Report of the 12h session of the Scientific Committee

Rapport de la 12e session du Comité Scientifique

(Seychelles, 30 Nov – 4 Dec 2009)

Presented by Dr. Francis Marsac, Chair of the Scientific Committee

Calendar of 2009 meetings

#	Session	Date	No countries	No attendees
1	7th session of the WP on Billfish (WPB)	6 – 10 July Seychelles	5	17
2	5th session of the WP on Ecosystem and Bycatch (WPEB)	12 – 14 October Mombasa, Kenya	10	43
3	11th session of the WP on Tropical Tunas (WPTT)	15 – 23 October Mombasa, Kenya	12	50
4	1st session of the WP on Fishing Capacity (WPFC)	22 October Mombasa, Kenya	12	49
5	6th session of the WP on Data Collection and Statistics (WPDCS)	26 – 27 November Seychelles	9	21
6	12th session of the Scientific Committee	30 Nov – 4 December Seychelles	13	44

Section 1

Data Collection and Statistics

IOTC species
Availability of statistics for 2008

Statistics available for 2008	Estim. Catch	Nominal Catches		Catch Effort		Size Frequency	
		BD	WP	BD	WP	BD	WP
IOTC species (x1000t)	1,361	441	1,047	416	701	313	440
%Available for 2008		32	77	31	52	23	32
%Available for 2007		36	71	24	49	29	50

- Less statistics available by deadline (BD) (NC, SF)
- Similar statistics available by the end of the year (WP)
- WPTT uses now recent data for the assessment

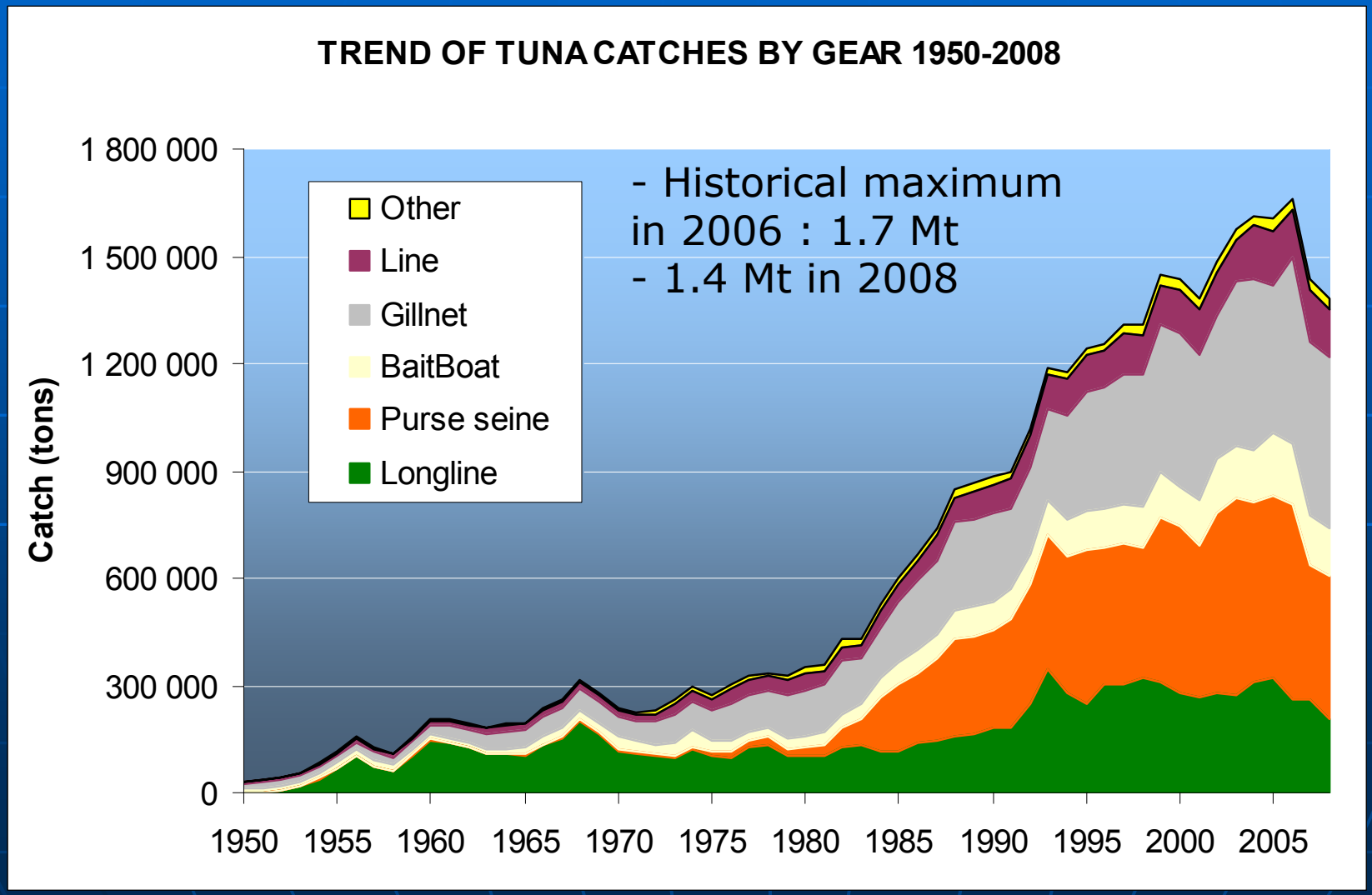
Scientific National reports

- Only 14 (13 in 2008, 13 in 2007, 10 in 2006) national reports from an expected 31
- Very few information on non-IOTC species (mandatory)
- Lack of homogeneity and recommendation for a revision of the existing template

16 countries not providing a National report :

Belize
Comoros
Eritrea
Guinea
Iran
Malaysia
Oman
Pakistan
Philippines
Sierra Leone
Sri Lanka
Sudan
Tanzania
Vanuatu
Senegal
Uruguay

IOTC species : yield



IOTC-OFCF project :
Phase 2 (March 2007 – March 2010)

Priority on fisheries

- of sufficient size to affect stock assessment or future management measures
- or catching fish sizes not well represented from other fisheries

2007-2008

2009-2010

Improvements for data collection, statistical procedures and dissemination

- Questionnaire on data collection, data management and dissemination (Secr)
  - Complete the documentation of the data gathered at Secretariat
  - Identify issues affecting quality of data
  - Assess the type of action to address the issues
- Assessments of sampling schemes on surface fisheries (all tuna RFMOs)
  - In-depth statistical analysis of existing sampling schemes
  - Strengthen sampling for biological parameters
- IOTC Data Summary (Secr)
  - Recommendation by SC that costs are evaluated and incorporated in the next budget proposal
  - Development of a dynamic information system available from the IOTC website

IOTC species
Catches-and-Effort and Size Frequency Data: Problem Areas

- No data:
  - Longliners of **India** (CE/SF), **Indonesia** (CE), **Malaysia** (CE), **Oman** (SF) and **NEI** (CE/SF)
  - Fresh-tuna LL **Taiwan,China** (CE/SF)
  - Purse seiners of **Iran** (CE/SF)
  - Oceanic gillnets of **Iran** and **Pakistan** (CE/SF)
  - Artisanal fisheries of **India** (CE/SF)

- Insufficient data:
  - Gillnet/longline fishery of **Sri Lanka** (CE)
  - Longline fisheries of **Japan**, **China** and **South Korea** (SF)
  - Sport fisheries (especially for billfishes)

IOTC species
Recommendations

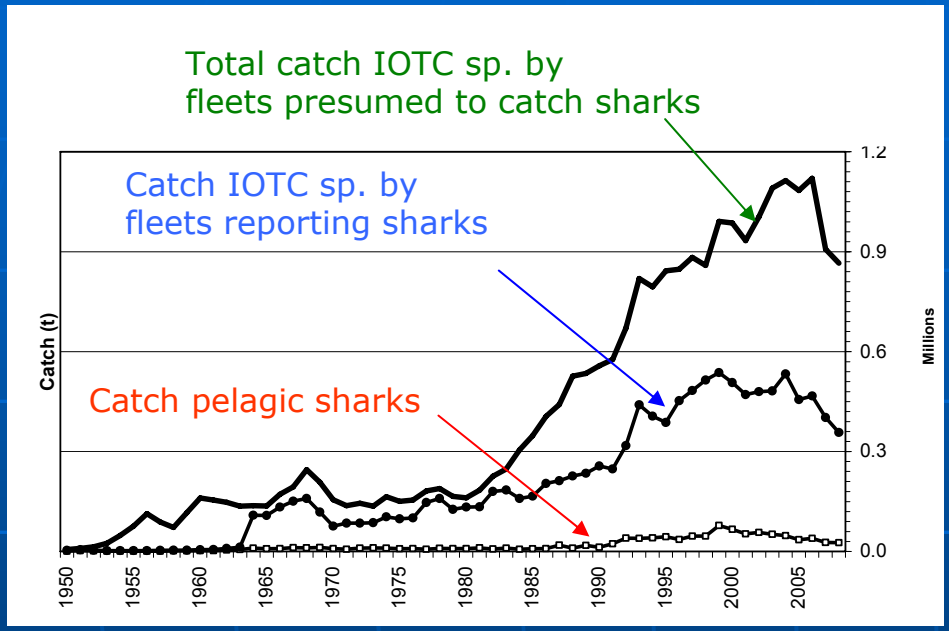
- **Yemen**: IOTC-OFCF continuing efforts to retrieve historical data
- **Madagascar** & **Comoros** : IOTC Secretariat to send fact finding missions to assess the status of fisheries and statistical systems
- **Indonesia**: IOTC-OFCF to provide technical support to the DGCF for the implementation of the logbook programme in Indonesia
- **India, Indonesia** and **Malaysia** collecting and reporting data from all longline vessels under its flag
- **India** reporting catches-and-effort and size data for artisanal fleets
- **Sri Lanka (G/L), Iran, Pakistan (GILL), and Maldives (BB)** implementing logbook programme on their offshore fisheries
- **Taiwan,China** collecting catches-and-effort and size data on fresh-tuna longliners
- **Oman** collecting size data from its longline fishery
- **Japan** increasing substantially size sampling coverage on longliners
- **EU, Thailand** revising estimation procedures from their PS fisheries to provide new estimates of catch by species

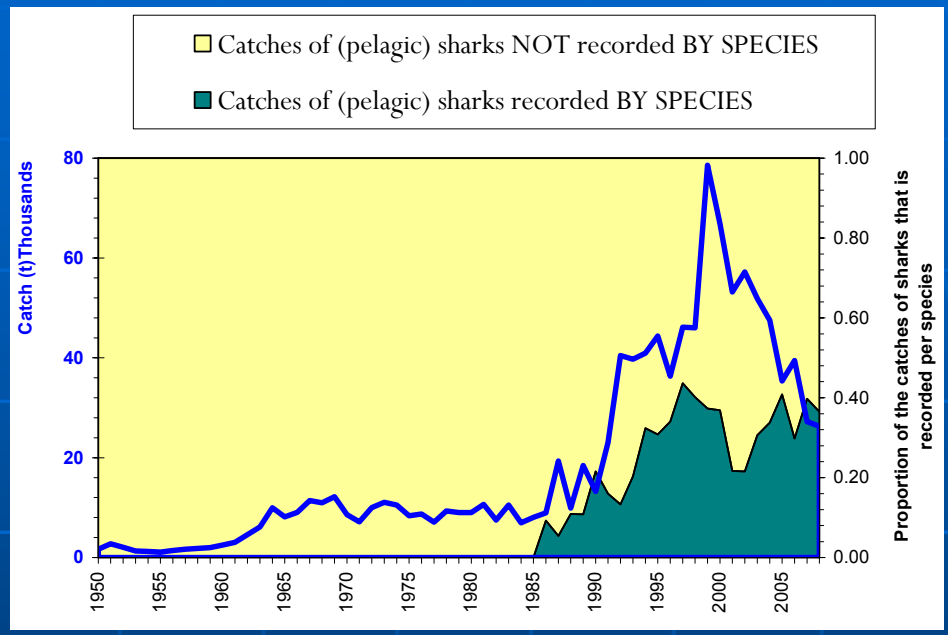
Non-IOTC species

Statistics Available, progress and problem areas

- Sharks (mandatory, Res. 08/01)
  - Total catches very incomplete and not by species
  - Several data series revised by Secretariat to add shark catches of sharks or break the existing catches by species
  - Estimation of total catches of sharks highly compromised due to the paucity of the information available (shark fins)
  - Almost no catches-and-effort and size data available by species
- Seabirds, sea turtles and other fauna
  - Some data available for recent years (observers) but still insufficient
- Some **observer programmes** in the IOTC Region include the collection of data on non-IOTC species: EC (PS), Australia (LL) and South Africa (LL) have reported estimates of by-catch levels

Sharks





- Data not reported at all:
  - Longline fishery of **Japan**
  - Oceanic gillnets of **Iran** and **Pakistan**
  - Purse seine fisheries of **Seychelles**, **Iran**, **Japan** and **Thailand**
- Data incomplete:
  - All fisheries catching sharks for their fins, in particular **longline (China, Taiwan,China, Indonesia, Seychelles, Oman)**

Non-IOTC-species

Recommendations

- **Japan** providing catches of sharks by species for its longline fishery
- **Japan**, **Taiwan,China** and **Korea** completing its catches-and-effort series with catches of sharks by species
- All countries having industrial fleets strengthening / implementing **Observer Programmes** to be able to provide:
  - estimates of **total catches** of **sharks** by species, including the amounts discarded
  - **bycatch** levels for **seabirds**, **sea turtles** and other marine fauna, including rates of survival at-release

Proposal of amendments on Res. 09/04 (Regional Observer Scheme)

Paragraph 3: *When purse seiners are carrying an observer as stated in paragraph 1, this observer shall also monitor the catches ~~at port~~* ***at unloading*** *to identify the composition of bigeye catches. The requirement for the observer to monitor catches ~~at port~~* ***at unloading*** *is not applicable to CPCs already having a ~~port~~* ***sampling scheme****, with at least the above mentioned coverage.*

Paragraph 4: *The number of artisanal fishing vessels landings shall also be monitored ~~at port by observers~~ at the* ***landing place by field samplers****. The indicative level of the coverage of the artisanal fishing vessels should progressively increase towards 5% of the total ~~landings~~* ***levels of vessel activity (e.g. total number of vessel trips or total number of vessels active)****.*

