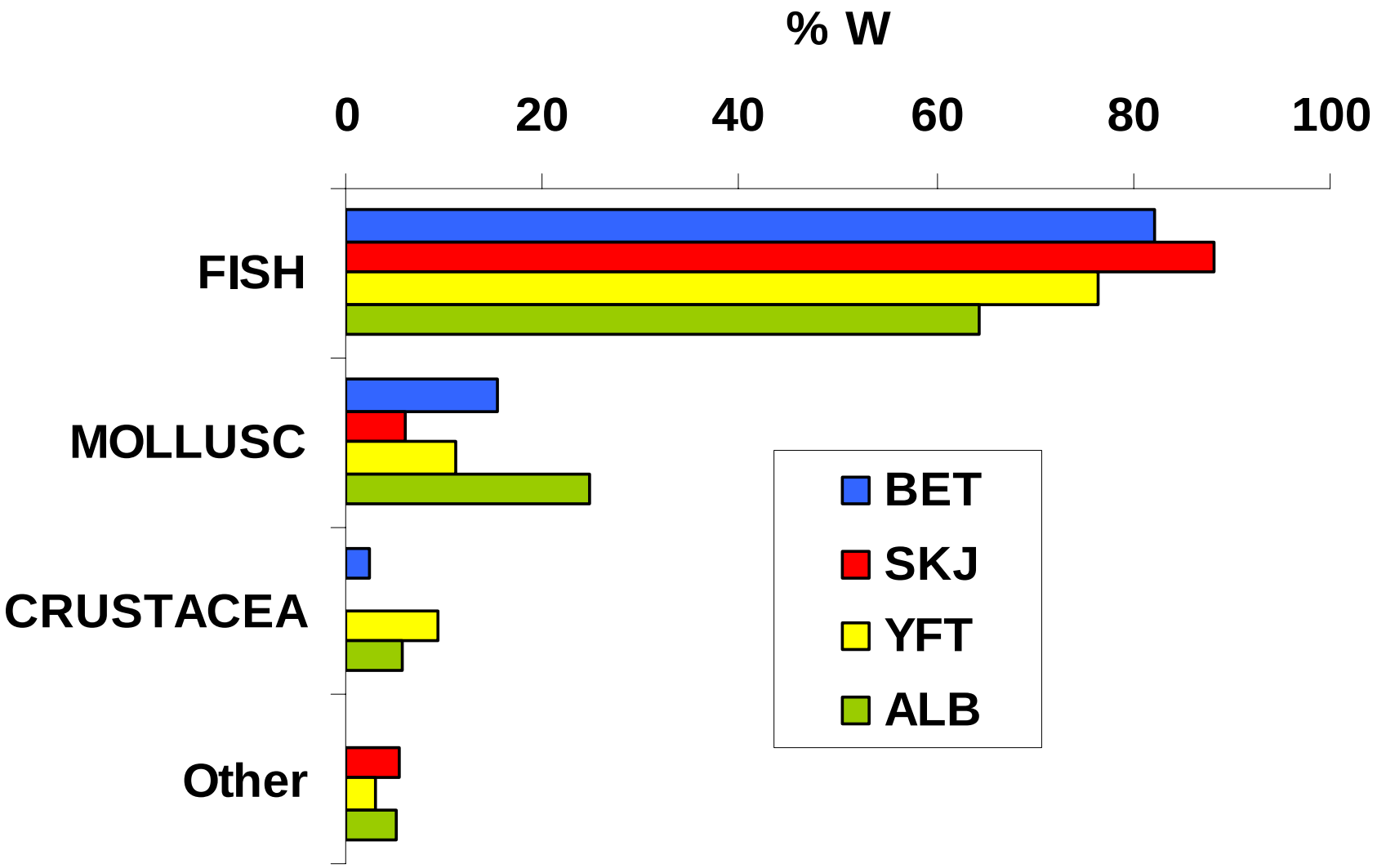
Collection of stomachs and muscle samples of TUNA and BYCATCH



