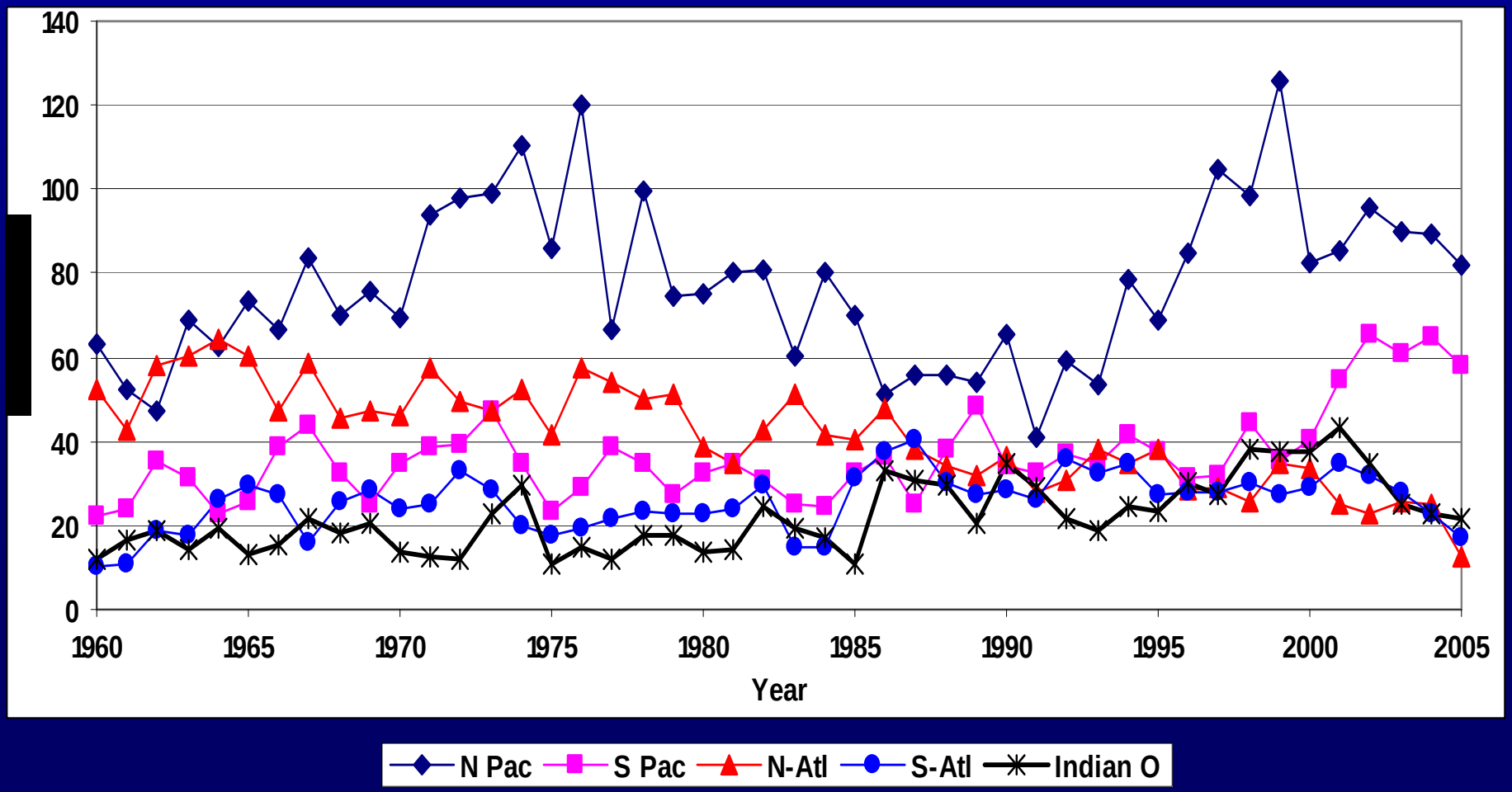
A summarized presentation of the report of the 2nd IOTC WP of the albacore meeting held in Bangkok, November 1st 2008

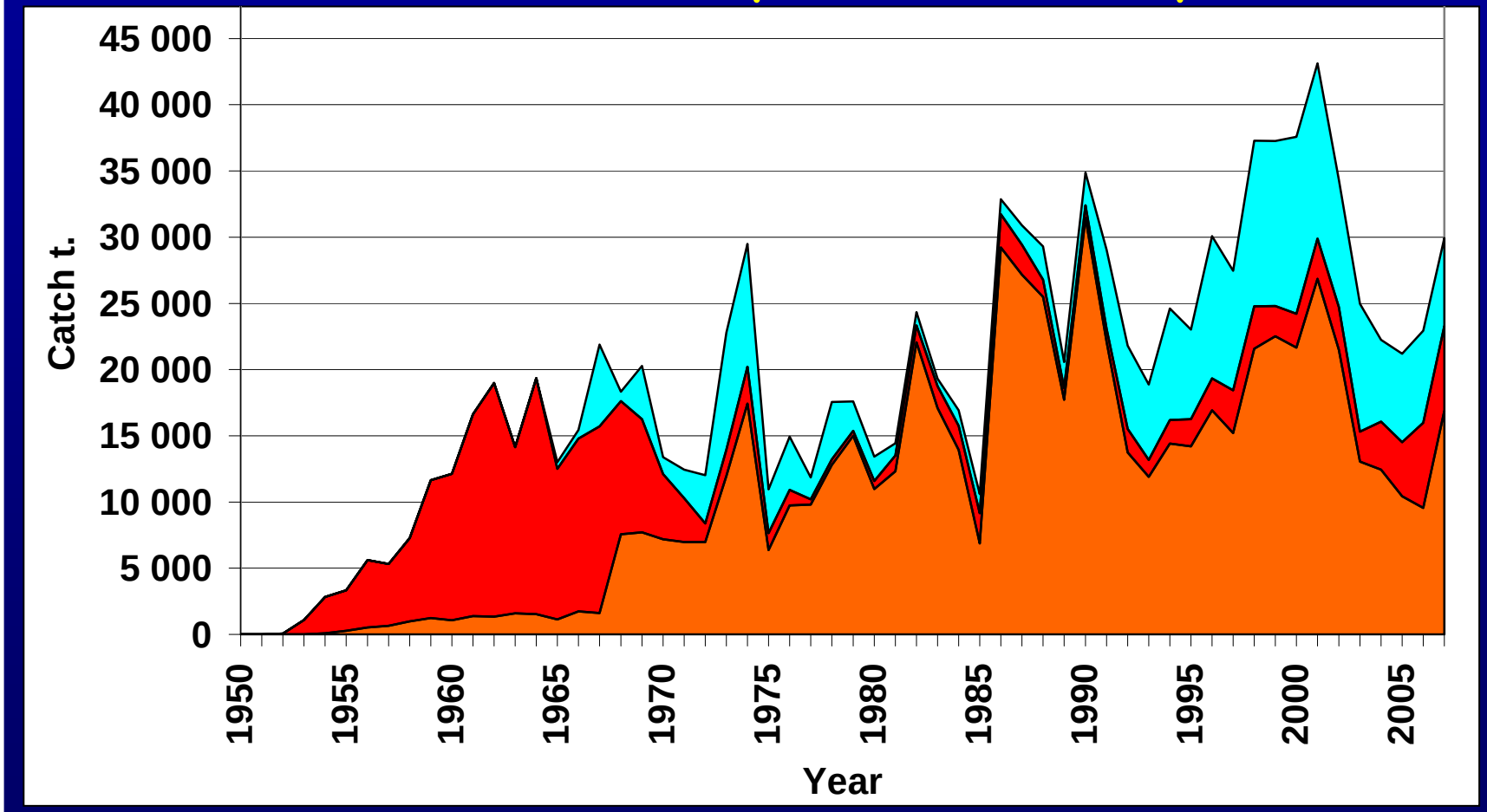
A meeting requested by the IOTC commission in June 2008 and a legitimate request!

- The 2nd meeting since the 1st one held in Shimizu in 2004
- A limited scientific participation: only 15 scientists
- A limited number of scientific documents: only 8
- Only a short day of meeting
- But a positive result: a very comprehensive and quite large report, 34 pages
- Probably a valid diagnosis of the present stock status,
- Surely a set of valid research recommendations

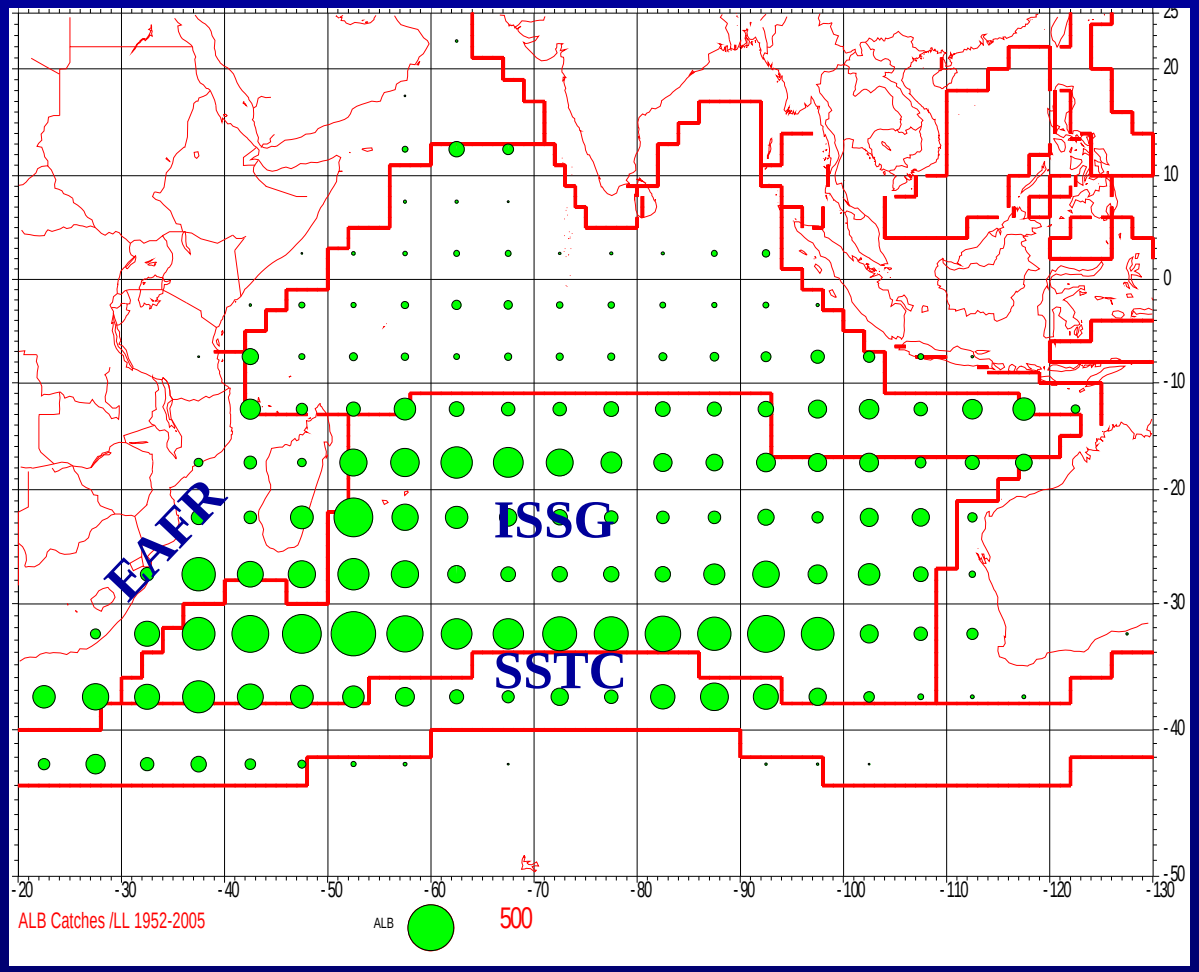
ALB: the only tuna species showing world wide flat catches trends
IO ALB catches have been always among the lowest compared to other oceans..
-the ALB Indian Ocean recent catches showing a decreasing trend