Paragraph 7: *The ~~observer~~* ***sampling*** *scheme referred in paragraph 4 will be covered by the Commission's accumulated funds and voluntary contribution on a provisional basis. The Commission will consider at its 14th Annual meeting an alternative for the financing of this scheme.*

Paragraph 9: *CPCs shall provide to the Executive Secretary and the Scientific Committee annually a report of the number of vessels ~~on which observers were placed~~* ***monitored*** *and the coverage achieved by gear type in accordance with the provisions of this Resolution.*

New paragraph to insert after paragraph 12: ***Field samplers shall monitor catches at the landing place in order to estimate catch-at-size by type of boat, gear and species, or carry out scientific work as requested by the IOTC Scientific Committee.***

Paragraph 13: *The funds available from the IOTC balance of funds may be used to support the implementation of this programme in developing States, notably the training of observers* ***and field samplers****.*

Proposal of amendments on Res. 08/01 (Mandatory Statistical Requirements)

Paragraph 4: *Size data shall be provided for all gears and for all species covered by the IOTC mandate according to the guidelines set out by the IOTC Scientific Committee. Size sampling shall be run under strict and well described random sampling schemes which are necessary to provide unbiased figures of the sizes taken.* ***Sampling coverage shall be set to at least one fish measured by ton caught, by species and type of fishery, with samples being representative of all the periods and areas fished****. Length data by species, including the total number of fish measured, shall be submitted by a 5° grid area by month, by gear and fishing mode (e.g. free swimming schools or schools in association with floating objects for the purse seiners).* ***Documents covering sampling and raising procedures shall also be provided, by species and type of fishery.***

Paragraph 5(c): "*The total number and type of FADs set by the supply vessel and purse seine fleet per quarter*"

- Considered as unclear and difficult to implement.
- Would require a modification of the Resolution 07/03

Proposal of amendments on Res. 07/03 (Recording of Catch)

Indications for filling the logbook form (purse seine and baitboats)

*POSITION (each set or midday): Use one line for each set (including negative ones)**, or each FAD deployed,** and note its position. If no set have been made and **FADs have not been deployed during the day**, note the position around midday. If necessary, information for one set can use several lines, without changing the general information (date and position).*

*SET/**DEPLOYMENT OF** FAD (Time): Indicate the time at the beginning of the set **or at the time the FAD was deployed**; if necessary, precise the time used on board (TU+ ??).*

*ASSOCIATION: Tick the case corresponding to the association type observed. For log sets **or deployment of FADs indicate** if the log is natural (N) or artificial (A), as well as if there bear or not a beacon. Indicates also if **the** fishing **set** was done **after the call of a supply vessel**. Of course, several associations are possible, and others than indicated may be mentioned in the "Comments" field.*

Section 2

Stock Assessments

2.1 – Tropical major tunas

2.2 – Albacore

2.3 – Billfish

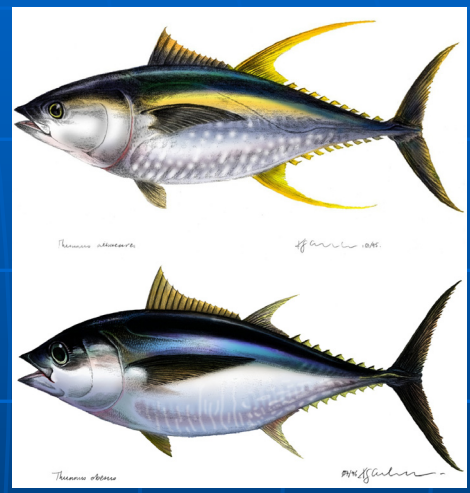
2.4 – Neritic tunas

2.5 – Fishing capacity

2.6 – Other considerations

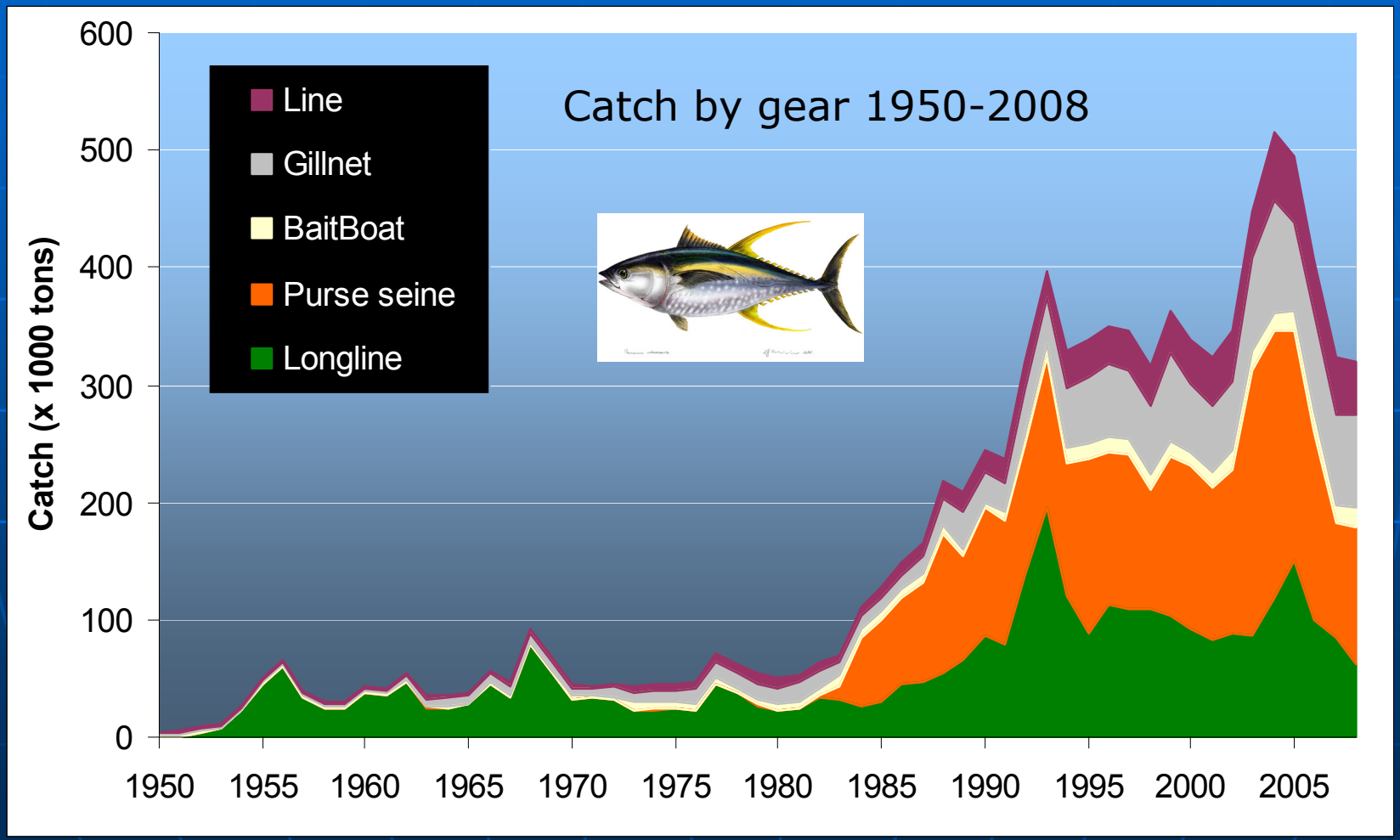
2.1 - Tropical tunas

- Yellowfin and bigeye stocks
  - both assessed in 2009, incorporating the most recent tag-release data sets
  - A single Stock Assessment model was used (MULTIFAN-CL) for Yellowfin
  - 5 SA models used for Bigeye



- Skipjack
  - Limited analyses on skipjack with no formal stock assessment conducted

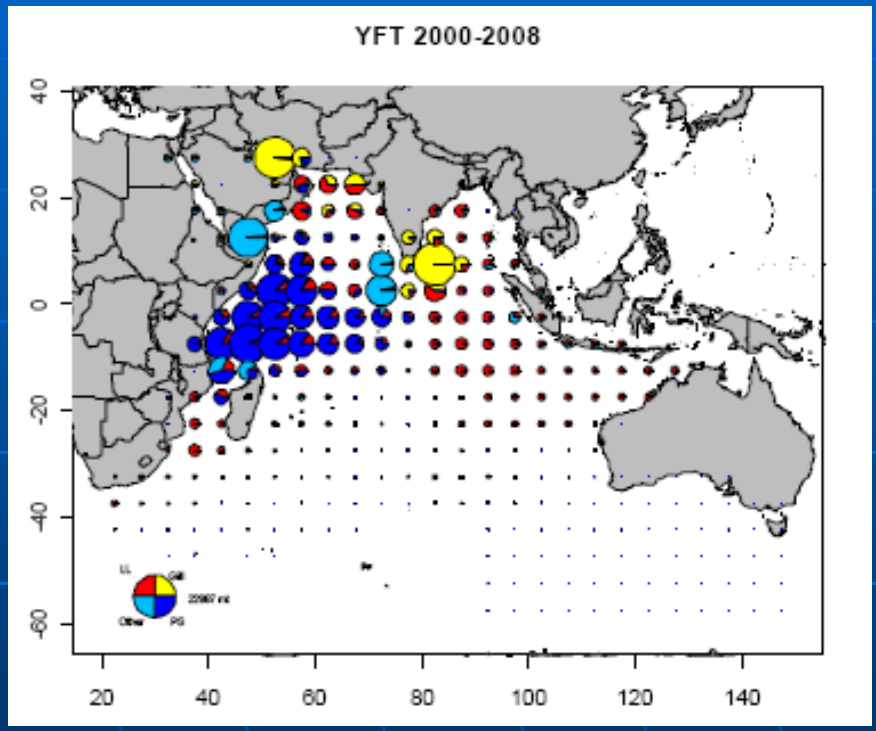
Yellowfin



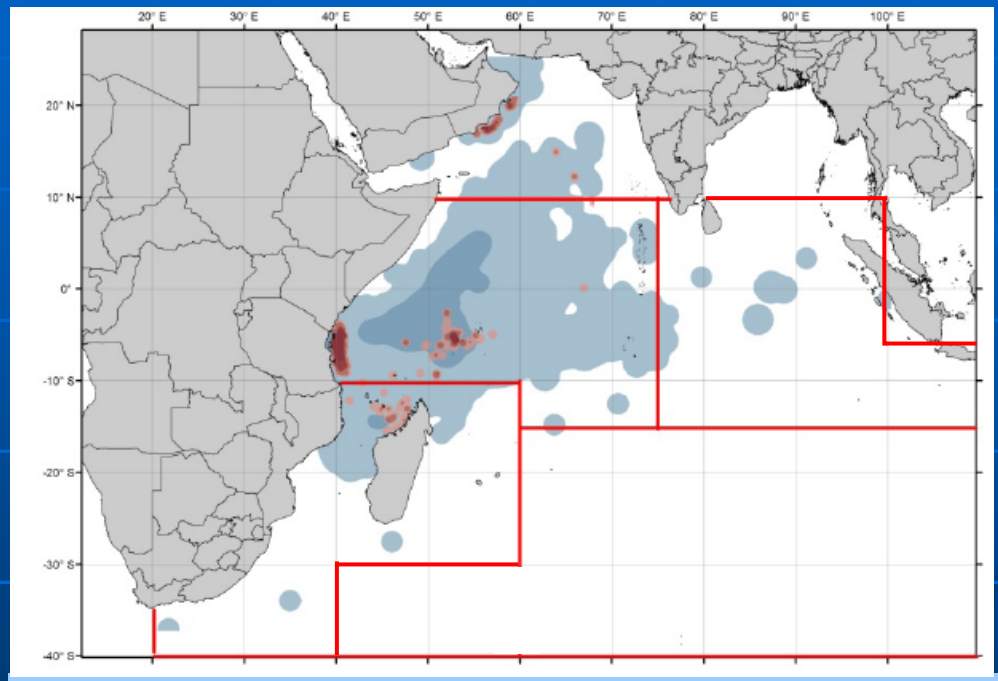
Artisanal gears : 42 % Industrial gears : 58%

Yellowfin

Catches and Tag Recapture Densities



- purse seine
- longline
- gillnet
- other



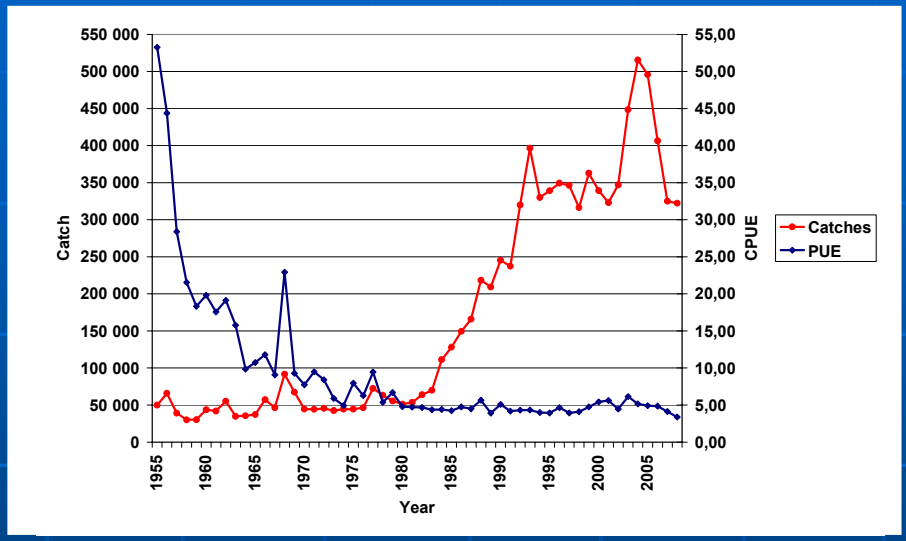
- 54 685 YFT tagged and released
- 9 499 recovered (17.4%)
- 93% recoveries from PS

