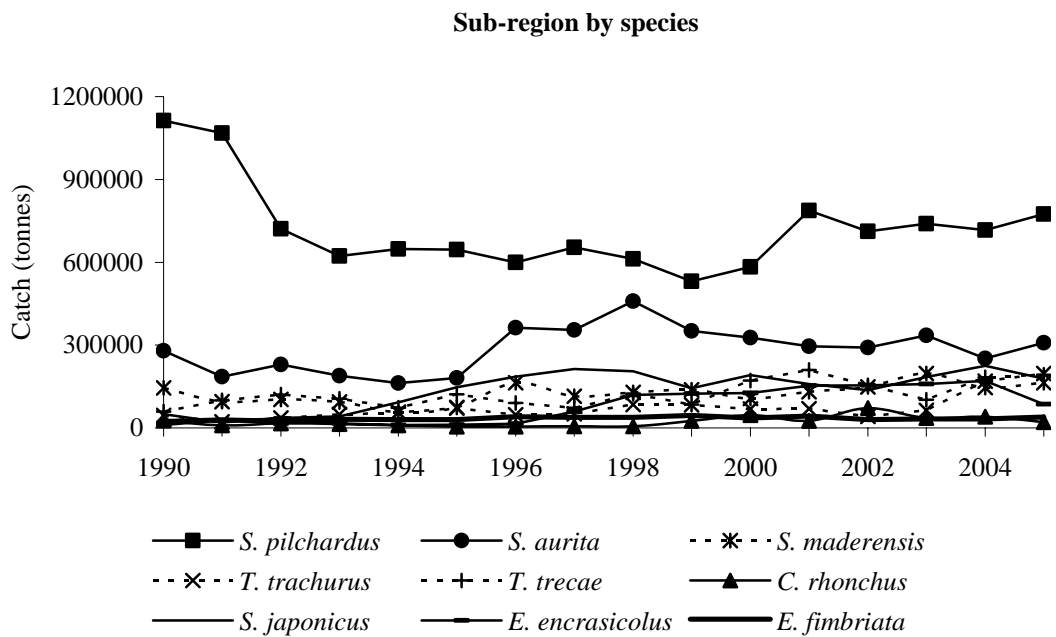
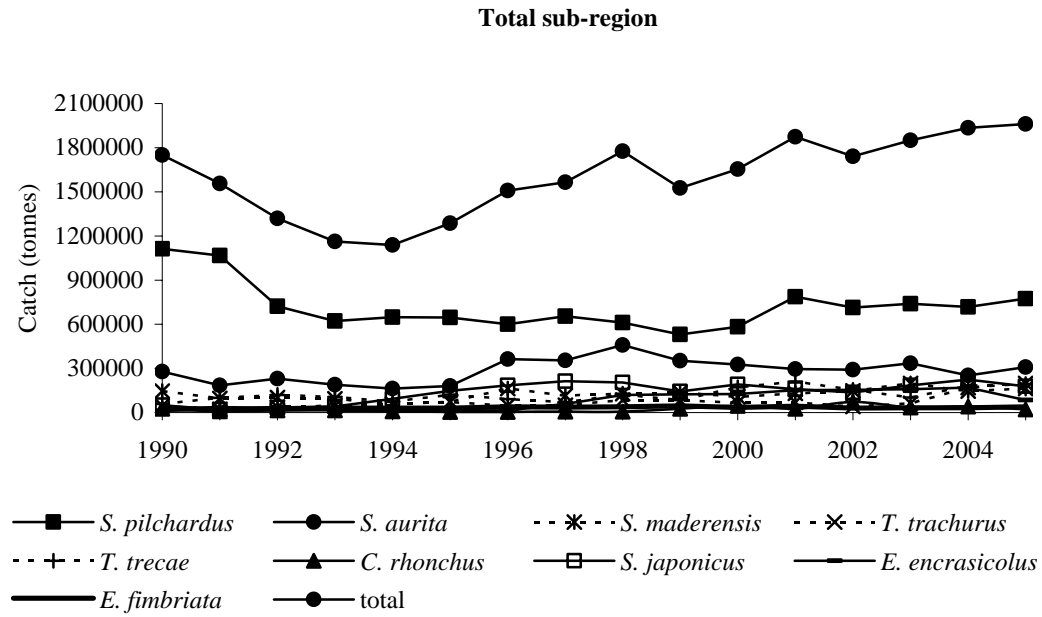
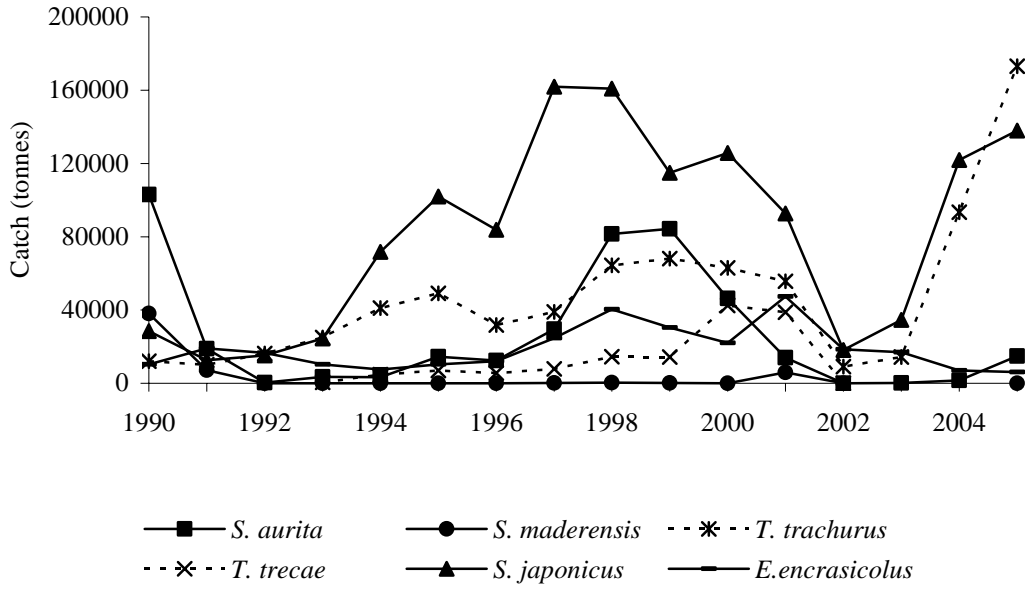


