



Panel 1: Tropical tunas

SKJ Skipjack

BET Bigeye tuna

YFT Yellowfin tuna

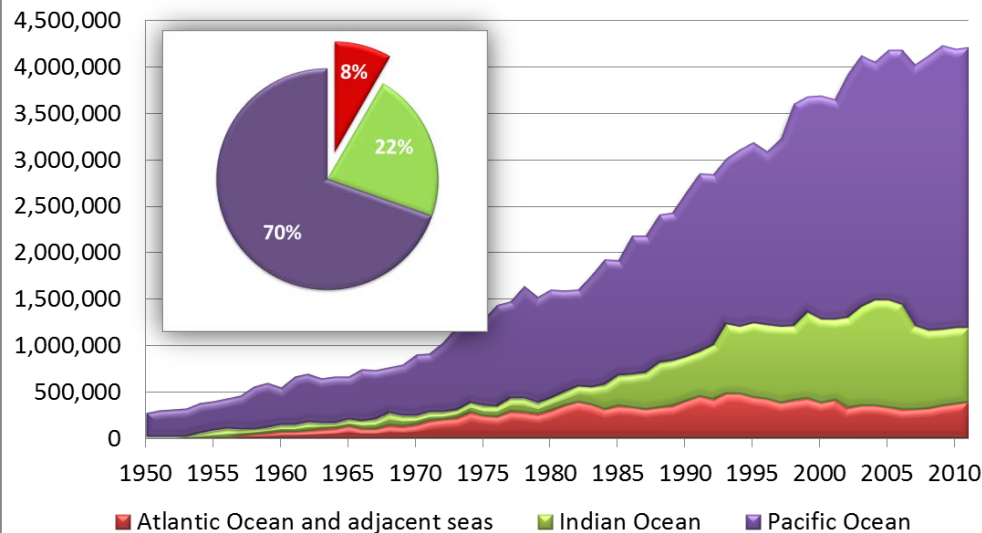


Panel 1: Items to be discussed

- SKJ Skipjack (assessed in 2008)
- BET Bigeye tuna (assessed in 2010)
- YFT Yellowfin tuna (assessed in 2011)
- Responses to COM Requests
- Research and Statistics: Recommendations & Work Plan

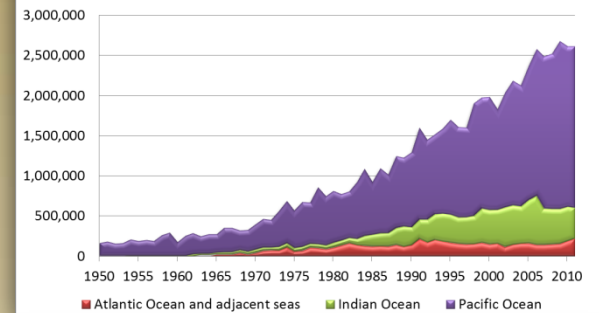


Tropical tunas

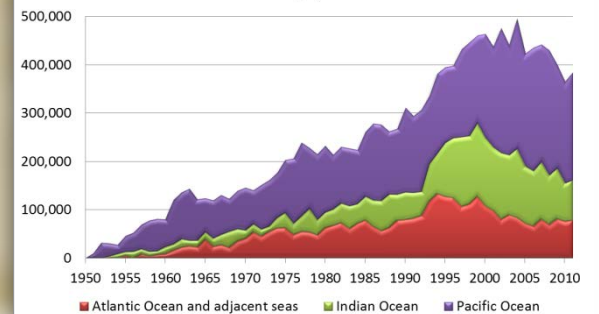


- **Atlantic Tropical Tuna represents 8.5% of the world production** (355,000 t - average 2007-2011).
- TT catches in the Atlantic has been in general **decline since the historic peak in 1994** (487,000 t).
- This tendency has changed since 2007.

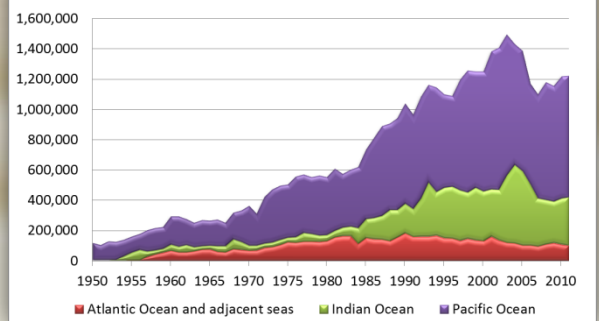
Skipjack



Bigeye

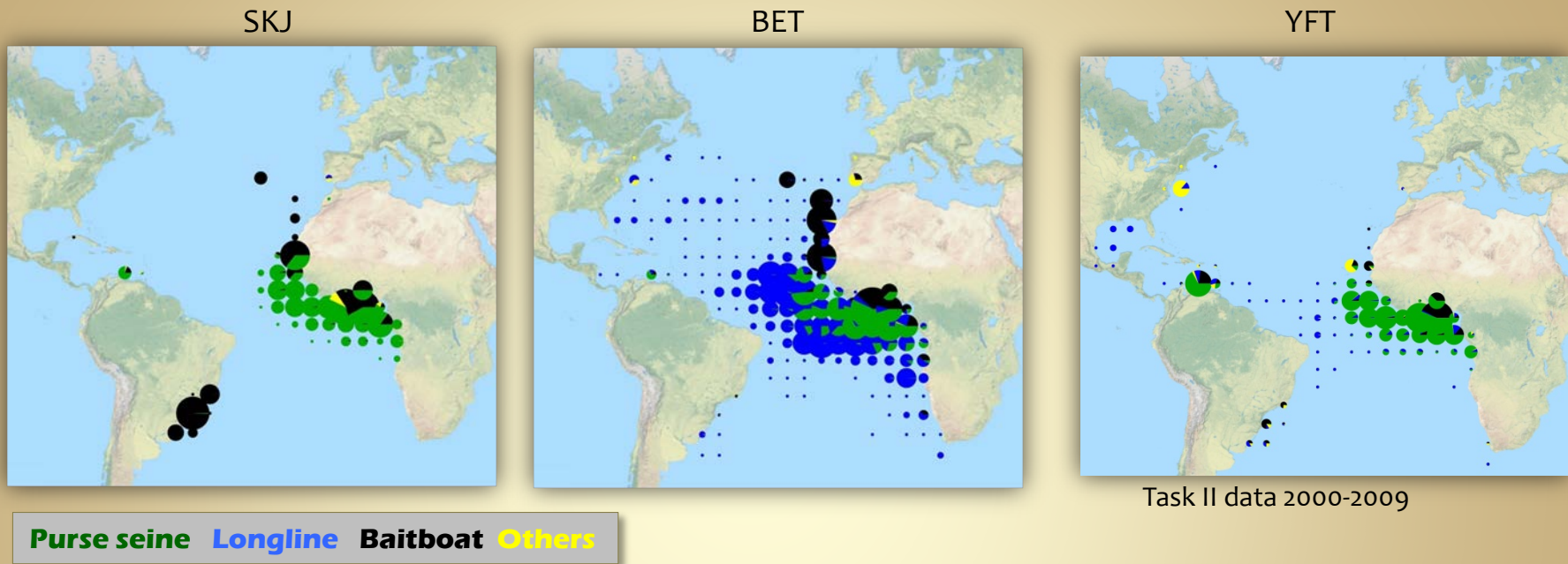


Yellowfin



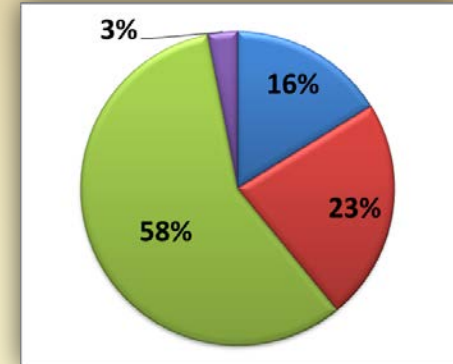
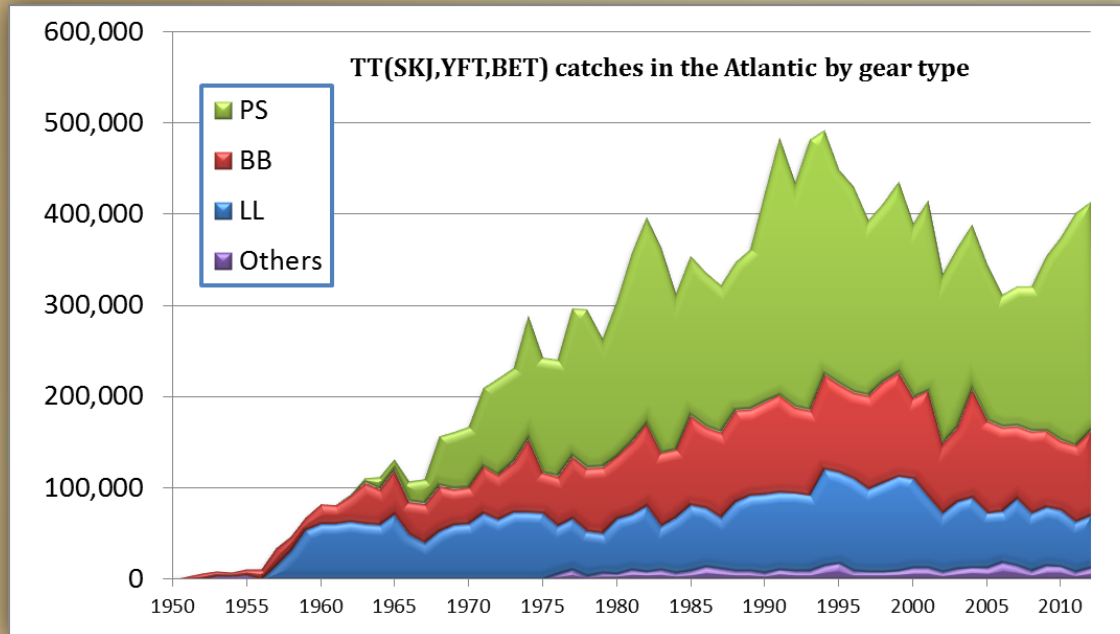


Tropical tuna, a multi-gear and a multi-specific fishery



- **Multi-specific fisheries** nature of the Tropical Tuna (TT) fisheries.
- TT species are strongly associated in the pelagic ecosystem.

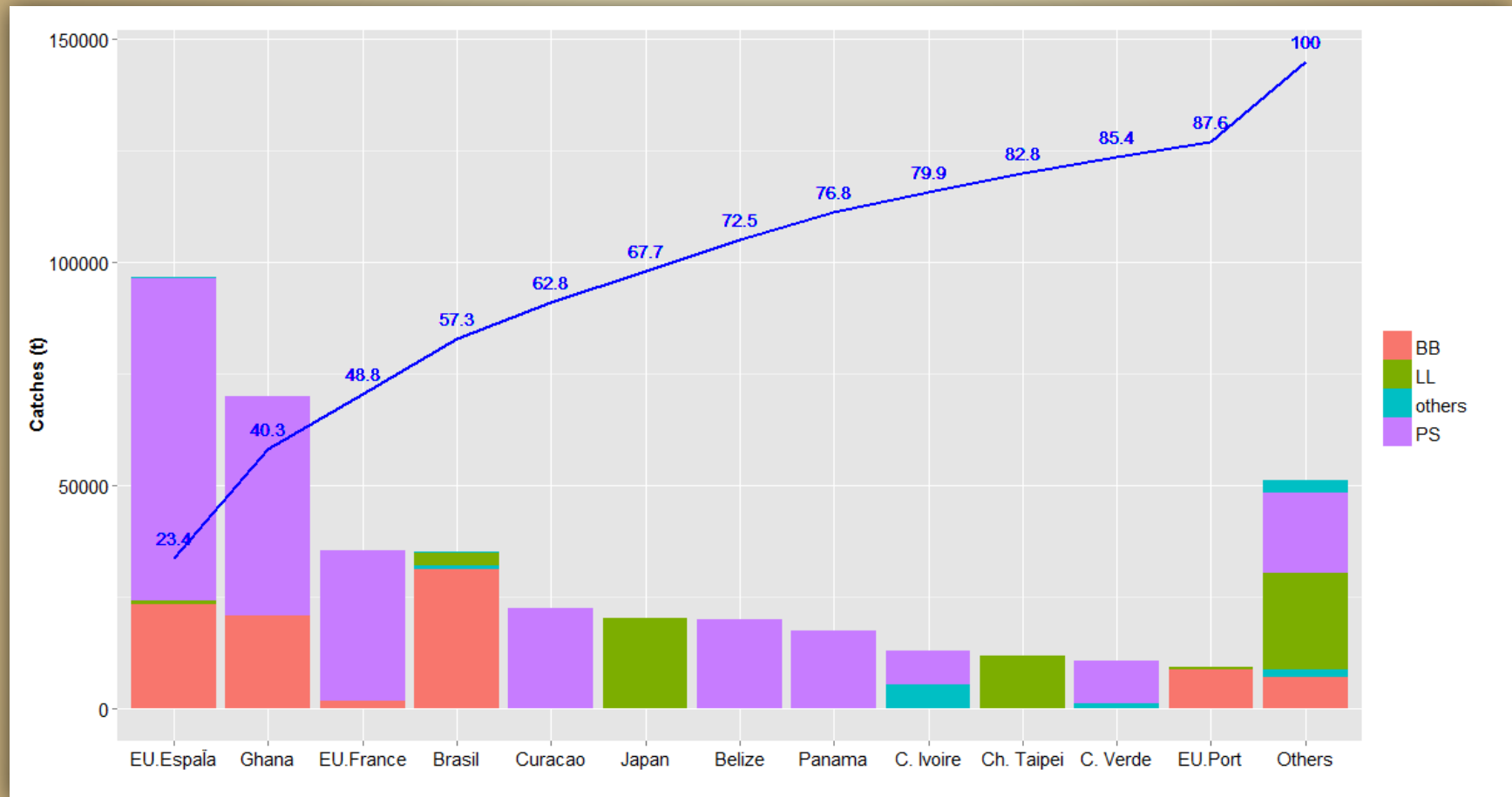
Tropical tuna, a multi-gear and a multi-specific fishery



% average catch in 2008-2012

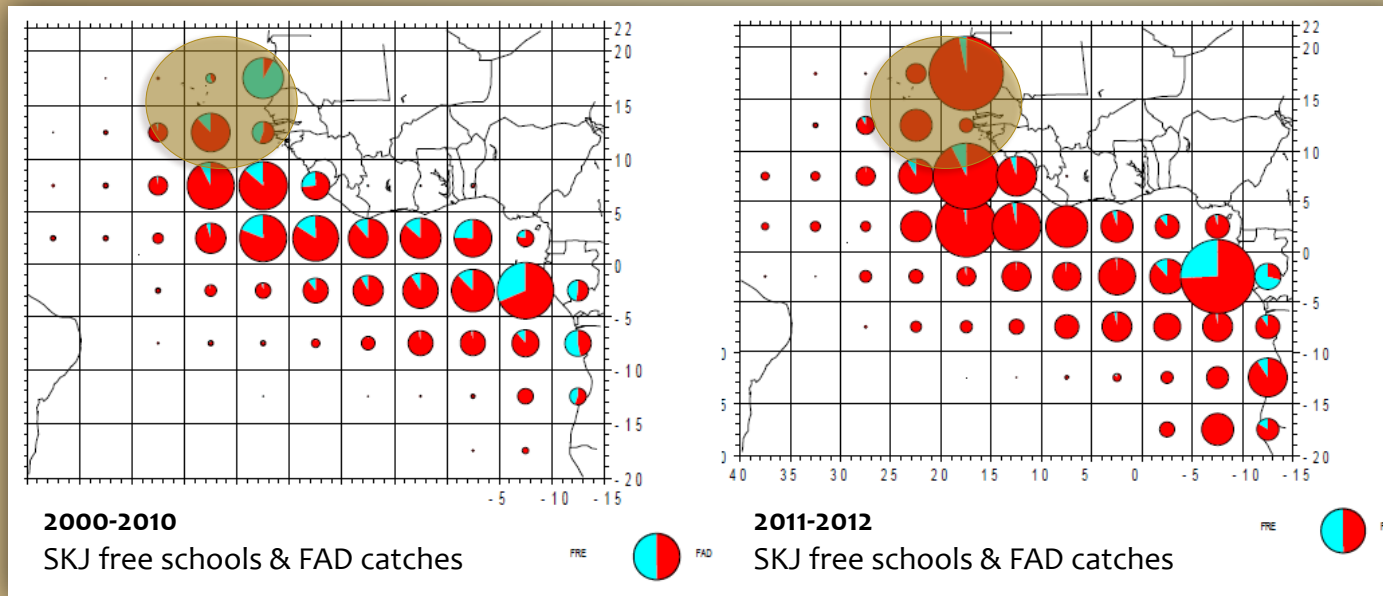
- **81% of the** Atlantic TT are caught by surface gears: (300,000 t - average 2008-2012).
- The use of **FADs** causes concerns for management.