Potential bias on real movement pattern

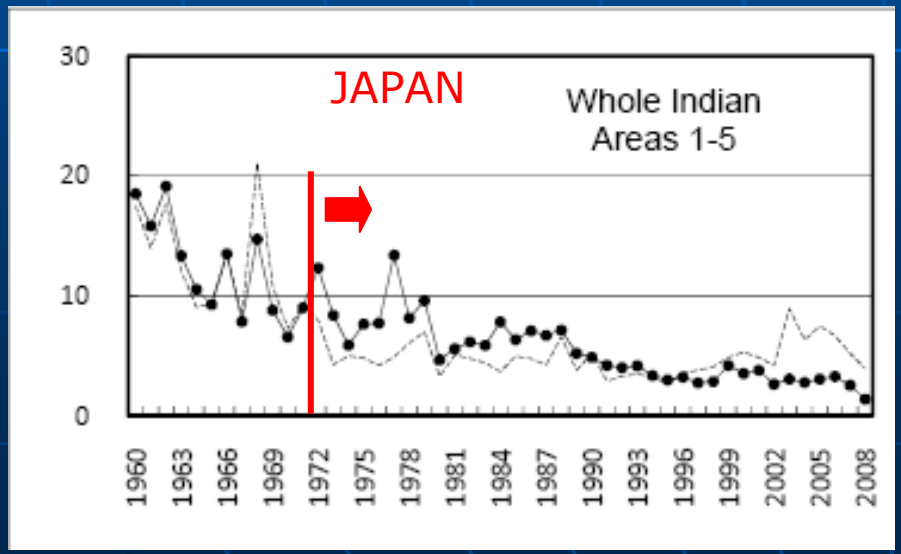
Large YFT > 1 m Fork Length	PS West IO	LL West IO	LL total IO
Total number YFT caught	2 229 874	1 876 828	2 958 699
Number recovered	2 984	46	
Number tags reported/million YFT caught	1 338	25	
Expected number tagged YFT caught / LL		2 512	3 959

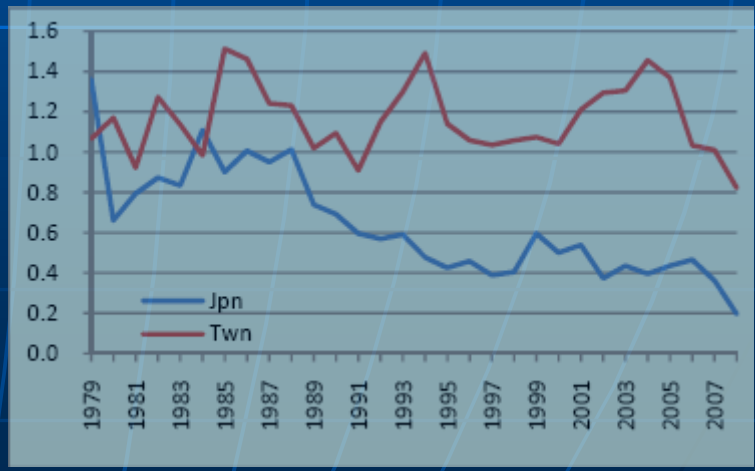
- The ratio in tag recovery between PS and LL is 55
- Potential underestimation of movements to the East IO

Conflicting trends between total catch and LL CPUE

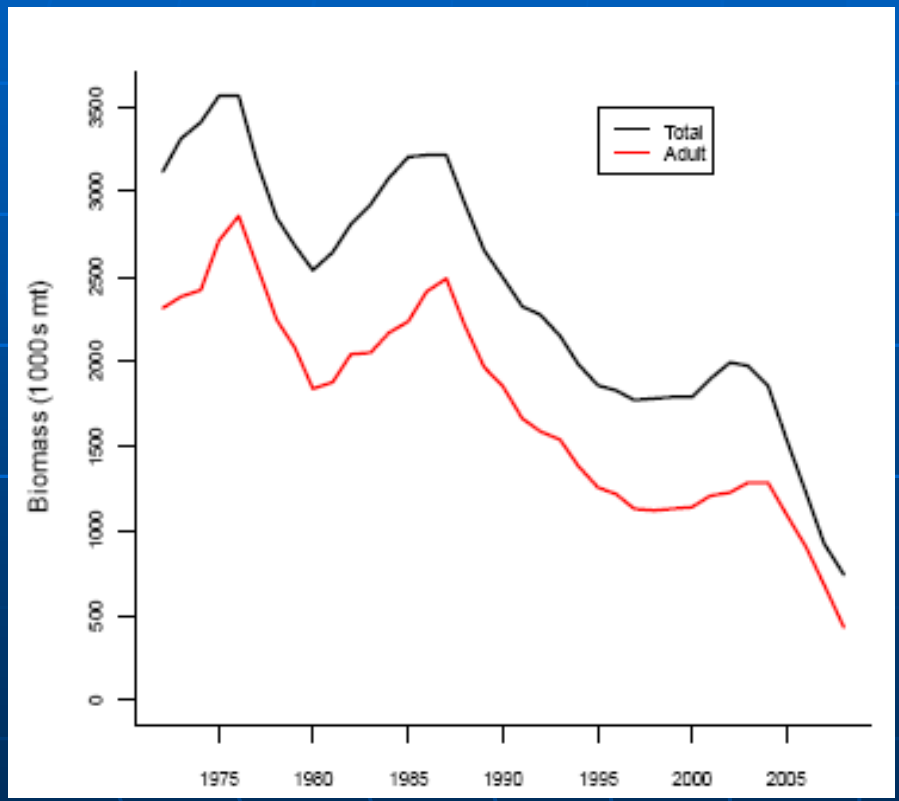


- Observed trends between catch and LL CPUEs are not consistent with any known theory of fishing
- Targeting behavior and increased efficiency of the fleets are not totally accounted for
- Severe discrepancy between Japanese and Taiwan,China CPUE series





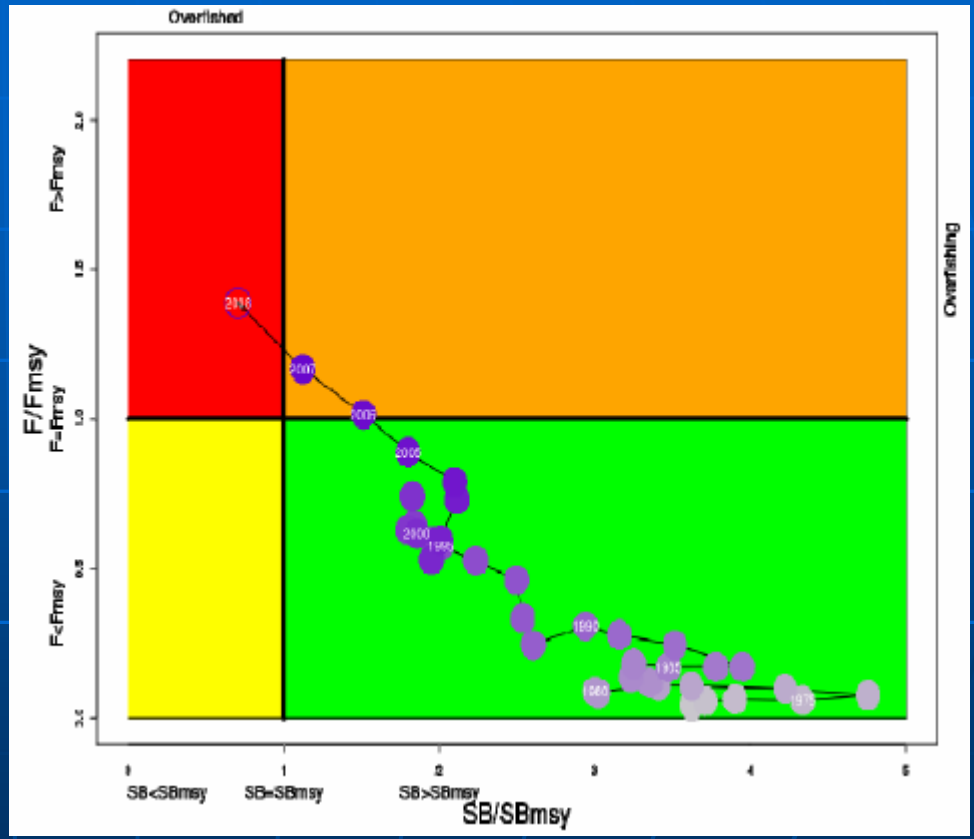
Yellowfin
Biomass trend



- Overall decline which may be accelerated by the high catches of 2003-2006
- However, the 2008 estimate is uncertain

Stock status summary

Last assessed : 2009 (Data up to 2008 but reference points for 2007)	
YELLOWFIN TUNA	
Catch 2008 (provisional)	318 400 t
Catch 2007	317 500 t
Average Catch 2004-2008	410 800 t
MSY (2007)	300 000 t
F_{2007}/F_{MSY}	1.16
B_{2007}/B_{MSY}	0.90
SB_{2007}/SB_{MSY}	1.12
B_{2007}/B_0	0.356
SB_{2007}/SB_0	0.342
$B_{2007}/B_{2007,F=0}$	0.400
$SB_{2007}/SB_{2007,F=0}$	0.340



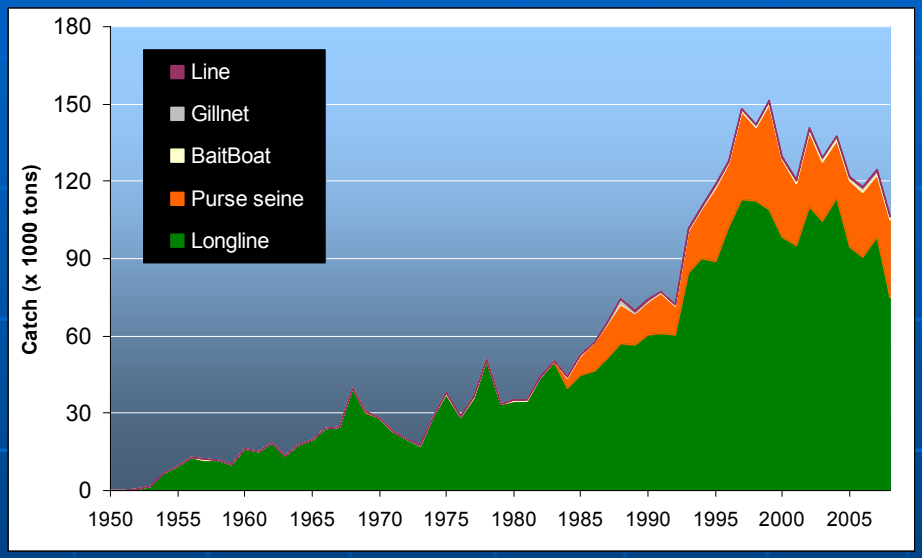
- The value for 2008 is uncertain
- Management advice based on the value for 2007

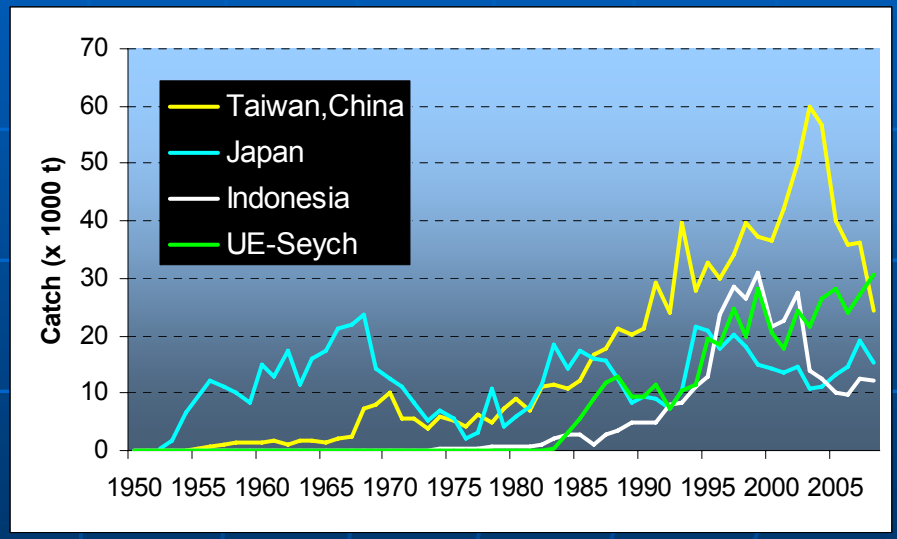
Management advice

- Fishing mortality above the MSY-related level :
  ⇨ overfishing
- Biomass at or below the MSY-related value :
  ⇨ depleted stock & likely overfished state
- Avoid return to normal fishing scenario
- Pre-2003 levels likely non-sustainable at the present level of biomass
- Catches should not exceed the MSY level of 300 000 tons