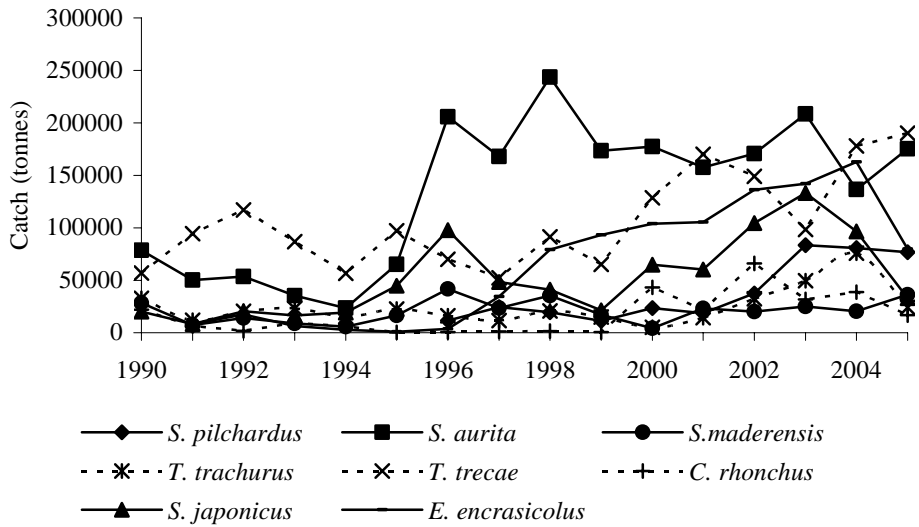
## **FIGURES**



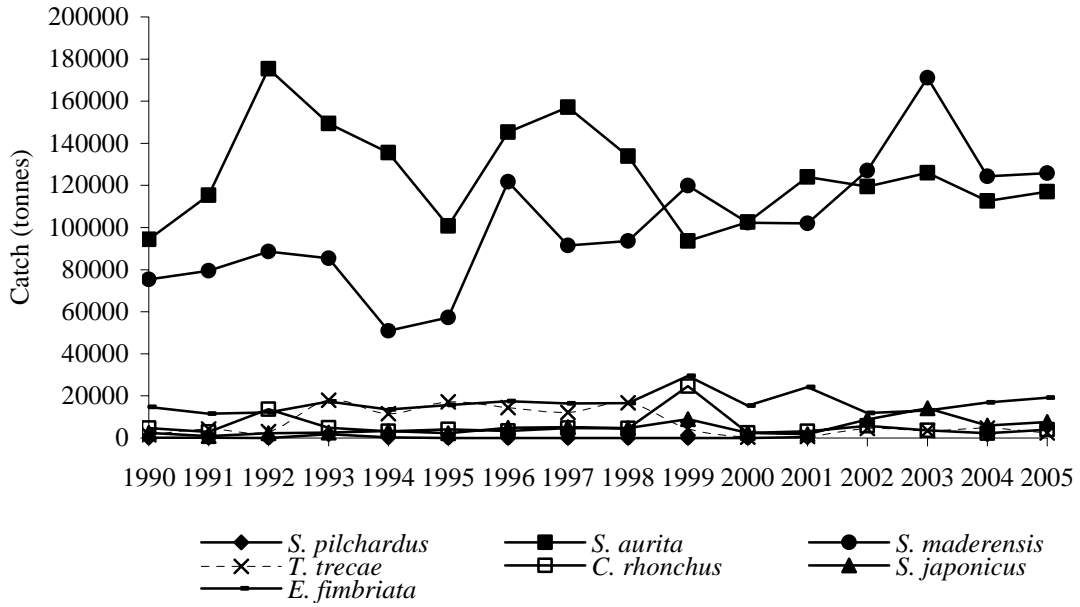
**Figure 1.5.1a:** Catches (1990–2005) in the subregion by species and year (weight in tonnes)/Captures totales (1990-2005) dans la sous-région par espèce et par année (poids en tonnes)



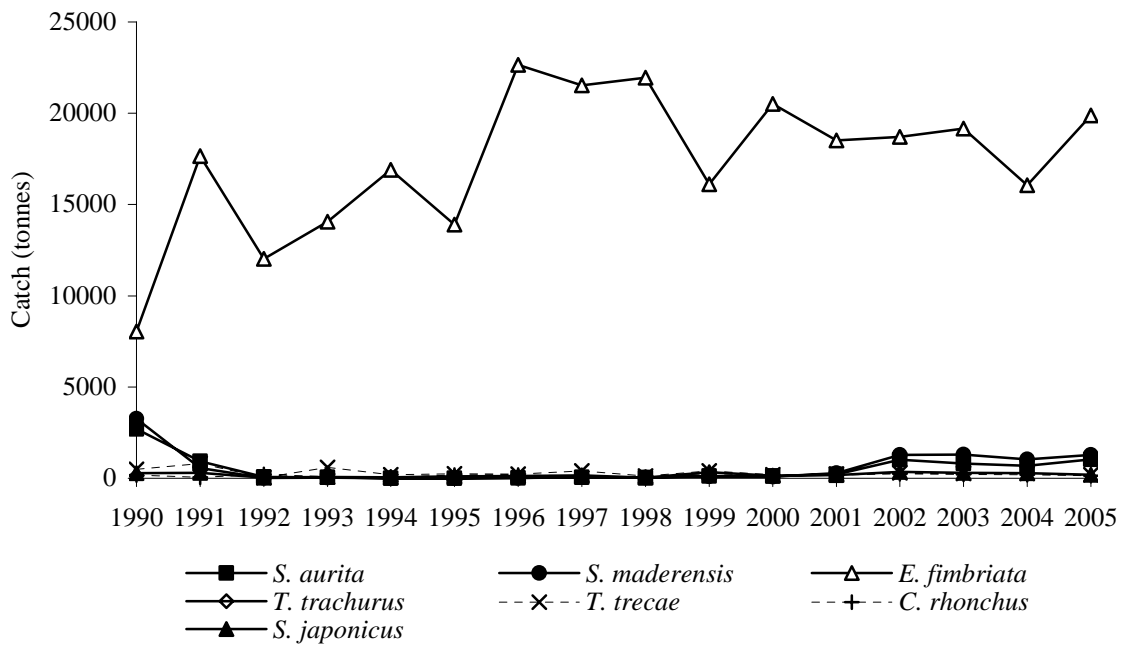
**Figure 1.5.1b:** Catches (1990–2005) in Morocco by species and year (weight in tonnes)/Captures (1990-2005) au Maroc par espèce et par année (poids en tonnes)



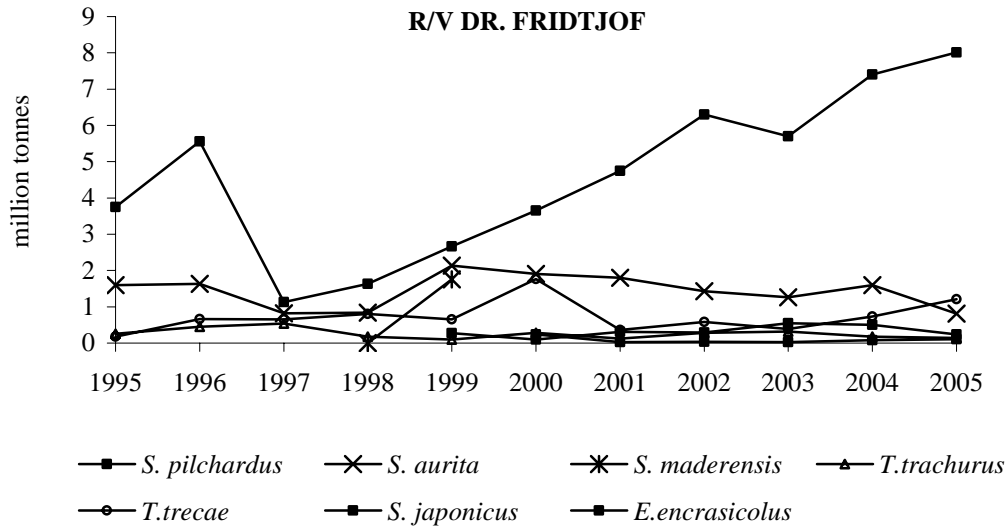
**Figure 1.5.1c:** Catches (1990–2005) in Mauritania by species and year (weight in tonnes)/Captures (1990-2005) en Mauritanie par espèce et par année (poids en tonnes)