Tropical tuna, a multi-gear and a multi-specific fishery

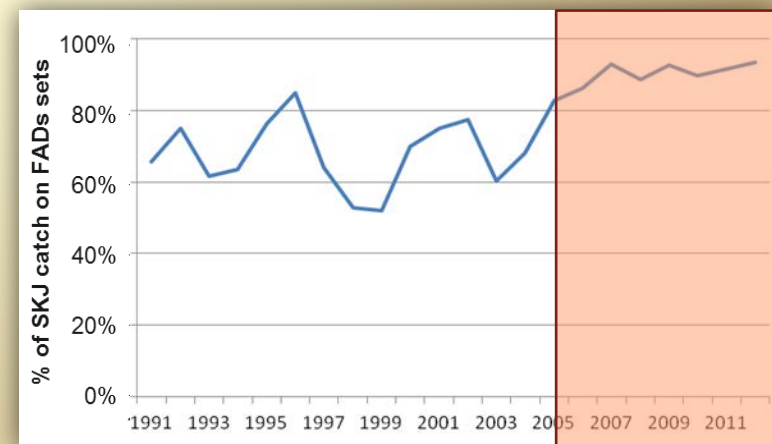


413,323 t in 2012

Recent changes in the spatial distribution of the EU PS fishery

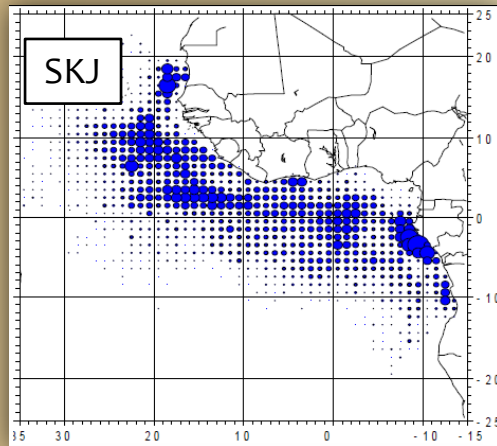


- SKJ catches made by EU PS , 2000-2010 vs 2011-2012 showing the **withdrawal from the Senegal zone** (an area of free school fishing) due to non-renewal of fishing agreements.
- The proportion of SKJ catches on **FADs** has continued to increase, reaching slightly **more than 90% of the catches**

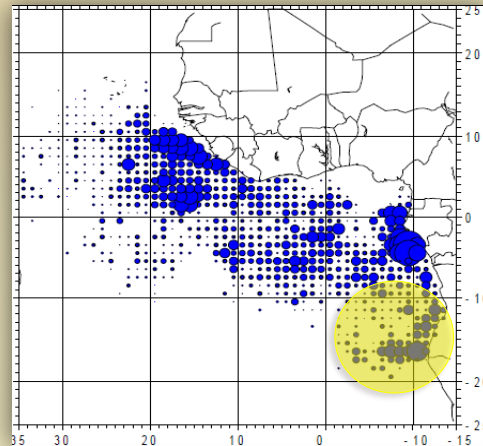


Recent changes in the spatial distribution of the EU PS fishery

2000-2010

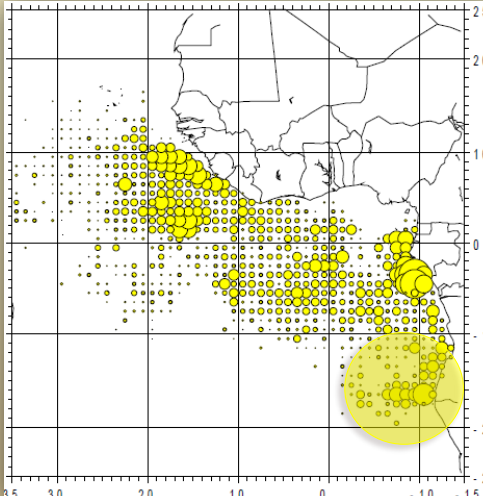
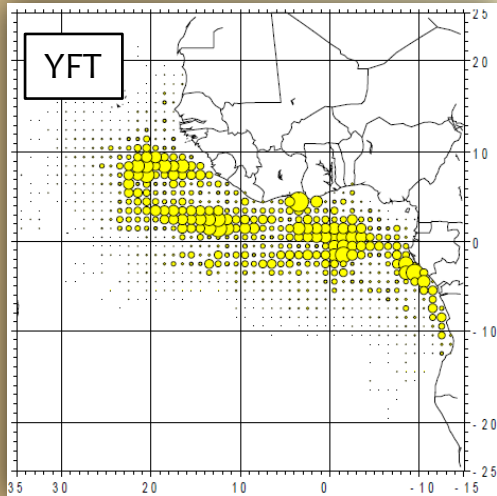


2011



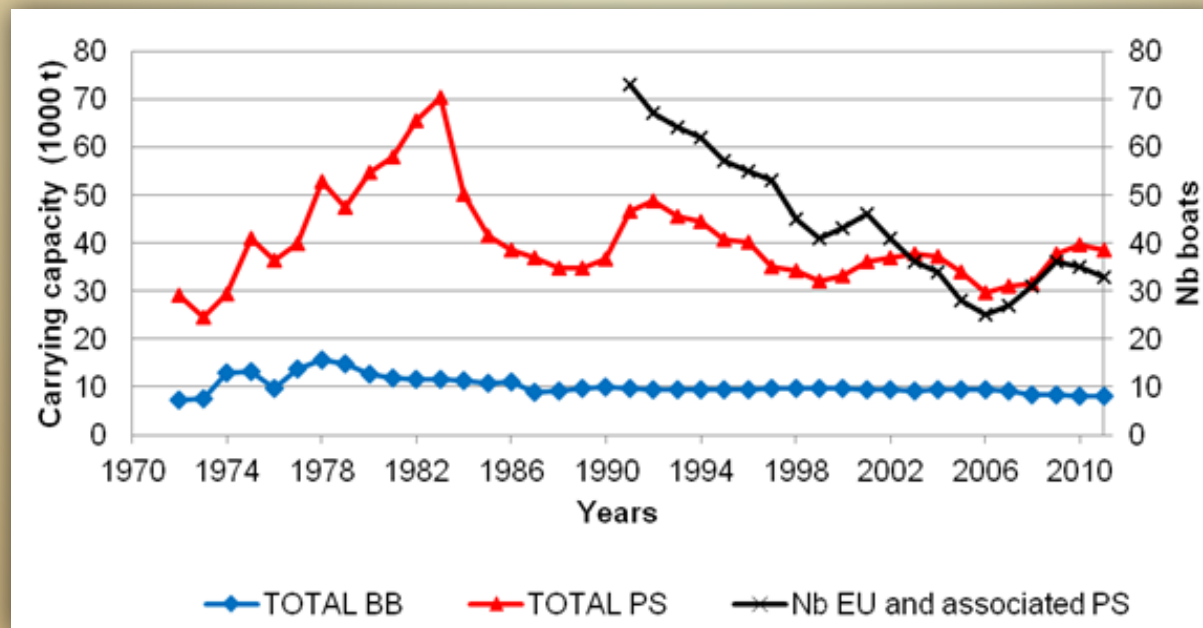
Recent increase in the area explored successfully:

- towards the central West Atlantic
- off Angola.



Fishing effort of EU and associated purse seiners

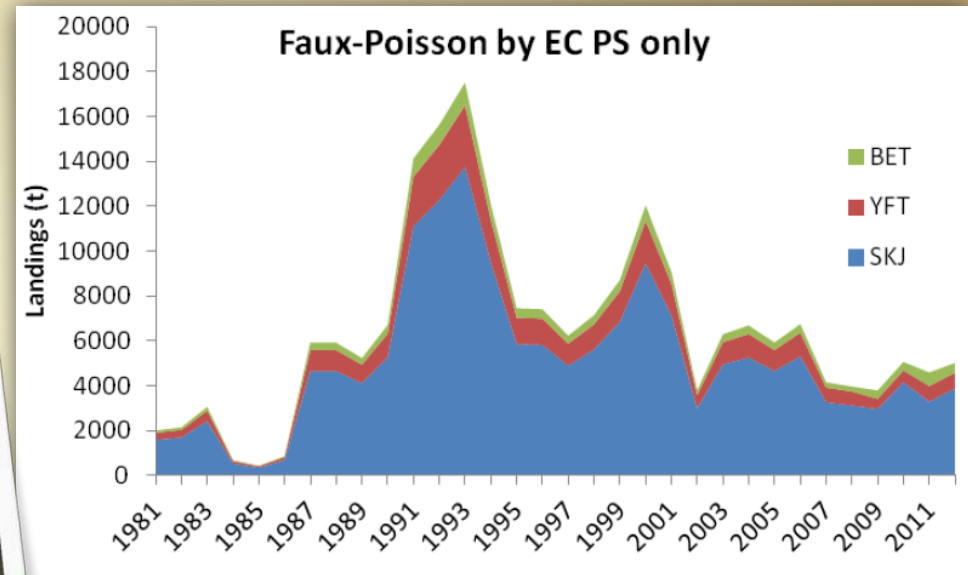
- **Difficult to estimate a fishing effort** targeting TT as well as fishing effort on FADs.
- **Nominal PS has decreased** regularly since the **mid-1990s up to 2006** (as a reference, there were 72 EU and associated vessels in 1990, 44 in 2001, 25 vessels in 2006.).
- **Recent considerable increase:**
 - EU PS have transferred their effort to the East Atlantic (**piracy** - Indian Ocean)
 - Presence of one new PS fleet operating from Tema (**Ghana**)
- The vessels transferred from the Indian Ocean are newer vessels with greater fishing power and carrying capacities
- EU PS seems to have stabilized in 2010.



Review of PS & BB Catches from the Ghanaian fleet

- New estimates of Task I and Task II catch and effort and size for these fleets for the period **1973-2005**. Similar estimates for the period 2006-2012 are expected to be available soon.
- Compared with previous estimates :
 - **BET & YFT** catches were **significantly lower** [yearly average of **2,500 t** (BET) and **4,300** (YFT)]over the period 1996-2005.
 - **SKJ** catches were **significantly higher** [yearly average around **9,000 t**]
- These recent corrections do not represent a significant change in the Atlantic-wide TT catches; however, they do represent a **large reduction in the estimated number of small** (~ 3 kg average weight) BET & YFT landed.

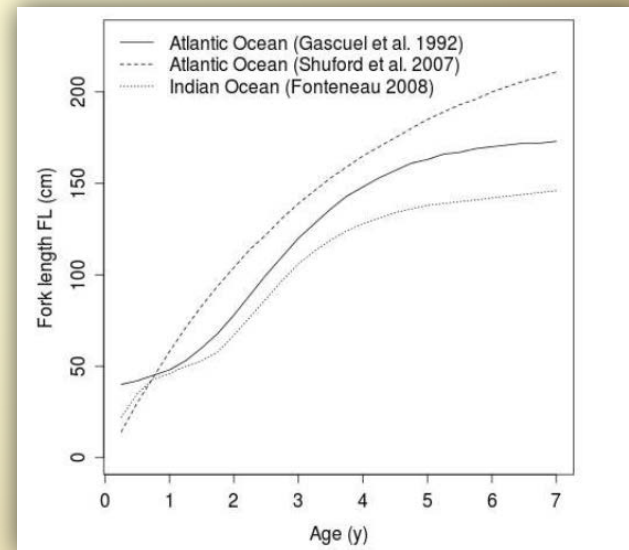
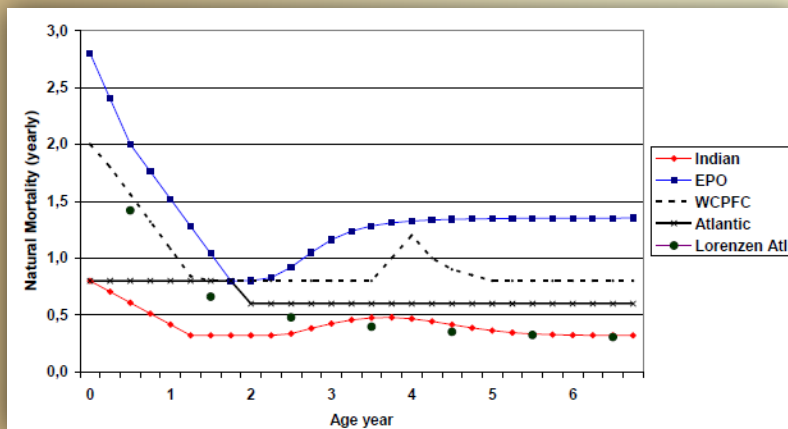
Some catch statistics are uncertain: Estimate of the small tropical tuna landed as “faux-poisson” in the local market of Abidjan in Côte d’Ivoire



- An average of 4,092 t/year between 2003 and 2012 for the EU and associated PS.
- The Committee regularly integrates these estimates in the **reported historical catches** for the EU-purse seiners since 1981, as well as in the catch-at-size matrix.
- However, new estimates indicate amounts of around 11,000 t/year between 2005 and 2010 for all the PS fleet operating in the East Atlantic.

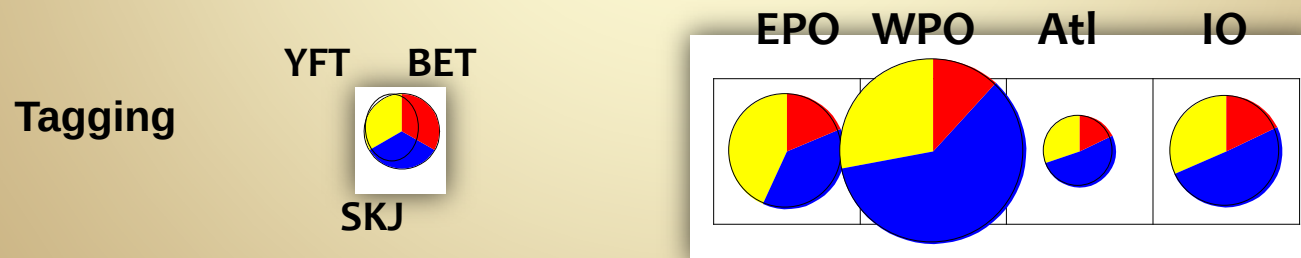
Uncertainty on biological parameters

- There is a **high degree of uncertainty on biological parameters** needed to conduct accurate stock assessments:
 - Stock structure and movements.
 - Growth (VB vs two-stanza); differences by sex
 - Natural mortality



Proposal: Atlantic tropical tagging program

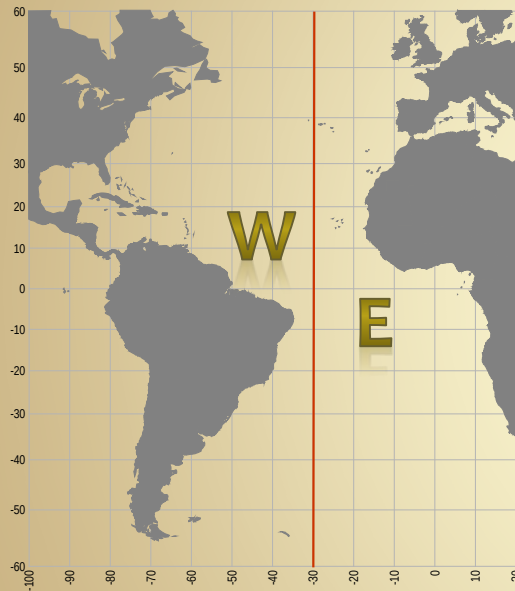
- Importance of simultaneously tag the 3 species (YFT-SKJ, BET):
 - Comparative biological results (**growth, movements, natural and fishing mortality at age**),
 - Indication of **movements** and possible **stock structure**.
 - Analysis of **interactions** among fleets.
 - Effects of FADs on tuna resources.
 - **Evaluation of management measures** (i.e., impact of **closures**)
 - Tagging programmes, if successful, provide data useful to answer the most important question: What is the **current population size**?



Skipjack



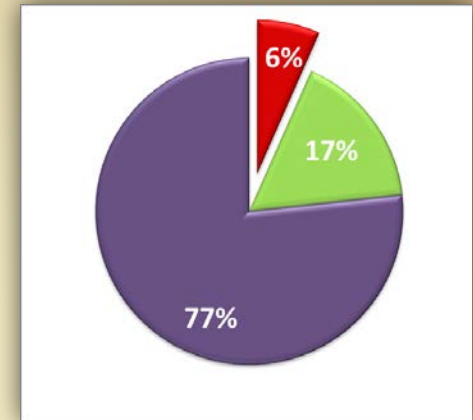
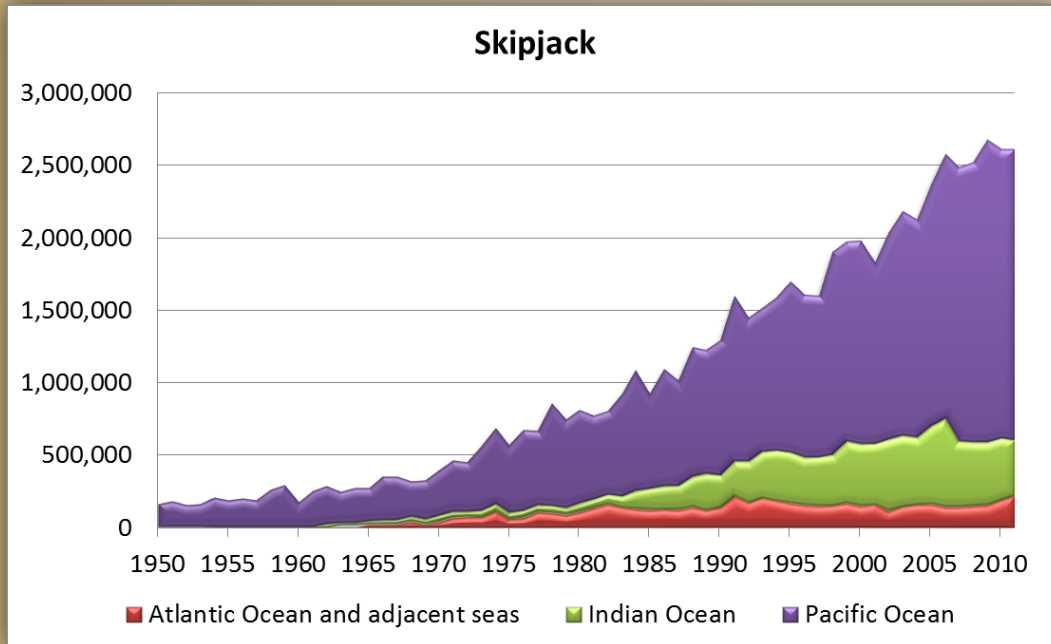
Last assessment: 2008



2 management units

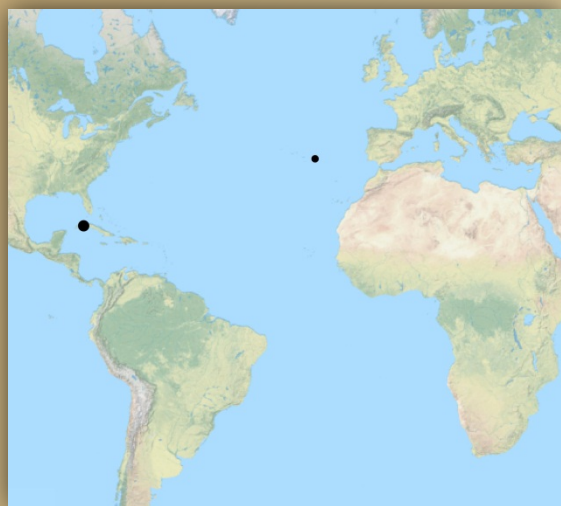
Skipjack, Listado, Listao

Scientific name	<i>Katsuwonus pelamis</i>
Distribution	Gregarious species that is found in tropical, subtropical, and warm temperate waters
Spawning grounds	Skipjack breed opportunistically throughout the year over wide areas of the Atlantic
Maturity	depending on the areas, between 42 and 50 cm
Life span	Around 5 years
Maximum size	Around 100 cm (18 kg)
Natural mortality	Assumed $M=0.8$

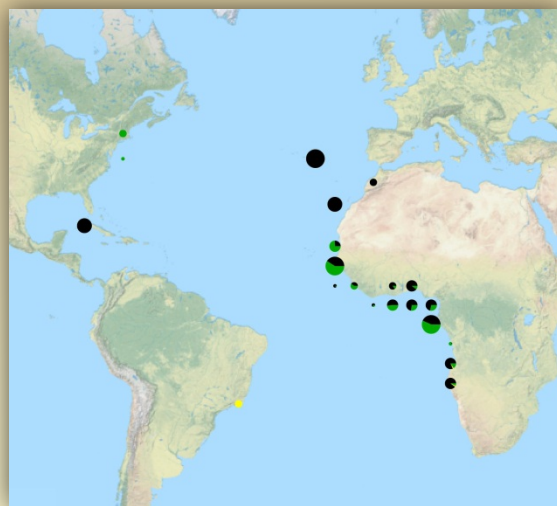


% average catch in 2007-2011

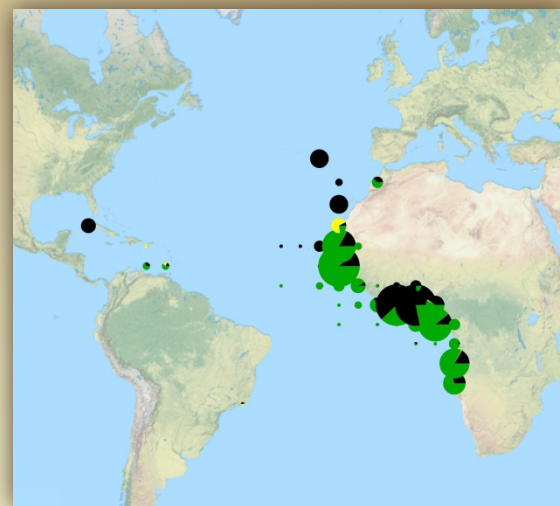
- Atlantic SKJ, although **the largest volume production of Atlantic tunas** at about 150,000t per year, represents a small proportion of the world-wide production of this species
- **Atlantic SKJ represents 6% of the world production** (average 2007-2011).