ALB Catches by country in the IO: Historical fishery dominated by Taiwan

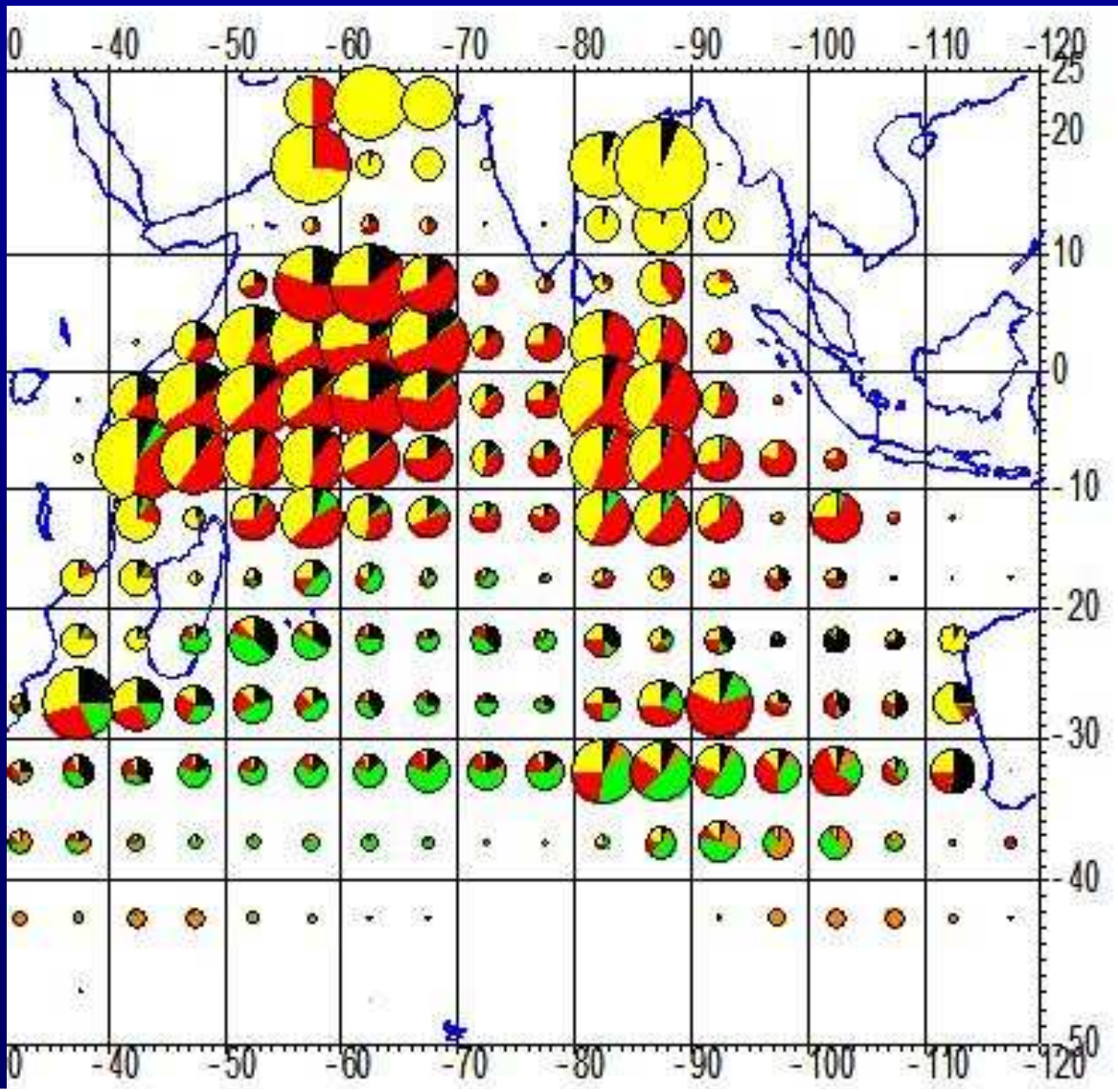


And by Japan (from time to time) , very few countries being active in the fishery (ALB is not YFT)

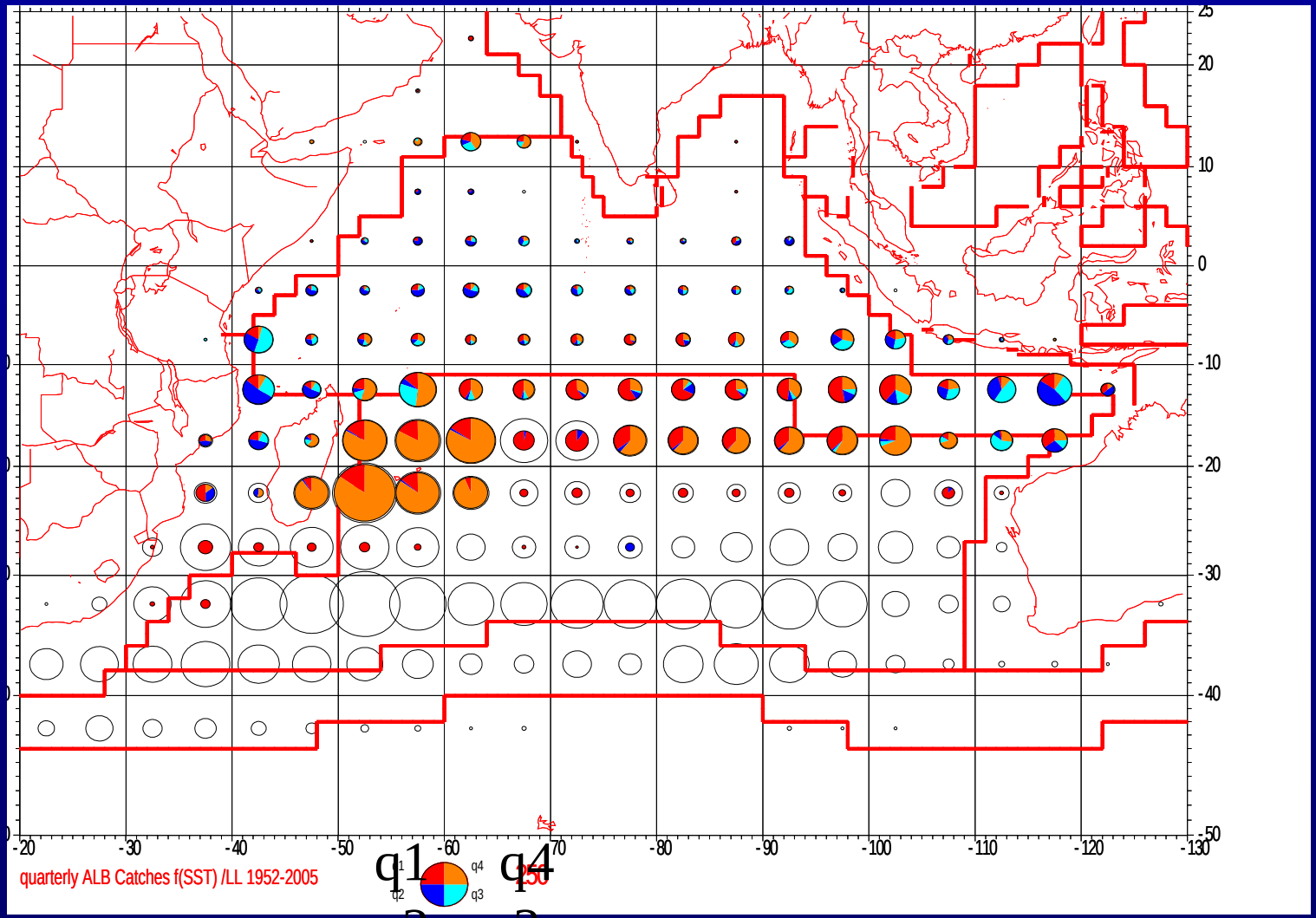


Average ALB LL catches 1984-2000:
Albacore is a temperate tuna, mainly inhabiting 3 ecosystems, south of 10°S: ISSG: ***Indian Ocean South Subtropical Gyre*** , SSTC ***South Subtropical Convergence &*** EAFR : ***East Africa coastal***

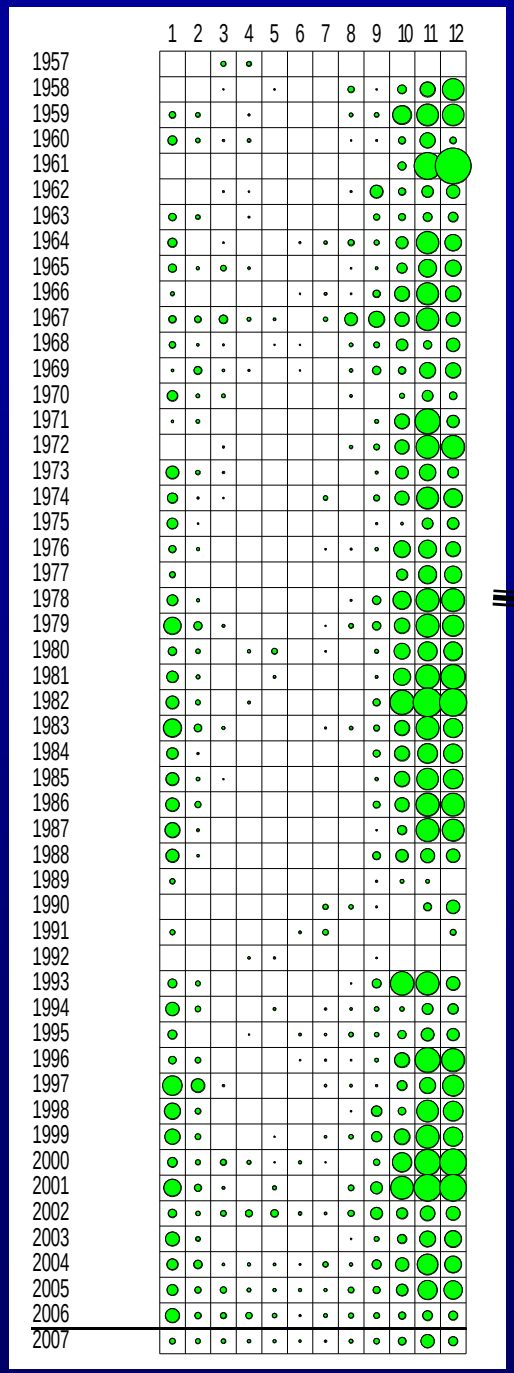
ALB LL fisheries:
centered in the gyre & with low diversity