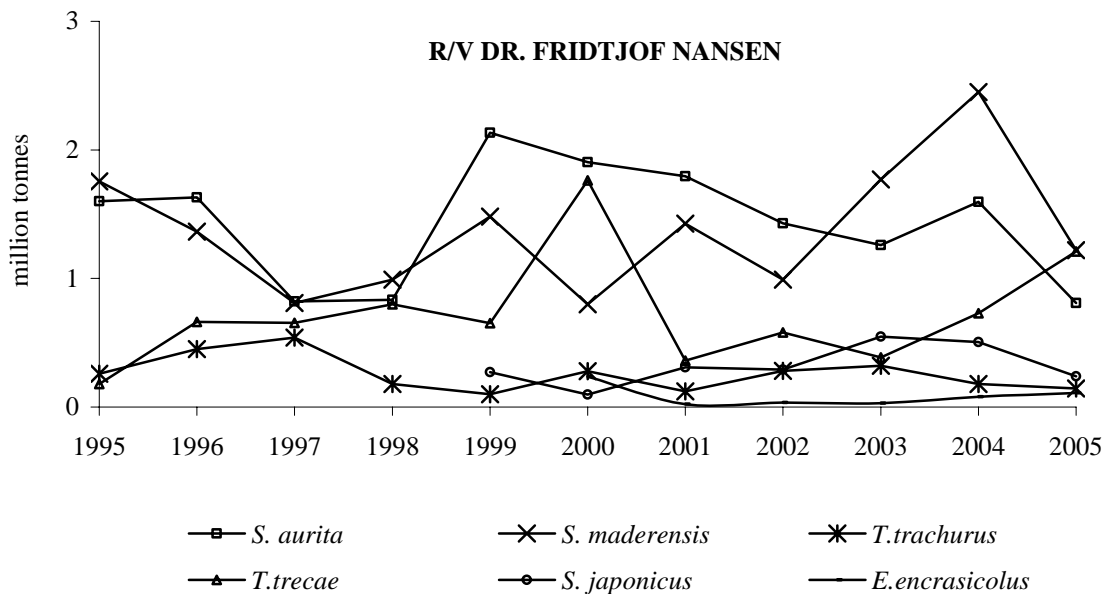
**Figure 1.5.1d:** Catches (1990–2005) in Senegal by species and year (weight in tonnes)/Captures (1990–2005) au Sénégal par espèce et par année (poids en tonnes)



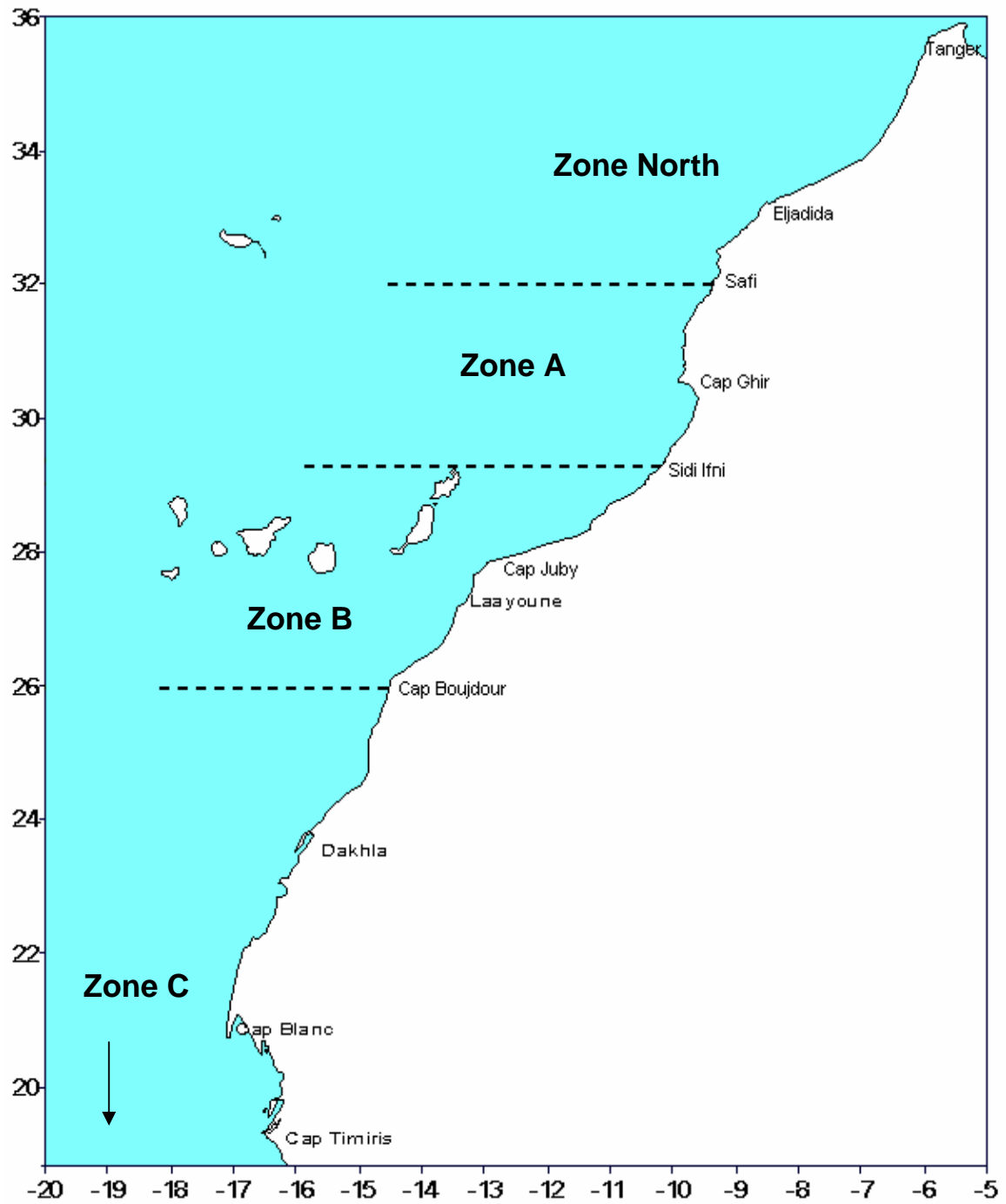
**Figure 1.5.1e:** Catches (1990–2005) in Gambia by species and year (weight in tonnes)/Captures (1990–2005) en Gambie par espèce et par année (poids en tonnes)



**Figure 1.6.1a:** Evolution of biomass (in million tonnes) estimated by R/V DR. FRIDTJOF NANSEN during the period 1995–2005/Evolution de la biomasse (en millions de tonnes) estimées par le N/R DR. FRIDTJOF NANSEN pendant la période 1995-2005