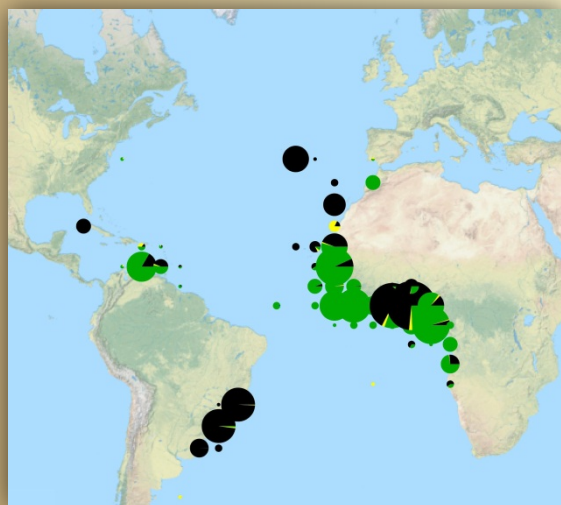
1950



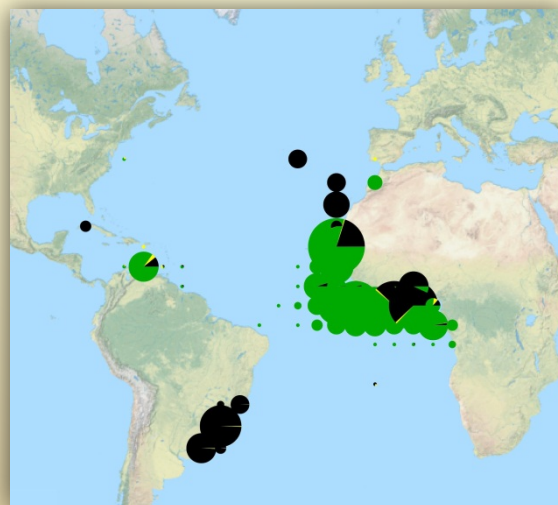
1960



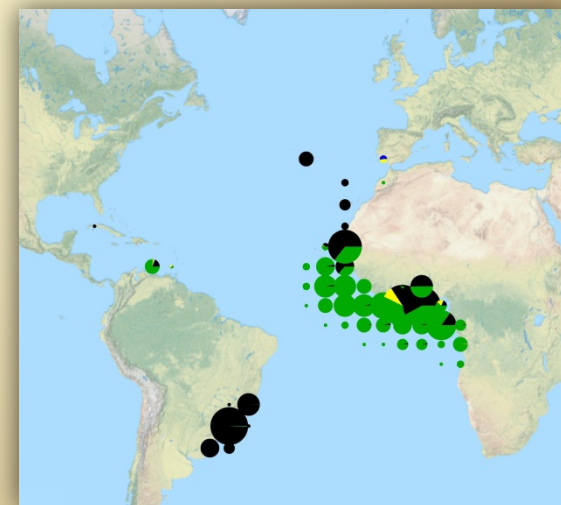
1970



1980



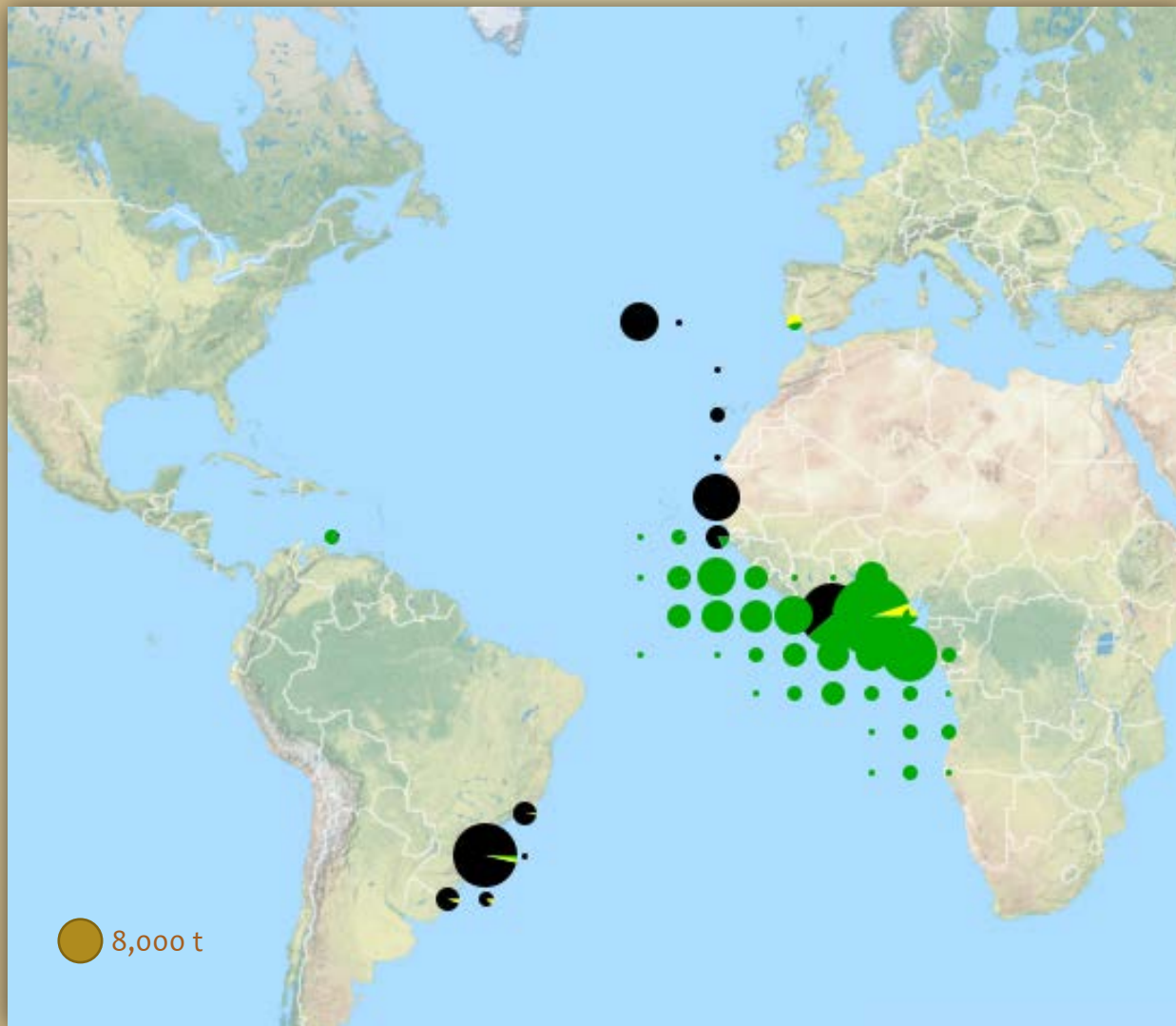
1990



2000

Purse seine Longline Baitboat Others

10,000 t

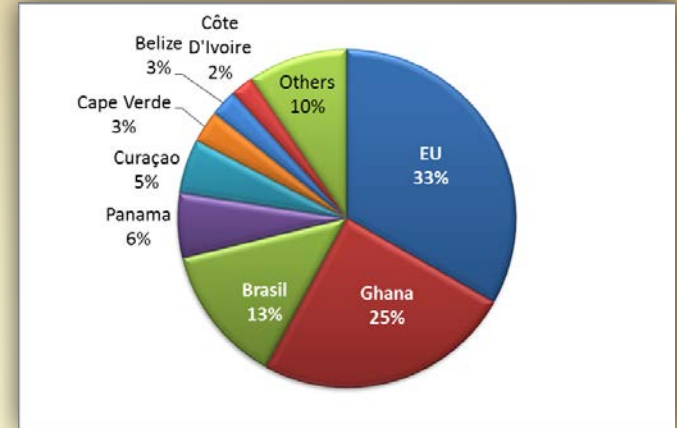
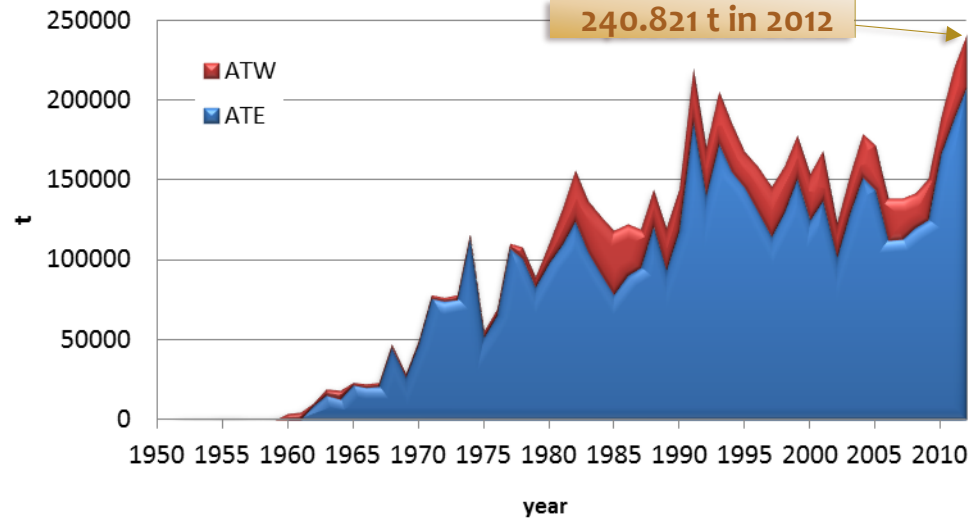


2010-2011

Purse seine Longline Baitboat Others

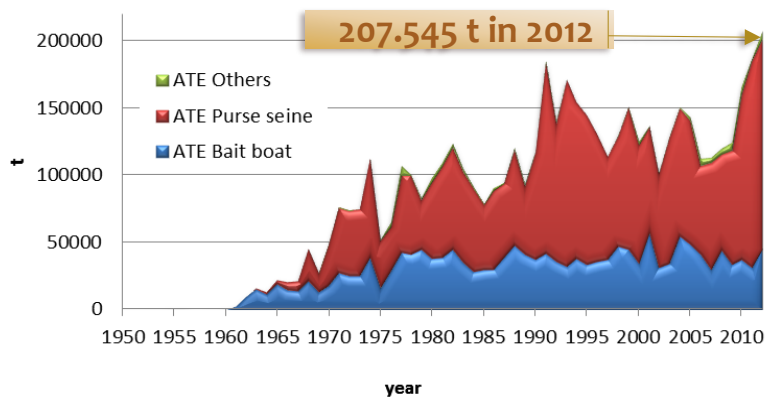
SKJ Catches by main CPC and gear type

SKJ Task-I cumulative catches by Stock

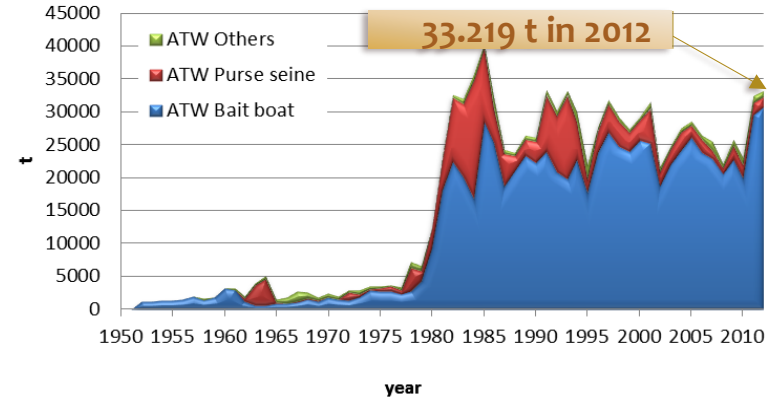


% average catch in 2008-2012

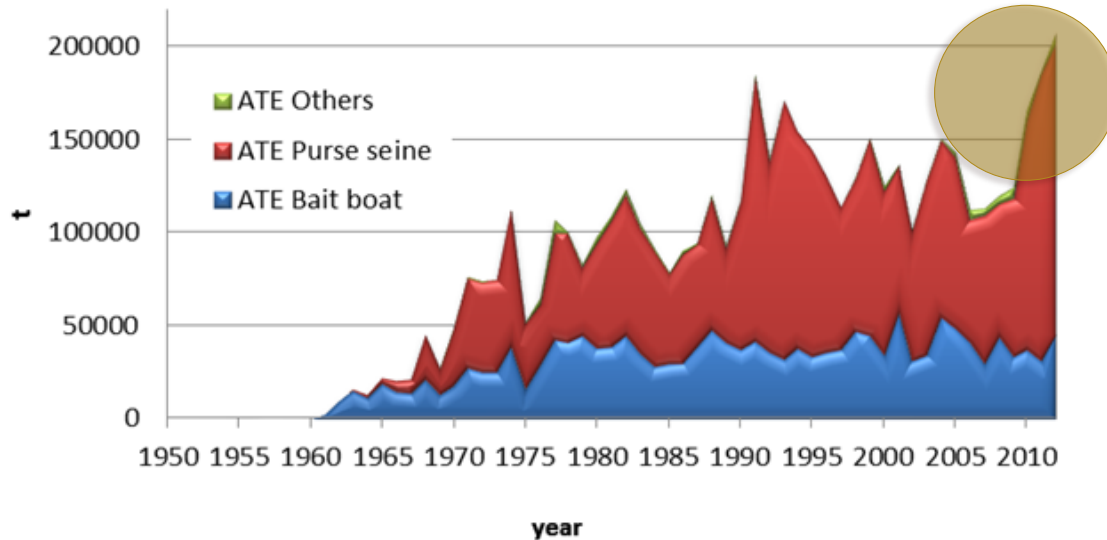
SKJ Task-I cumulative catches (AT.East)



SKJ Task-I cumulative catches (AT.West)



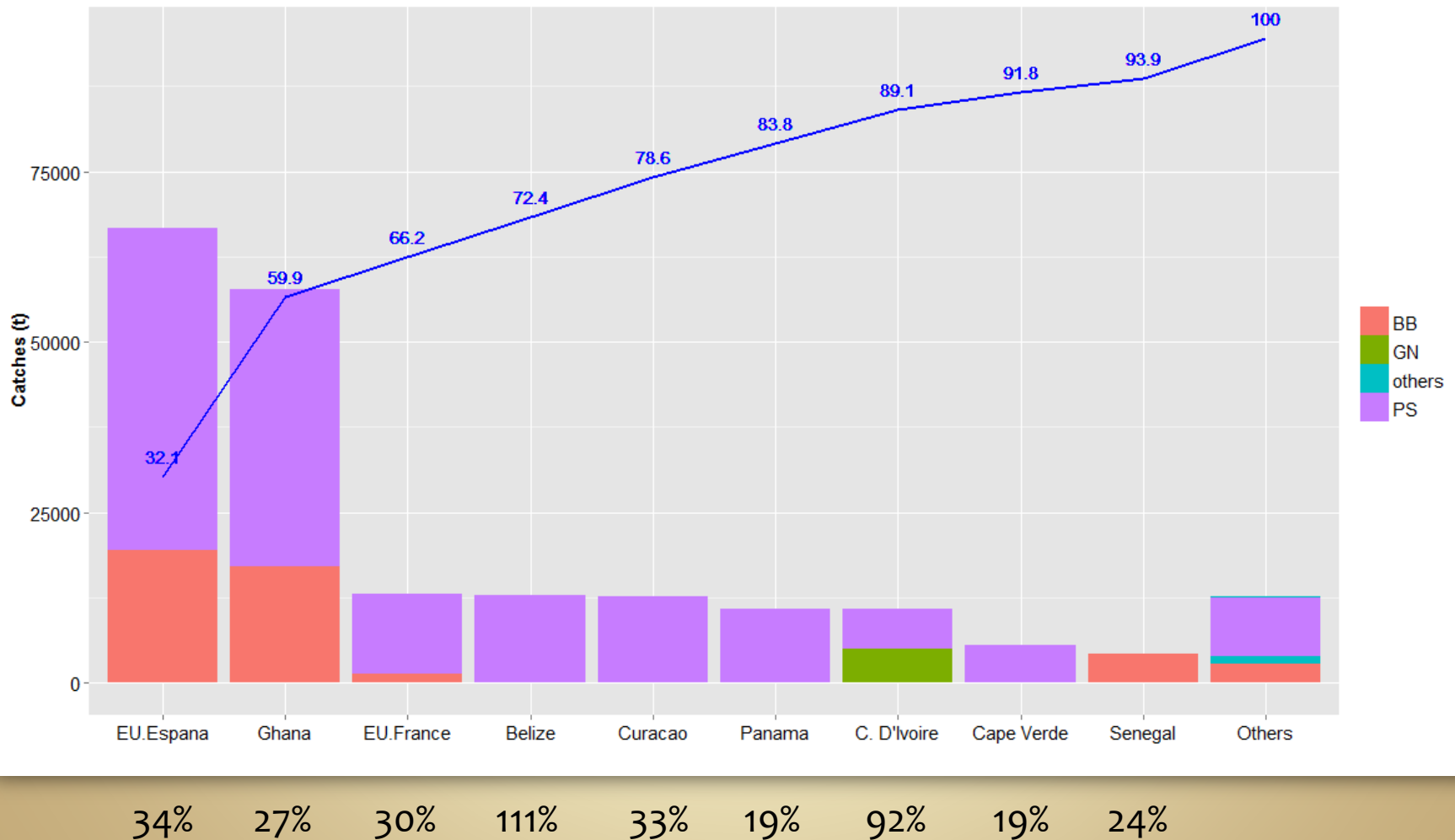
SKJ Task-I cumulative catches (AT.East)



- Estimated 2012 SKJ catches in the East Atlantic amounted to **207,545 t**, that is, an **increase of around 46%** compared to the average of 2007-2011.
- A strong increase in the skipjack catches by **European purse seiners** is noted, probably due to the high selling price of this species.
- High SKJ catches by PS off Mauritania, beyond 15°N latitude, in 2012 between August and November.