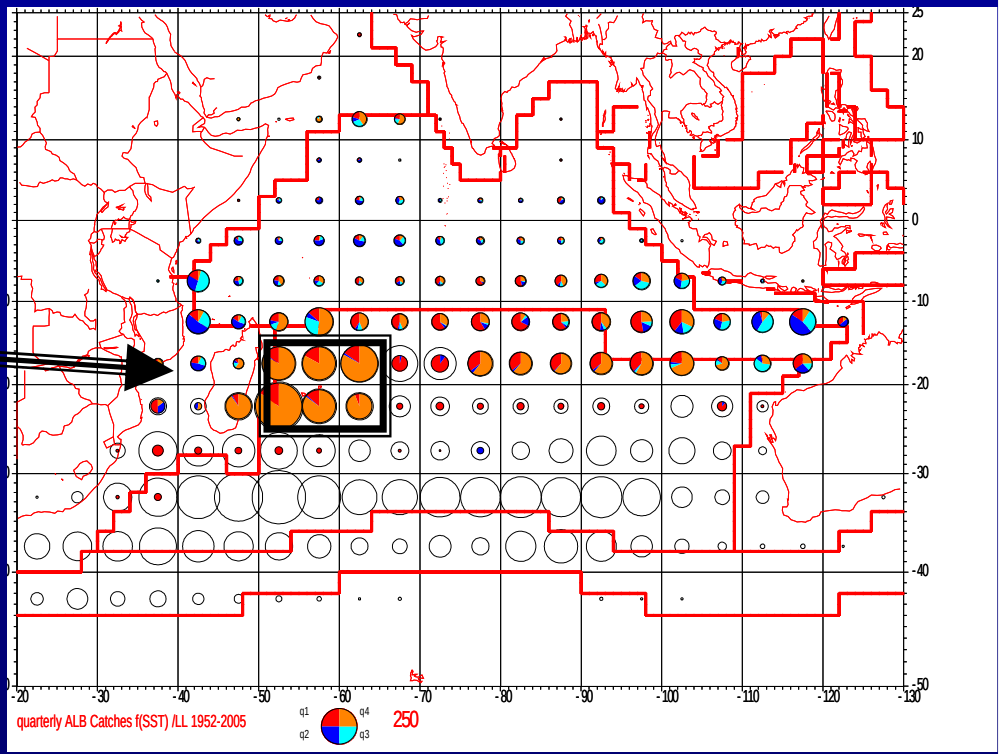
LL catches / species
2001-2005



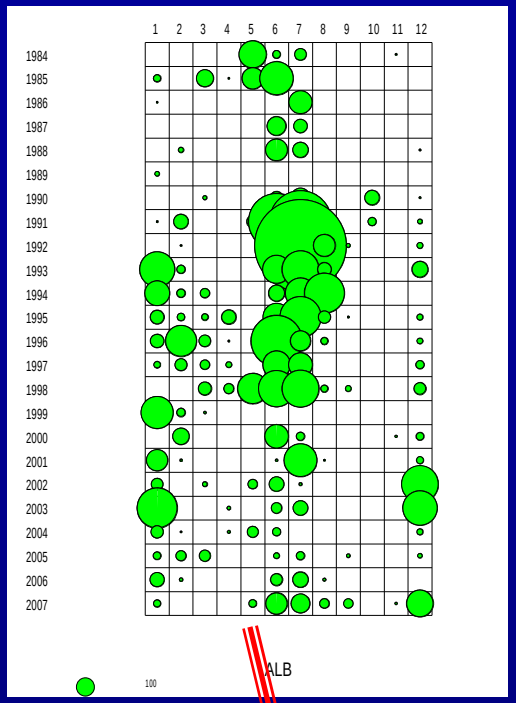
Catches in cold and quarterly in warm waters (>25°C):
Clearly showing well identified spawning and feeding strata



Monthly total ALB catches by LL During the 1957-2007 period in the area NE of Madagascar

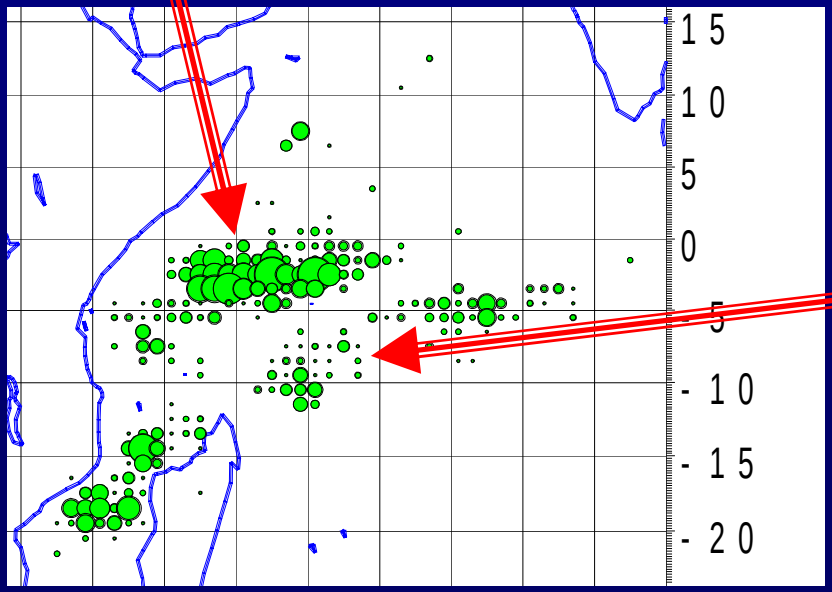


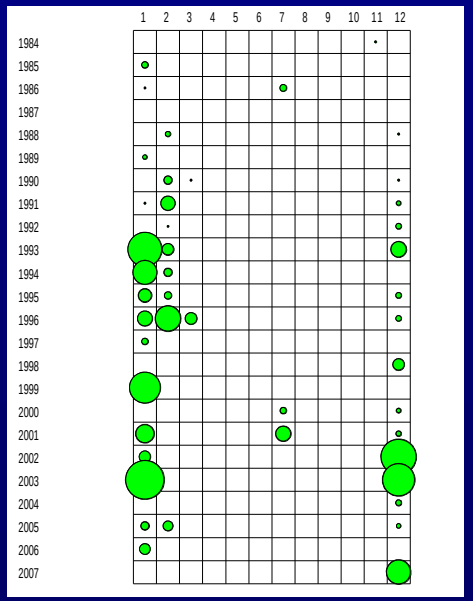
Potential ALB spawning area NE of Madagascar
ALB concentrated each year in the warm waters of this area, mainly in November & December.
Typically following a spawning migration & corresponding to a spawning concentration



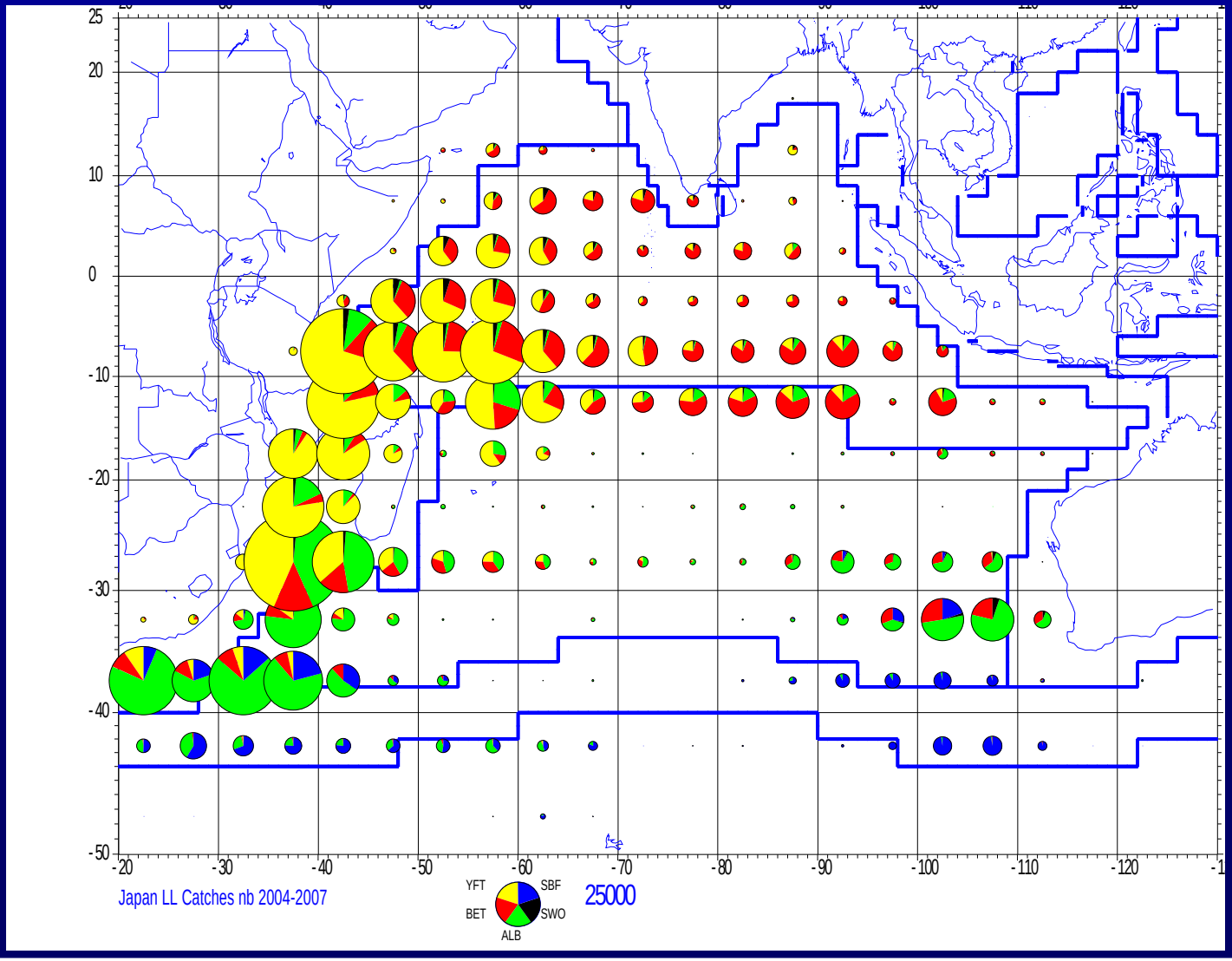
Albacore catches by PS:

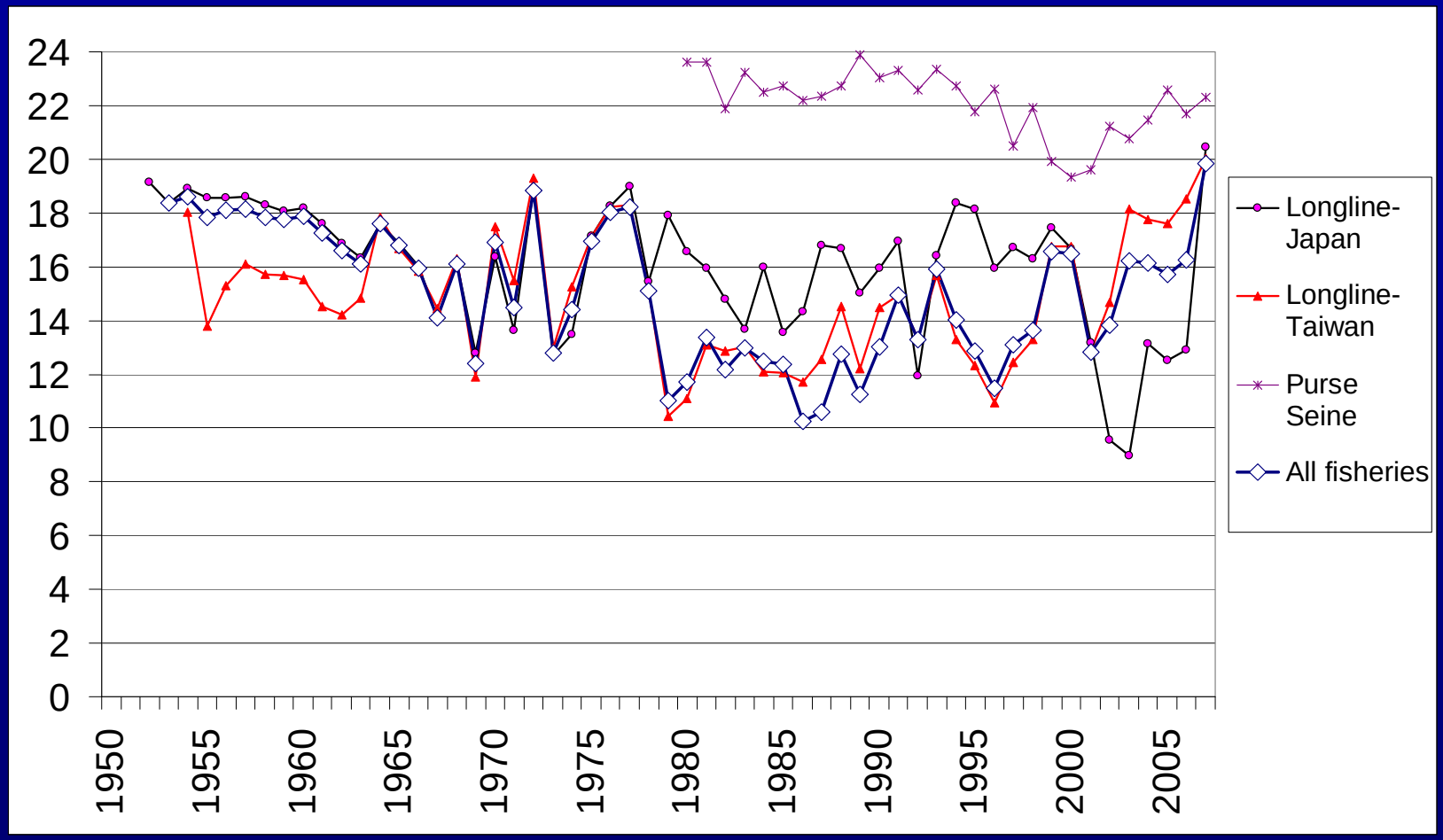
- Always very large adults
- Equatorial catches mainly in June: probably a feeding strata
- Minor subtropical catches in december & January, probably spawning fishes





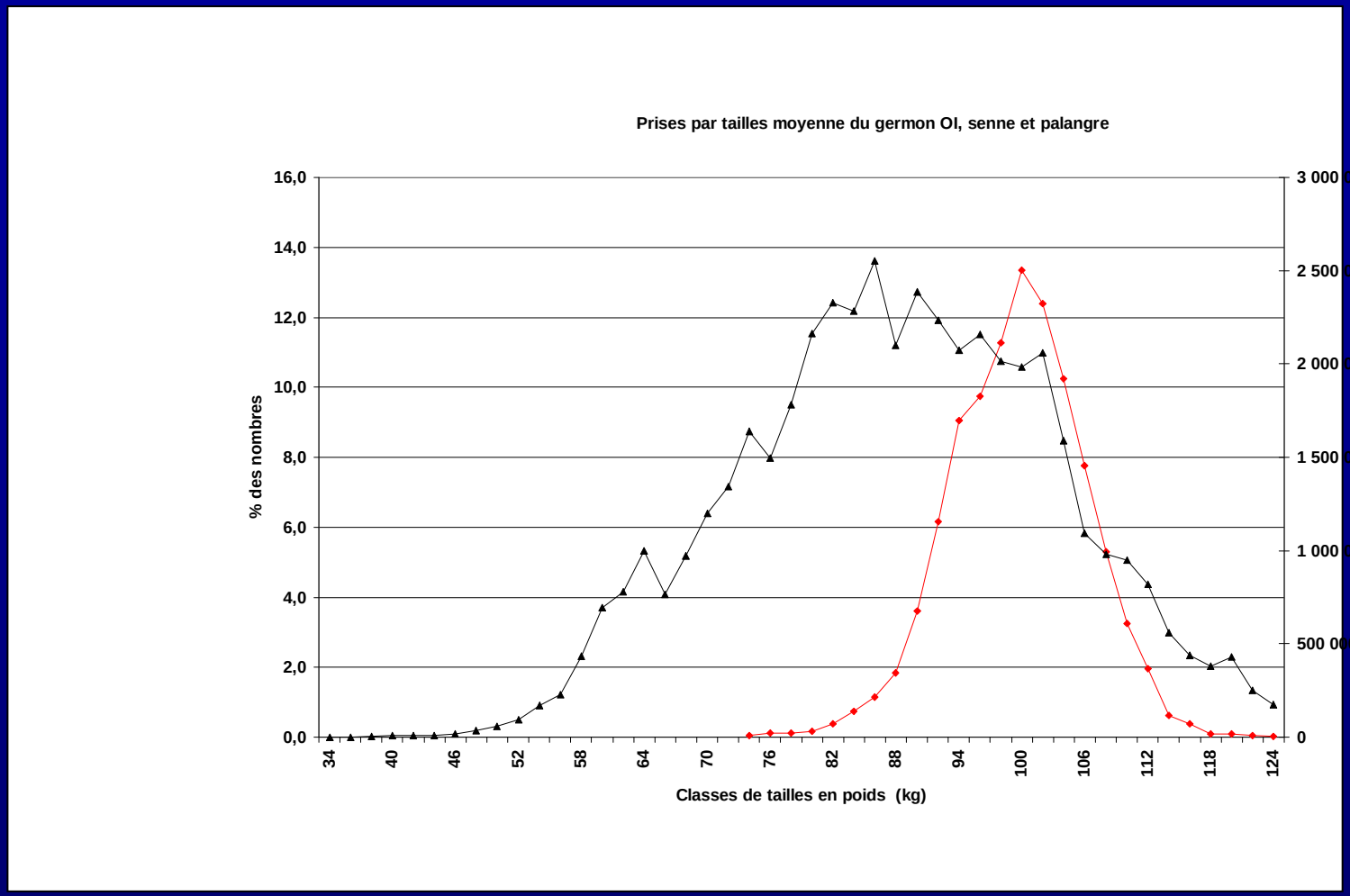
Recent fishing zones by Japanese LL 2004-2007: Significant ALB catches, but most often taken as a bycatch of the YFT or SBT fisheries, not as a pure target species (in the gyre)





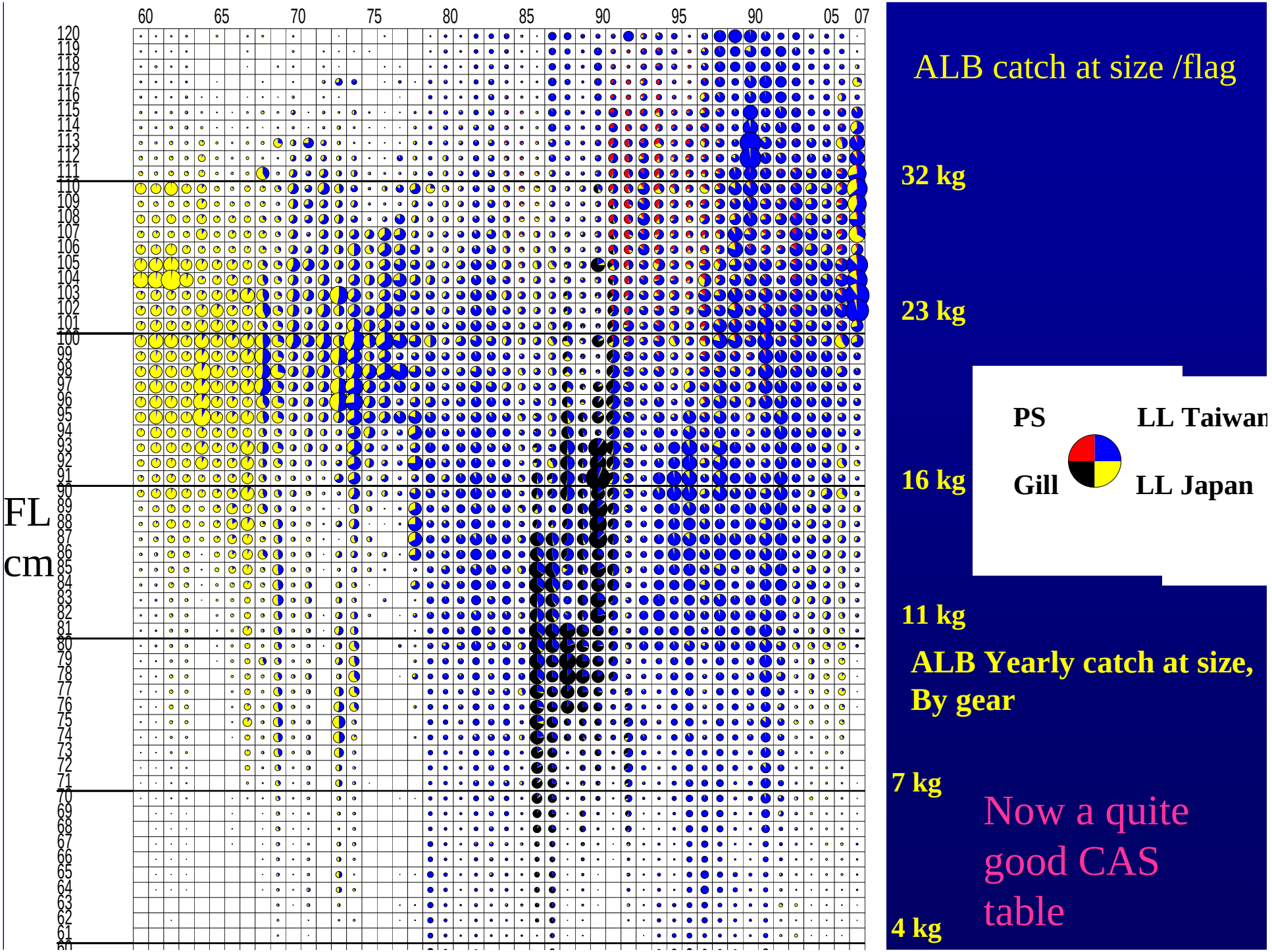
Average weight of ALB caught by the IO fisheries are now quite well estimated because of the good Taiwanese size data recently submitted to the IOTC:

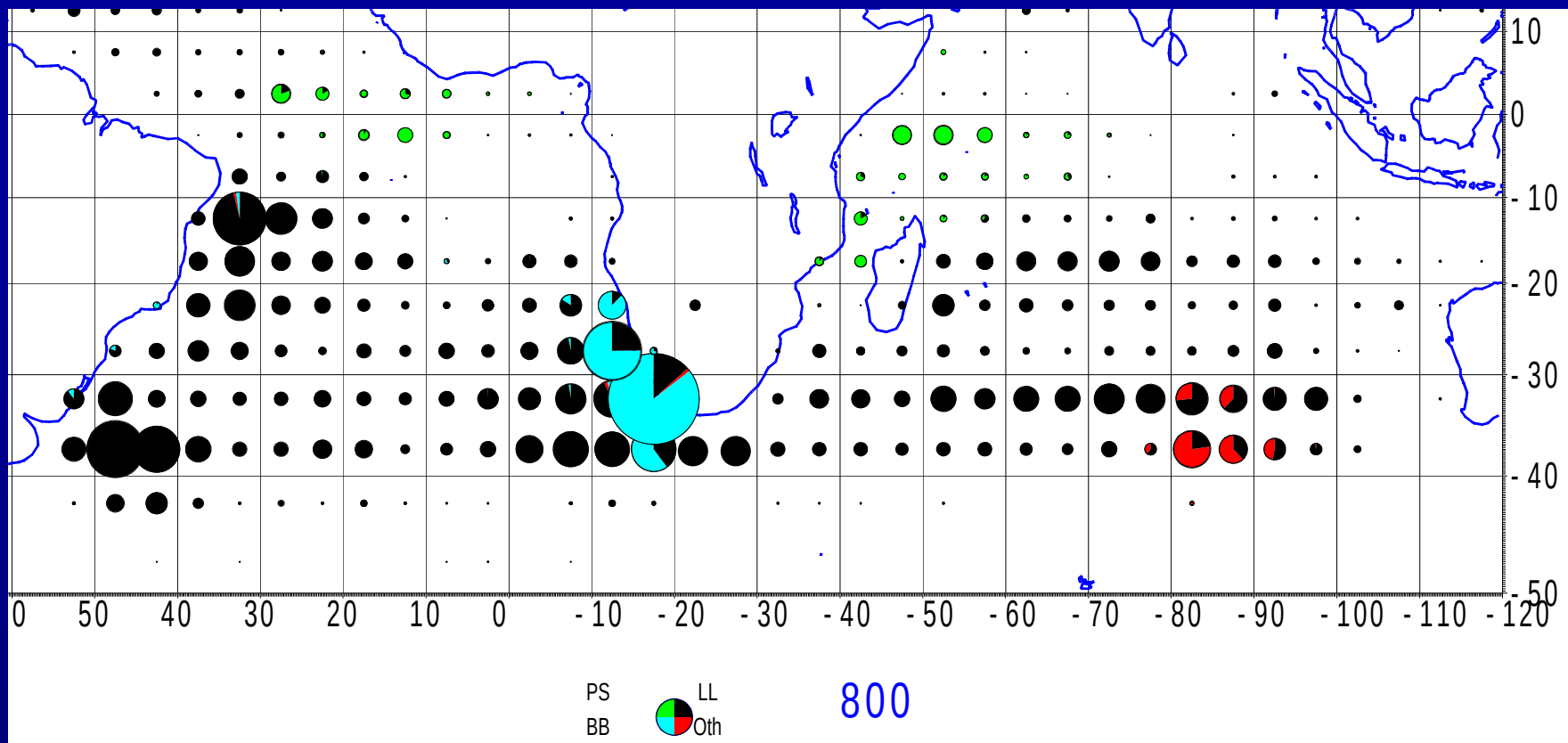
Stable and relatively large weight, in the absence of surface fisheries targetting juvenile ALB (fishes <5kg , as the major surface fisheries active in the Bay of Biscaye and North Pacific)



Size taken:

- LL and PS fisheries are taking the same sizes of large ALB;
- When smaller fishes in the range 5-12 kg, are also significantly taken by longliners


ALB catch at size /flag
32 kg
23 kg
16 kg
11 kg
7 kg
4 kg
PS
LL Taiwan
Gill
LL Japan
ALB Yearly catch at size, By gear
Now a quite good CAS table
FL cm
60
65
70
75
80
85
90
95
90
05
07



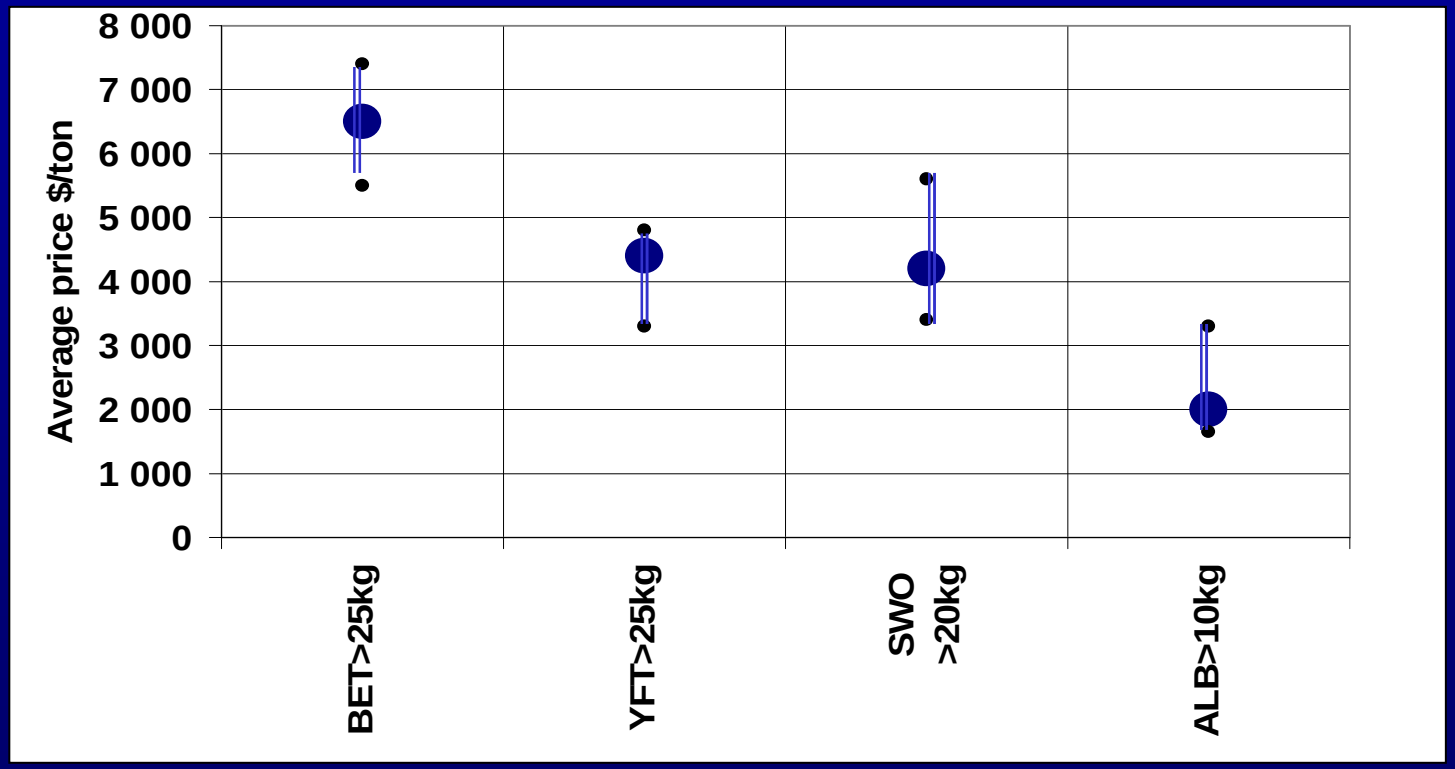
ALB catches by gear 1985-2000 (blue: P&L, black: LL)

-the hypothesis that the P&L SAF fishery is exploiting ALB from IO and Atlantic stocks has been widely accepted by various experts

- It is clear that there is no environmental frontier for adult or juvenile ALB between the IO and Atlantic oceans

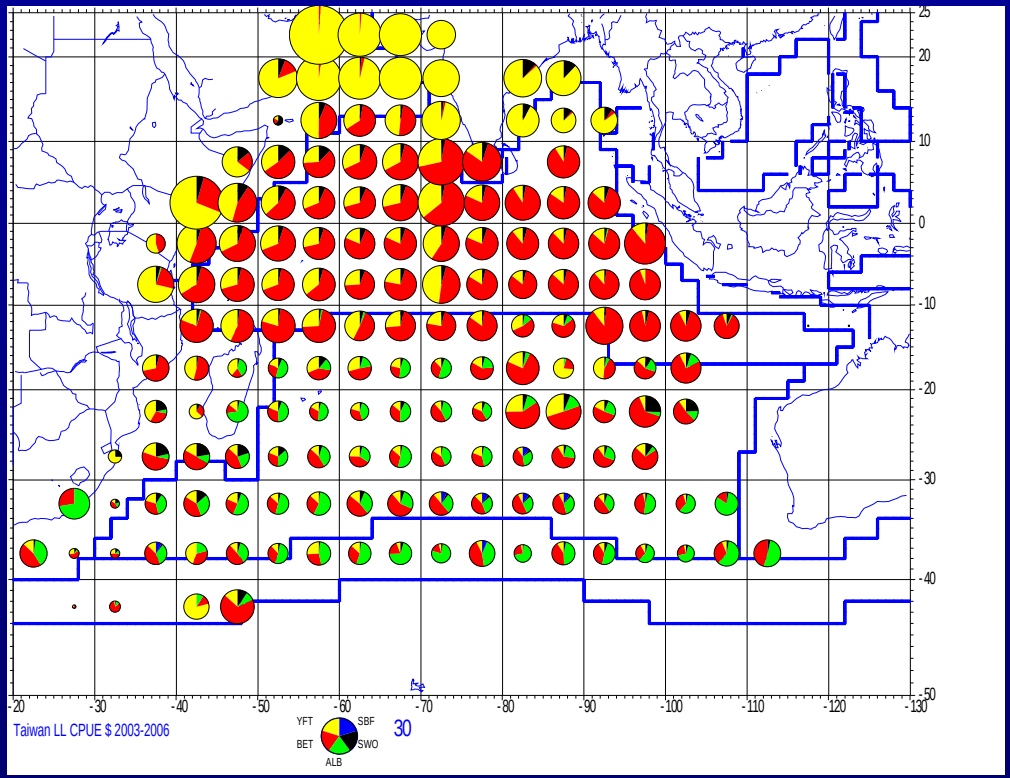
-Further research are recommended to solve this question of major importance for both the IO and South Atlantic ALB stocks!