Bigeye

Catch by gear and by major country

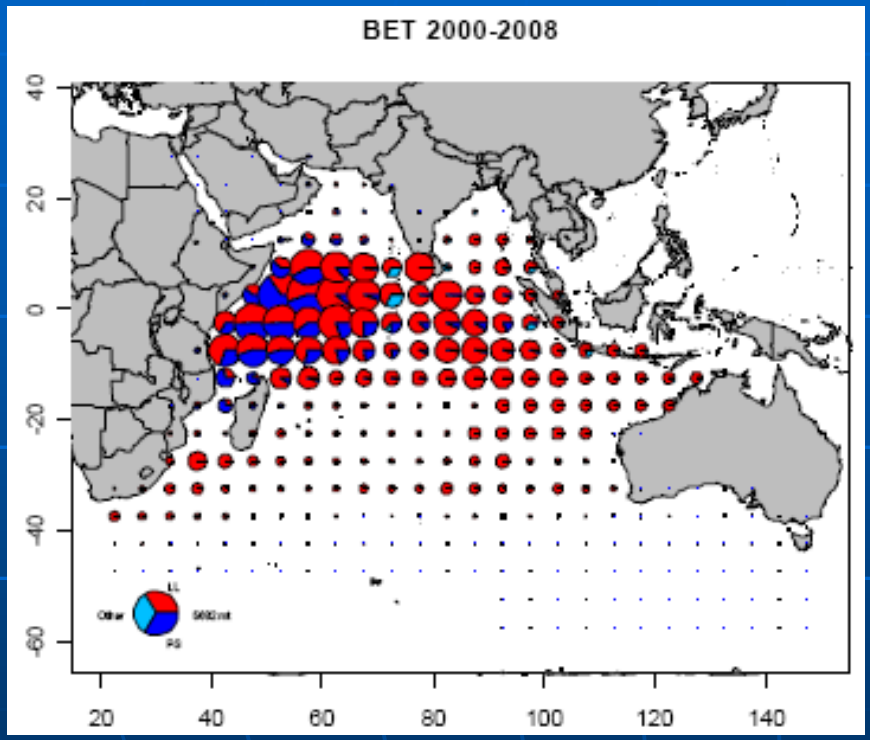


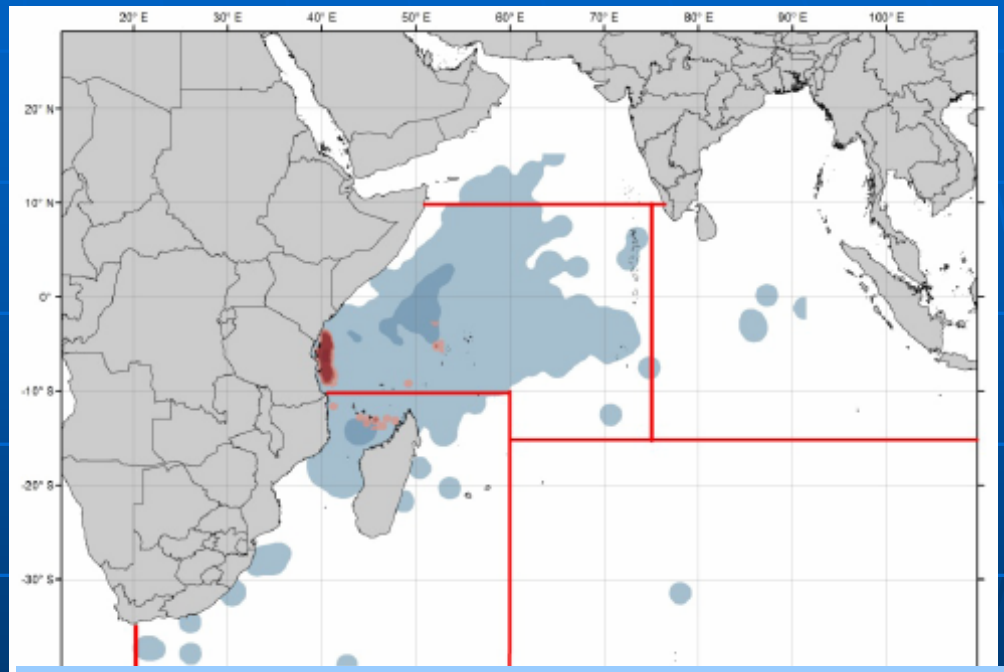


-CE : good overall quality for LL/PS, likely major under-reporting by gillnet fisheries (Iran, Pakistan, Sri Lanka) and pole and line (Maldives)

- SF : good for PS, insufficient for LL (Taiwan,China ; Korea; Japan), gillnet and pole and line fisheries

Bigeye
Catches and Tag Recapture Densities

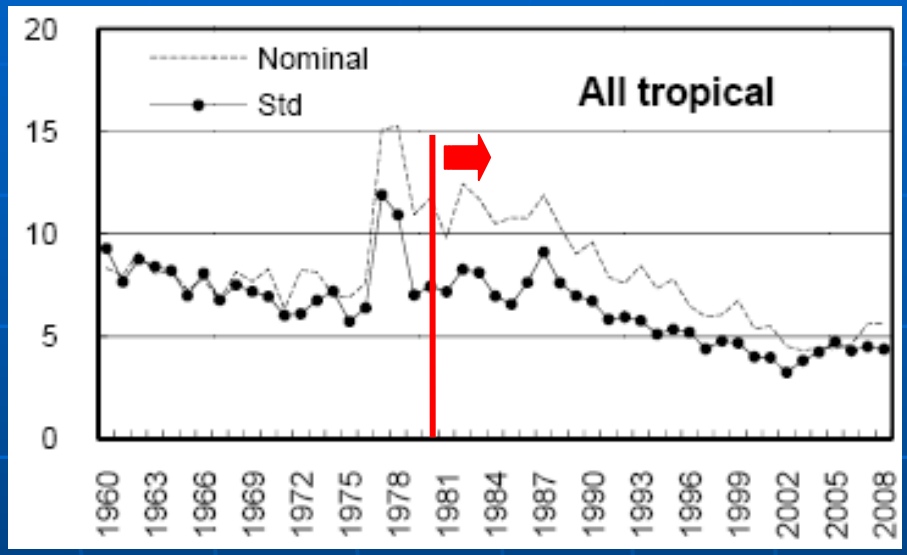


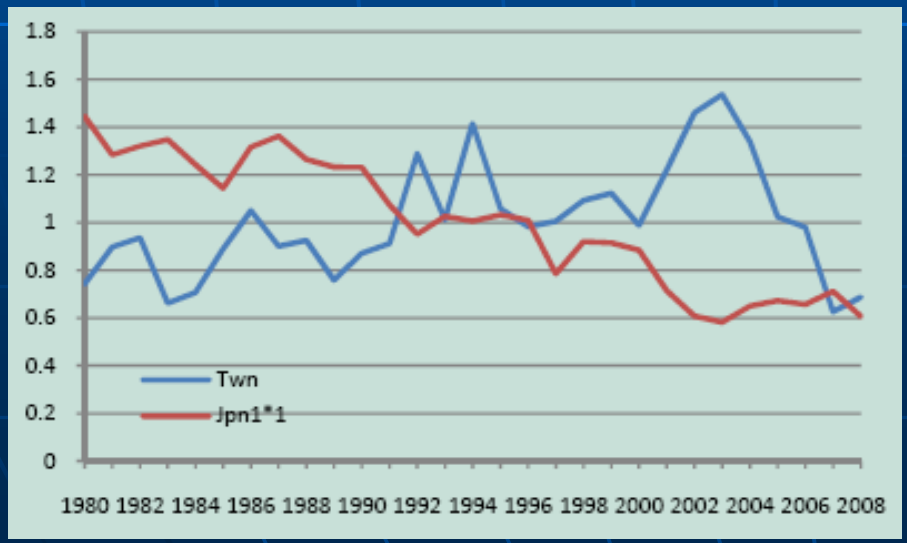


- 34 568 BET tagged and released
- 5 320 recovered (15.4%)
- 95% recoveries from PS

No recoveries for large fish due to extremely low rate of reporting by LL fisheries (2.9%)

Bigeye
CPUE trends





- Large increase in 1976-77 likely due to increased catchability (deep LL)
- Assessment conducted for post-1980 period
- Improved standardization based on 1° squares (instead of 5°) and incorporation of environmental variables
- Discrepancy between Japan and Taiwan,China series due to operational differences between the two fleets

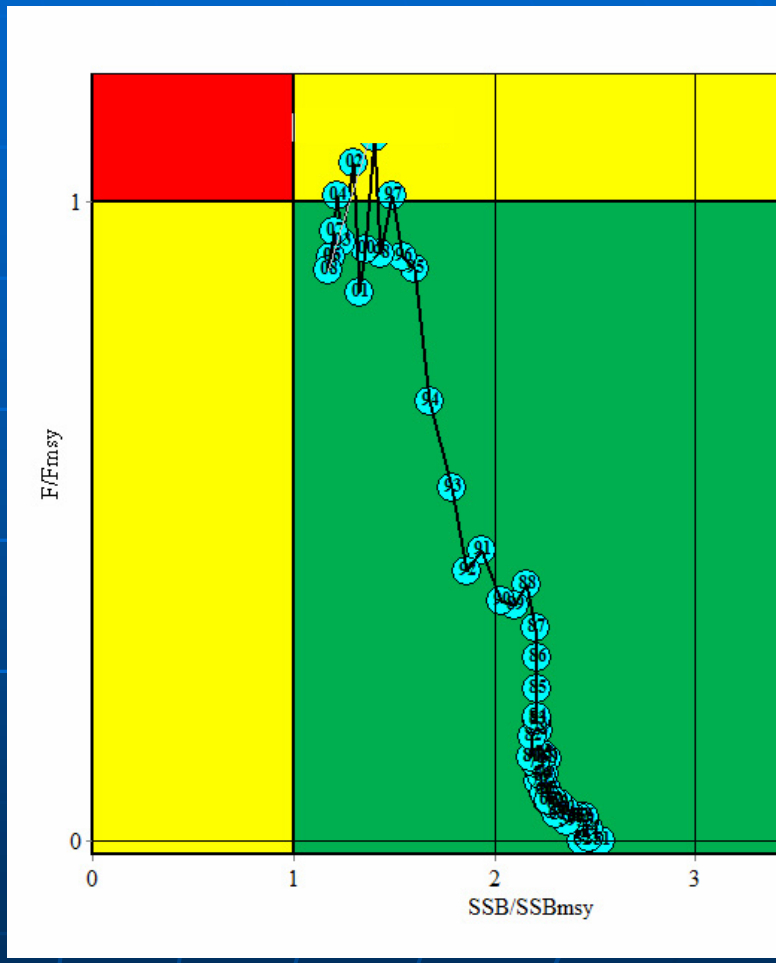
Stock status summary

BIGEYE TUNA		
	2006 assessment (data up to 2004)	2009 assessment (data up to 2008)
Most recent catch	121 600 t (2005)	107 000 t (2008)*
Mean Catch 2004-2008	-	121 700 t
MSY	111 200 t [95 000 - 128 000]	110 000 t [100 000 - 115 000]
$F_{current}/F_{MSY}$	0.81 [0.54 - 1.08]	0.90
$B_{current}/B_{MSY}$ (1)	-	1.17
$SB_{current}/SB_{MSY}$ (2)	1.34 [1.04 - 1.64]	1.17
$B_{current}/B_0$	-	0.42
$SB_{current}/SB_0$	-	0.34

* provisional

(1) estimated through ASPIC

(2) estimated through ASPM

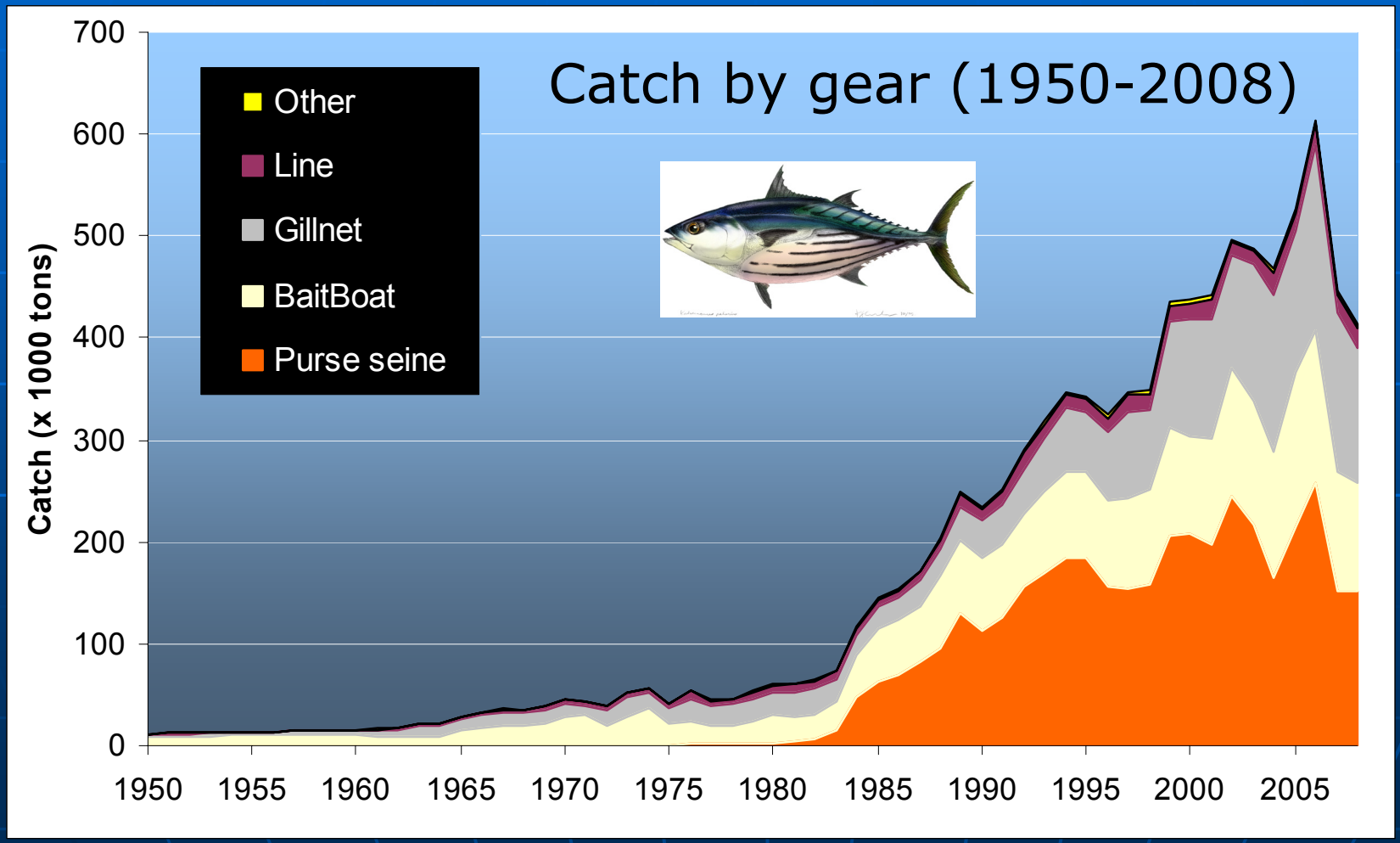


Management advice

- Preliminary catch estimates 2008 are below the MSY whereas catches in the past (1997-1999) were much above MSY
- Fishing mortality and biomass for 2008 close to MSY-related values :