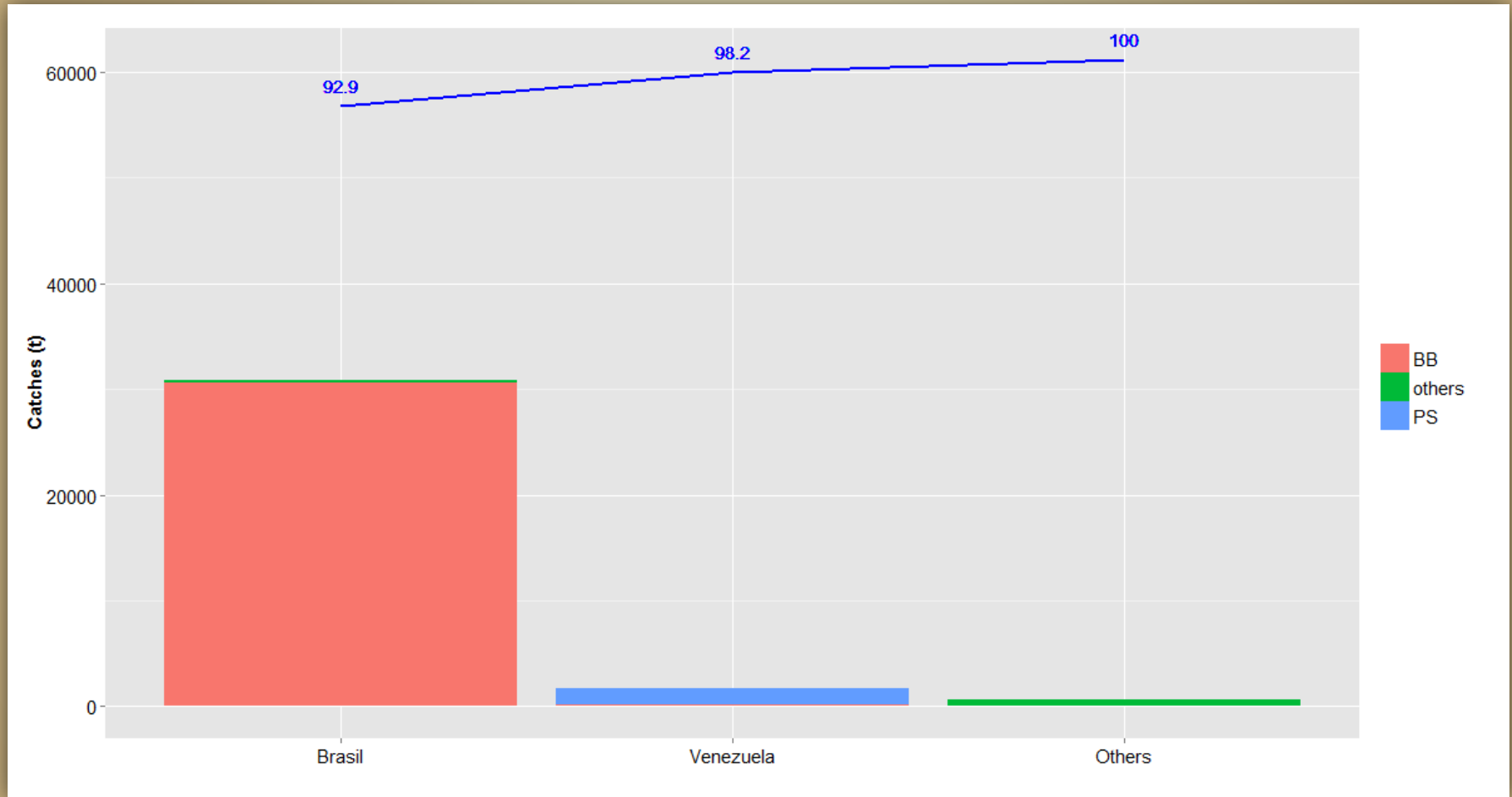
SKJ Catches (East) by main CPC and gear type in 2012

207,545 t in 2012



Increase of SKJ Catches in 2012 compared to the 2008-2011 average catch

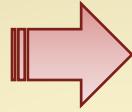
SKJ Catches (West) by main CPC and gear type in 2012



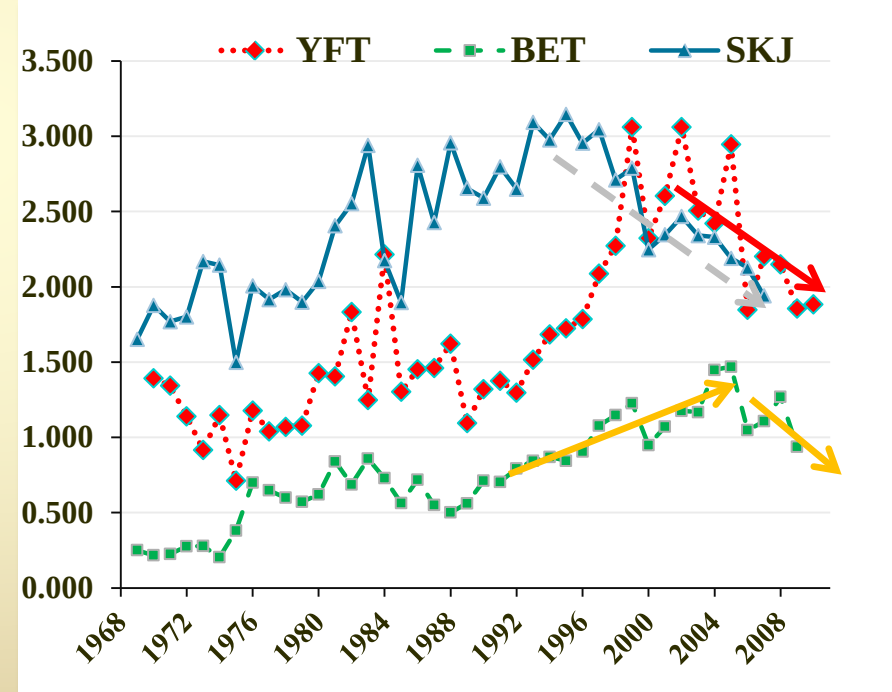
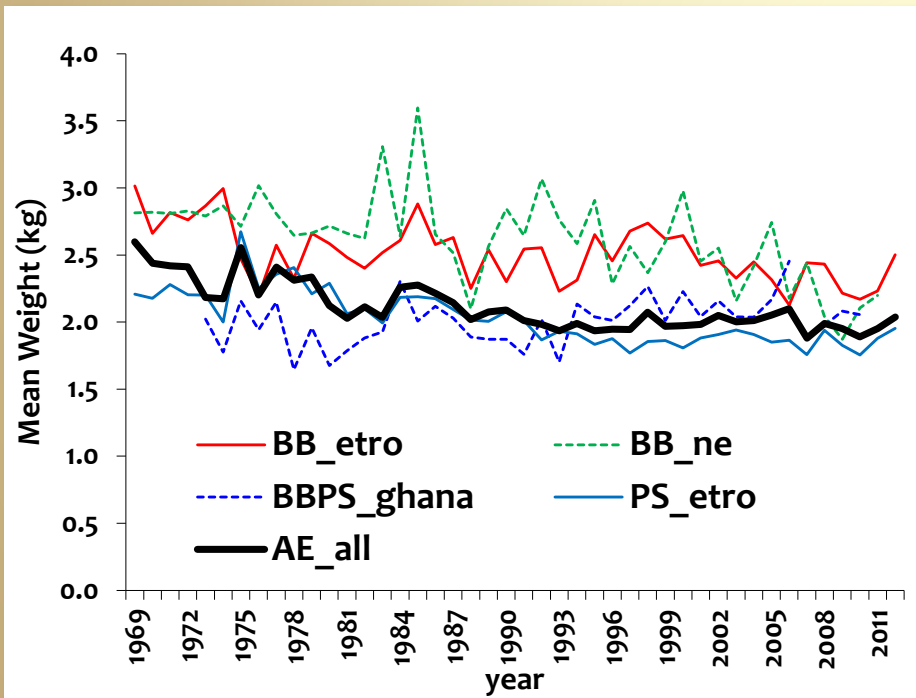
33,219 t in 2012

SKJ (East) Fishery indicators

Regular decrease in mean weight
(dominated by PS catches) until
1995, around 2 Kg in the last 10
years

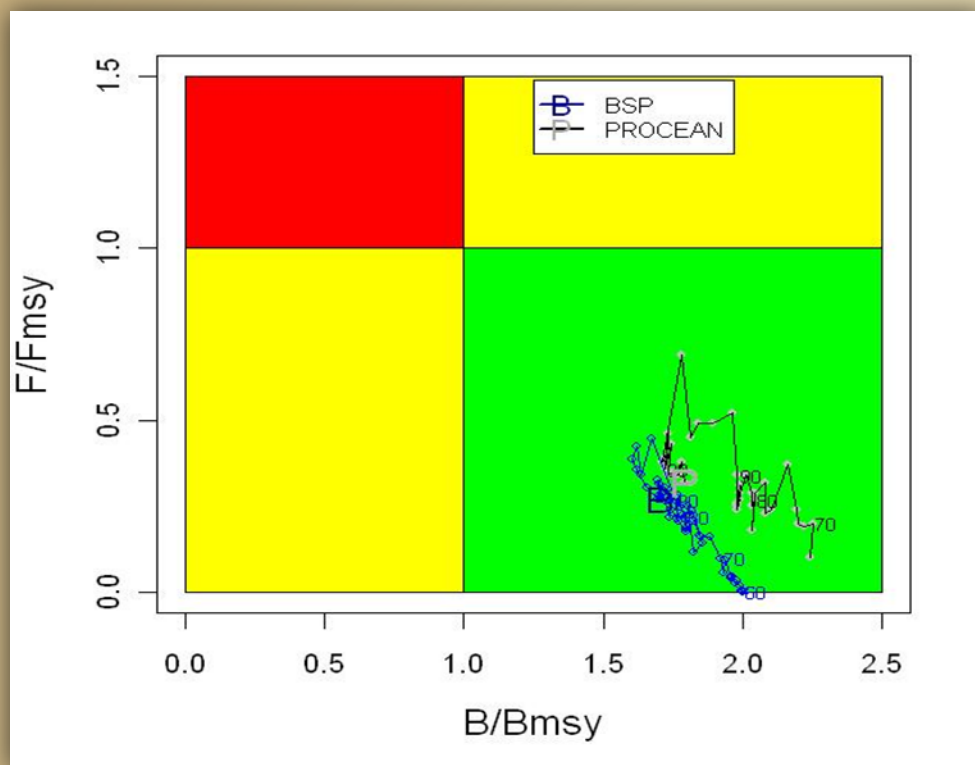


regular increase in total mortality
(based on Length data) until 1990,
followed by a decline due to a
moratorium effect AND/OR a decrease
in fishing effort ?



Trend in apparent total mortality
(Apparent Z from length data)

Stock status (East Atlantic)



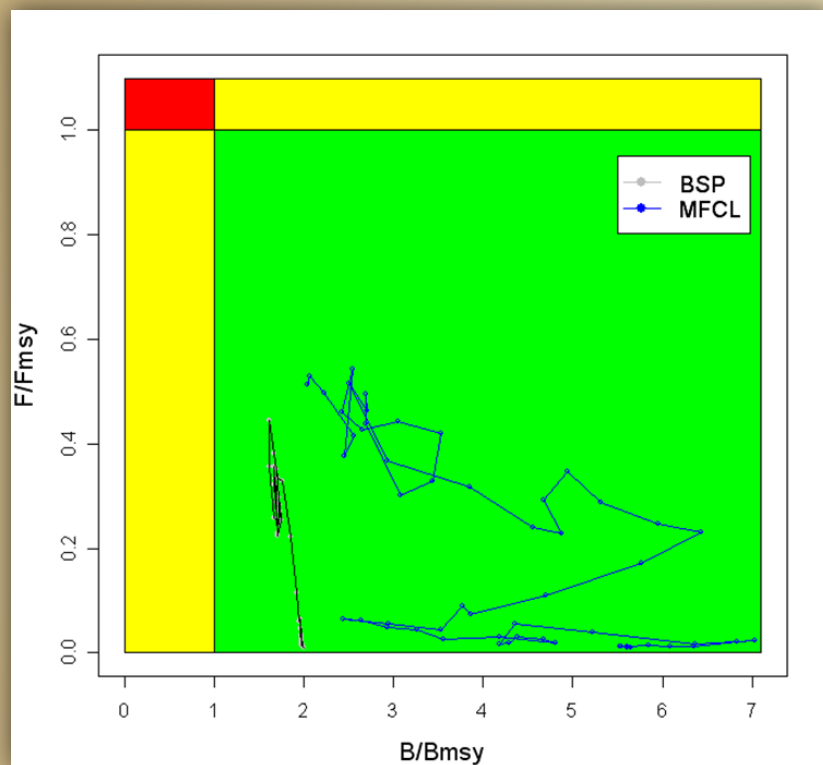
Model type	MSY
RRIC (G & G index)	149,000 t
Catch only model (Schaefer)	143-156,000 t
Procean (Generalised)	155-170,000 t
BSP (Schaefer)	155-170,000 t

MSY: 143,000 – 176,000 t

Current Catch (2012)	207,545 t
Average catches (5 years)	161,300 t

- SA conducted in 2008 with fisheries information until 2006
- It is **unlikely that skipjack be overexploited** in the eastern Atlantic.

Stock status (West Atlantic)



Model type	MSY
RRIC (G & G index)	30,000 t
Catch only model (Schaefer)	30,000 t
Multifan CL	31–36,000 t
BSP (Schaefer)	34,000 t

MSY: 30,000 – 36,000 t

Current Catch (2012)	33,219 t
Average catches (5 years)	27,300 t

It is unlikely that the current catch is larger than the current replacement yield

Effects of current regulations

- There is currently **no specific regulation** in effect for skipjack tuna.
- Although the average of catches in recent years are around the estimates of MSY, the Committee is concerned about
 - the **high catches of skipjack reported in 2011 and 2012**,
 - the **potential under-reporting** in recent years for the East stock.
- The new Recommendation [Rec. 11-01] (entering into force in 2013) will most likely have an impact on the skipjack catches.

Management recommendations

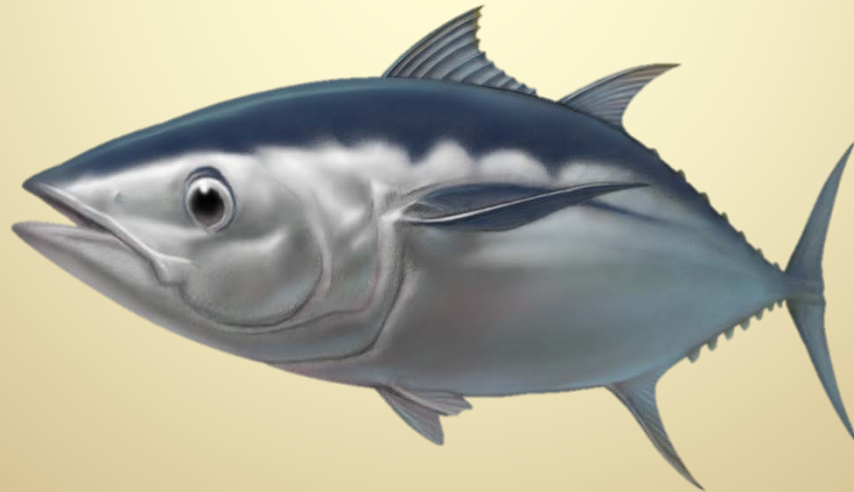
- The Committee reiterated its advice that **catches should not be allowed to exceed MSY**.
- As **recent catches have clearly exceeded the estimate of MSY**, made in 2008, and taking into account:
 - 1) the uncertainties related to the status of these stocks, relative to this reference point, in the new exploitation scheme, and
 - 2) uncertainties identified in the 2008 assessment,

it is difficult to know if the current catches can produce overexploitation.

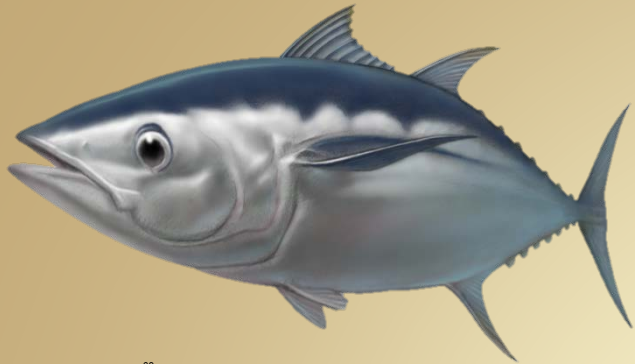
Therefore, the Committee recommends an **assessment of the skipjack stocks in 2014**.

- The Commission should be aware that increasing harvests and fishing effort for skipjack could lead to **involuntary consequences for other species** that are harvested in combination with skipjack in certain fisheries.

Bigeye tuna



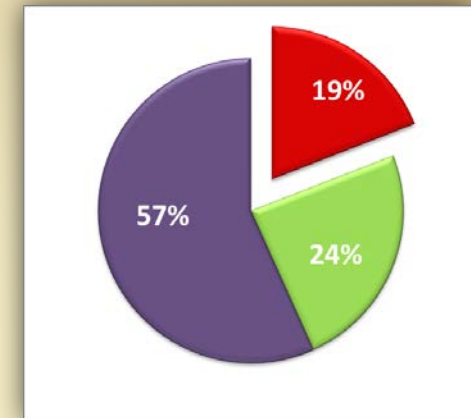
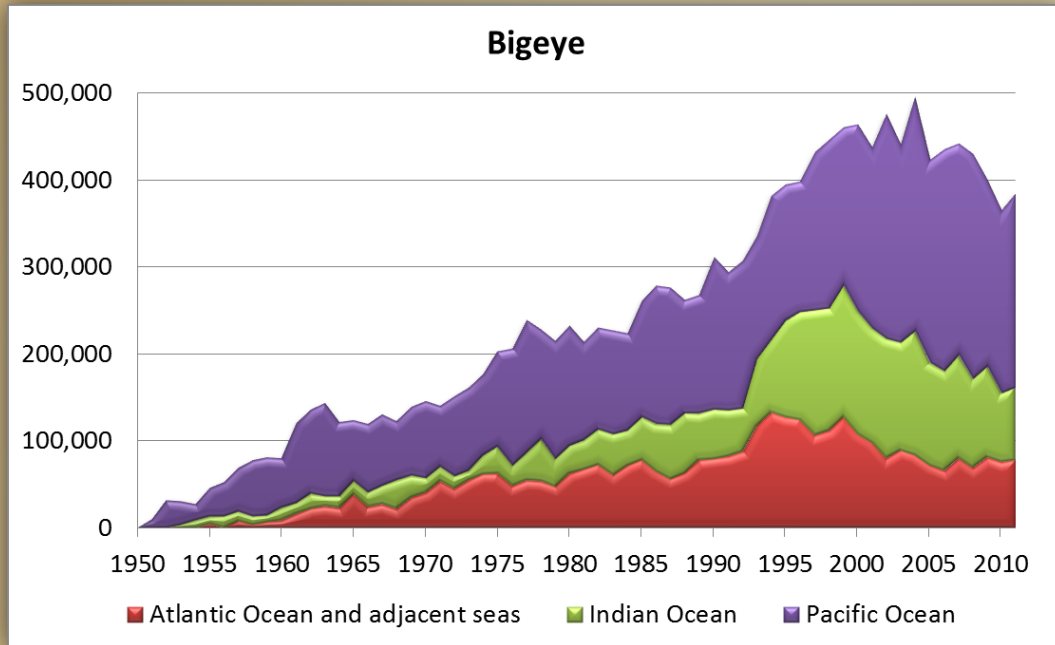
Last assessment: 2010



1 management unit

Bigeye tuna, Patudo, Thon obèse

Scientific name	<i>Thunnus obesus</i>
Distribution	Widely distributed in the tropical and subtropical waters of the Atlantic. Geographical limits are 55°-60°N and 45°-50°S.
Spawning grounds	Spawning takes place throughout the entire year in a vast zone in the vicinity of the equator with temperatures above 24°C from the coast of Brazil to the Gulf of Guinea. primer trimestre en mayoria y zona limitada entre 5°S y 10°S
Maturity	Around 100-110 cm - 3 year old
Life span	Around 15 years
Maximum size	Around 200 cm
Natural mortality	Assumed to be 0.8 for ages 0 and 1, and 0.4 for ages 2+

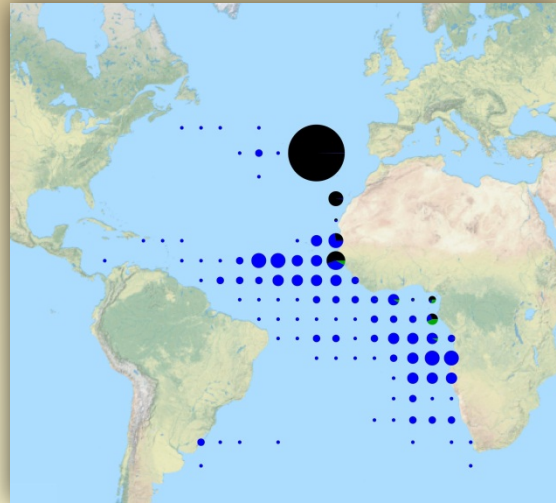


% average catch in 2007-2011

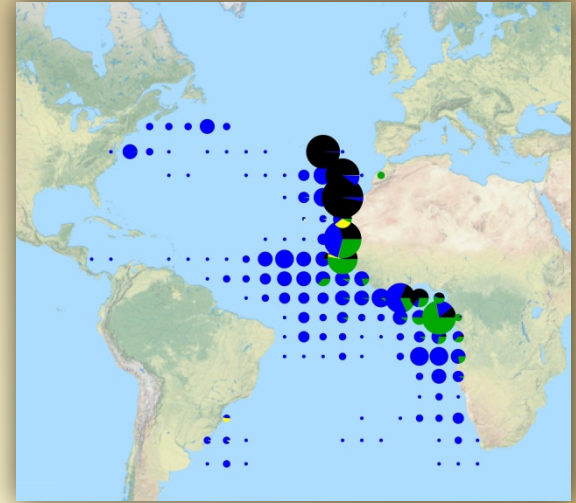
- **Atlantic** bigeye tuna represents **around 19% of the world production** (average 2007-2011).
- It represents the lowest volume production of Atlantic tropical tunas at about 77,000t per year (average 2007-2011).