Average, min & max values of YFT, BET SWO and BET taken by Taiwanese LL fisheries 2003-2008 (document WPT-04)



- A much lower value of Albacore compared to YFT, BET and SWO
- And a much smaller fish: average LL weight only 12 to 18kg

Same Taiwan 2003-2006 fishery: CPUEs in US $:
A very low apparent profitability of LL fisheries targeting ALB in the gyre

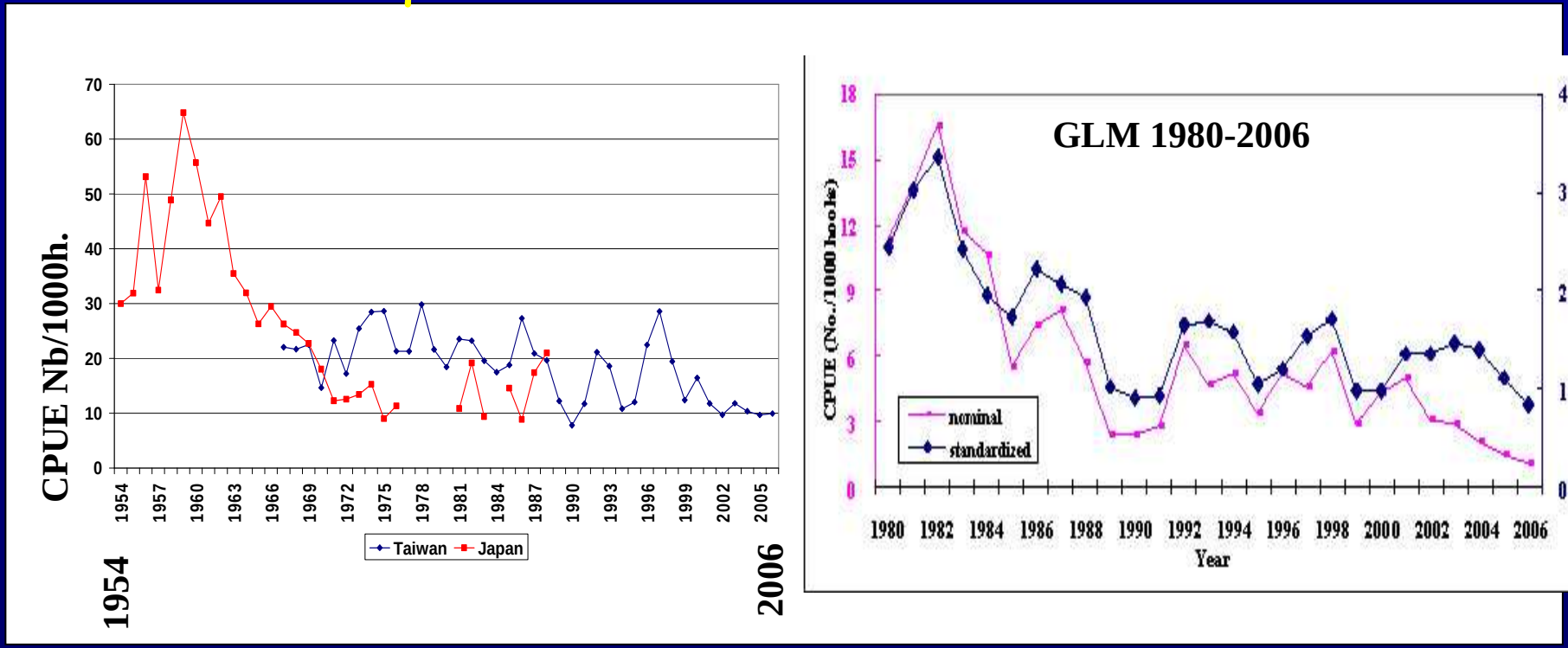


In such context of low CPUE in $, it is rather strange that some longliners are still targetting the albacore areas

It was explained to the WG by Taiwan scientist that modern LL have been moving to equatorial areas, not the oldest and less efficient vessels.

Indian Ocean ALB:

a major early decline of nominal CPUE in the core of the gyre area (1955-1970), and also a recent further decline of GLM CPUEs since the early nineties. A fluctuating but quite stable GLM CPUE since 1990.



The recent decline in ALB CPUEs could well be due to the departure of the most efficient vessels towards the more profitable equatorial BET or southern SBT fishing grounds

A tentative stock assessment of the Albacore stock

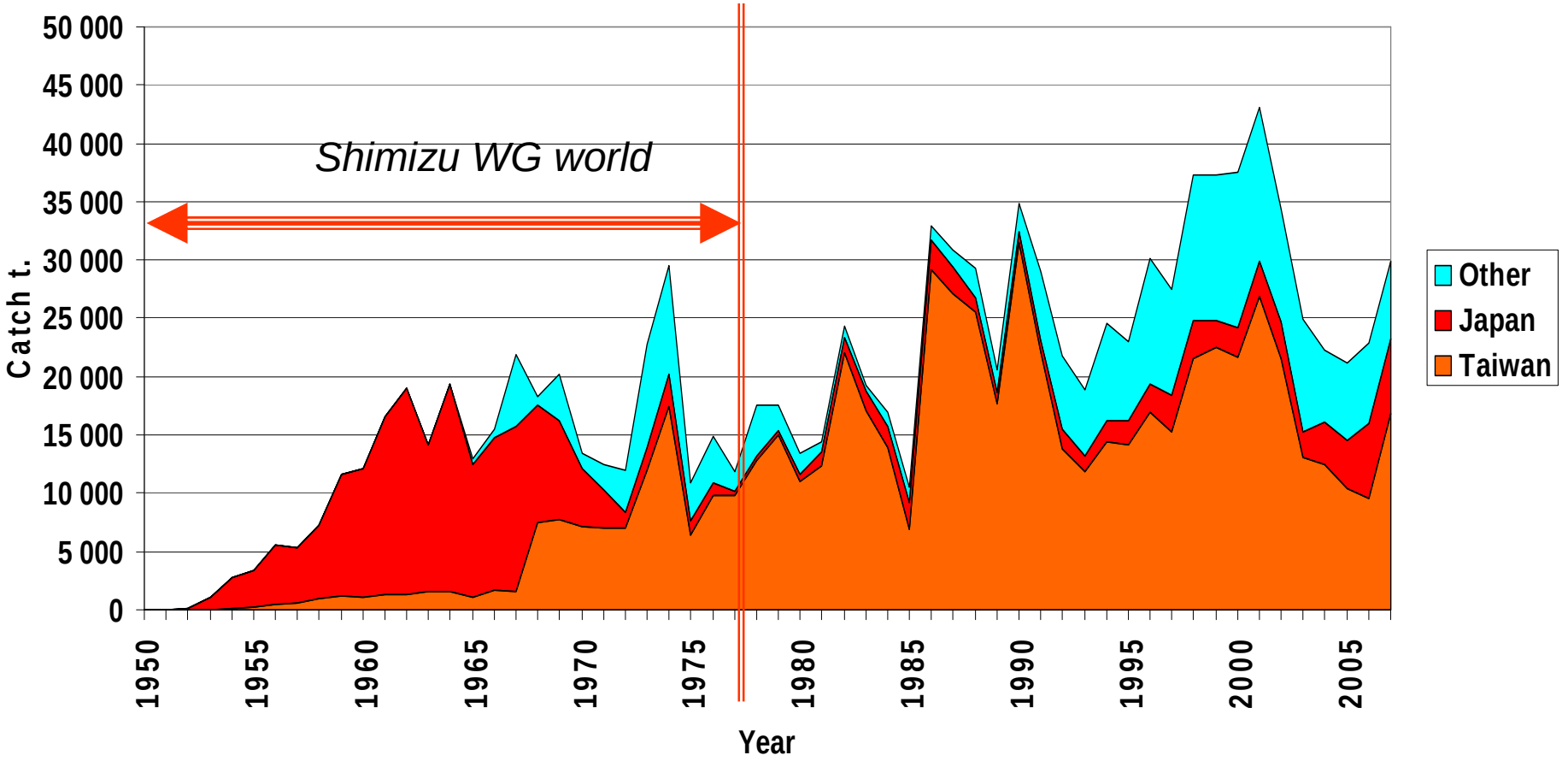
- An age structured production model was tentatively used to assess stock status
- Two scenarios were examined
- This work was only as the models do not fit very well to the CPUE data, but the responses are similar as the models
- For both cases there was no outstanding indications that the stock was over-fished (B2007/BMSY >1), or that overfishing is occurring (hcurrent < hMSY)
- On balance of the information available, albacore is considered to be not overfished and overfishing is not occurring.
- Because of its low value and low profitability, there is likely to be very little incentive for an increase in fishing effort on this species in the immediate future

Research recommendations

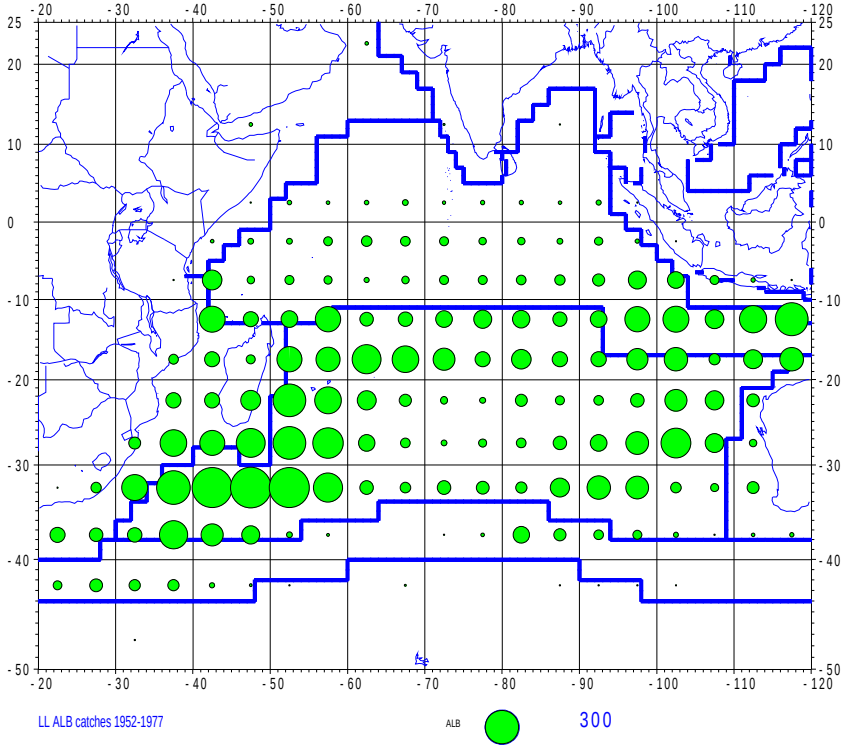
- Improve data….
- Maintain at the IOTC a database of tuna prices
- Genetics and tagging work be conducted to better understand the stock structure of Atlantic and Indian ocean albacore
- Gonads be collected and examined to confirm the spawning time and location of the spawning area presently hypothesized
- That IOTC and ICCAT scientists collaborate more to improve understanding of the IO and South Atlantic stocks
- Investigate CPUE indices that should be better representative of stock abundances

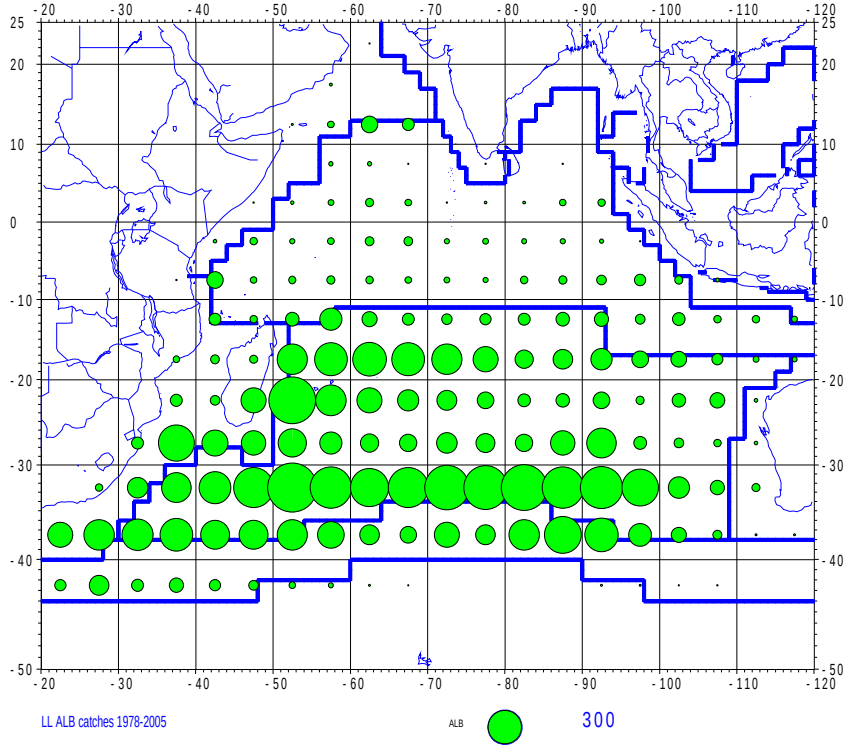

Now back to the
Shimizu 1979 WG

IO ALB catch / country



- No major changes observed in total catches, but post 1977 catches X 2.1
- LL catches have been permanently & widely dominant