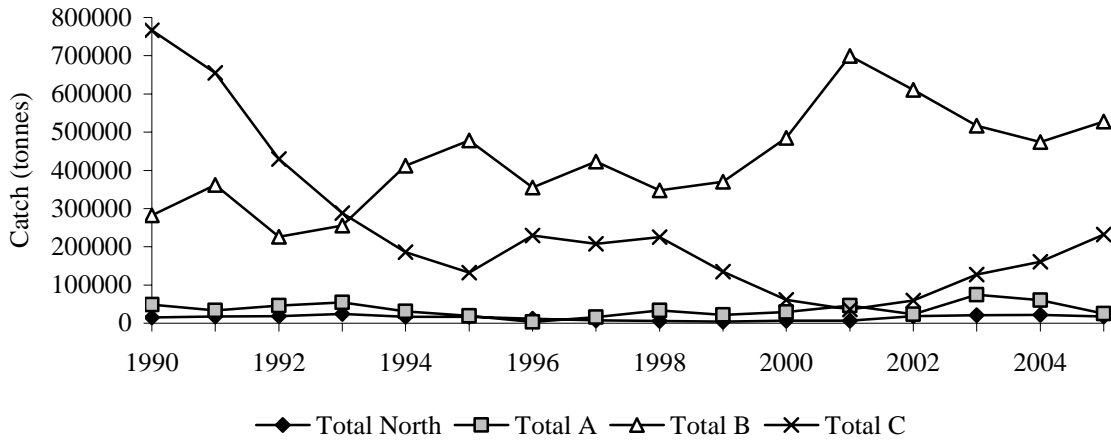


**Figure 1.6.1b:** Evolution of biomass of small pelagics without sardine (in million tonnes) estimated by R/V DR. FRIDTJOF NANSEN in the period 1995–2005/Evolution de la biomasse de petits pélagiques sans sardine (en millions de tonnes) estimées par le N/R DR. FRIDTJOF NANSEN pendant la période 1995-2005



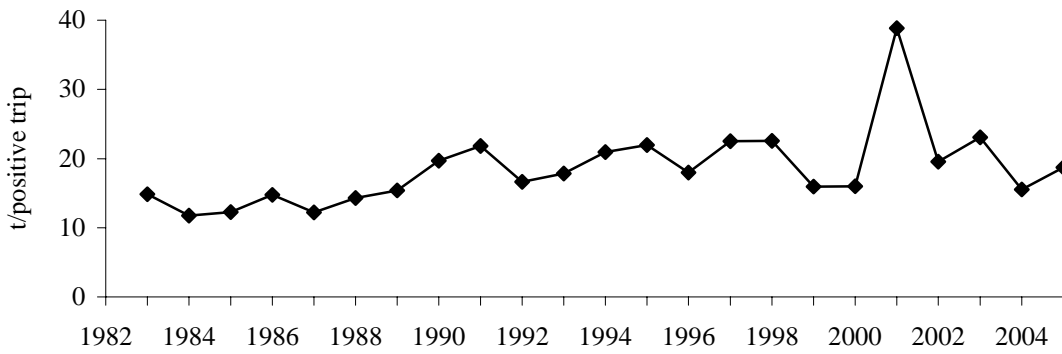
**Figure 2.1.1:** Stock units and sardine fisheries/Unités de stock et pêcheries de sardine

*Sardina pilchardus*

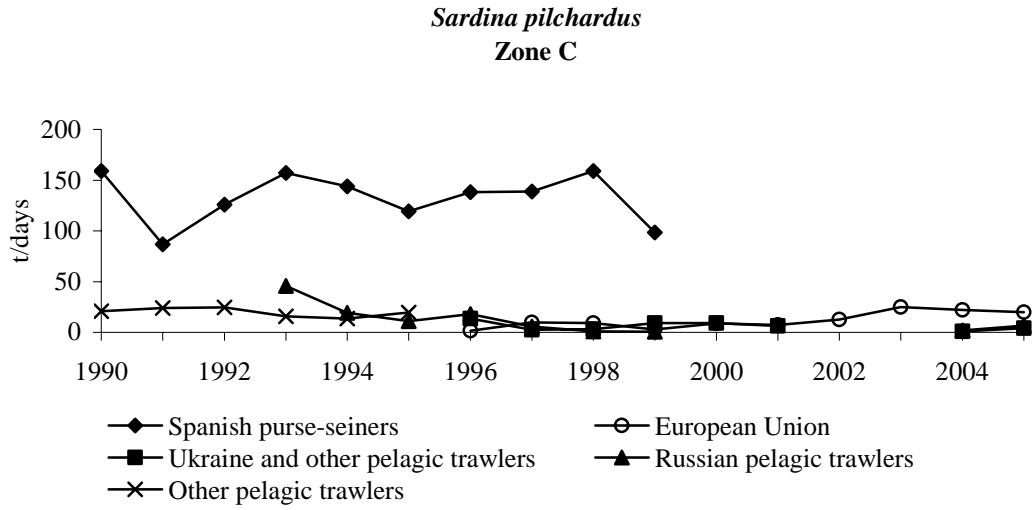


**Figure 2.2.1a:** Catches (1990–2005) of *Sardina pilchardus* by zone and year (weight in tonnes)/Captures (1990-2005) de *Sardina pilchardus* par zone et année (poids en tonnes)

*Sardina pilchardus*  
Zone A+B

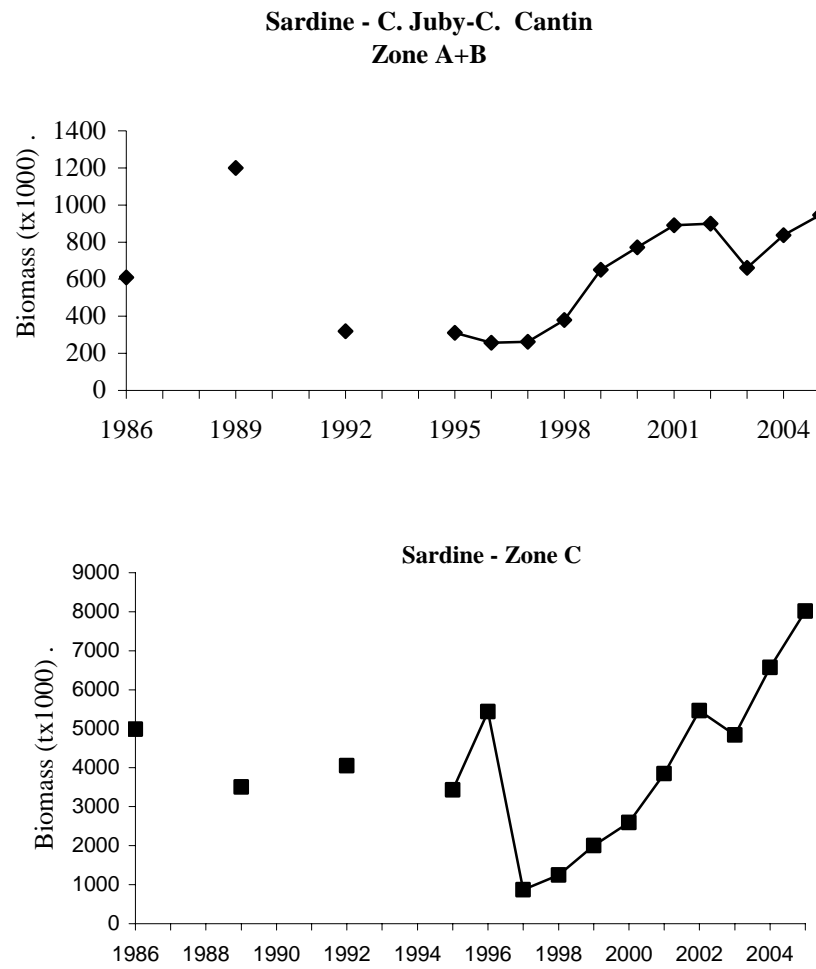


**Figure 2.3.1a:** CPUE of *Sardina pilchardus* (1983–2005) in zone A+B (tonnes/positive trips)/CPUE de *Sardina pilchardus* (1983-2005) dans les zones A+B (tonnes/sorties positives)