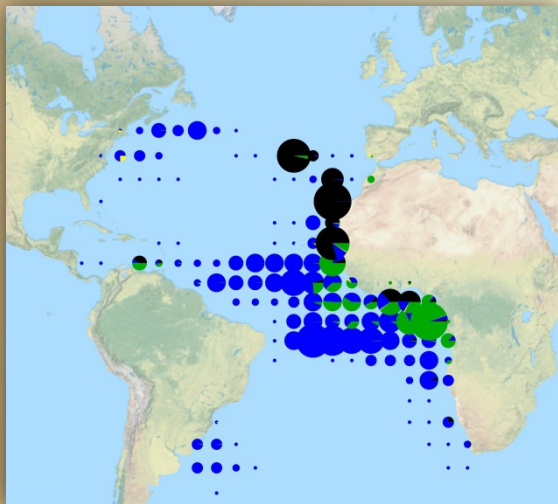
1950



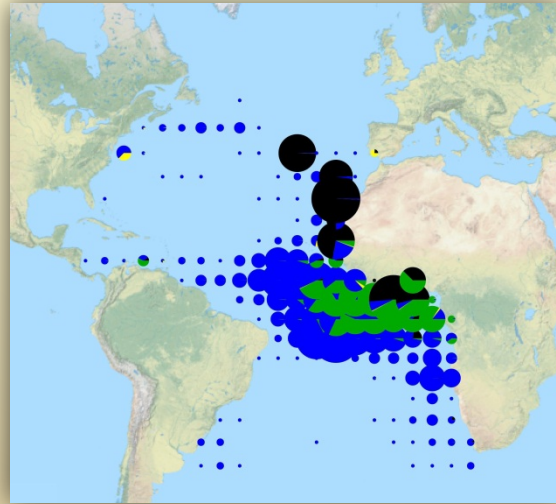
1960



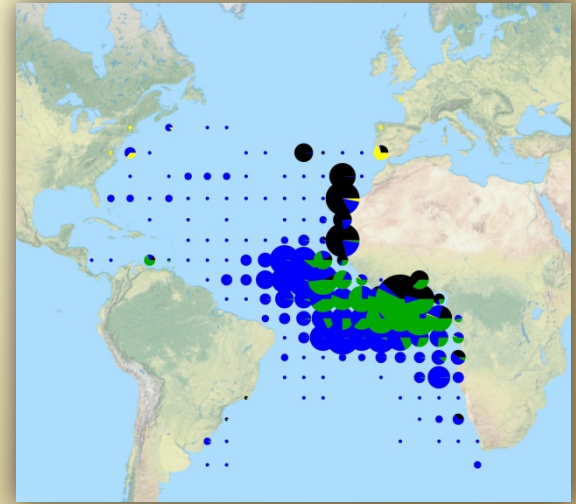
1970



1980



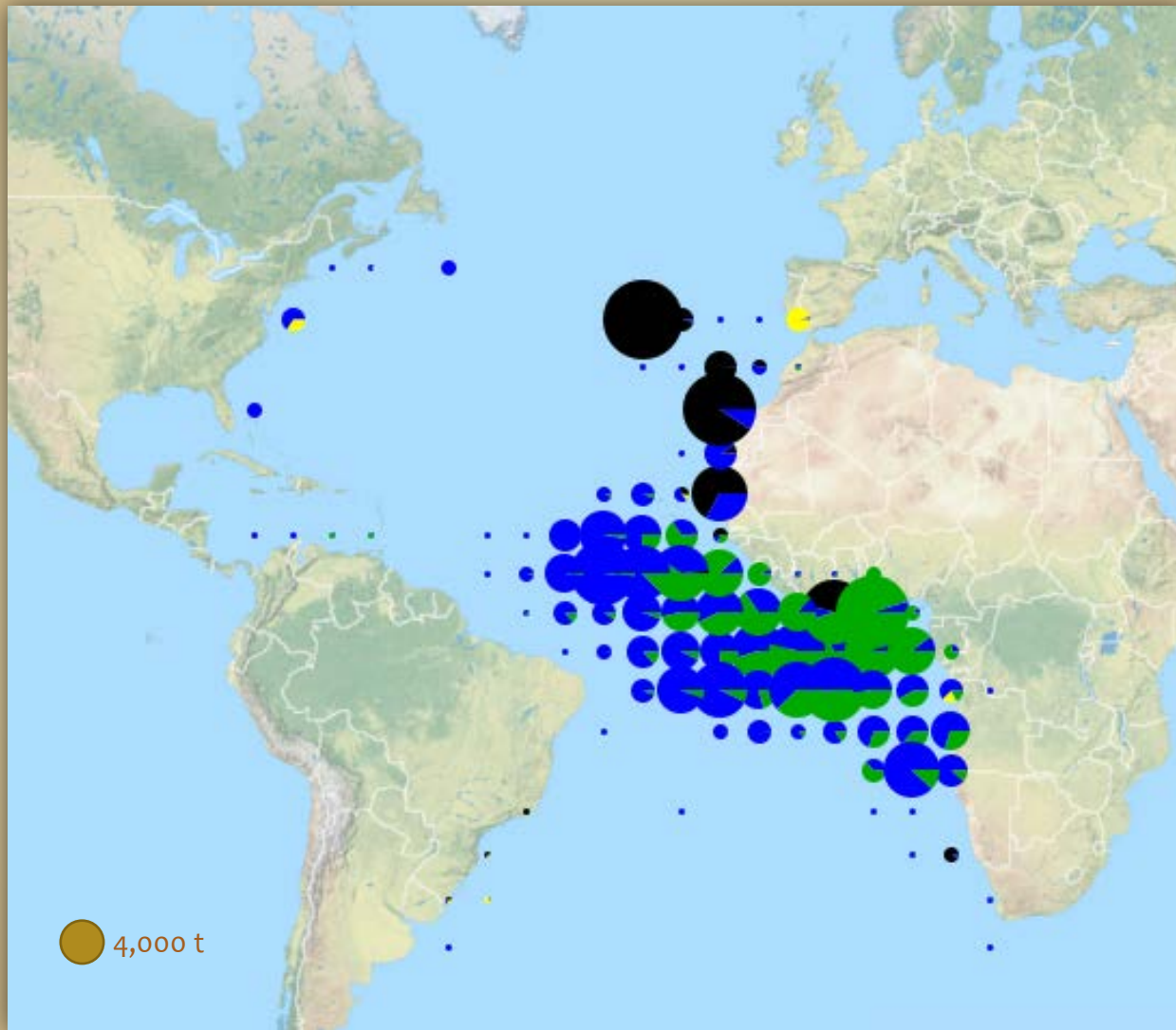
1990



2000

Purse seine Longline Baitboat Others

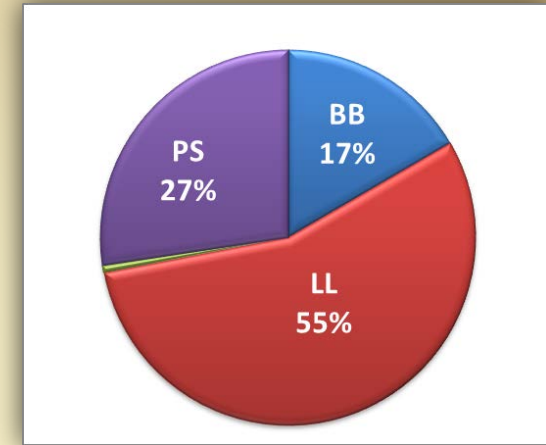
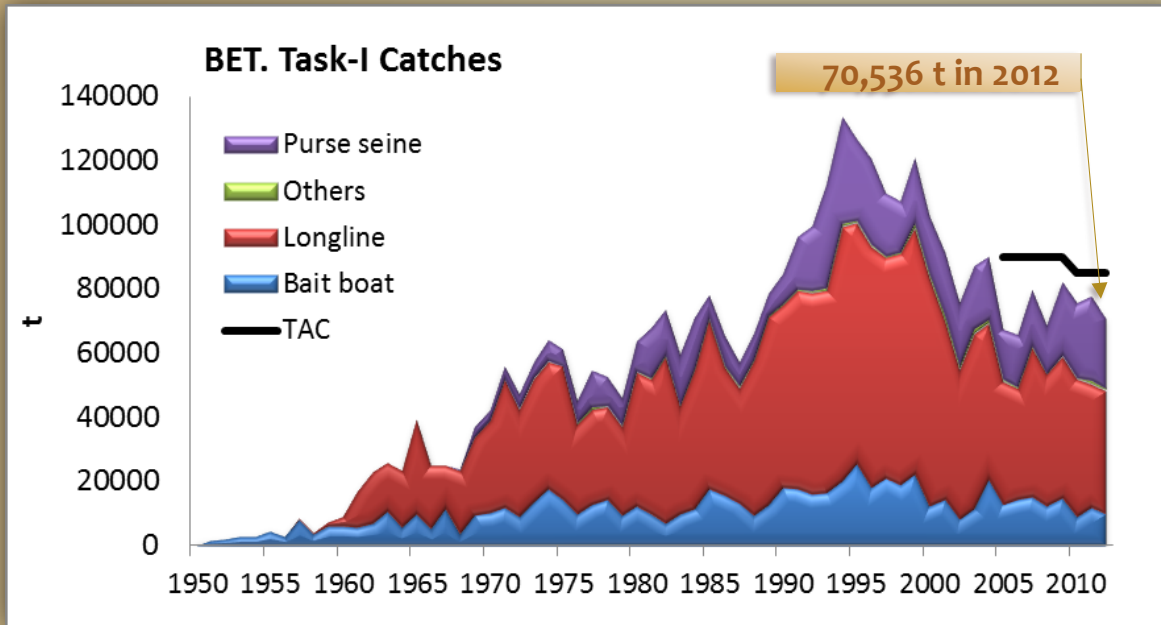
5,000 t



2010-2011

Purse seine **Longline** **Baitboat** **Others**

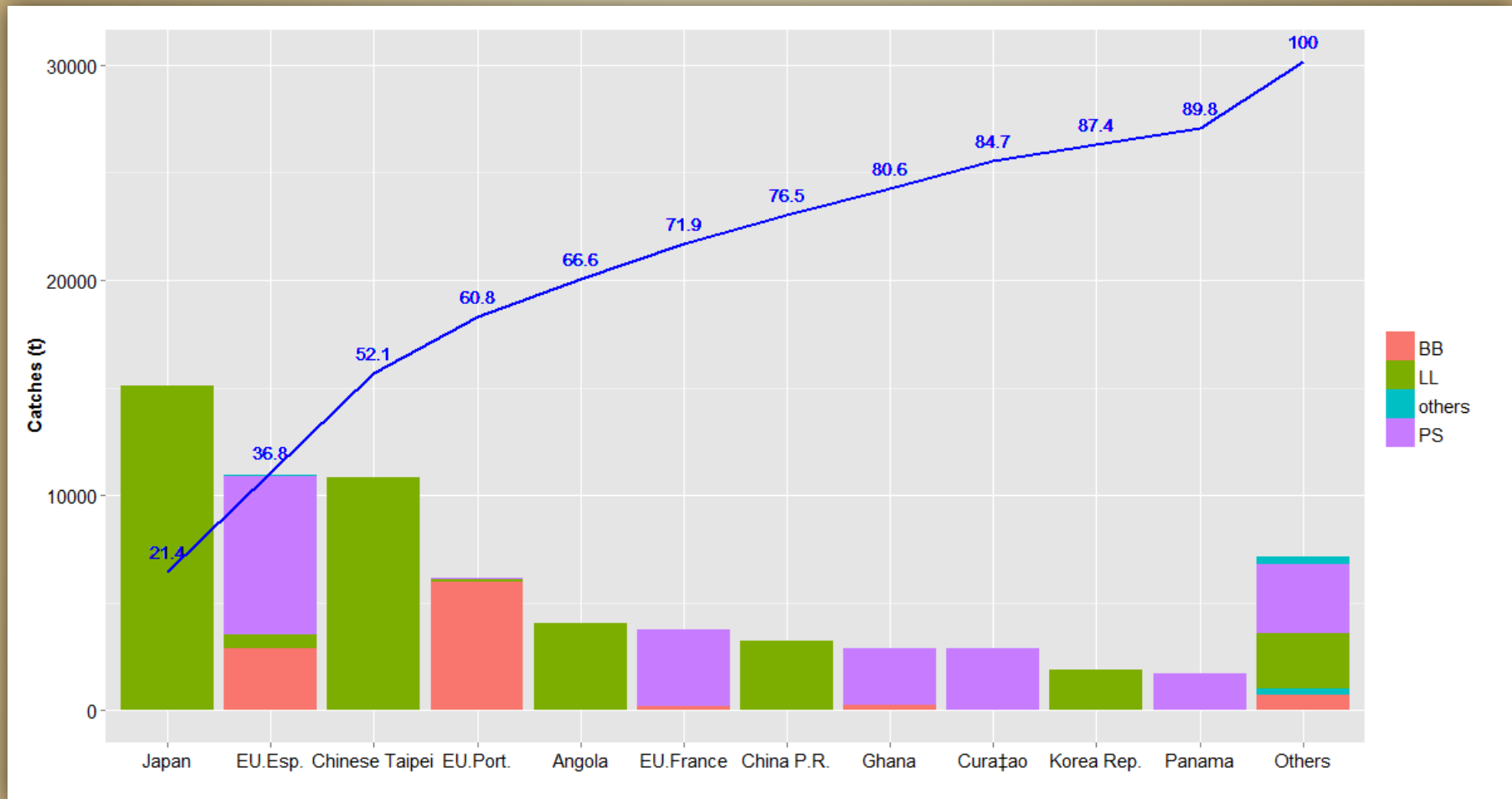
BET Catches by main gear type



% average catch in 2008-2012

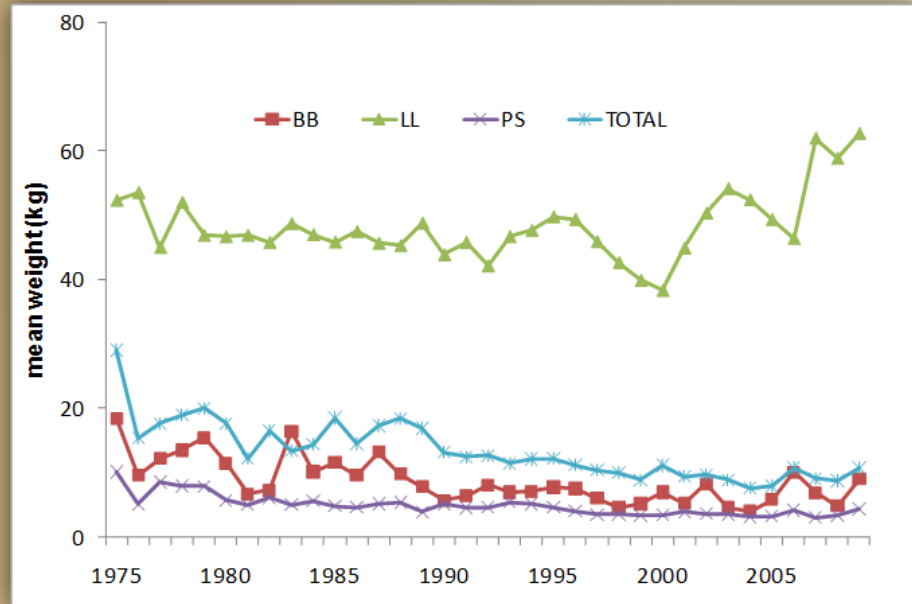
- Historic high of about 133,000 t in 1994.
- After 1994, all major fisheries exhibited a decline of catch; related to declines in fishing fleet size (LL) as well as decline in CPUE (LL & BB).
- The number of active PS declined by more than half from 1994 until 2006; but then increased since 2007.