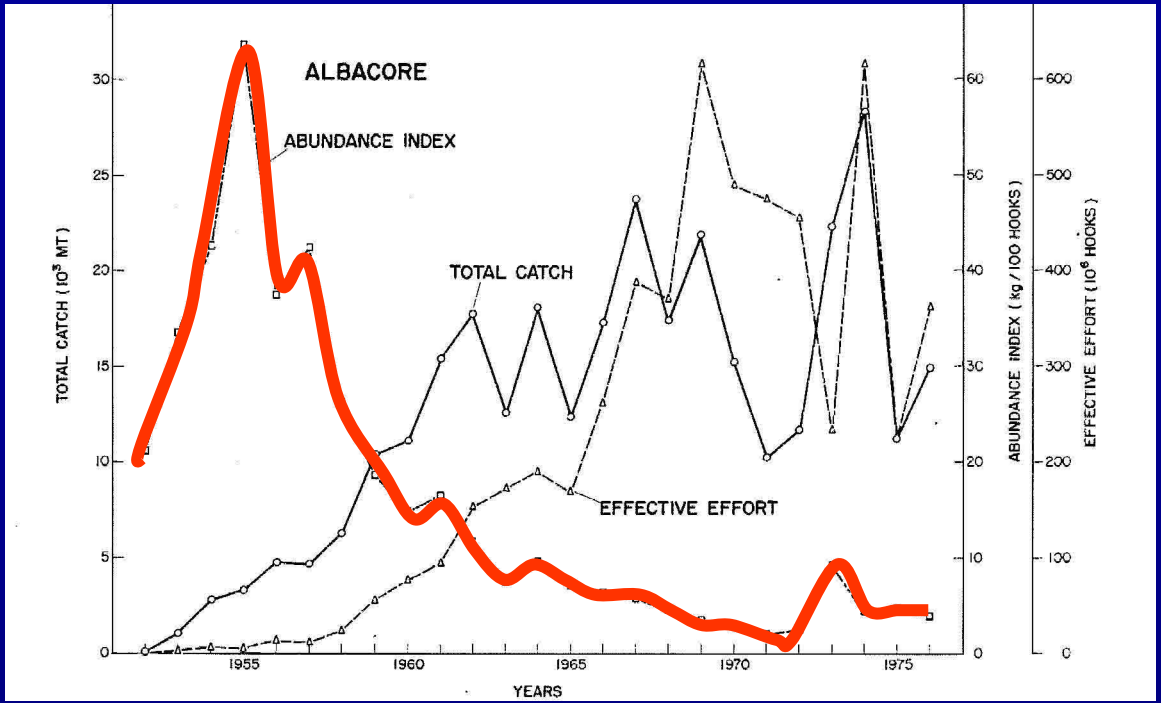
ALB Fishing zones: 1952-1977
During the SHIMIZU 1979 WG

After it: 1978-2006

WG Conclusion in 1978:

"Aside from routine collection of catch and effort statistics, there is essentially no research effort on Indian Ocean albacore"

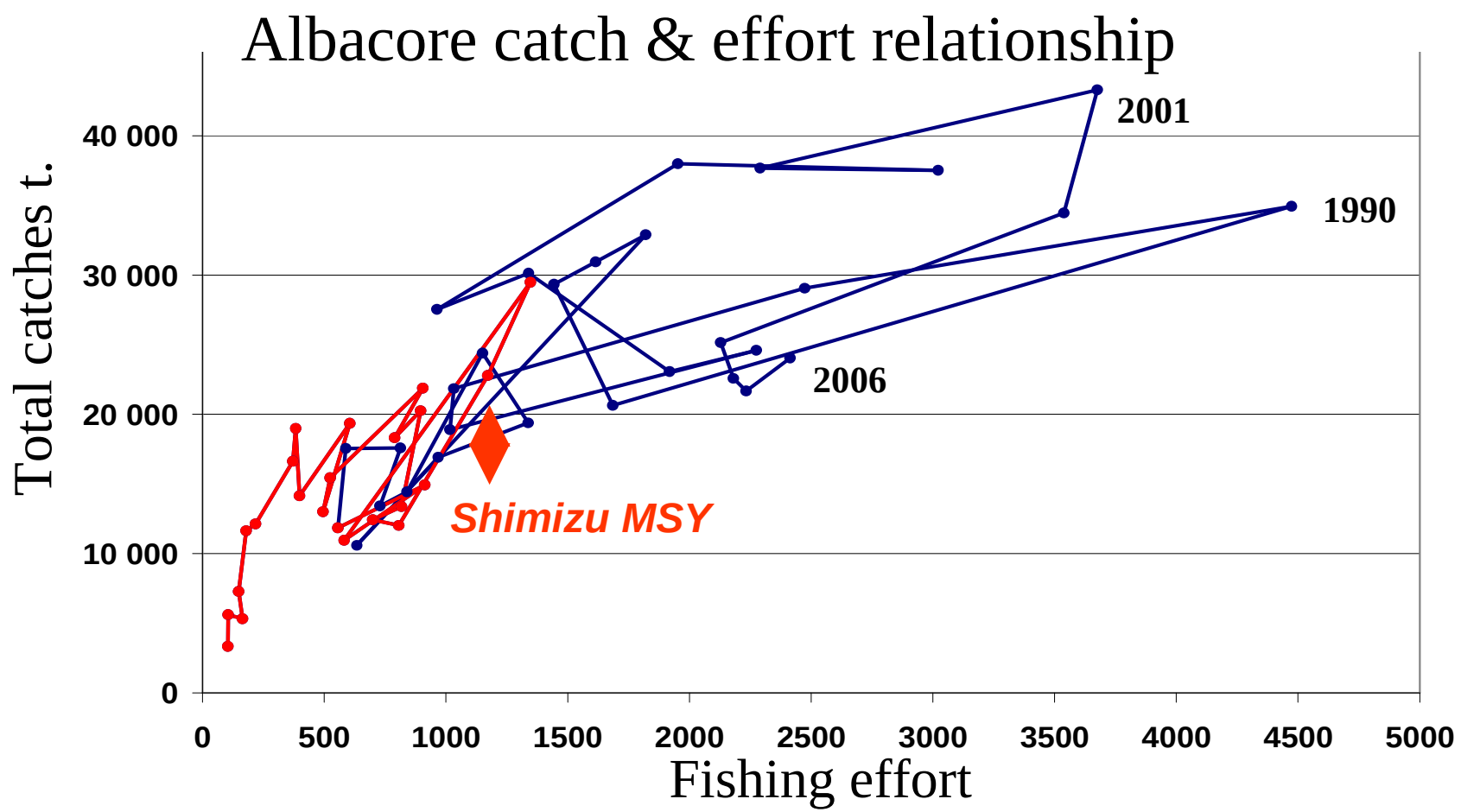
A conclusion that remains unfortunately still valid 30 years after….



Shimizu report: ALB CPUE, effort & catches

Shimizu 1979 main conclusions:

- A Major early decline of LL CPUEs (Honma index), very similar to YFT CPUEs…
- But *"no reason for concern"*….. Based on the conclusion that this decline of CPUE was excessive and probably not in proportion of biomass
- 1978 MSY was then estimated at levels of the 1960-1977 catches, in a range between **15 and 20.000t**.



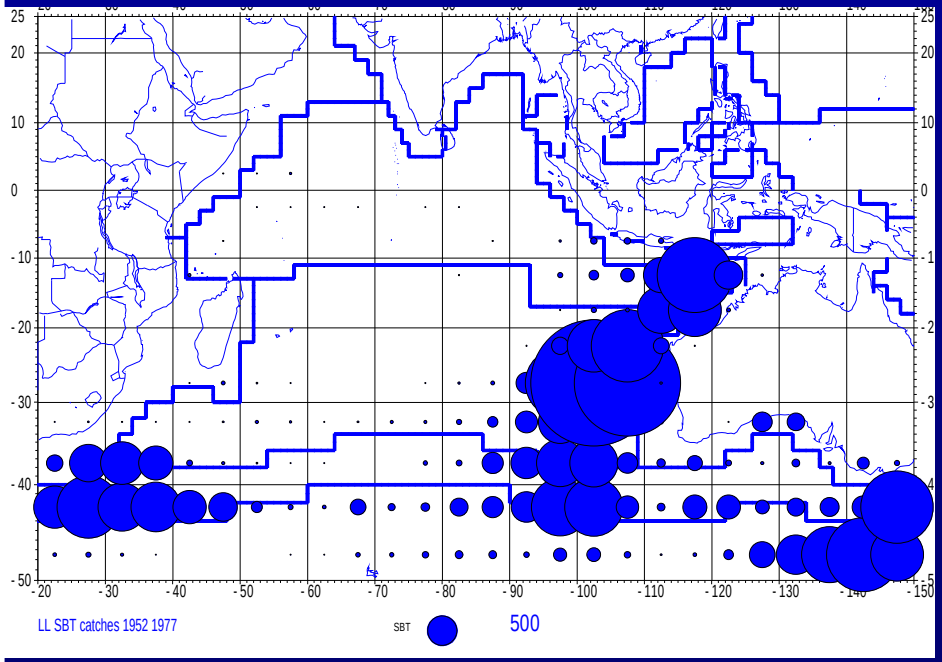
Since 1979: large increases of fishing effort targeting ALB have been observed mainly by Taiwanese fisheries, producing a doubling of ALB catches

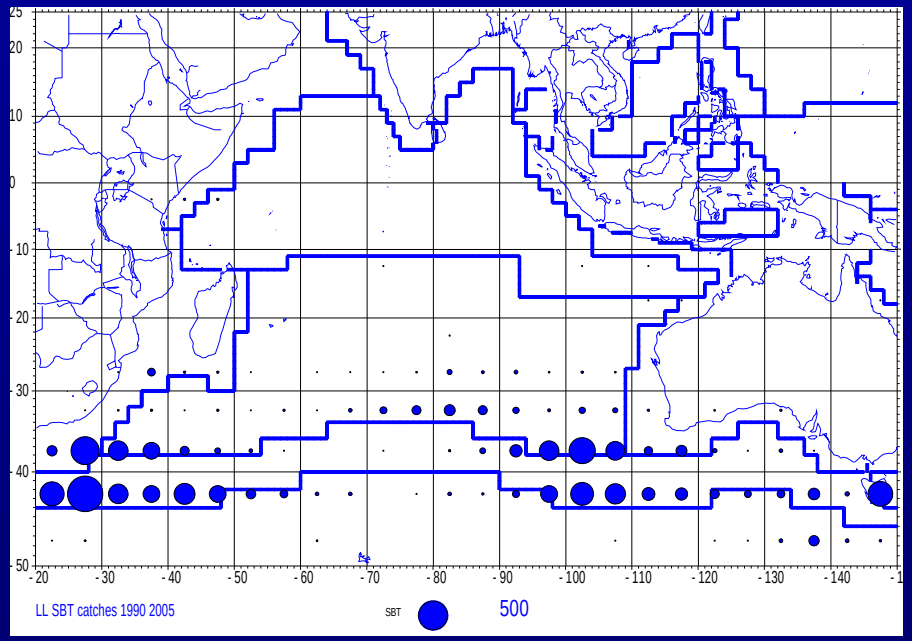
Albacore lessons and conclusions: Albacore fisheries and Stock Assessment, 30 years after the Shimizu WG