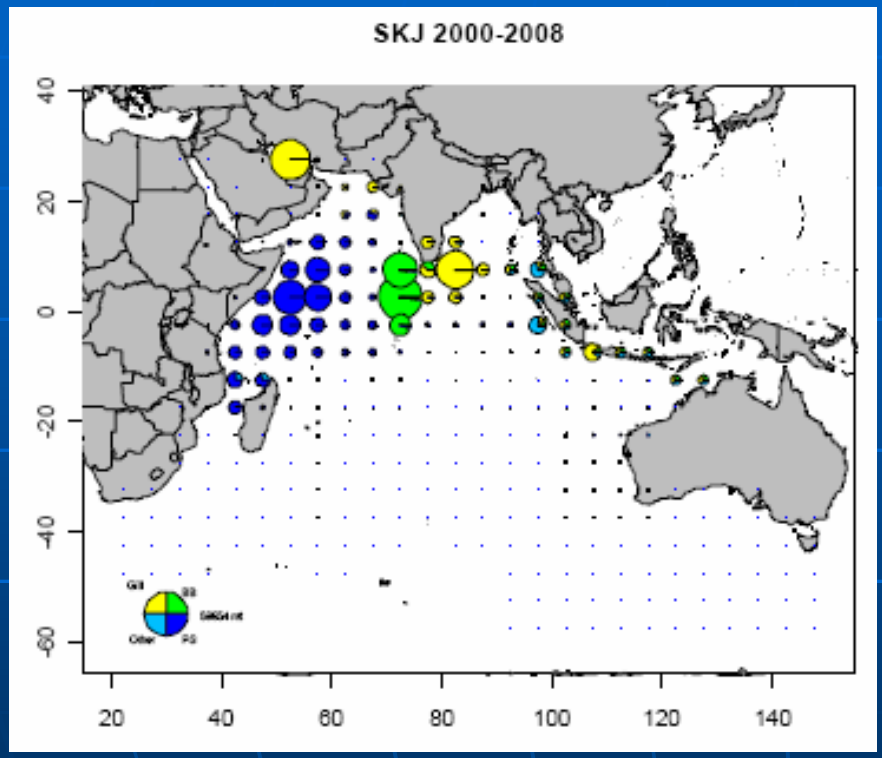
  ➡ fully exploited stock
- Catches should not exceed the MSY level of 110 000 tons

Skipjack

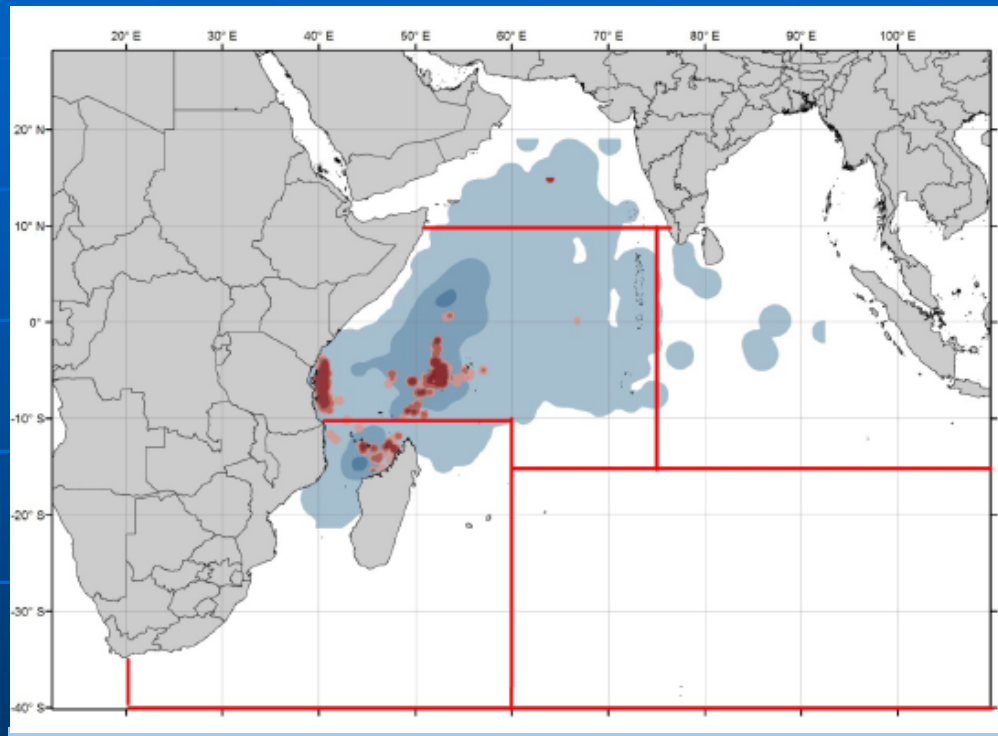


Artisanal gears :51 % Industrial gears : 49%

Skipjack
Catches and Tag Recapture Densities



- purse seine
- baitboat
- gillnet
- other

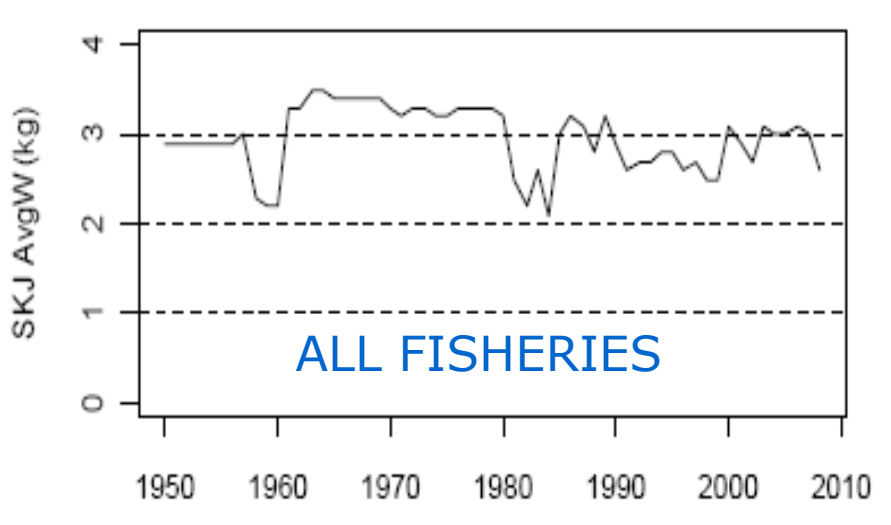


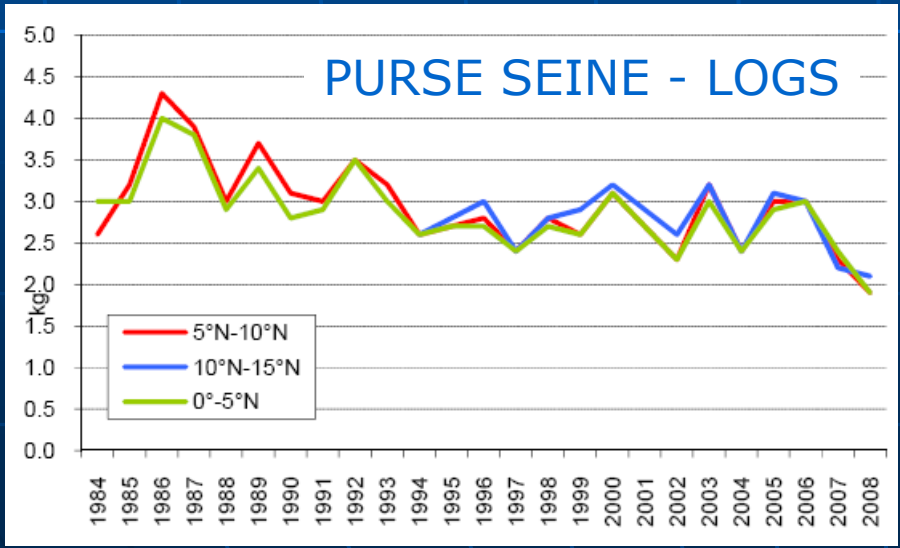
- 78 324 SKJ tagged and released
- 12 568 recovered (16%)
- 96% recoveries from PS

Insufficient recoveries from pole and line fisheries

Skipjack

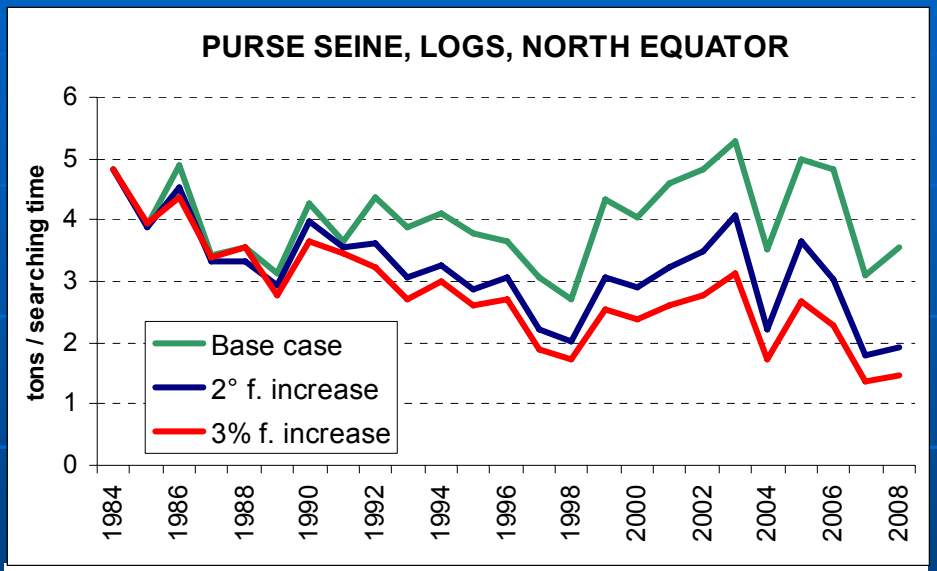
Mean weight of catches

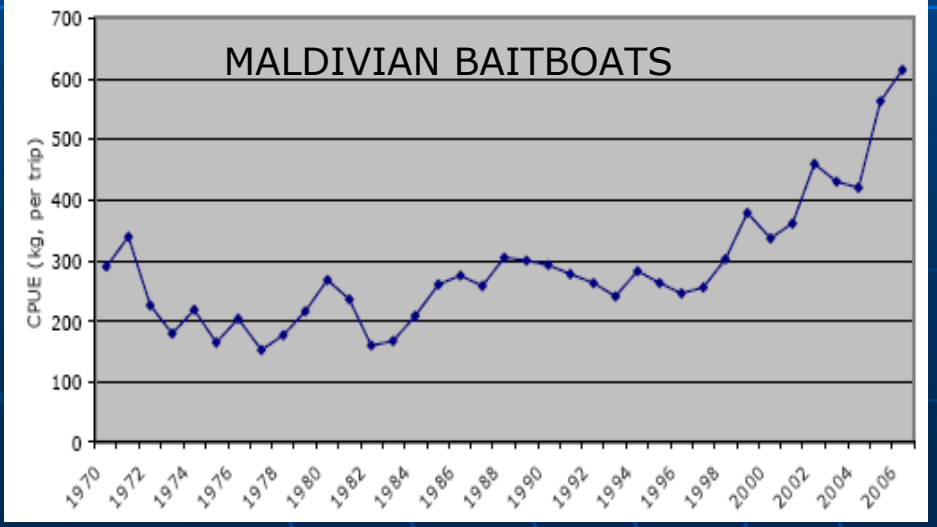




- Overall stability since 1991 for all fisheries combined
- Strong decline during 2007-2008 on PS Logs
- Current size of SKJ taken by PS is still above the size at 1st maturity

Skipjack
CPUE trends





- PS CPUE :
  - No trend if fishing power considered as stable
  - overall decline if increased fishing power is accounted for
  - 2007 drop is concomitant with the reduction of catch due to piracy
- BB Maldives :
  - Increasing trend since 1997 due to increased fleet efficiency.
  - Then decline in 2007 (anomalous high SSTs + fuel cost rise)
- Using CPUE from PS or BB will be a real challenge

Stock status summary

No formal assessment	
SKIPJACK TUNA	
Catch 2008 (provisional)	431 100 t
Catch 2007	458 700 t
Average Catch 2004-2008	499 900 t
MSY (2007)	unknown

(From WPTT 2008) :

- Abundance estimates
  - Larger numbers than YFT and BET
  - 2007 slightly lower than 2006
  - Stable age structure (stable year class regime over 2000-2005)
- Exploitation rate
  - Relatively low (not exceeding 20%)

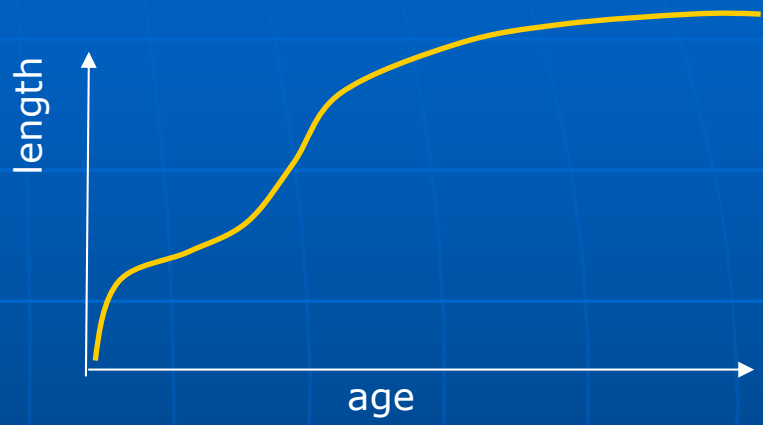
Management advice

- High productivity and life history traits would provide a strong resilience and resistance to fishing
- However, the trend of some fishery indicators calls for a close monitoring of the stock in 2010
- Interactions between industrial and artisanal fisheries not yet tackled because of too few recoveries (e.g. Maldives)
- A formal assessment is required in 2010