BET Catches by main CPC and gear type in 2012

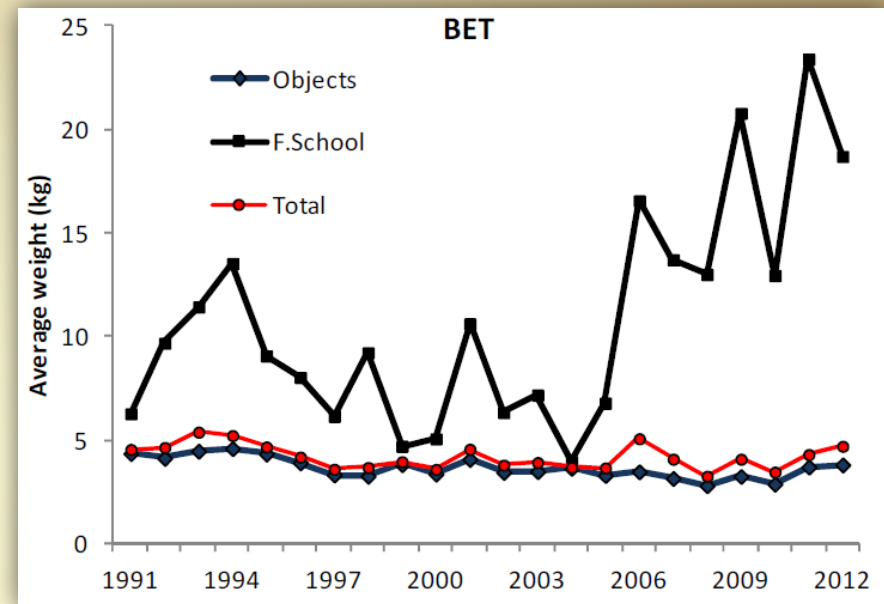


70,536 t in 2012

Average weight of bigeye tuna by fishing gear

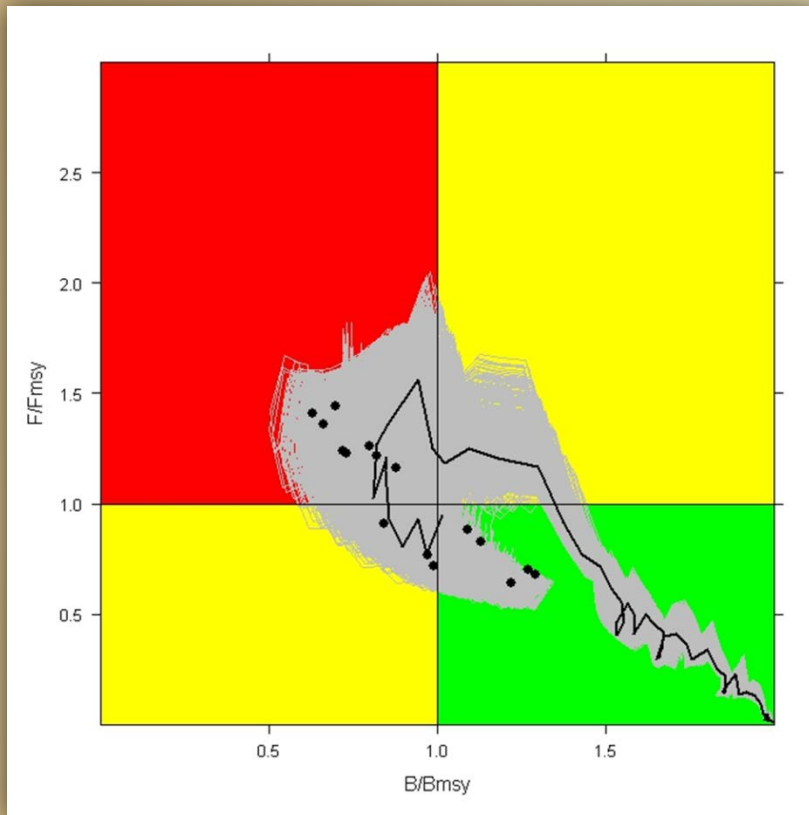


Average fish weight differs between major gears



Bigeye tuna caught free schools are significantly larger than those caught on FADs; these differences are notably large in the last four years

Stock status

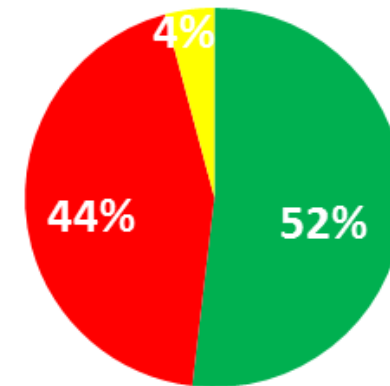


MSY = **92,000 t** (78,700-101,600 t)

2012 Yield = 70,536 t

$B_{2009}/B_{MSY} = \mathbf{1.01}$ (0.72-1.34)

$F_{2009}/F_{MSY} = \mathbf{0.95}$ (0.65-1.55)



- There is considerable **uncertainty** in the assessment of stock status and productivity for bigeye tuna.
- **52%** of the outcomes indicate the stock is **consistent with the Convention Objective**.

Outlook

TAC	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
60,000	54%	63%	71%	75%	79%	82%	84%	85%	86%	87%
70,000	54%	61%	67%	71%	74%	76%	77%	79%	80%	81%
80,000	54%	58%	62%	66%	68%	70%	71%	72%	73%	74%
90,000	54%	57%	58%	60%	61%	62%	62%	63%	63%	64%
100,000	53%	54%	54%	54%	54%	54%	54%	54%	55%	55%
110,000	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%

70,536 t in 2012

Current TAC 85,000 t

- Modeled probabilities of the stock being maintained at levels consistent with the Convention Objective over the next five years (starting in 2011) are **about 60% for a future constant catch of 85,000 t**.
- Reported catches for 2012 (70,536 t) are lower than the corresponding TAC.

Outlook

- It needs to be noted that projections made by the Committee assume that future constant catches represent the **total removals** from the stock, and not just the TAC of 85,000 t established by ICCAT [Rec. 09-01] & [Rec. 11-01] .
- Catches made by other **fleets not affected by catch limits of [Rec. 11-01]⁽¹⁾** need to be added to the 85,000 t for comparisons with the future constant catch scenarios.
- Furthermore, any **future changes in selectivity** due to changes in the ratios of relative mortality exerted by the different fleets - such as an increase in the relative mortality of small fish - will change and add to the uncertainty of these projections.

⁽¹⁾ CPCs whose annual catch of bigeye tuna in the Convention area in 1999 is less than 2,100 t.

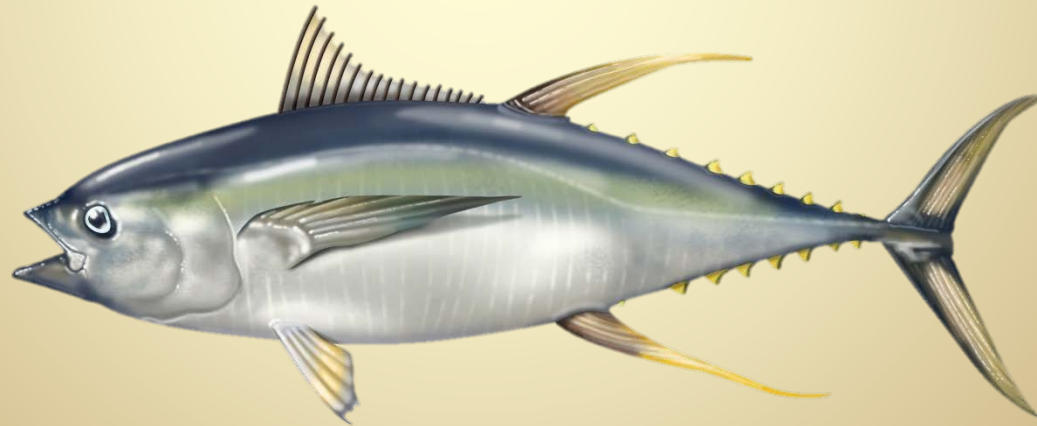
Effects of current regulations

- During the period 2005-2008 an overall TAC was set at 90,000 t. The TAC was later lowered [09-01] to 85,000 t. Estimates of **catch for 2005-2012** seem to have been always **lower than the corresponding TAC**.
- Concern over the catch of small bigeye tuna partially led to the establishment of **spatial closures** to surface fishing gear in the Gulf of Guinea [Rec. 04-01], [Rec. 08-01] and [Rec. 11-01].
- Conclusive evidence that the spatial closures to date have been sufficient to reduce fishing mortality of juvenile bigeye is not available.

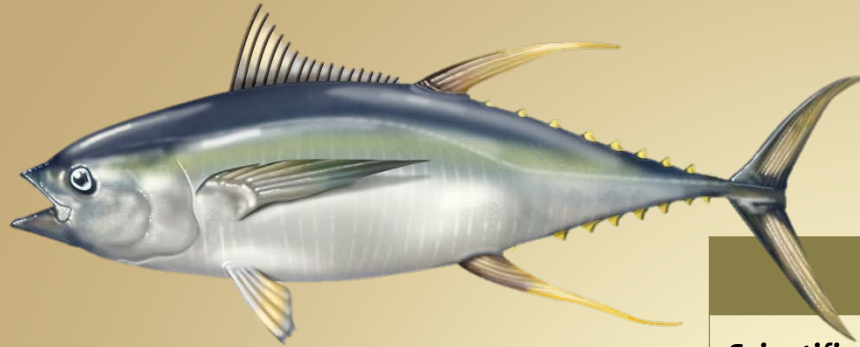
Management recommendations

- **TAC =85,000 or less** would provide a high probability of maintaining at or rebuilding to stock levels consistent with the Convention objectives.
- The Commission should be aware that if major countries were to take the **entire catch limit set under Recommendations 09-01 and 11-01** and other countries were to maintain recent catch levels, then the total catch **could well exceed 100,000 t**.
- The Committee reiterates its **concern** that **unreported** catches, including those part of the "faux poisson" category, might have been poorly estimated.

Yellowfin tuna



Last assessment: 2011

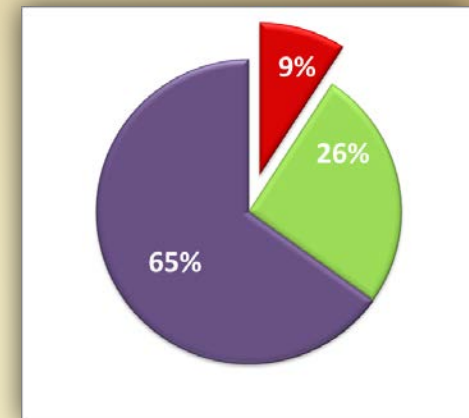
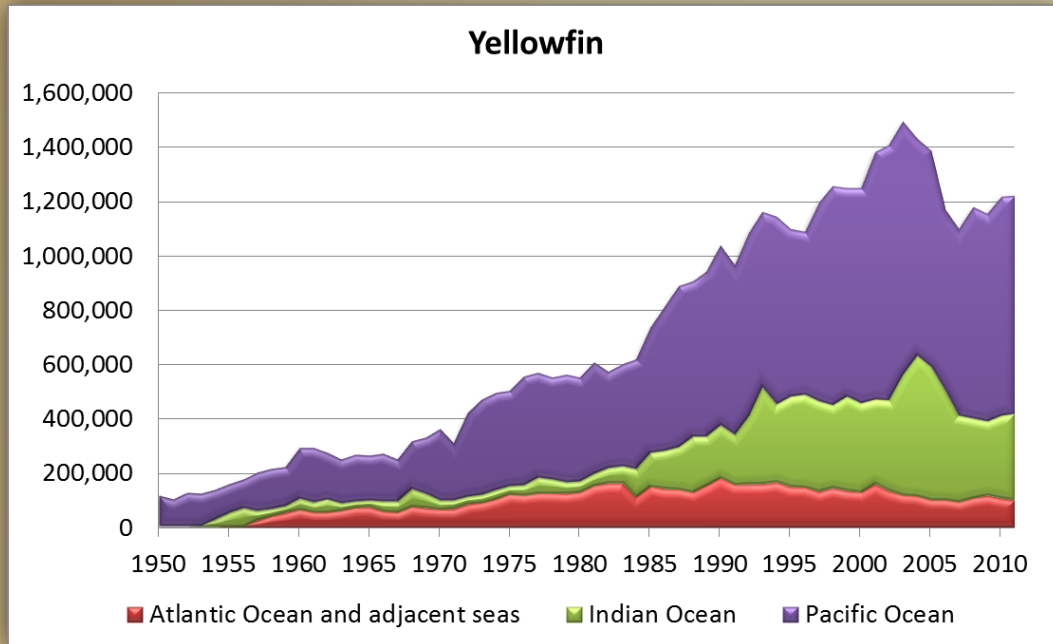


1 management unit

Yellowfin, Rabil, Albacore

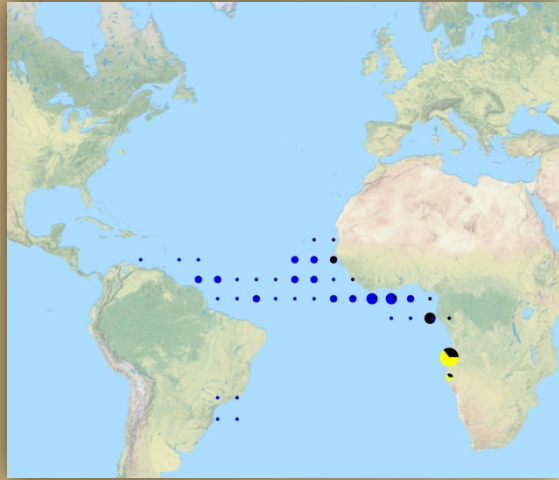
Scientific name	<i>Thunnus albacares</i>
Distribution	Tropical and subtropical species distributed mainly in the epipelagic oceanic waters
Spawning grounds	The main spawning ground is the equatorial zone of the Gulf of Guinea (January to April). Spawning also occurs in the Gulf of Mexico, in the southeastern Caribbean Sea, and off Cape Verde, although the relative importance of these spawning grounds is unknown
Maturity	Around 100 cm - 3 year old
Life span	Around 10 years
Maximum size	Around 230 cm (180 kg)
Natural mortality	Assumed to be 0.8 for ages 0 and 1, and 0.6 for ages 2+

- Uncertainties in both natural mortality and growth have **important implications for stock assessment**.
- **Younger age classes exhibit a strong association with FADs**. This association increases the vulnerability of these smaller fish.

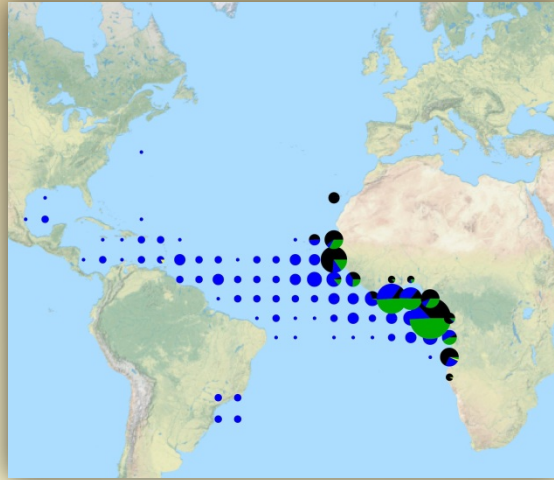


% average catch in 2007-2011

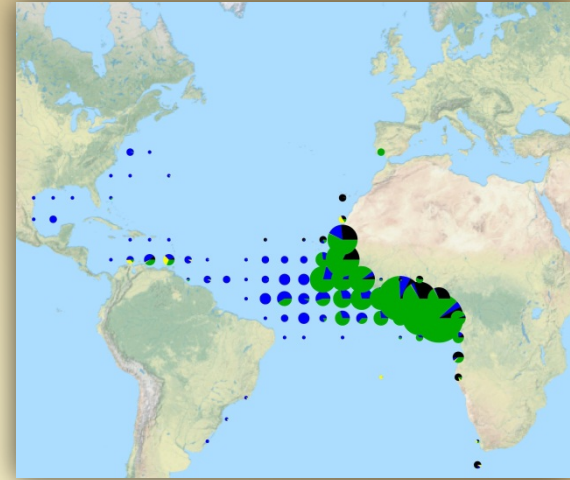
- Atlantic YFT, although the **second largest volume production of Atlantic tunas** at **about 108,000 t per year** (average 2007-2011), represents a small proportion of the world-wide production of this species
- **Atlantic YFT tuna represents 9% of the world production** (average 2007-2011).