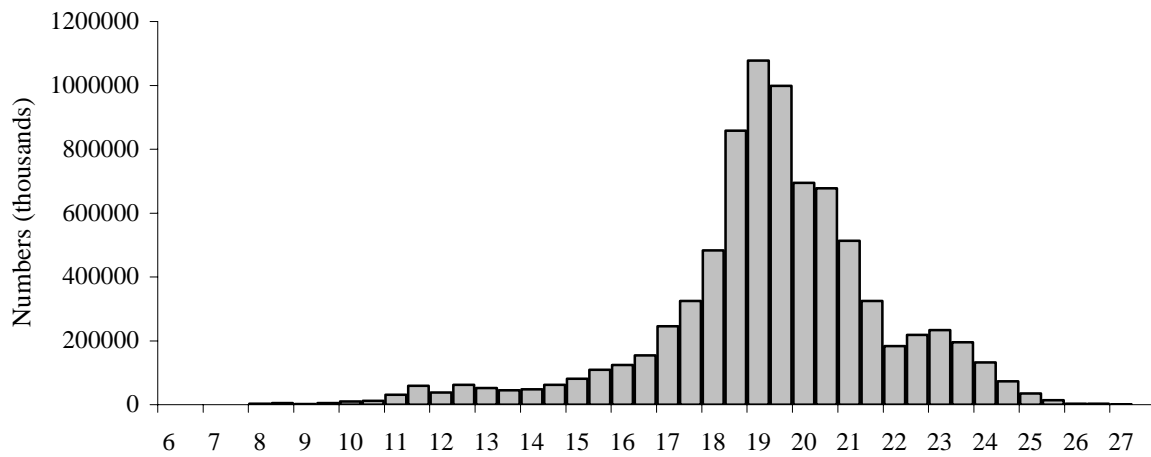
**Figure 2.3.1b:** CPUE of *Sardina pilchardus* (1992–2005) by fishery in zone C (tonnes/fishing days)/CPUE de *Sardina pilchardus* (1992-2005) par pêcheur dans la zone C (tonnes/jours de pêche)





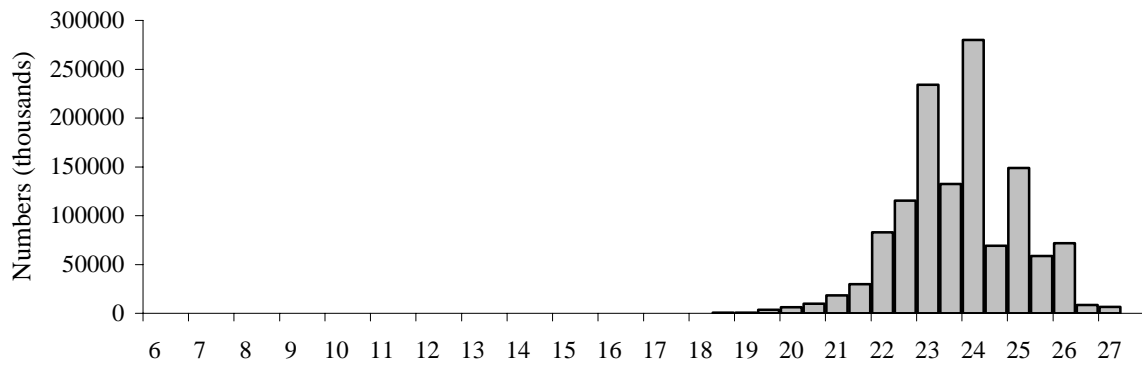
**Figure 2.3.2:** Biomass estimates of sardine (1986–2005) for zones A, B and C from R/V DR. FRIDTJOF NANSEN (in thousand tonnes)/Estimations de la biomasse de sardine (1986-2005) pour les zones A+B et C du N/R DR. FRIDTJOF NANSEN (en milliers de tonnes)

## Sardine - Zone A+B

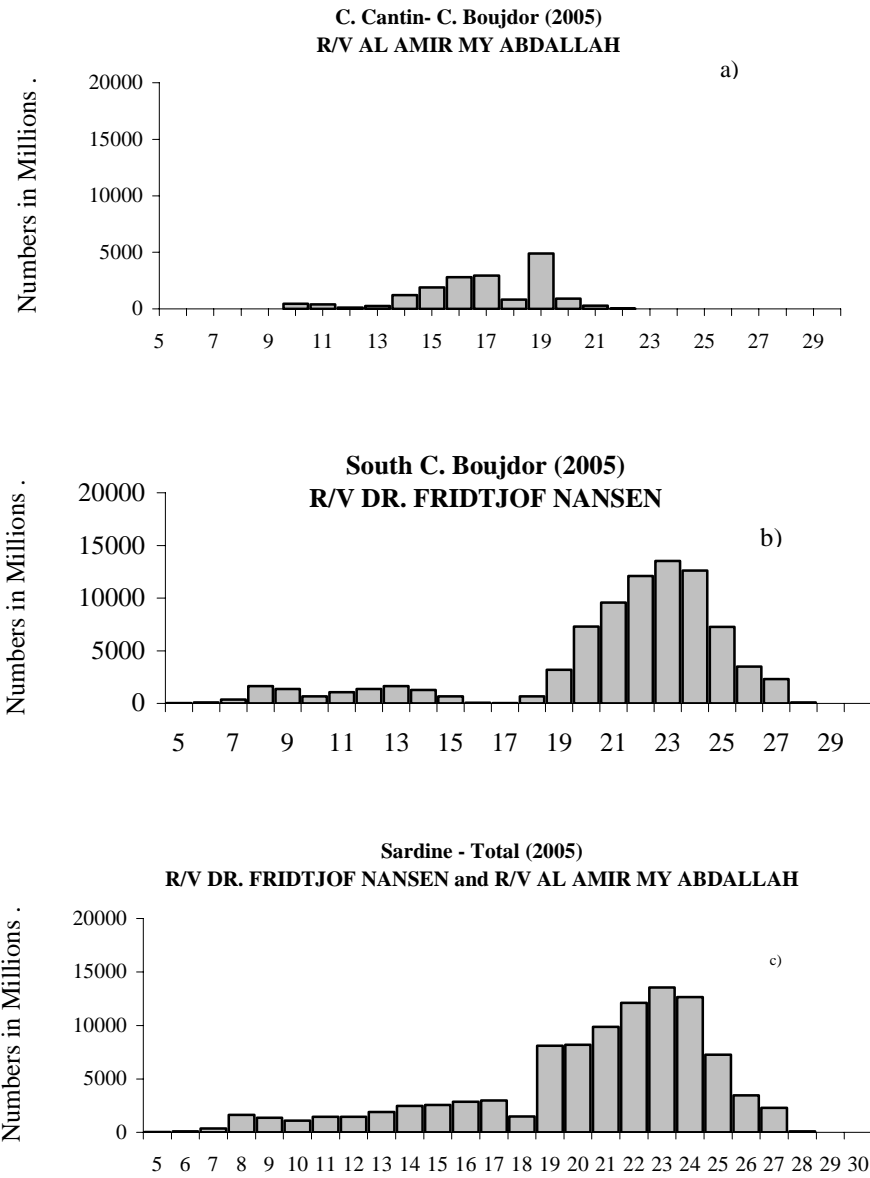


**Figure 2.5.1a:** Length composition of catches for 2005 in zone A+B/Composition par taille des captures en 2005 pour la zone A+B