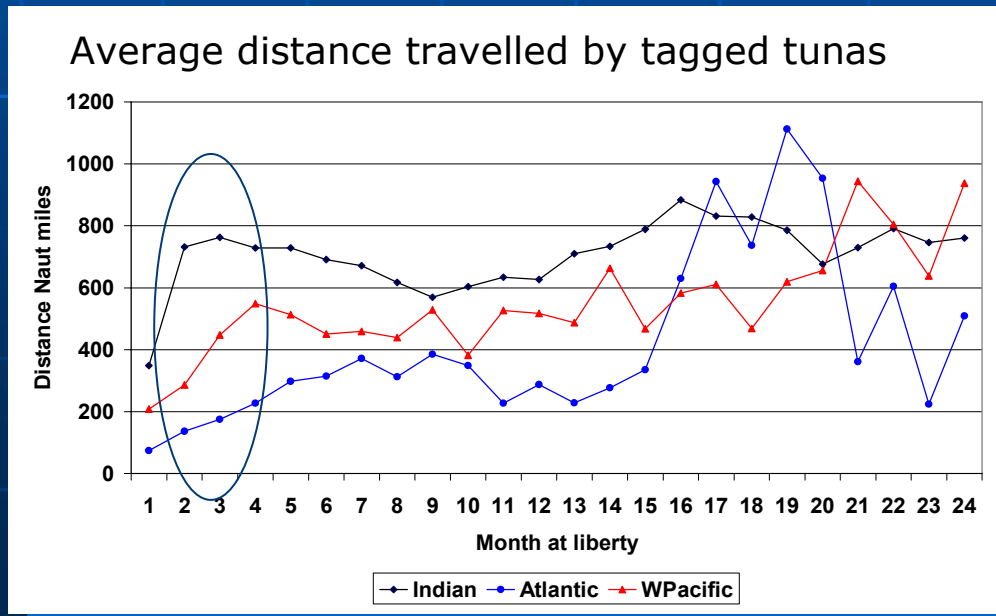
Tropical tunas

Major outcomes from RTTP

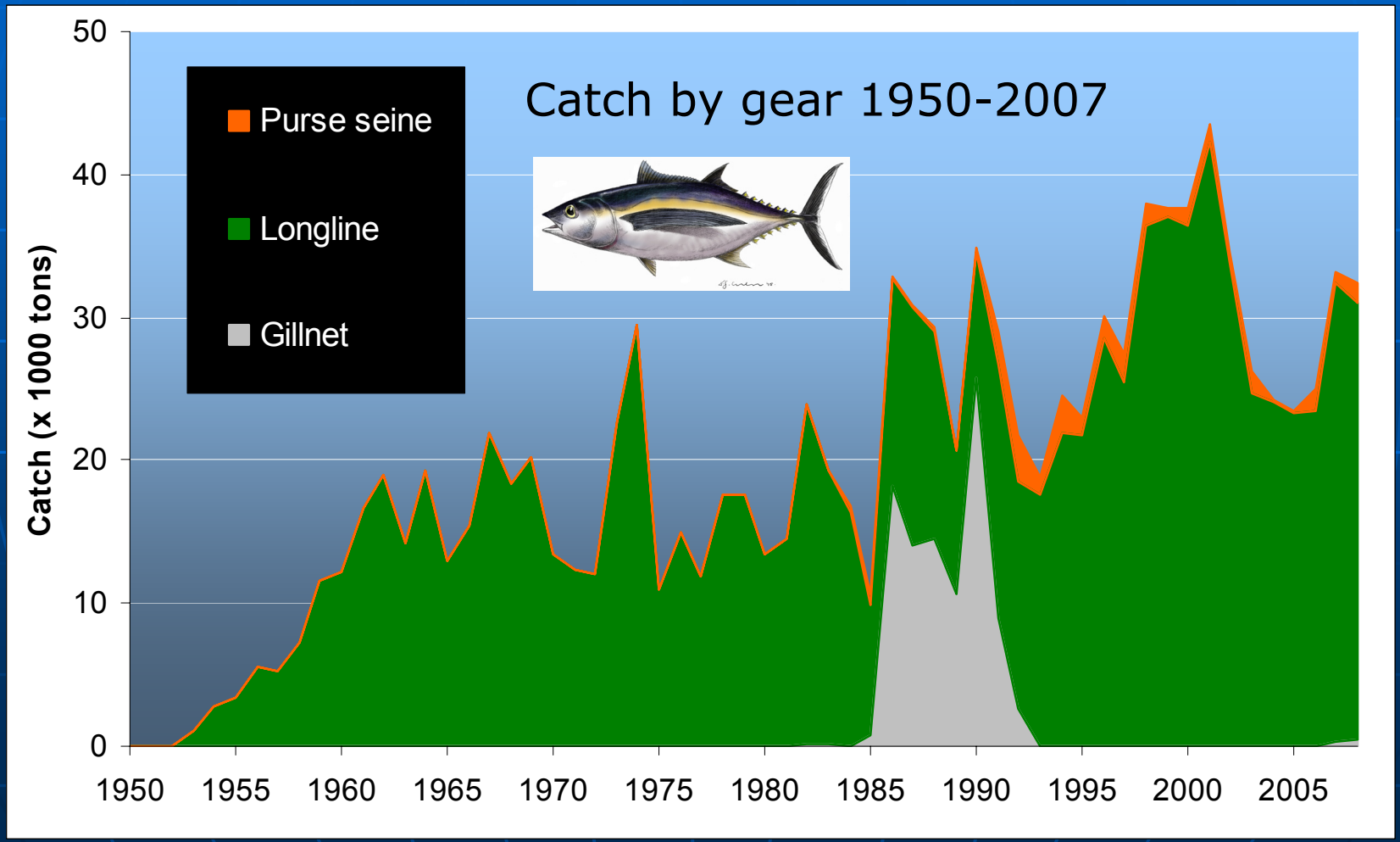
- **Growth** :
  - YFT and BET : a multi-stanza model (confirmed by otoliths readings for YFT)
  - SKJ : confirmation of a Von Bertalanffy curve



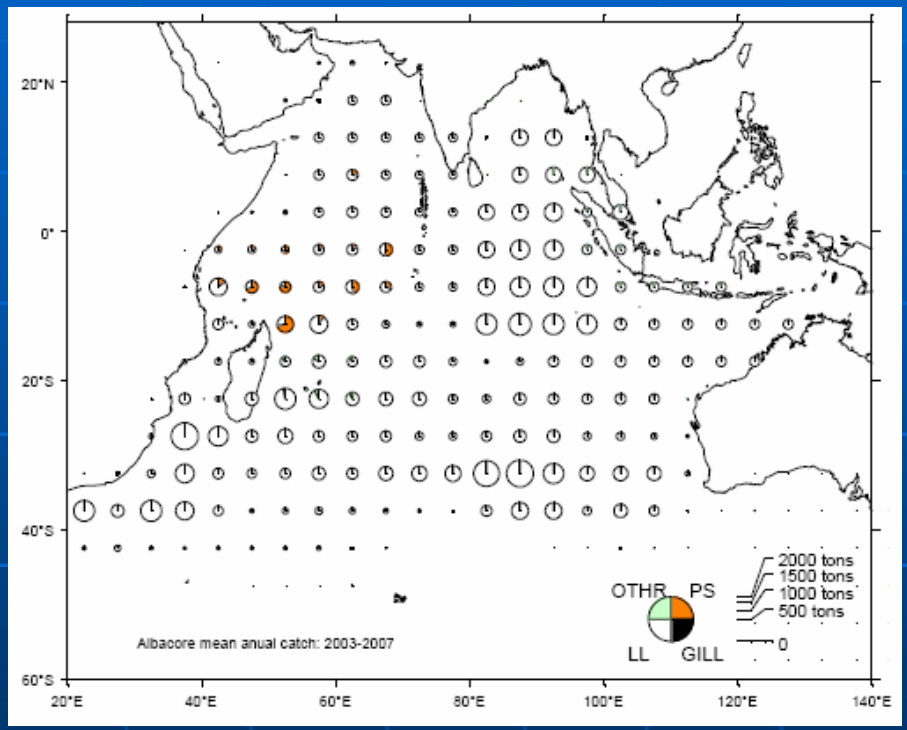
- **Natural Mortality** : lower than previously assumed
- **Movements** : large and fast, the largest among the three oceans
- Rapid mixing, **single stocks**



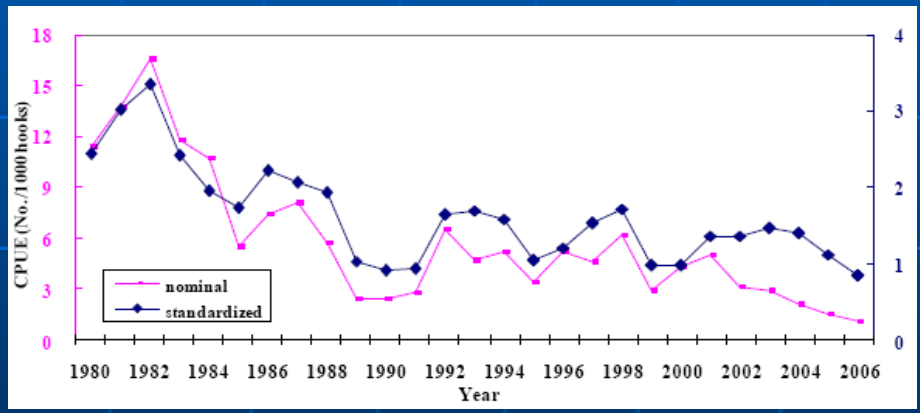
2.2 – Albacore


Catch by gear 1950-2007
Purse seine
Longline
Gillnet
Catch (x 1000 tons)
50
40
30
20
10
0
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005

Albacore
Catches and CPUE



- Steady decline from 1980 to 1990
- Fluctuations without trend



- The only ocean where juvenile albacore are rarely targeted by fisheries
- Albacore is both a targeted (Taiwan,China) and a by-catch species (Japan)

- Low price compared to other species
- Profitability achievable only at low operational cost

Stock status summary

Last assessed : 2008 (Data up to 2007)	
ALBACORE TUNA	
Catch 2008 (provisional)	32 900 t
Catch 2007	33 200 t
Average Catch 2004-2008	27 900 t
MSY (2007)	28 260 t - 34 415 t
F_{2007}/F_{MSY}	0.48 - 0.91
B_{2007}/B_{MSY}	-
SB_{2007}/SB_{MSY}	-
B_{2007}/B_0	> 0
SB_{2007}/SB_0	-
$B_{2007}/B_{2007,F=0}$	-
$SB_{2007}/SB_{2007,F=0}$	-

- Use of an age-structured production model, based on Taiwan, China LL CPUE (1980-2006) and catch data 1950-2007
  - $B_{current}$ and $h_{current}$ are respect. above and below MSY levels

→ not an overfished stock

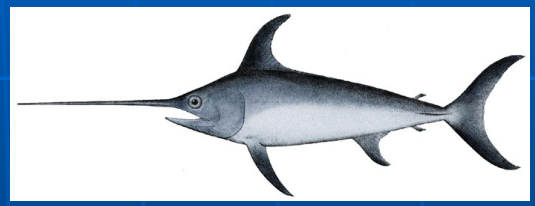
- Stable and high mean weight
  - Likely a high yield per recruit
- Overfishing likely to occur if catch levels are back to historical high levels (1998-2001, avg 38 000 t)

Management advice

- Stock size and fishing pressure considered within acceptable limits
- Status not likely to change markedly over next 2-3 years is market price remains low
- No need for immediate concern
- A new assessment to be undertaken at the latest in 2011

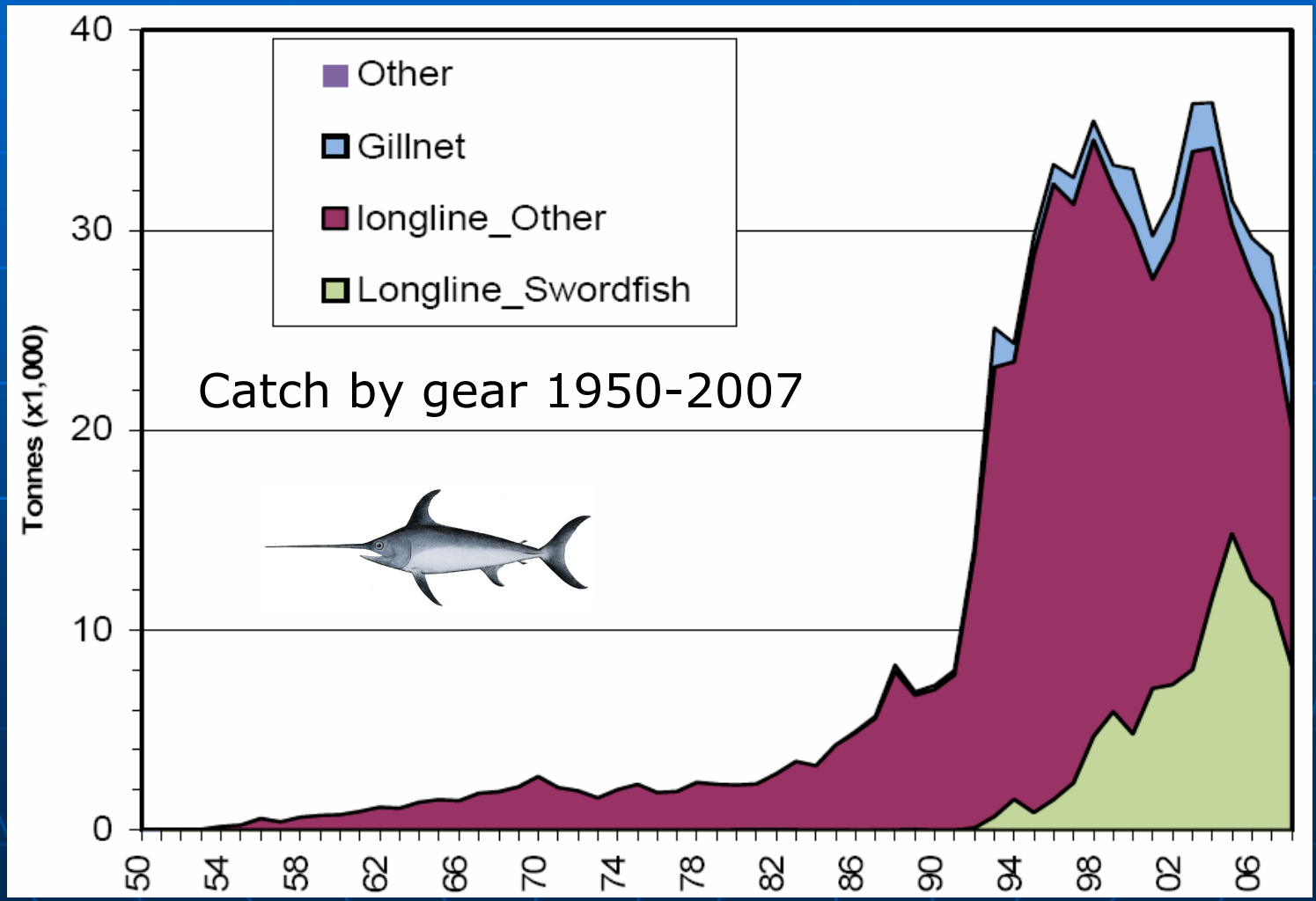
2.3 - Billfishes

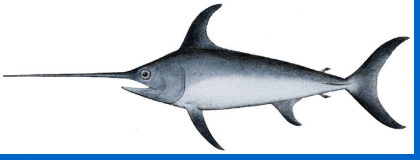
- Swordfish
  - Stock assessed in 2009 (data up to 2007)
  - 4 models used