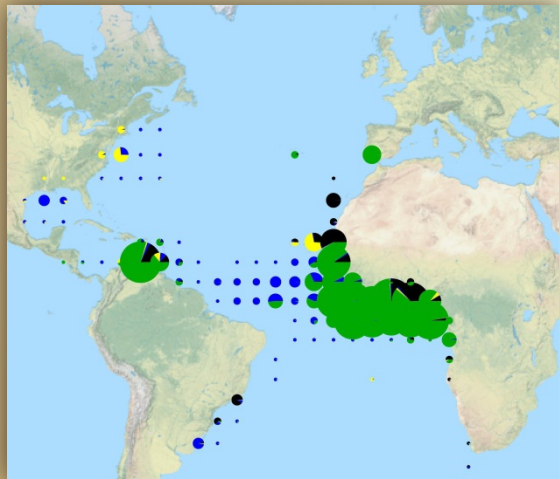
1950



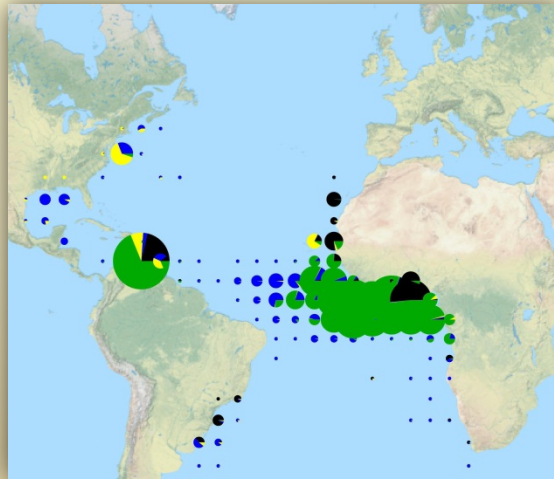
1960



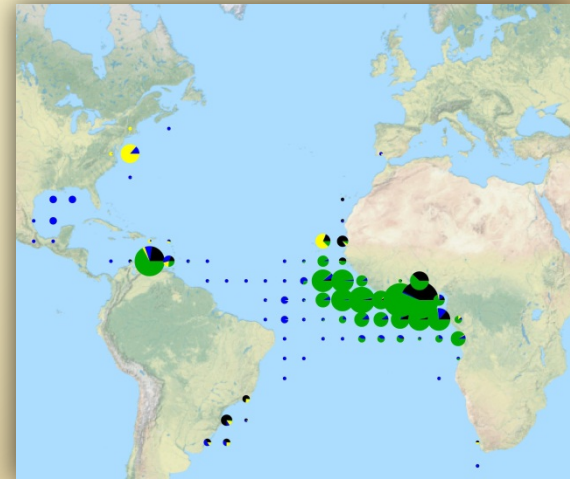
1970



1980



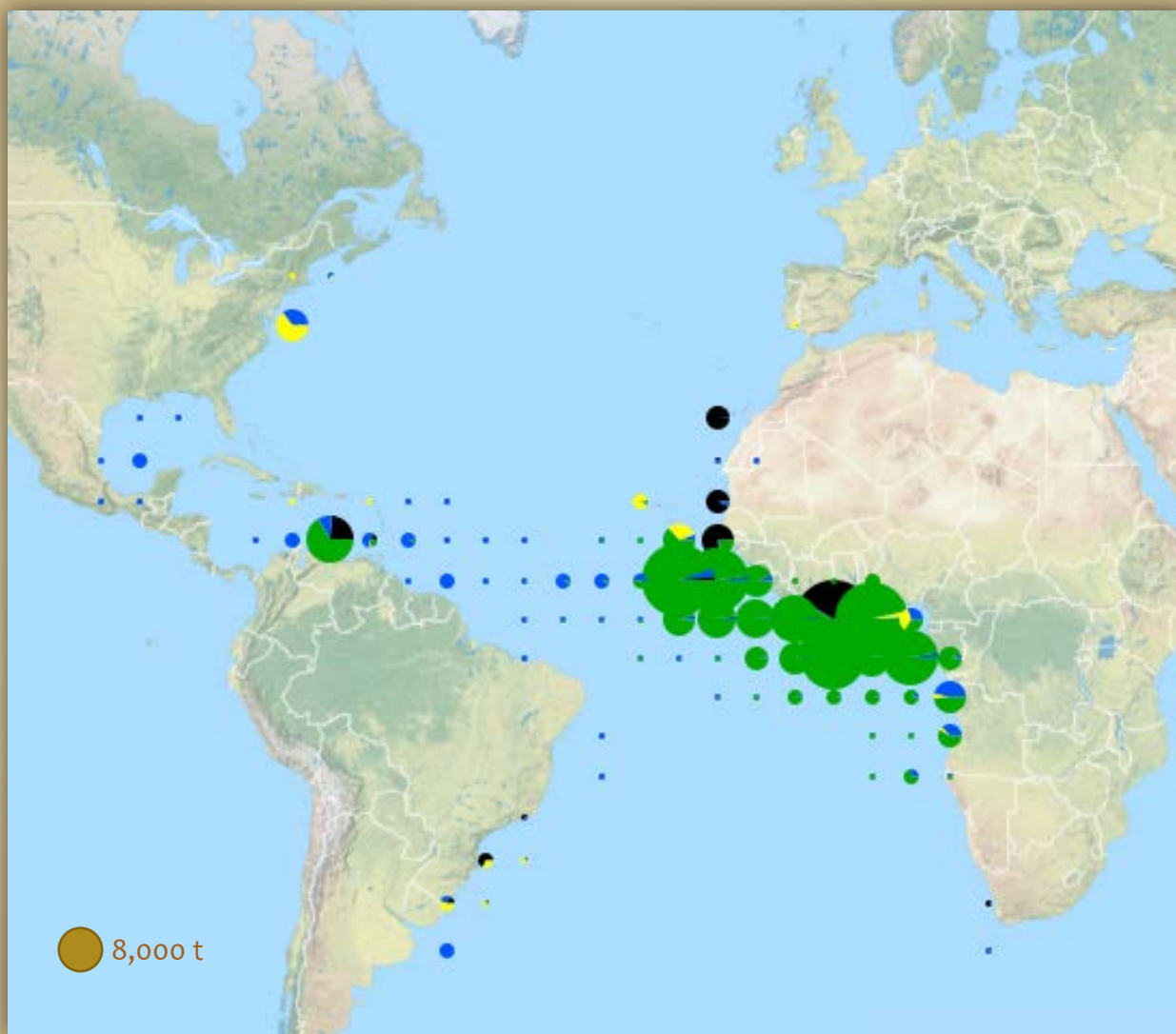
1990



2000

Purse seine Longline Baitboat Others

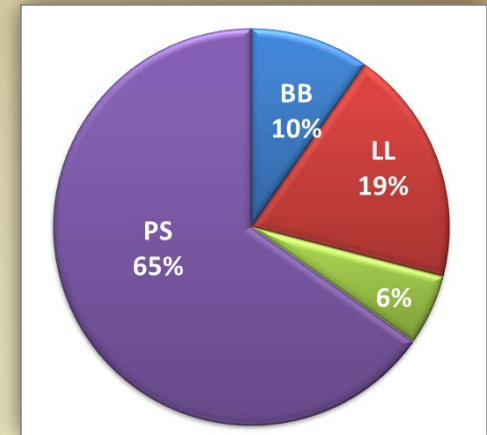
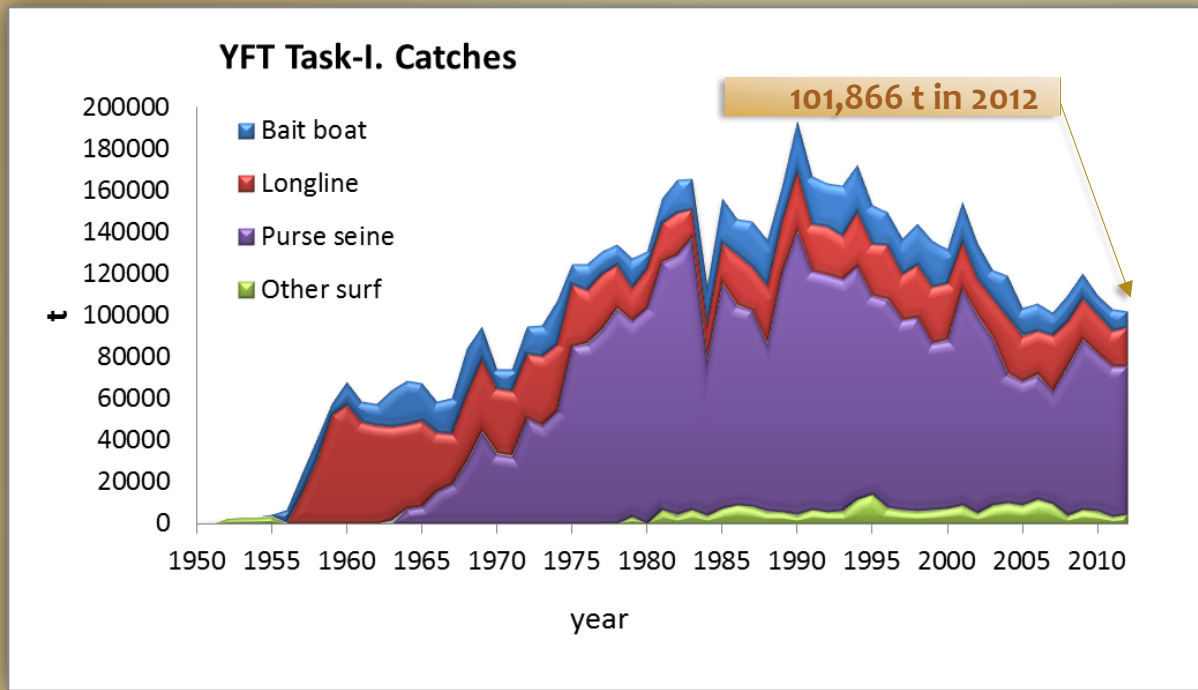
5,000 t



2010-2011

Purse seine Longline Baitboat Others

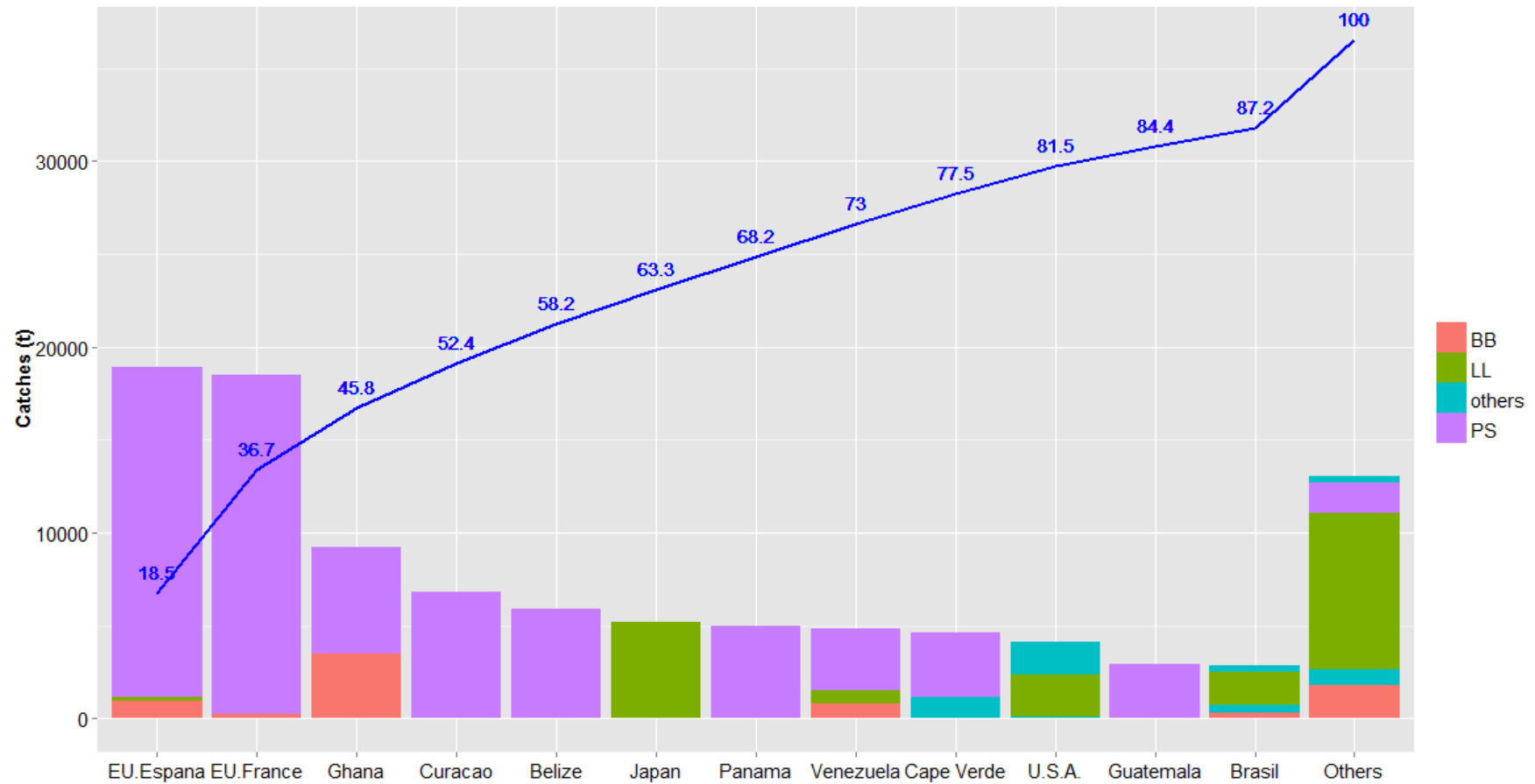
YFT Catches by main gear type



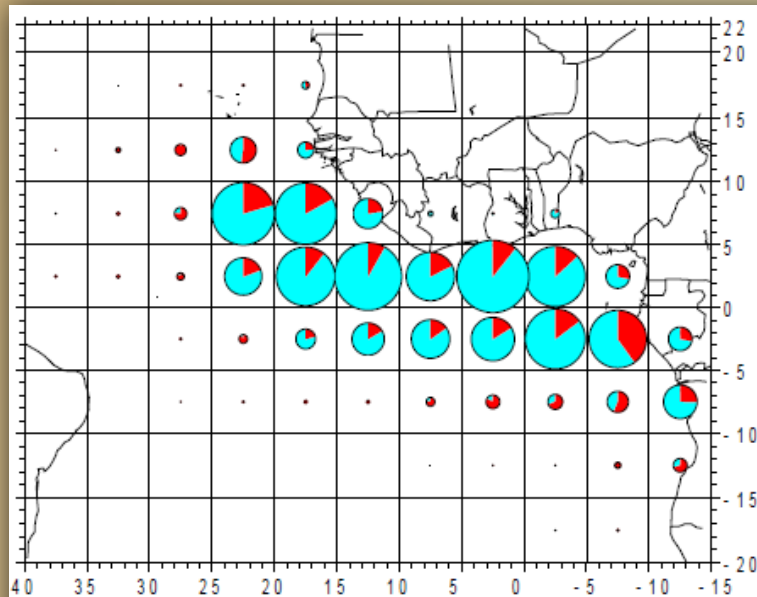
% average catch in 2008-2012

- Historic high of about 194,000 t in 1990.
- After 1991, catches declined to the lowest level in nearly 40 years (100,000 t) in 2007. Catches have increased by about 10% from that level in recent years.
- The **number of active PS** declined by more than half from 1994 until 2006; but then **increased since 2007** (piracy in the Indian Ocean; other fleets).

YFT Catches by main CPC and gear type in 2012



101,866 t in 2012



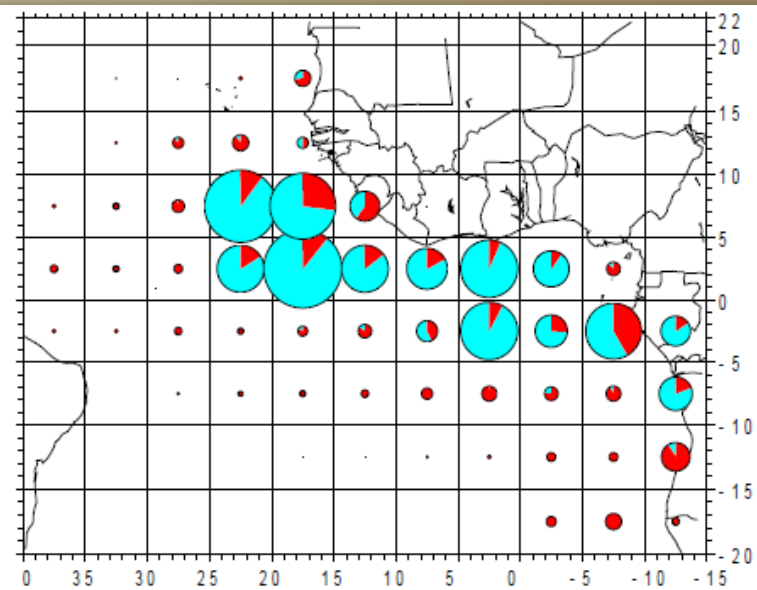
2000-2010

YFT free schools & FAD catches

FRE



FAD



2011-2012

YFT free schools & FAD catches

FRE

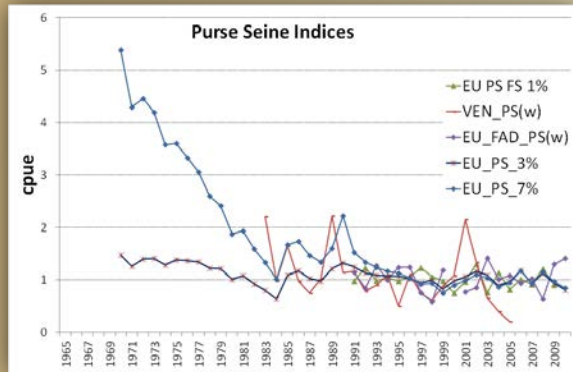


FAD

- Significant catches of YFT (over 1000 tons) were obtained in 2011 by EU PS **south of 15°S off the coast of West Africa** (in association with skipjack and bigeye on FADs).
- This area is very special in its environment and low oxygen levels.
- This was the first time that YFT catches have been obtained by PS in this region, although this species was once dominant in the catches on Angolan BB until 1965.

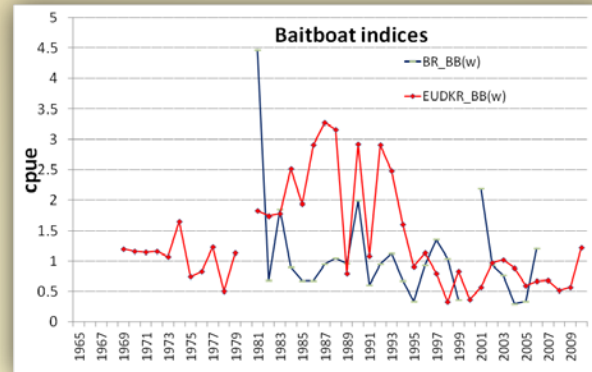
CPUE series:

Purse seine



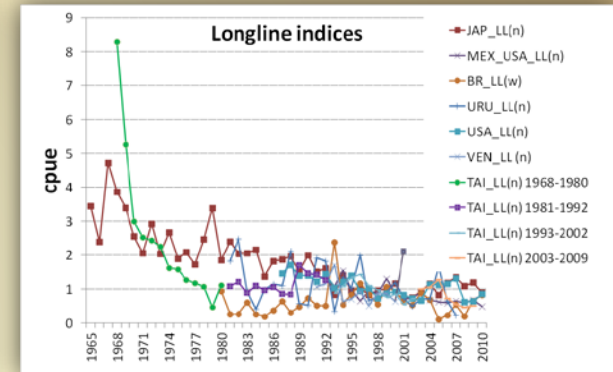
After an initial period of apparent declines, showed high variability without clear trend in recent years

Baiboot



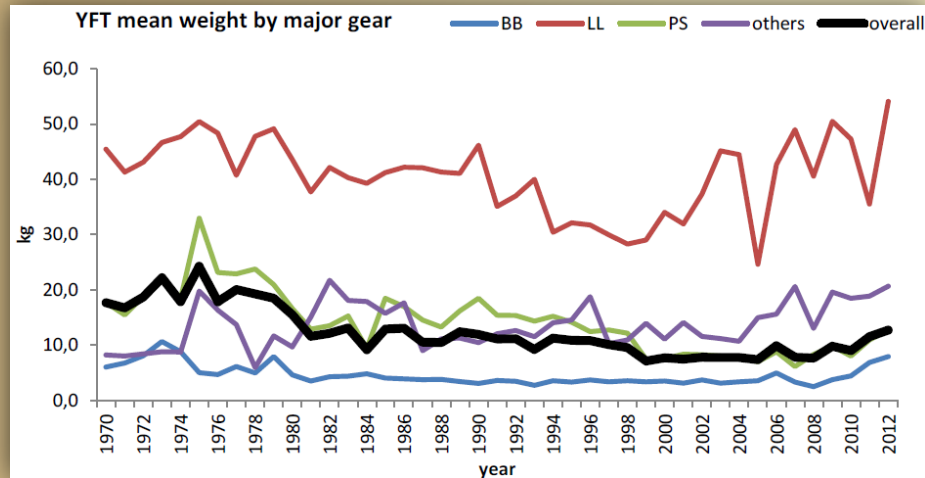
Large fluctuations, with a somewhat declining overall trend

Longline

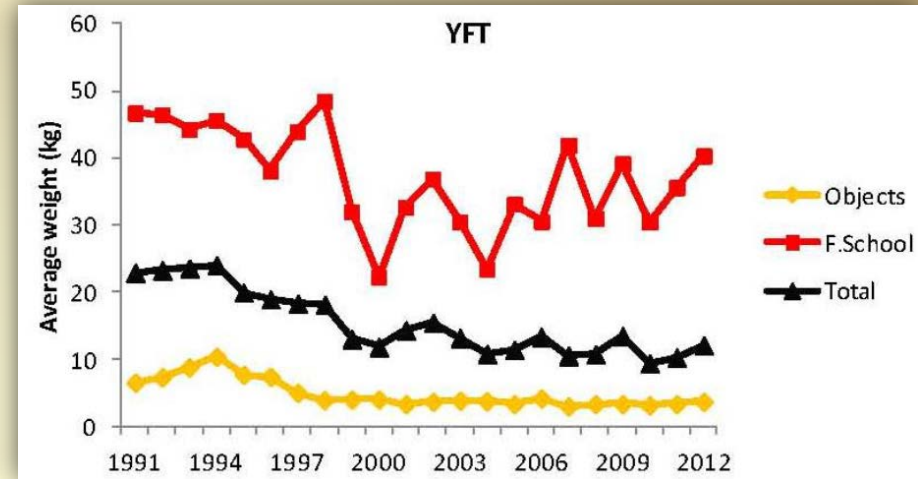


Declining trend until the mid-1990s, and have fluctuated without clear trend since

Average weight of yellowfin tuna by fishing gear



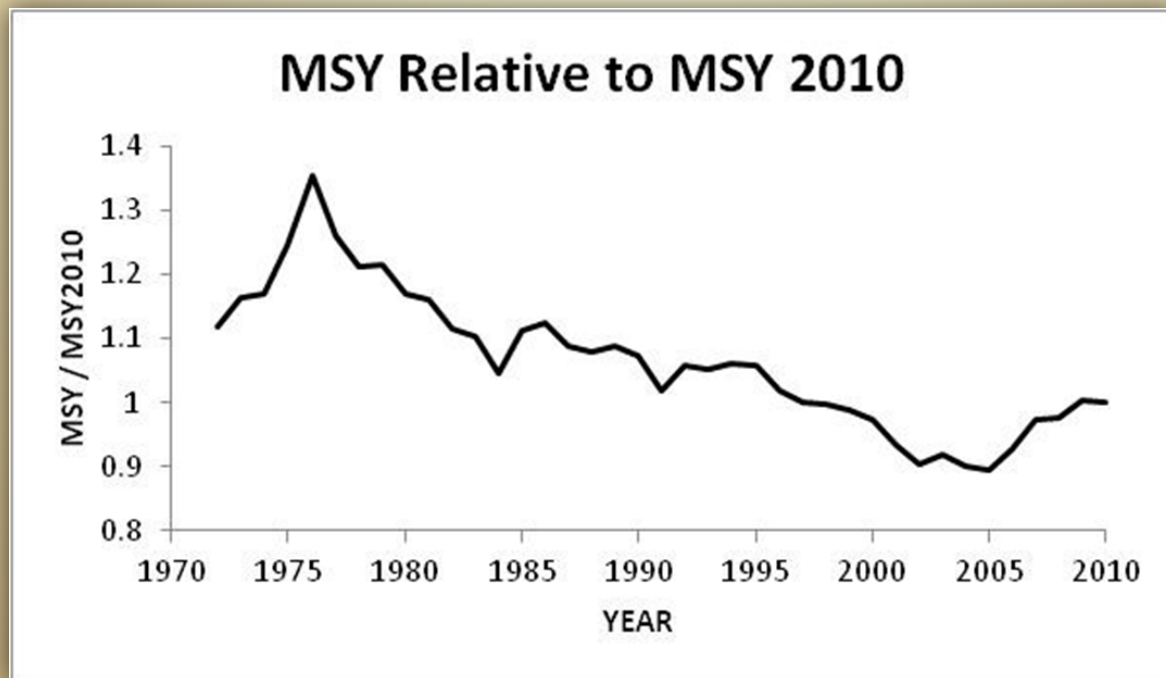
Average YFT weight differs between major gears. The recent average weight in EU PS catches has declined to about half of the average weight of 1990 (at least in part due to changes in selectivity associated with fishing on FADs beginning in the 1990s).