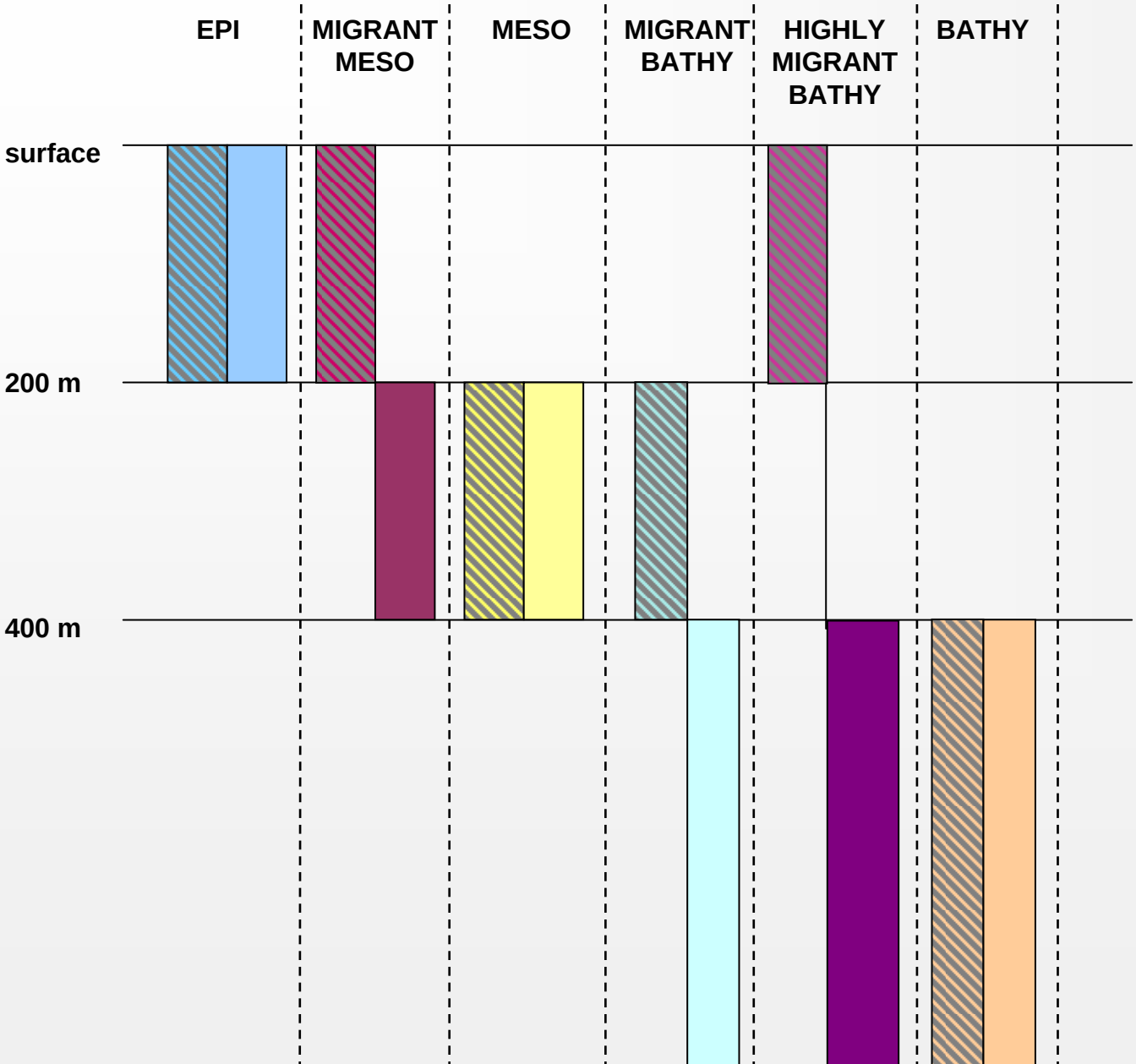
81 sampling trips since 2001

54 LL trips
17 PS trips
10 others

PREY GROUPS


% W
0
20
40
60
80
100
FISH
MOLLUSC
CRUSTACEA
Other
BET
SKJ
YFT