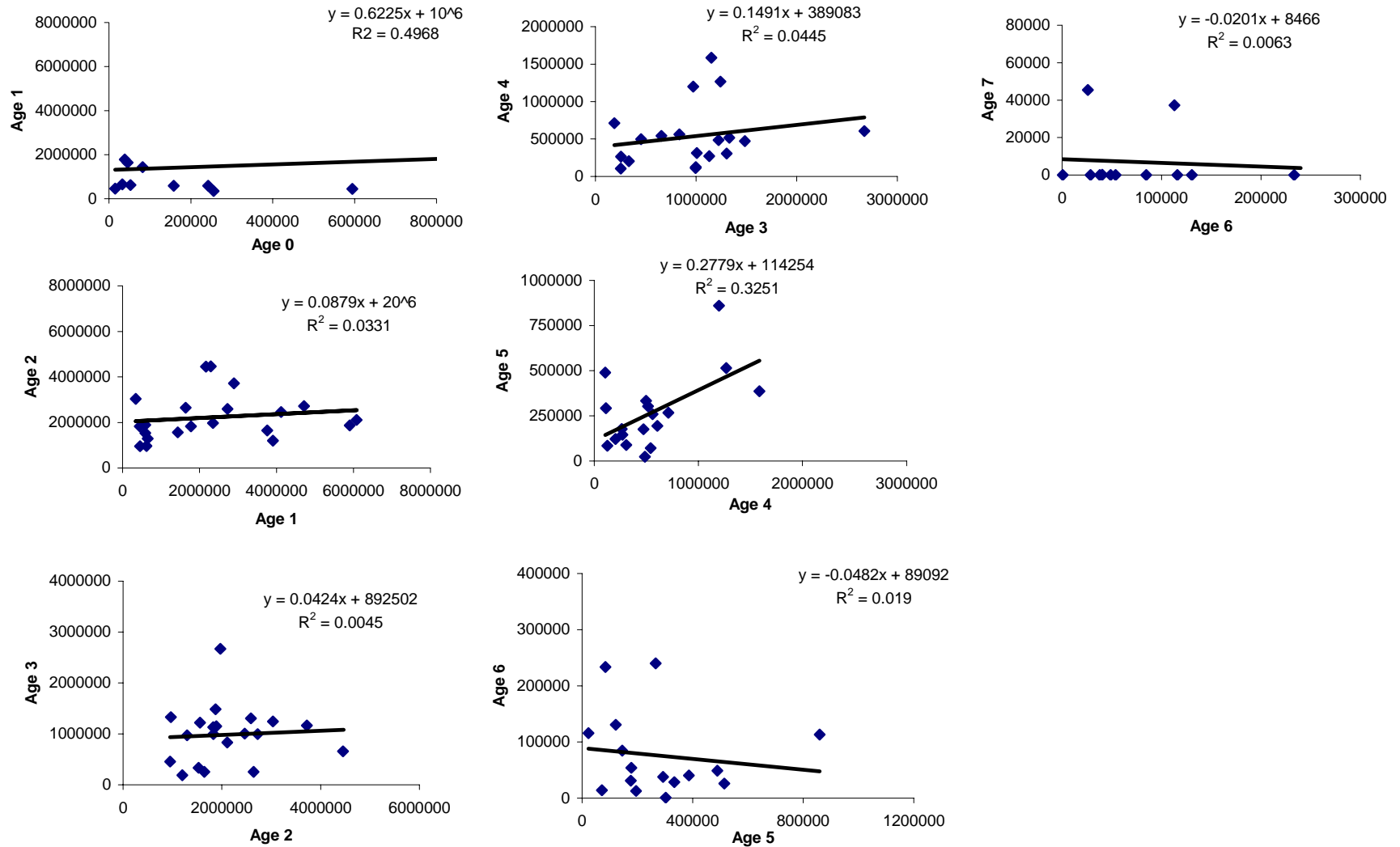
## Sardine - Zone C



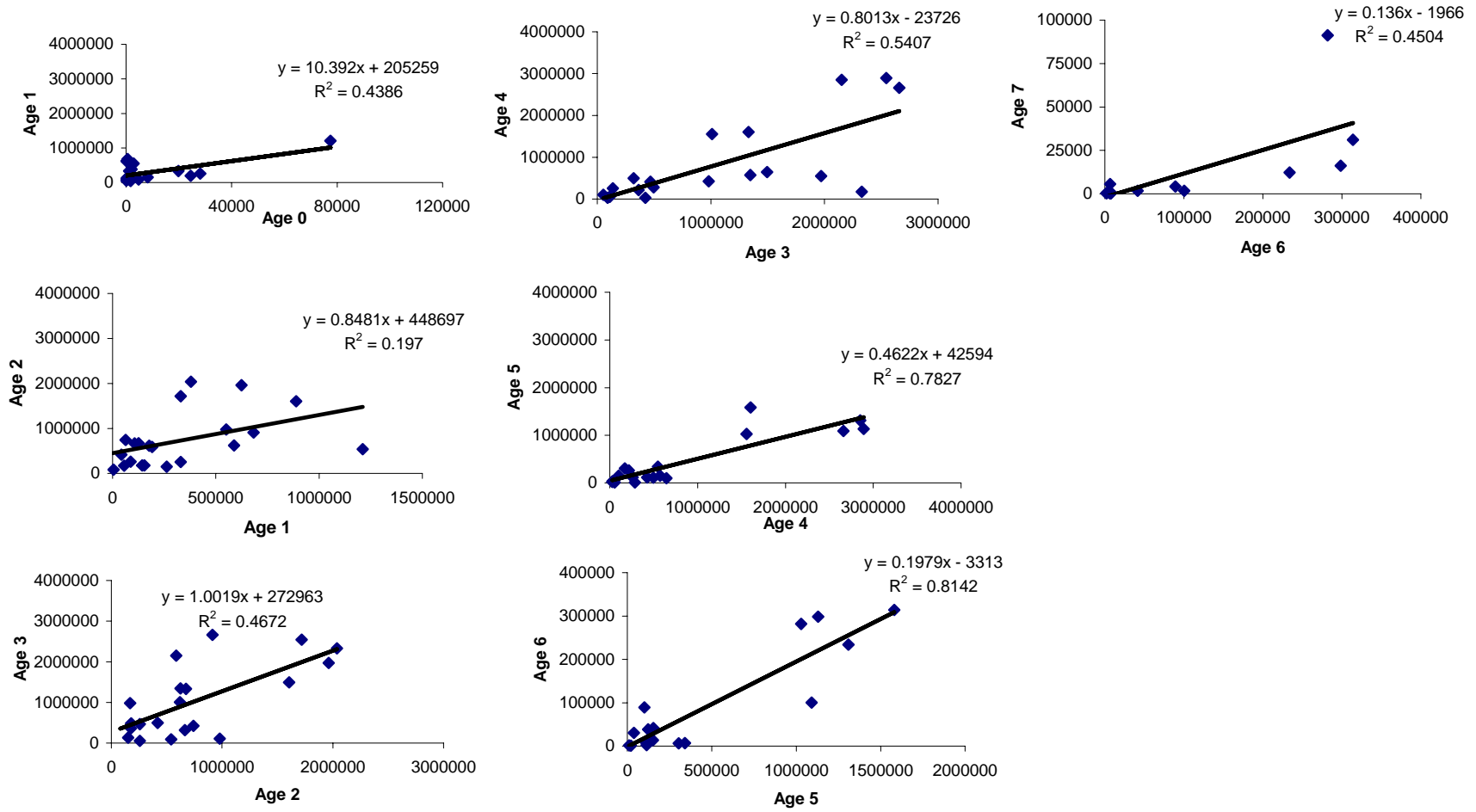
**Figure 2.5.1b:** Length composition of catches for 2005 in zone C/Composition par taille des captures en 2005 pour la zone C