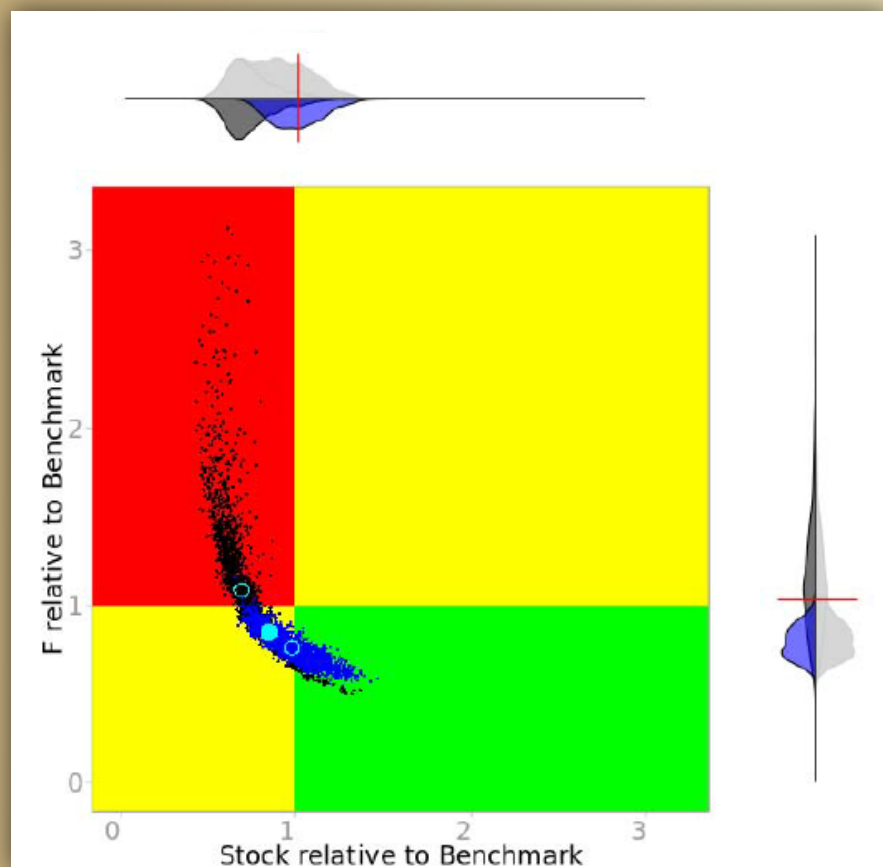
Trend in YFT average weight for EU PS separated between free schools and FAD associated.

Catch at age: 1970-2010

- In terms of selectivity the overall fishery focus has generally evolved since the early 70's of larger/older fish to smaller/younger fish.
- This **evolution in selectivity has implications** for how much yield can be taken from the stock while maintaining (or rebuilding) it at a level consistent with the Convention Objective.



Stock status

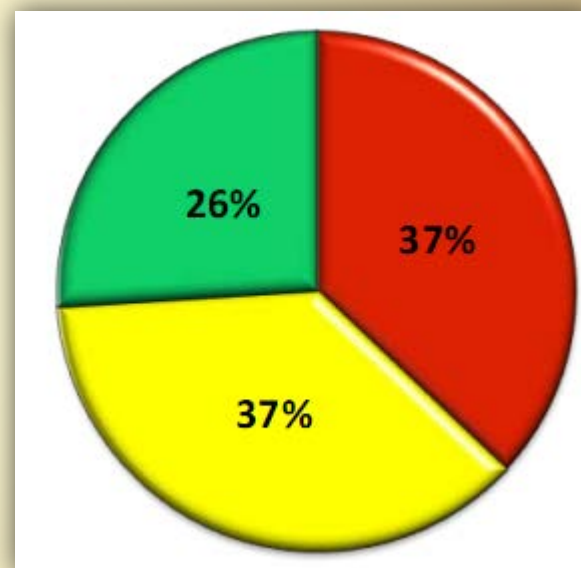


MSY = **144,600 t** (114,200-155,100 t)

2012 Yield = 101,866 t

$B_{2010}/B_{MSY} = \mathbf{0.85}$ (0.61-1.12)

$F_{current}/F_{MSY} = \mathbf{0.87}$ (0.68-1.40)



- There is considerable **uncertainty** in the assessment of stock status and productivity for yellowfin tuna.
- **26%** of the outcomes indicate the stock is **consistent with the Convention Objective**.

Outlook

TAC	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
50,000	25%	51%	70%	78%	84%	87%	89%	91%	92%	93%	94%	95%	95%	96%
60,000	24%	48%	66%	76%	81%	85%	87%	89%	90%	92%	93%	93%	94%	94%
70,000	24%	45%	63%	73%	78%	82%	85%	87%	89%	90%	90%	92%	92%	93%
80,000	24%	43%	59%	69%	75%	79%	82%	84%	86%	87%	88%	89%	90%	90%
90,000	24%	40%	54%	65%	71%	75%	78%	81%	82%	84%	85%	86%	87%	88%
100,000	24%	37%	49%	59%	66%	70%	73%	76%	78%	80%	81%	82%	83%	84%
110,000	23%	35%	45%	53%	59%	64%	67%	70%	72%	74%	75%	76%	77%	78%
120,000	23%	32%	40%	46%	51%	55%	58%	61%	64%	65%	66%	68%	69%	70%
130,000	23%	29%	35%	39%	43%	45%	47%	49%	51%	53%	54%	55%	56%	58%
140,000	22%	26%	29%	31%	33%	34%	36%	36%	37%	38%	39%	39%	40%	40%
150,000	20%	21%	22%	22%	22%	21%	21%	21%	21%	21%	21%	21%	20%	20%

101,866 t in 2012

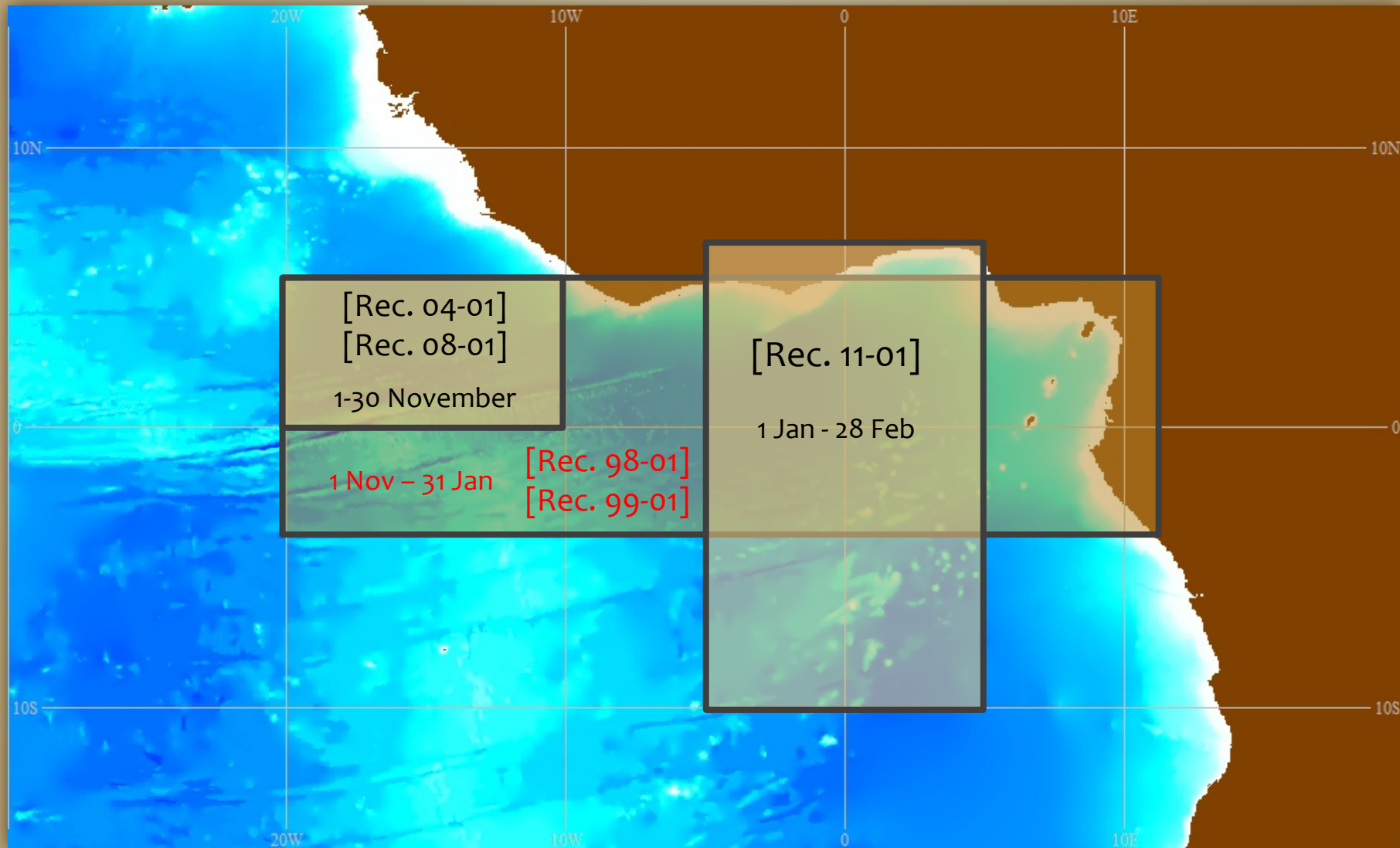
TAC 110,000 t

- Maintaining current TAC= 110,000 t [Rec. 11-01] is expected to lead to a biomass somewhat above B_{MSY} by 2016 with a 60% probability.
- Reported catches for 2011-2012 are lower than the corresponding TAC.

Effects of current regulations

- **Spatial closures** to surface fishing gear in the Gulf of Guinea [Recs. 98-01, 99-01, 04-01, 08-01, **11-01**].
- **Larger time/area moratoria are likely to be more precautionary** than a smaller moratoria, providing that the moratoria are fully complied with.
- Rec. 11-01 also implemented a **TAC of 110,000 t** for 2012 and subsequent years.
- In 1993, the Commission recommended “that there be no increase in the level of effective fishing effort exerted on Atlantic YFT, over the level observed in 1992”. **Effective effort in 2010 appeared to be near the 1992 levels.**

Effects of current regulations



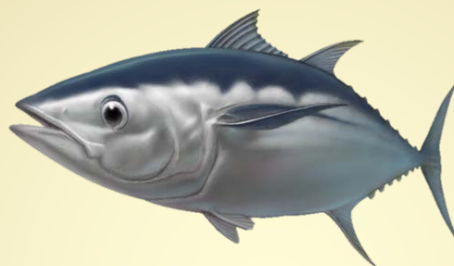
Management recommendations

- Atlantic YFT stock was estimated to be overfished in 2010. Continuation of **catch levels of 110,000 t** is expected to lead to a biomass somewhat above B_{MSY} by 2016 with a 60% probability.
- Catches approaching **140,000 t or more would reduce the chances** of meeting Convention Objectives below 50%, even after 15 years (2025).
- The Committee continues to recommend that **effective measures be found to reduce FAD-related and other fishing mortality of small YFT**.
- The Committee notes that the **closure implemented in Rec. 11-01 may be more effective** than that implemented by [Rec. 04-01].

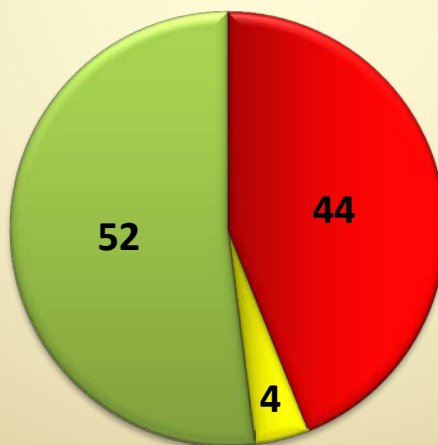
Atlantic Tropical tunas: 2011 summary



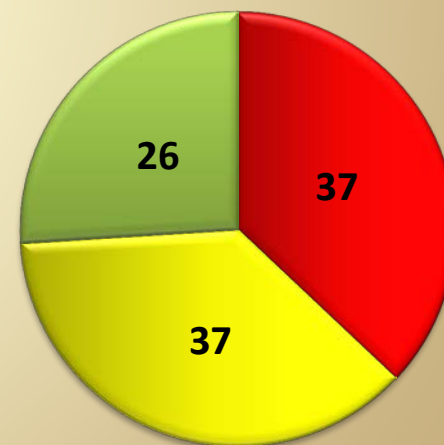
Skipjack



Bigeye



Yellowfin





Responses to Commission's requests

-
- 16.1 Review the content of FAD Management Plans elaborated by CPCs and define a format for FAD information from logbooks Rec. [11-01], par. 25 and 19.
-

- 16.1 Review the content of FAD Management Plans elaborated by CPCs and define a format for FAD information from logbooks Rec. [11-01], par. 25 and 19.

[Rec. 11-01] requests the Secretariat to transmit the content of the FAD Management Plans of the CPCs that use this fishing mode to the SCRS.

- FAD Management Plan: a **mandatory component** (number of FADs to be deployed per vessel; description of FAD characteristics & FAD markings), and an **optional component**.
- **In 2012 6 flag States** submitted FAD Management Plans and **only 3 of these included the required information**, such as the number of FADs to be deployed per vessel. In 2013, two of these six flag States have updated their management plans⁽¹⁾
- Besides being incomplete, the information received in these Management Plans **does not appear to be useful** for stock assessment or for improving the Committee's ability to advise the Commission.

(1) Summary table included in the SCRS report

- 16.1 Review the content of FAD Management Plans elaborated by CPCs and define a format for FAD information from logbooks Rec. [11-01], par. 25 and 19.

For scientific purposes, there are 2 primary types of **information that should be collected and reported**:

- (i) An inventory of FADs and FAD activity (“**FAD logbook**”: markings, deployment, retrievals of FADs, etc.),
- (ii) A **registry of visits to FADs** by fishing (and supply) vessels with the FADs (“**Fishing logbook**”: visits to FADs and catches from sets made on FADs).

These two types of information should be **linked through the FAD ID** or marking.

The Committee recommends that the Commission **revisit the requirements for FAD monitoring** included in the [Rec. 11-01] (paragraphs 18-19 and Annexes 1 and 2 of the Recommendation).



- 16.1 Review the content of FAD Management Plans elaborated by CPCs and define a format for FAD information from logbooks Rec. [11-01], par. 25 and 19.

“Draft Recommendation by ICCAT amending the recommendation on a multiannual conservation and management program for bigeye and yellowfin tunas” included as Appendix 3 to the report of the 8th Meeting of the IMM WG [IMM-016A].

- This Appendix is a proposal to amend Recommendation 11-01 which will be considered by Panel 1 at the 2013 annual Commission meeting.
- The **Committee endorsed the adoption** of the amendment concerning fishing operations on FADs (of the type requested by other tRFMOs) since this type of data are essential for the SCRS to carry out studies related to this fishing mode.

16.1 Review the content of FAD Management Plans elaborated by CPCs and define a format for FAD information from logbooks Rec. [11-01], par. 25 and 19.

- However, the Committee recommends that **more detailed information**, including the identification codes, data on trajectory, frequency of visits and the duration in the water of the FADs with instrumented buoys, **be fully available to the national scientists** according to the conventional confidentiality protocols.
- This type of information is needed to **better quantify the fishing effort** associated with FAD fishing, and thus the indices of abundance related to this fishing mode used in stock assessments, as well as in the definition of the regulatory time/area strata of a moratorium type.



P1 Research and Statistics

TT General recommendations to the Commission that have financial implications

- The SCRS proposes that the two skipjack stocks be assessed in 2014.
- The SCRS recommends to maintain funding for continuing the collaboration work, including the participation to joint-meetings, between Ghanaian and EU scientists to improve the Ghanaian data collection and processing
- The SCRS recommends developing a feasibility study for the implementation of the Atlantic Ocean Tropical Tuna Tagging Program (AOTTP) as soon as possible as well as developing the AOTTP Research Programme.

Other recommendations

- The **information on FADs fishing** requested by the Commission [IMM-016A] appears useful for scientific studies. However, the detailed data on the tracking of FADs/buoys, including their identifiers codes of both be fully available to the national scientists above the conventional confidentiality protocols.
- A detailed description of the assumptions used for the revision of the **Ghanaian statistics** (2006-2012) should be presented during the SKJ SA in 2014.
- For the species not evaluated during the present year, **fishery indicators should be systematically presented** by CPC during the SA of the species evaluated or during the species group. Bearing in mind the **relevance of the Catch at size matrix (CAS)** for calculating several of such fishery indicators the ICCAT secretariat should updated on a regularly basis the CAS for the main fleets, on reasonable.

- **Stock assessments of the eastern and the western stocks of SKJ** during a nine days inter-sessional meeting.
- Participation of an external expert in the SKJ SA (**peer review**).
- CPC participants of this stock assessment provide several **fishery indicators for the three tropical tuna species**.
- Adopt a preliminary Task I for the **Ghanaian fleet** for the period **2006-2012**.
- Preliminary **evaluation of the efficacy of the time-area closure on FADs** [Rec. 11-01] (only one year of data available).
- Atlantic Ocean Tuna Tagging Programme (**AOTTP**)
 - Funding request to DG Mare to carry out a feasibility study ✓
 - Launch the feasibility study (late 2013)
 - Develop a proposal for the AOTTP programme including objectives, plan of work, timeline and budget (SKJ SA meeting)
 - Identify donors and procedures to mobilize the funds
 - Peer-review the AOTTP proposal