ALB

VERTICAL CLASSIFICATION OF THE PREY GROUPS

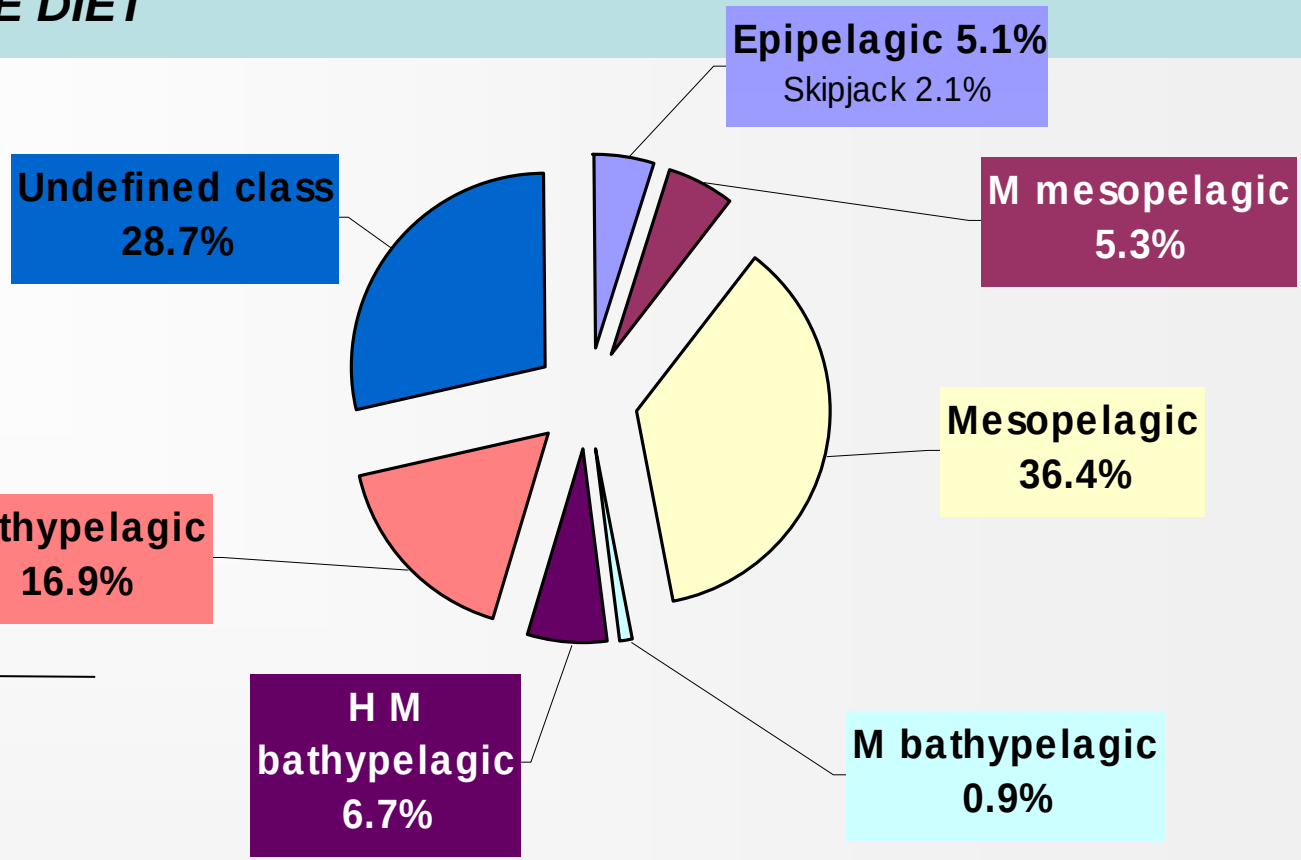


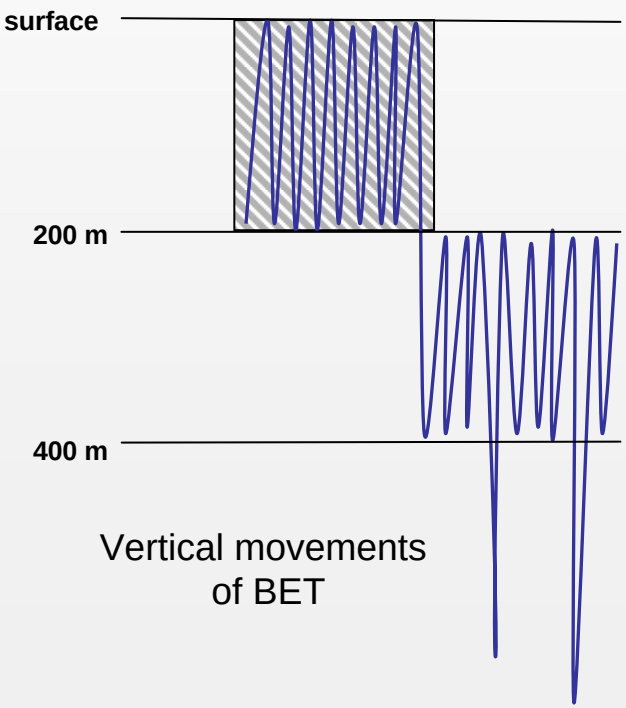
Vertical distribution and migration of forage species