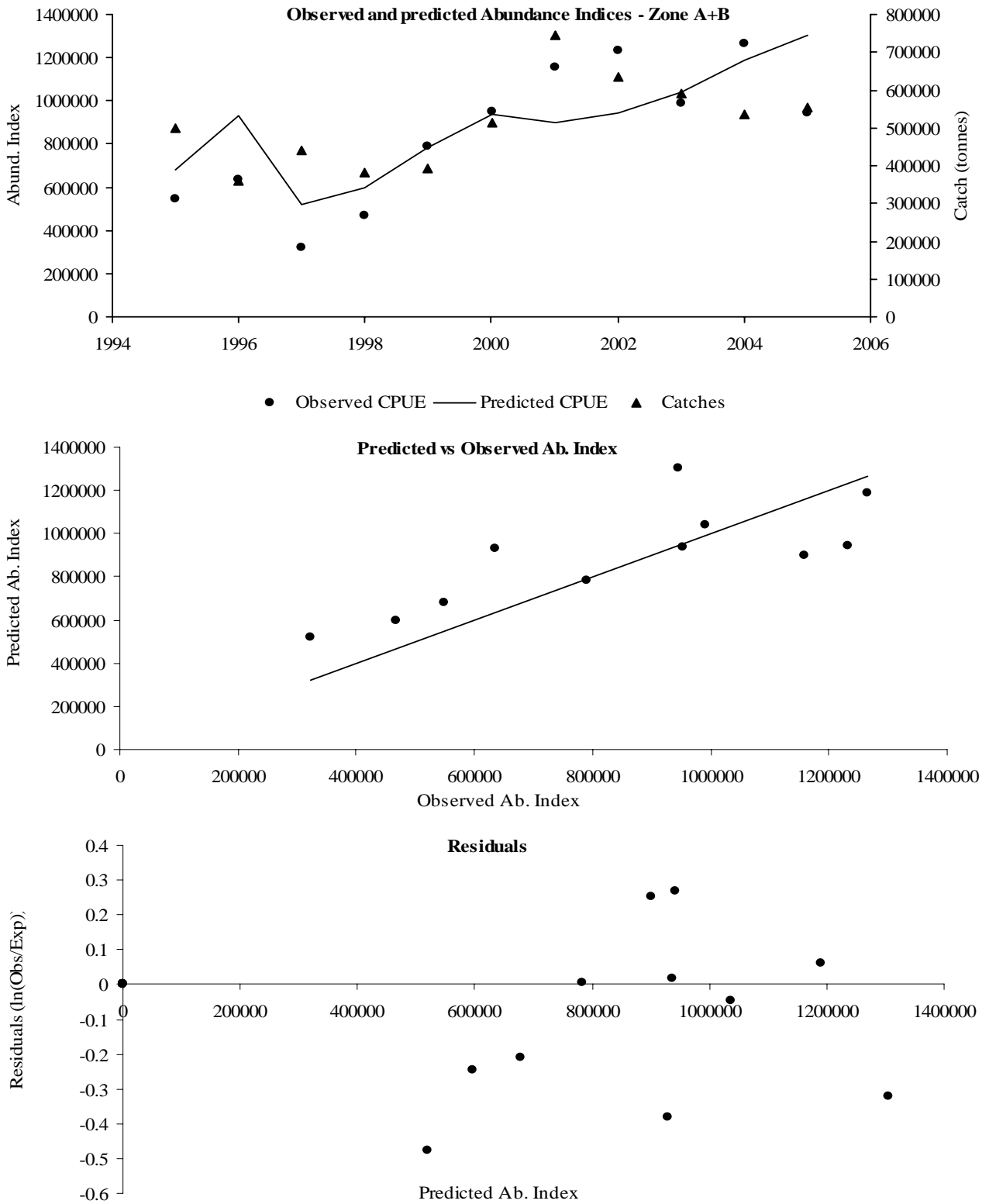
**Figure 2.5.2a,b,c:** Length composition of sardine (Nov.–Dec. 2005) – R/V DR. FRIDTJOF NANSEN and R/V AL AMIR MY ABDALLAH/Composition en taille des sardines (nov.-déc. 2005) – N/R DR. FRIDTJOF NANSEN et N/R AL AMIR MY ABDALLAH



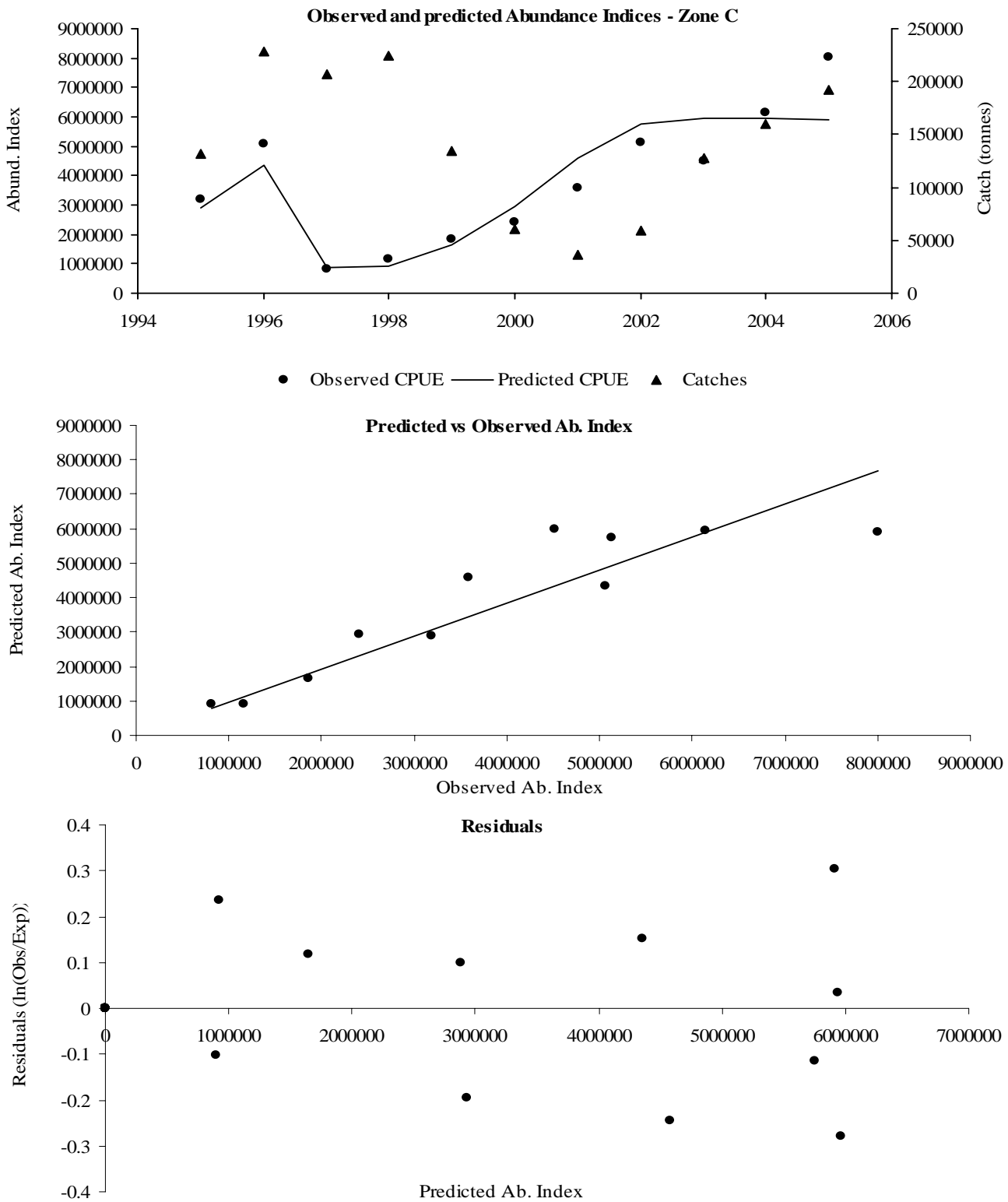
**Figure 2.6.1:** Exploratory analyses of the data for sardine in zone A+B/Analyses exploratoires des données pour la sardine dans la zone A+B