- Marlins and sailfish
  - Basic fishery indicators

Swordfish

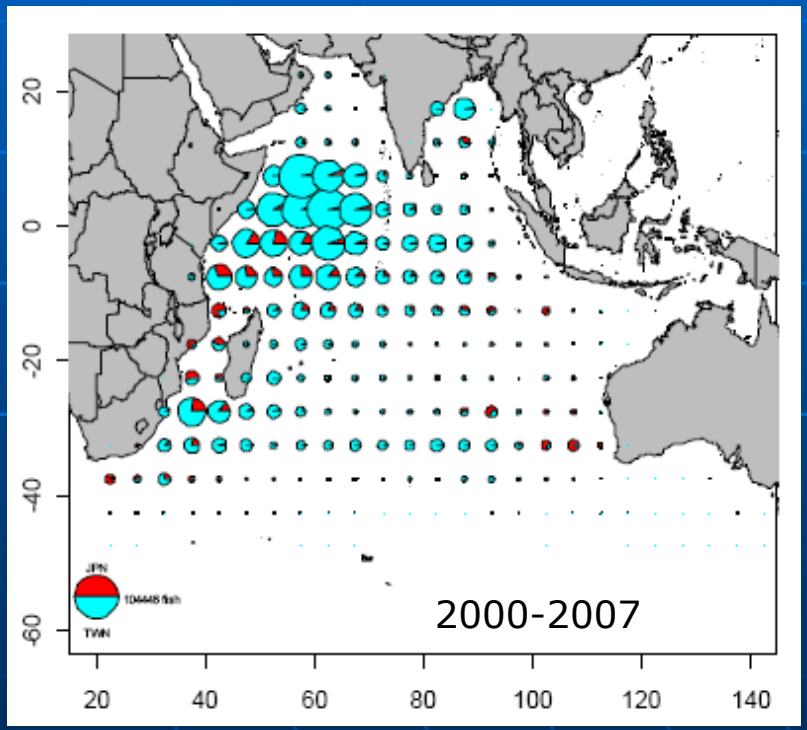

Other
Gillnet
longline_Other
Longline_Swordfish
Catch by gear 1950-2007
Tonnes (x1,000)
40
30
20
10
0
50
54
58
62
66
70
74
78
82
86
90
94
98
02
06

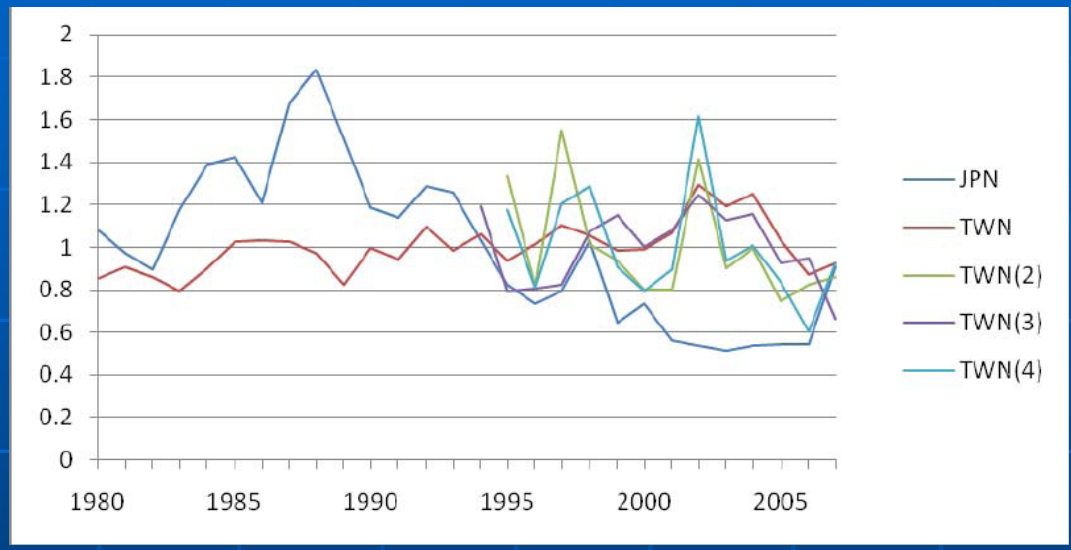


Swordfish

Catch distribution and CPUE trends

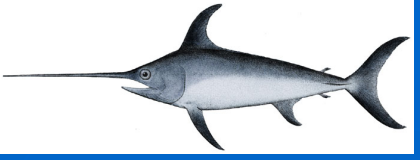
Longline catches by **Japan** (red) and **Taiwan,China** (blue)





Standardized CPUE 1980-2007 :

- Sharp decline on JPN series mostly due to spatial shifts and catchability changes
- Relative sustained efficiency of Taiwan,China series over time
- Downward trend of La Reunion and Spanish series

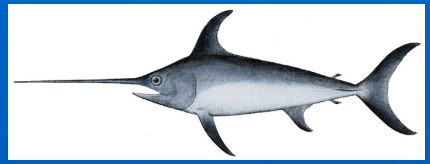


Stock status summary

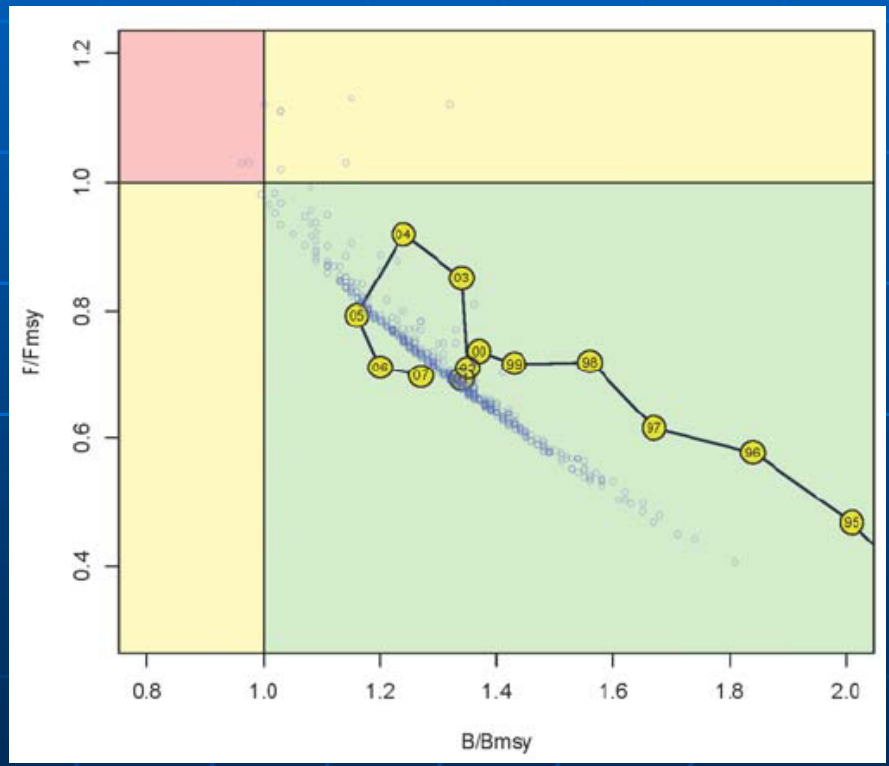
Last assessed : 2009 (Data up to 2007)	
SWORDFISH	
Catch 2008 (provisional)	22 300 t
Catch 2007	28 100 t
Average Catch 2004-2008	29 900 t
MSY (2007)	33 000 t [32 000 - 34 000 t]
F_{2007}/F_{MSY}	0.70 [0.58 - 0.84]
B_{2007}/B_{MSY}	1.31 [1.13-1.46]
SB_{2007}/SB_{MSY}	-
B_{2007}/B_0	0.48

- 4 very different models : large degree of uncertainty in reference points
- Depends on whether CPUE series are treated separately or merged together
- Impossible to consider any advice based on area stratification
- Selection of one model (ASPIC) on an expert basis for reference points
- Localized swordfish depletion not well understood (on-going tagging experiments)

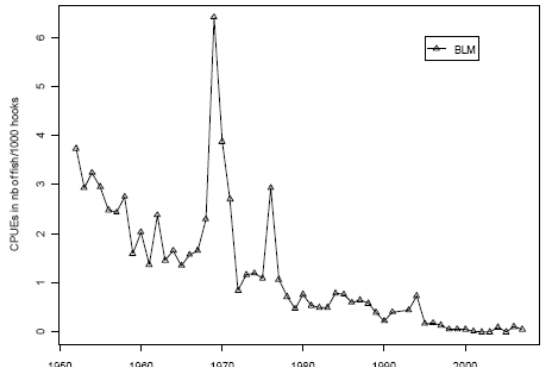
Management advice



- Overall declining trends of all CPUE series
- Further decline expected at current fishing effort as increase in fishing efficiency not well tackled in analysis
- Given the uncertainty in the assessment, high probability that target and limit reference points may be marginally exceeded
- Precautionary measures required such as capacity control or catch limits
- Catch should not exceed the MSY value of 33 000 t

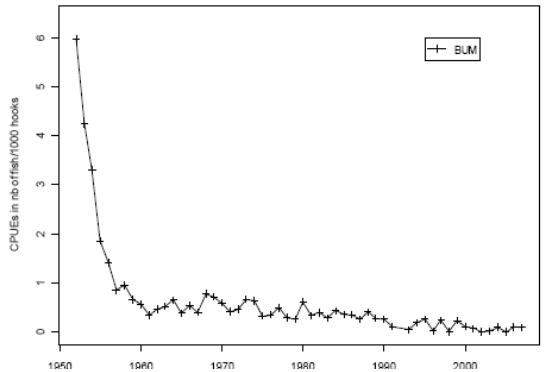


Marlins and sailfish

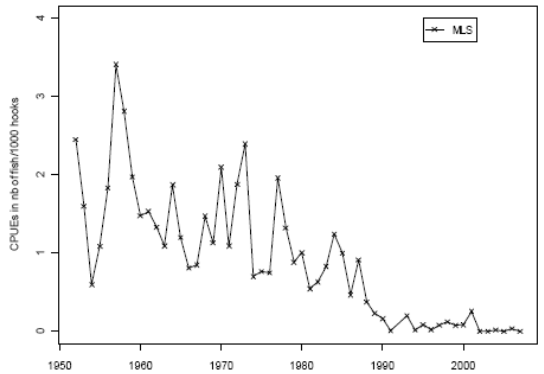


Nominal CPUE series :

Black marlin



Blue marlin



Striped marlin

- No assessment because of paucity of data
- Some sport fisheries now available
- Work limited to rough fishery indicators
- Dramatic decline of LL catch rates (by-catch)
  - Mixed effects of decreased abundance, changes in targeting practices, discarding practices…
  - Might be a matter of serious concern

Stock status are uncertain

2.4 – Neritic tunas

	Catch 2004-2008	Catch 2008
Bullet tuna	3 500 t	3 700 t
Frigate tuna	32 500 t	33 900 t
Spanish mackerel	116 800 t	124 600 t
Kawakawa	113 100 t	126 700 t
Longtail tuna	94 800 t	104 400 t
King mackerel	36 200 t	43 200 t

- No reliable indicators
- Biologically productive species
- Stock status uncertain
- The 1st WP on Neritic Tuna is still pending

2.5 - Fishing capacity

- Input-based estimates (amount of fishing units) easier to start with.
- Inventory of tuna fishing vessels, grouped by fleet, years 2006 to 2008 (Doc. S14-04)
- Necessity to consider the fishing vessels <24 m fishing within the EEZ

Gear	Total no. Vessels			By length (2008)			Catch (t) in 2008	Av.catch (t) / vessel / year (2006-08)
	2008	2007	2006	≥24m	<24m	Unk		
Purse seine	85	92	90	83	2		299,382	3,790
Longline	2,414	2,328	2,593	1,215	683	516	191,529	97
Pole-and-line	87	89	93	87			25,745	341
Oceanic gillnet	1,029	1,029	1,027	285	467	277	19,776	27
Gillnet/Longline	421	369	359		421		14,934	34
Total	**4,036**	**3,907**	**4,162**	**1,670**	**1,573**	**793**	**551,366**	**160**

- In the present situation, the SC cannot produce any advice on the optimal level of fishing capacity
- Great complexity of the Indian Ocean with numerous artisanal fisheries
- Necessity to liaise with other RFMOs for vessels shifting from one ocean to the other
- SC requesting that Secretariat participate to a world meeting on fishing capacity due by the middle of 2010

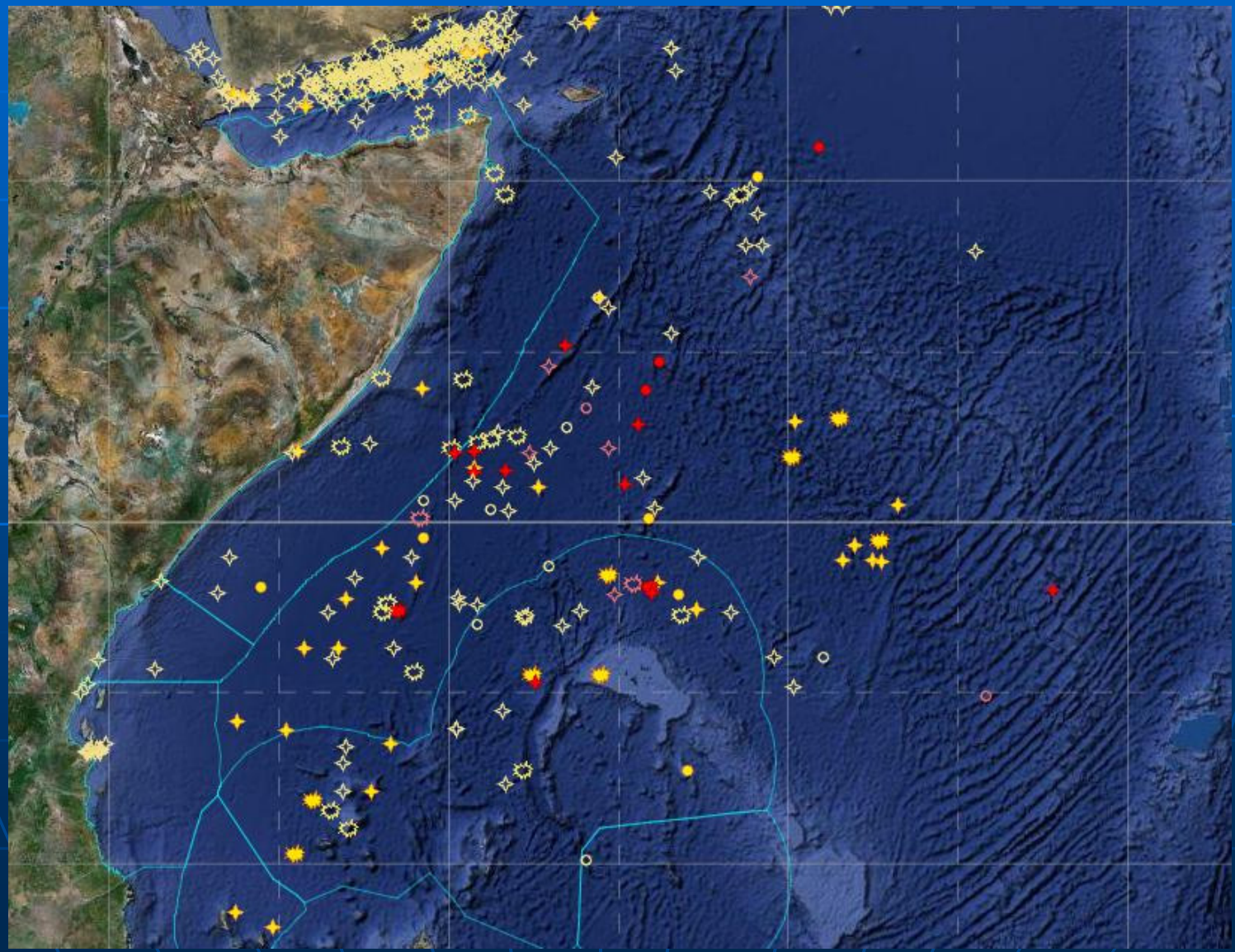
Photo Francis Marsac


Photo Francis Marsac

2.6 – Other considerations

- Impacts of Somalian piracy on tuna fishing activities
- Discussion on Marine Protected Areas (MPAs) in the high seas
- Steps to improve assessment