NIGHT

DAY

PREY ITEMS IN BIGEYE DIET



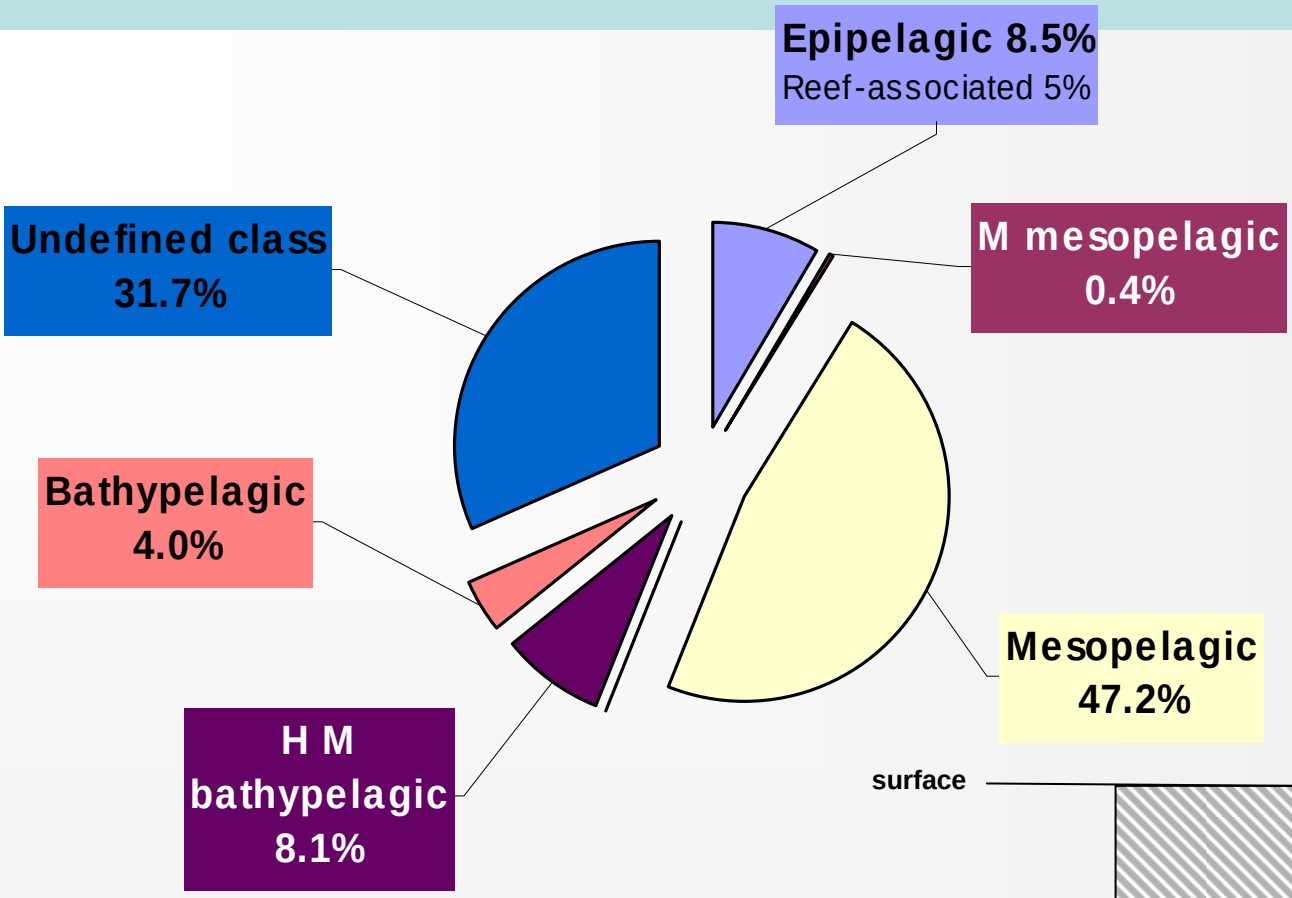


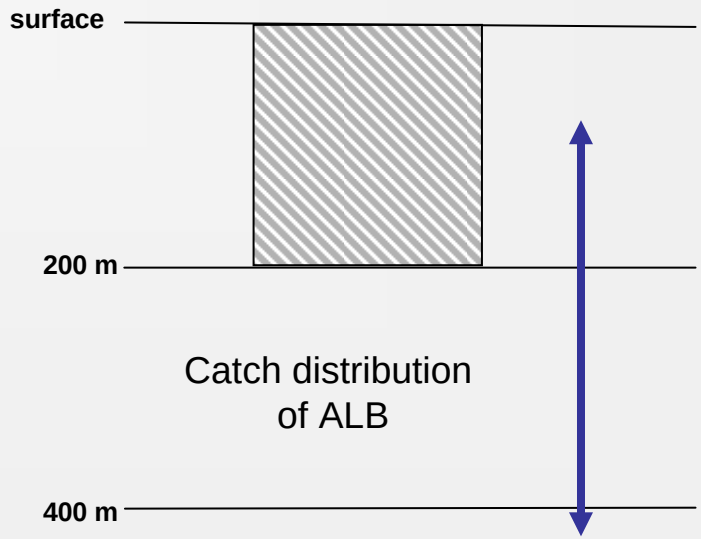
Vertical movements of BET

Number of prey items: 93

Mean size of the preys: 7.4 cm

PREY ITEMS IN ALBACORE DIET

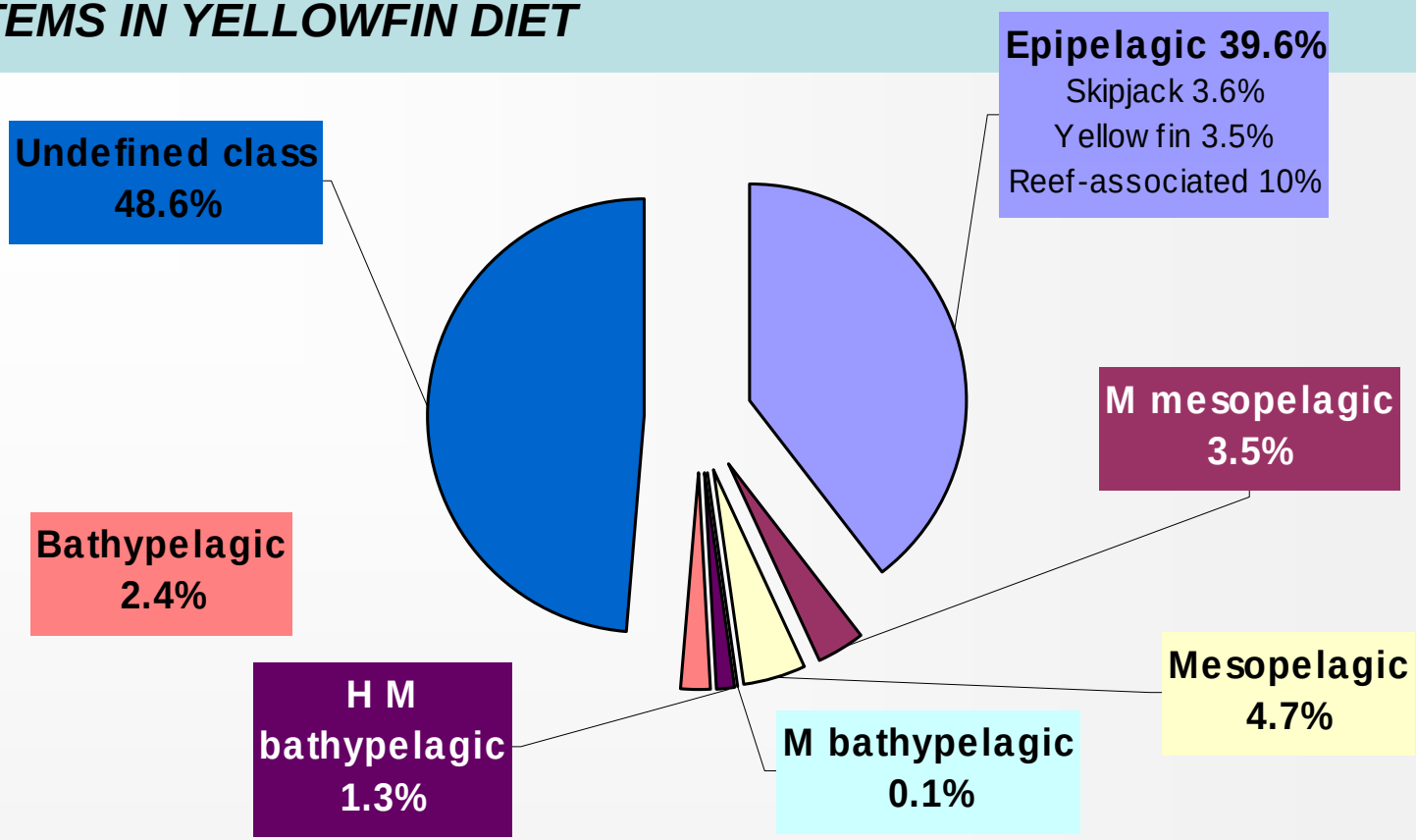


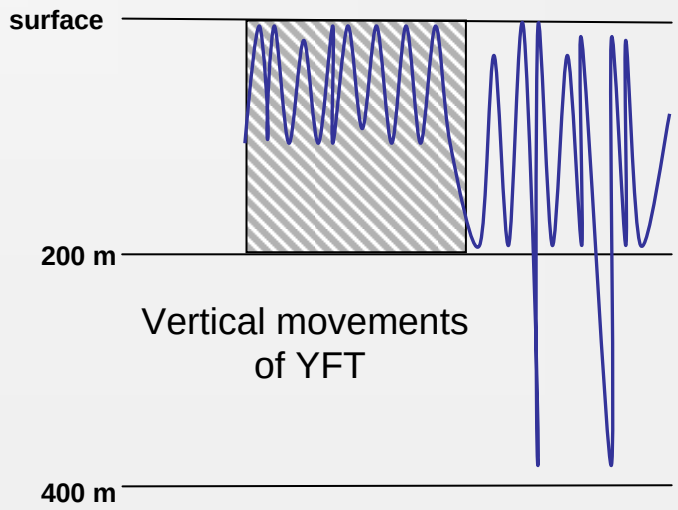


Number of prey items: 42

Mean size of the preys: 4.1 cm