- Stable fisheries in term of fishing gear and of fishing zones; simply increased catches in the core of the gyre area, where ALB is the dominant tuna species
- A 1977 stock assessment underestimating the MSY, by a factor of at least 2?, due to the early “excessive” CPUE decline and to the fact that the best fishing zones in the central gyre were not yet heavily fished in 1977.
- Still a deep need to develop basic research upon this very interesting stock, a dominant species in many area of the Southern IO

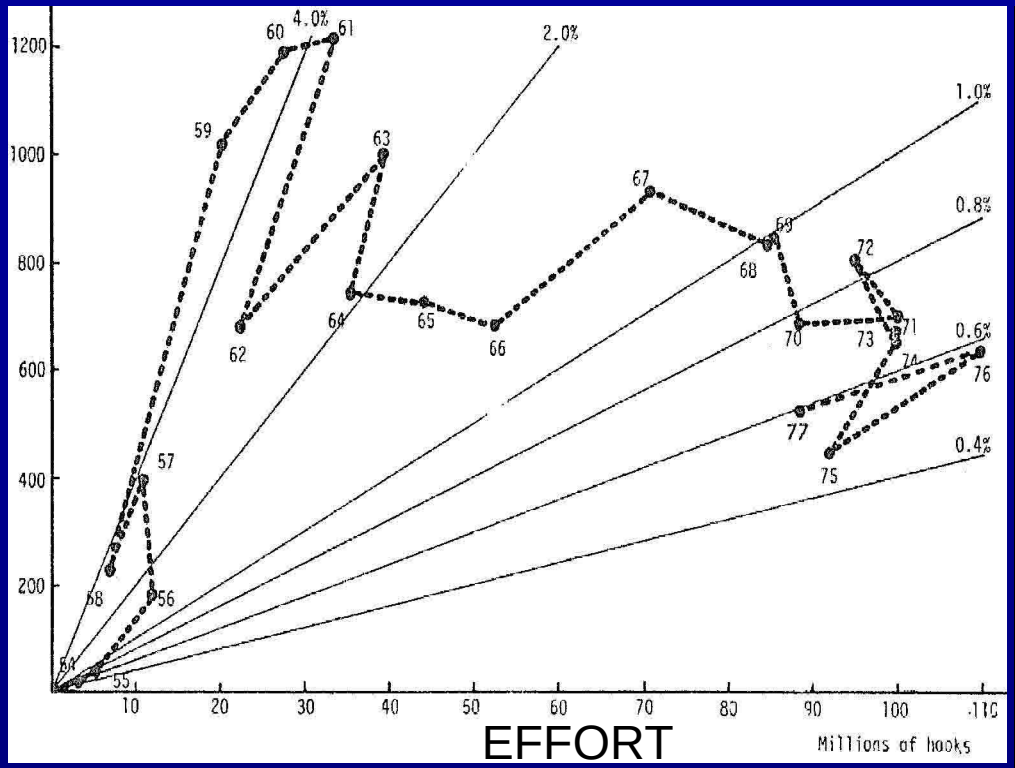
Southern Bluefin

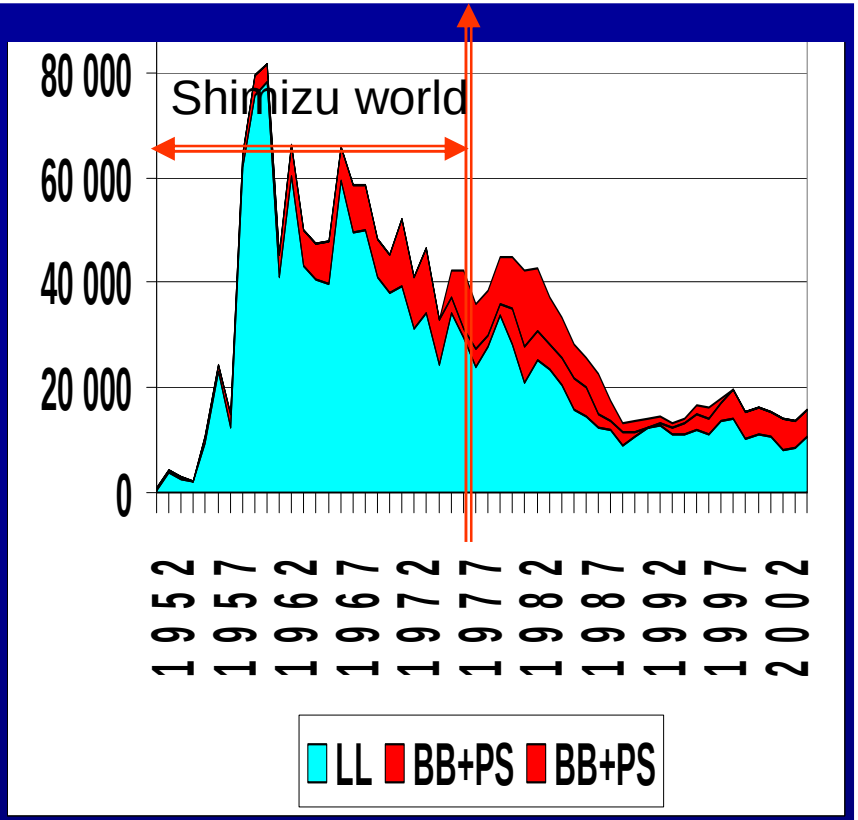
The anomaly: a species already very well studied & fully exploited in 1977





- Pre 1977 SBT fishing zone were mixed: Equat & tropical areas in the Eastern IO and temperate ones (subtropical convergengy)
- Present fishing areas are purely temperate ones, & at a low level of catches
- 1978 SA based on very good data: good CE, good sizes, tagging, biology, etc

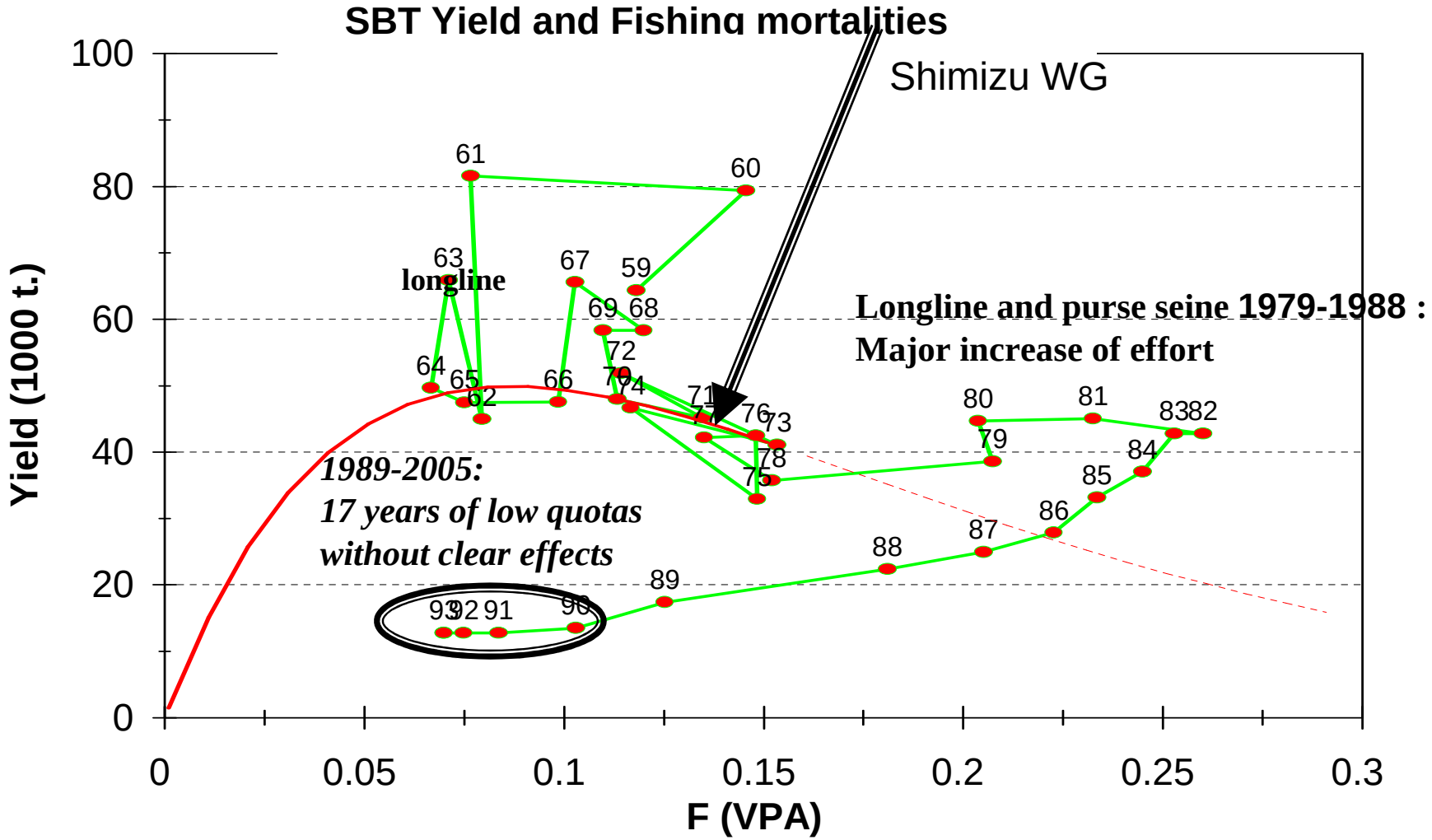




Shimizu WG conclusion:

"The high catches in 1959-61 could have been due to fishing on previously unexploited old fish; however as effort has increased, catches have continued to decline. An attempt should be made to assess whether a reduction in longline fishing effort would result in an increased total sustained catch. It appears that further increased effort from PS or LL fisheries would not result in substantially increased catches"

Surprisingly the 1979 was not ringing any alarm bell on the risk of overfishing, a risk that was Already highly visible in 1979 in the C/E data for such a long living species… Precautionary approach should have made at least a firm recommendation to freeze the effort… & wait 10 years..



We can now ask the question: could the Shimizu WG have prevented the present SBT stock overfishing, making in 1977 a much pessimistic and much stronger management recommendation? Recruitment overfishing occurred only in the early nineties, but there was already strong evidence in 1979 that the 60ies catches would not be sustainable: being taken on accumulated adult biomass, not a biological productivity. This was typically a case were Precautionary approach should have been used firmly by scientists in their recommendations!

Then a question in 2008: what would be today the SBT recruitment under the 1979 effort?

A lesson from the Shimizu 1070 WG and the subsequent collapse of the SBT stock?

- It may be strange ti see that Southern Bluefin: the most valuable stock, and in 1979 with the best statistics, the best scientists, the best tagging, best biological research, best modeling, has been providing the only case of major overfishing for a tuna stock & of major decline in recruitment… that was totally unexpected 30 years ago.
- This fatal weakness of the 1979 SBT scientific advice should be a lesson for us today: when scientists have serious & well founded reasons to make a precautionary management recommendation, they have the obligation to do it, and firmly, even when they have not been able to estimate the exact stock status in a Kobe plot..