Impacts of Somalian piracy



Impacts of Somalian piracy

- 2008-2009 : 115 attacks in Somali Basin, 25 successful
- Tuna vessels : 24 attacks (12 PS, 2 LL)
- Decline of fishing effort :
  - LL Taiwan,China : -70% (2005-2007)
  - LL Japan : -18% (2007-2008)
  - PS EU : -16% (2007-2008)
- Spatial shift of fishing activities but no major reduction in catch rates
- Severe economic loss for some countries
- Bad scientific consequences
  - Lower level of sampling in port
  - Observer's activities halted
- Piracy acts not beneficial for stock conservation

Discussion on MPAs in the high seas

- To be effective, tuna MPAs have to cover large areas
- MPAs can also be defined for specific purposes (spawning aggregations, diversity hotspots, …)
- Need to consider the costs related to enforcement in case of large MPAs
- Oceanic MPAs are a tricky issue, but dedicated projects are underway
- MPA delineation must be based on scientific evidence
- The SC recommends that the IOTC actively cooperates with research initiatives on MPAs

Steps to improve assessment

- Strengthen monitoring and data collection
- More work needed on the standardization of abundance indices
- Need to strengthen external analyses of the tag-recovery dataset
  - A Scientific Symposium recommended by SC
- Use tagging results to fix some key parameters in SA models
- General value of using multiple models for more robust assessments
- Greater integration of ecosystem considerations (interactions, multi-species approach)

Section 3

Ecosystems and bycatch

3.1 – Sharks

3.2 – Seabirds

3.3 – Sea turtles & marine mammals

3.4 – Depredation

3.5 – Regional Observer Programme

3.1 - Sharks

- No improvements on data provision
- National Plans of Action (NPoA) : a requirement from 2008, 11 countries with NPoA-Sharks, only 1 (Seychelles) presented
- Recommendation made by SC-11 to have sharks landed with fins attached to the body to achieve 3 goals :
  - Reduce/avoid shark finning
  - Ensure accurate catch statistics
  - Facilitate collection of biological information

→ supported by most CPCs, but no consensus reached

- Proposal of amending the shark list in the logbooks (Res. 08/04) : **remove 1** (porbeagle) and **add 7** species groups with easy identification and greatly concerned by the fisheries

→ supported by most CPCs, but no consensus reached

Proposed amendments on shark list

Under Res. 08/04	Under new proposal	IUCN status
Species/genus	Species/genus	
Blue shark	Blue shark	NT
Mako shark	Mako sharks	VU to NT
Porbeagle	To be removed	
	Great White shark	VU
	Crocodile shark	NT
	Thresher sharks	DD/VU
	Tiger shark	NT
	Requiem sharks	LC to VU
	Hammerhead sharks	NT to EN
Other sharks	Other sharks	
	Pelagic stingray	LC

DD : Data deficient ; LC : least concern ; NT : nearly threatened ; VU : vulnerable ;EN : endangered

3.1 - Sharks

- In the present situation on shark data, conducting formal assessments of shark stocks is questionable
- Only some kind of basic indicators can be produced

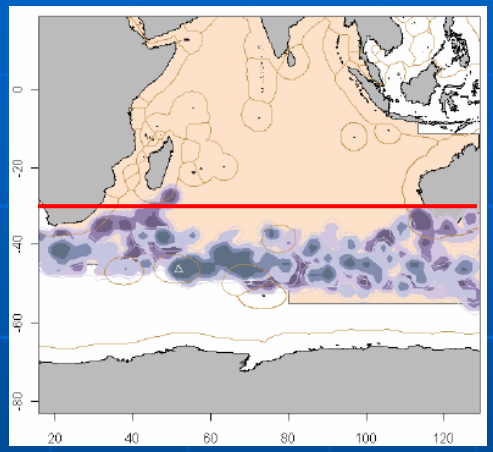
Photo FADIO/IRD/Ifremer

3.2 - Seabirds

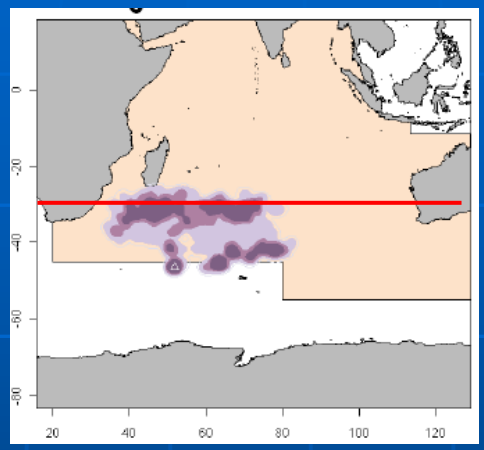
- No update on NPOA-Seabirds presented
- An executive Summary on Seabirds
- New results concerning the dispersal of non-breading adults or juveniles, in positions North of 30°S

Recommendation to amend Res. 08/03 to include a new latitudinal limit : 25°S instead of 30°S for the use of mitigation measures

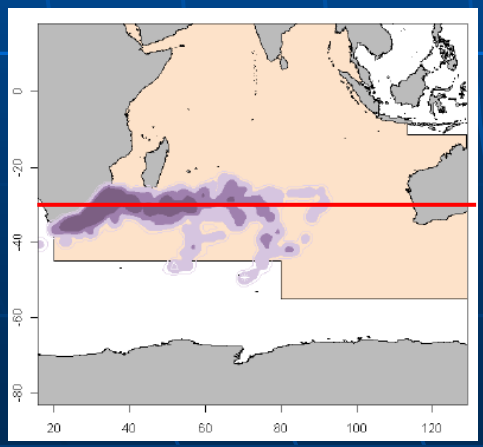
Dispersal of naive juvenile birds



Northern giant petrel (NT)



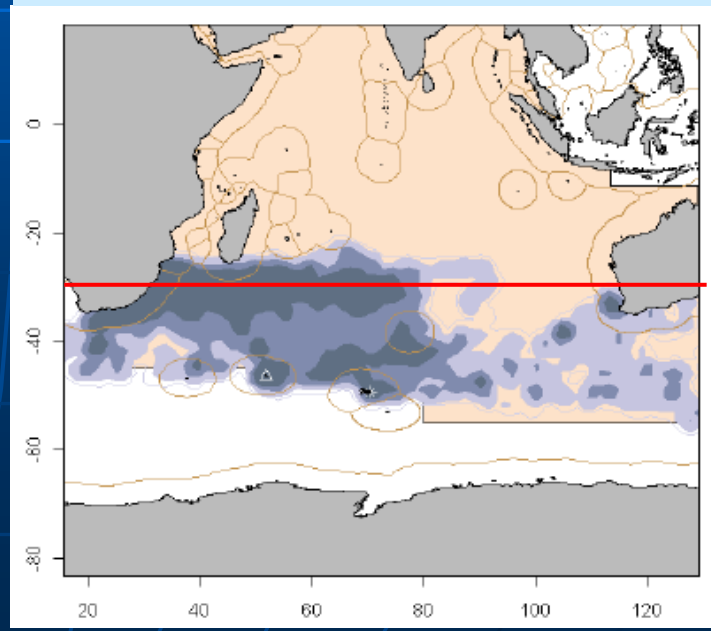
Sooty albatross (EN)



White-chinned petrels (VU)

Recent trackings (2009) of juvenile seabirds

All tracks combined



3.3 - Sea turtles & Marine mammals

- Sea turtles
  - Res. 09/06 : WPEB asked to consider the effects of circle hooks on target and bycatch species catch rates
  - SC did not endorse the recommendation made by WPEB to deploy circle hooks : more research needed (e.g. impacts on sharks)
  - Major concern on the drifnets
- Marine mammals
  - Little interaction between PS and marine mammals
  - Use of logbook and observer data to investigate spatial distribution of whales associated to tuna schools
  - Major concern on the drifnets

3.4 - Depredation

- Source of cryptic fishing mortality by longline fisheries
- Examination of an amendment of Res. 08/04 to include occurrences and number of fish damaged in the logbooks

→ supported by some CPCs, but no consensus reached

- Recommendation for a voluntary reporting of depredation events in artisanal fisheries
- A specific form proposed by the SC

A voluntary reporting form for depredation

Confidential data
For statistical purposes only
None of the fields are obligatory

iotc ctoi Indian Ocean Tuna Commission
Commission des Thons de l'Océan Indien

Tuna Statistics in the Indian Ocean
IOTC Form 99:
Voluntary reporting form for depredation and other non-target species for small-scale fisheries

Page		
	of	

Vessel name	
Vessel length, m	
Fishing area	
Landing site	
Country/flag	

Observation type	
Single operation	☐
Several operations	☐
No of operations	

Position/area	
Lat DD°MM' S/N	Long DDD°MM' E

Type of Gear			Effort				Operation details			
							Fishing type		Bait	
Longline	Pelagic drifting	☐		Hooks			Night fishing	☐	Fish whole	☐
	Pelagic statinary	☐		Hooks			Day fishing	☐	Fish parts	☐
	Bottom	☐		Hooks			Soaking time, h		Squid	☐
Gillnet	Pelagic drifting	☐		Sections of		m length	Target species		Attractant used	
	Pelagic statinary	☐		Sections		m length	Tuna	☐		
	Bottom	☐		Sections		m length	Swordfish	☐	Lightsteaks	☐
Purse seine		☐		Sets	Length/height	/	Sharks	☐	Fish/fish blood	☐
Ring net		☐		Sets	Length/height	/				

Catch details		
Catch, no	Non-damaged	Damaged
Total		
Tuna		
Swordfish		
Other billfish		
Sharks		
Other fish		

Damage details				Sightings								Catch/bycatch species involved in depredation			
				Along the gear				Along the vessel							
				Numbers				Numbers				Numbers			
Damage done by	Damage of			n/a	1-5	5-50	>50	n/a	1-5	5-50	>50	n/a	1-5	5-50	>50
	Catch	Bait	Gear												
Cetaceans	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Big sharks	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Cookiecutter shark	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Squid	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Seabirds	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Seaturtles	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Crustaceans	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

3.5 - Regional Observer Programme

- A framework for the development of observer manuals, reporting templates and training programmes, prepared by the Secretariat (Res. 09/04)
- Complex implementation esp. for CPCs lacking capacity
- Not enough consideration of existing schemes
- On-going process is :
  - Analysing comments received from Japan and Birdlife
  - Organising an ad-hoc meeting to define the minimal set of field data to be collected at the start of the programme (1 July 2010)
  - Implementation of the programme by countries having currently the capacity
  - Consolidation of manual and training programmes at a later date

Schedule of WP meetings for 2010

Working Party	Major topics	Date & venue
Billfish (WPB)	▪ Stock assessment for SWO ▪ Stock indicators for MAR and SAI	12-16 July (5 days), Seychelles
Tropical Tunas (WPTT)	▪ Stock assessment for YFT, SKJ and BET ▪ External analyses tagging data	18-25 October (7 days), Seychelles
Fishing Capacity (WPFC)	Development of input-based capacity measures	26 October (1 day), Seychelles
Ecosystem & Bycatch (WPEB)	▪ Review data available at Secretariat ▪ Review availability of observers data ▪ Information on sharks, seabirds, sea turtles and sea mammals ▪ Stock indicators on sharks ▪ Ecosystem approaches (ERA)	12-14 October (4 days), Seychelles
Data collection and statistics	▪ Review status held by the Secretariat ▪ Propose ways of improving statistics quality	3-4 December (2 days), Seychelles
Neritic tunas (WPNT)	To be advised	April-May, Iran

Schedule of meetings (contd)

- Ad hoc technical meeting regarding the regional Observer Programme to be held in April and May 2010, 3-5 days
- SC proposed to be held on 6-10 December, Seychelles
- Preliminary plan for 2011 : WPB, WPEB, WPTT, WPFC, WPDCS, WPTe, WPN

Summary of general recommendations to the Commission

- To strengthen the Secretariat by 2 additional professional staff members
- To undertake all necessary actions to improve data collection and submission of statistics to the Secretariat (IOTC and non-IOTC species)
- To amend the Res. 07/03, 08/01, 09/04 and 08/03
- To support the organisation of a Symposium for encouraging more in-depth external analyses of the tag-recoveries dataset
- To consider as a priority the preparation of a Statistic Summary and evaluate and incorporate the corresponding costs in the next budget proposal
- To reinforce its position on the huge problem that IO fisheries are facing with the Somalian piracy
- To actively engage with research initiatives on MPAs in the high seas

The end ...