PREY ITEMS IN YELLOWFIN DIET





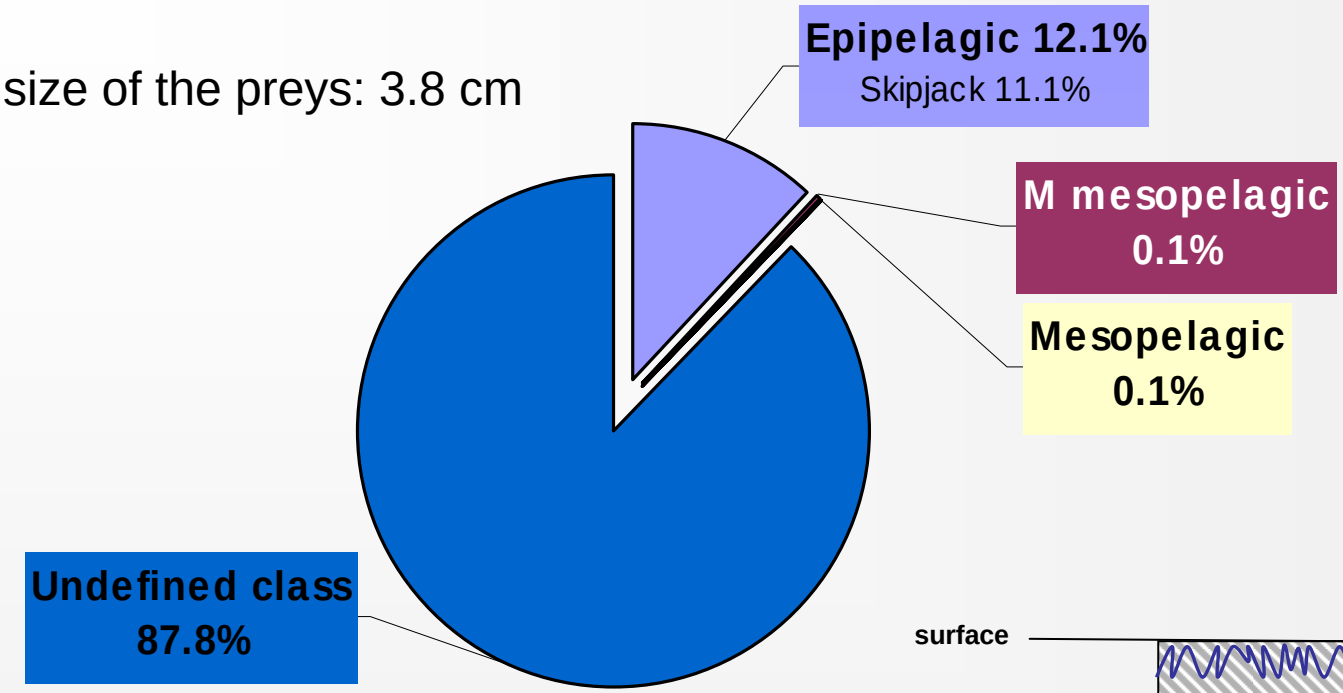
Number of prey items: 77

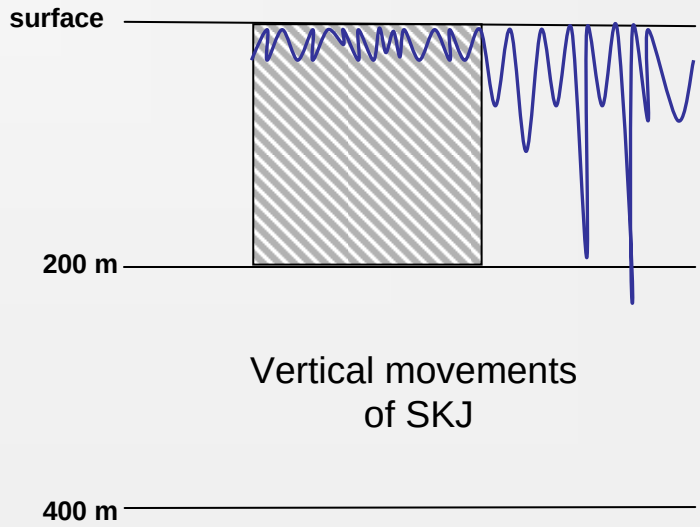
Mean size of the preys: 4.8 cm

PREY ITEMS IN SKIPJACK DIET

Number of prey items: 23

Mean size of the preys: 3.8 cm

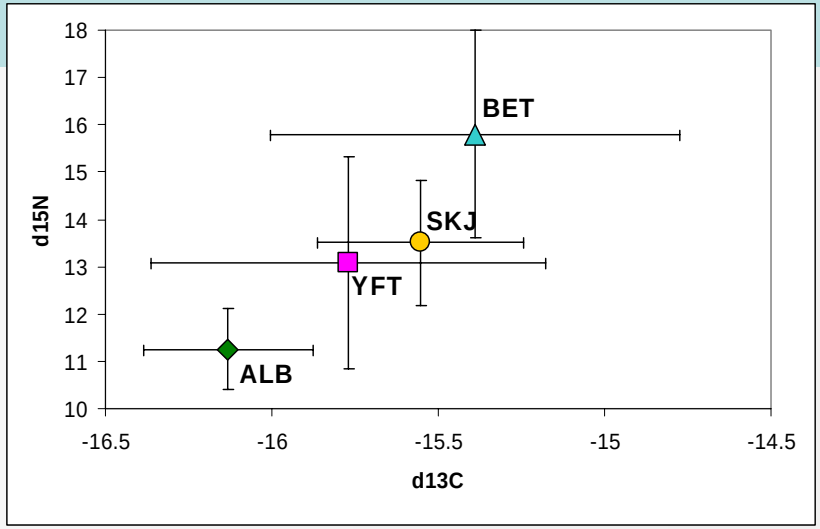




Vertical movements
of SKJ

CONCLUSION

Diet examination are complemented by **isotope** studies that provide information on trophic level and gives a more integrated view of the diet rather than the snapshot of the stomach content at the individual level



Diet studies provide basic information on

-biology and behavior of the predators (daily ration, vertical behavior – that depends on our knowledge of the prey behavior)

-interactions between predators (predation on juveniles of other predators, competition between predators)

Diet studies are also useful as

-basic parameters for ecosystem modelling (e.g. Ecopath) EB WP-10

-ecosystem indicator (prey diversity, mean trophic level, diet composition) to detect changes in the ecosystem in conjunction with other indicators EB WP-5