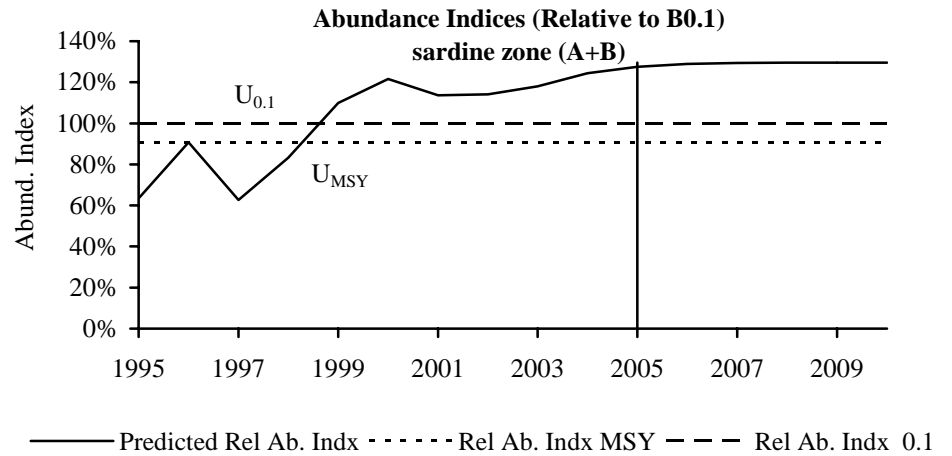
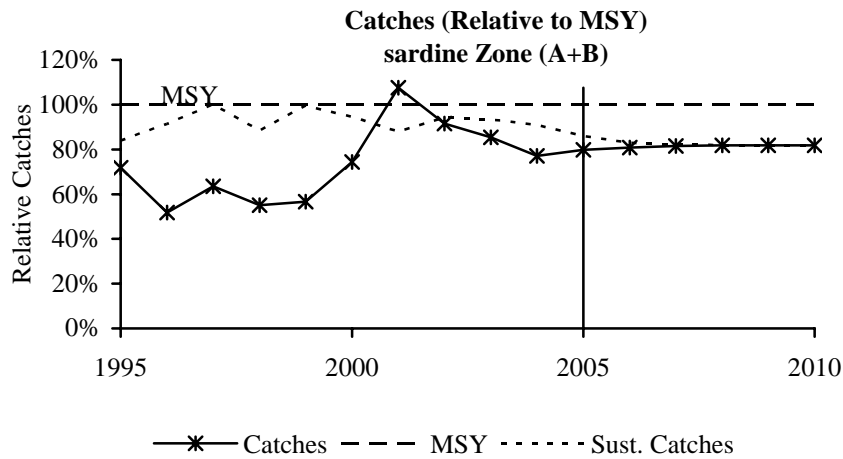
**Figure 2.6.2:** Exploratory analyses of the data for sardine in zone C/Analyses exploratoires des données pour la sardine dans la zone C



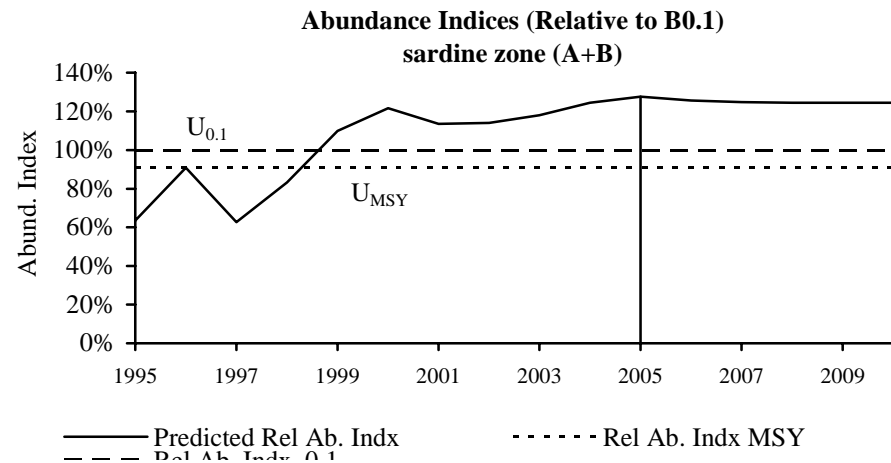
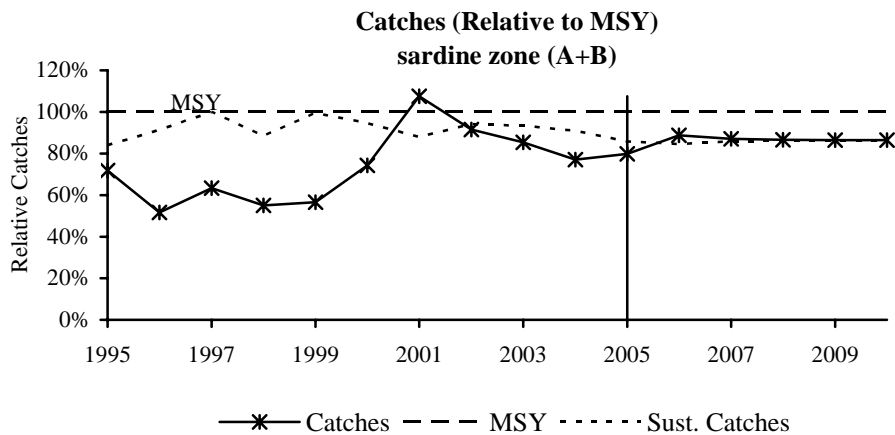
**Figure 2.6.3a:** Observed and predicted abundance indices for Sardine zone A+B using estimates from R/V DR. FRIDTJOF NANSEN (1995–2005) and diagnostics of the model fit/Indices d’abondance observés et prévus pour la sardine dans la zone A+B à partir des estimations du N/R DR. FRIDTJOF NANSEN (1995-2005) et des diagnostics du modèle



**Figure 2.6.3b:** Observed and predicted abundance indices for Sardine zone C using estimates from R/V DR. FRIDTJOF NANSEN (1995–2005) and diagnostics of the model fit/Indices d’abondance observés et prévus pour la sardine en zone C en utilisant les estimations du N/R DR. FRIDTJOF NANSEN (1995-2005) et des diagnostics du modèle

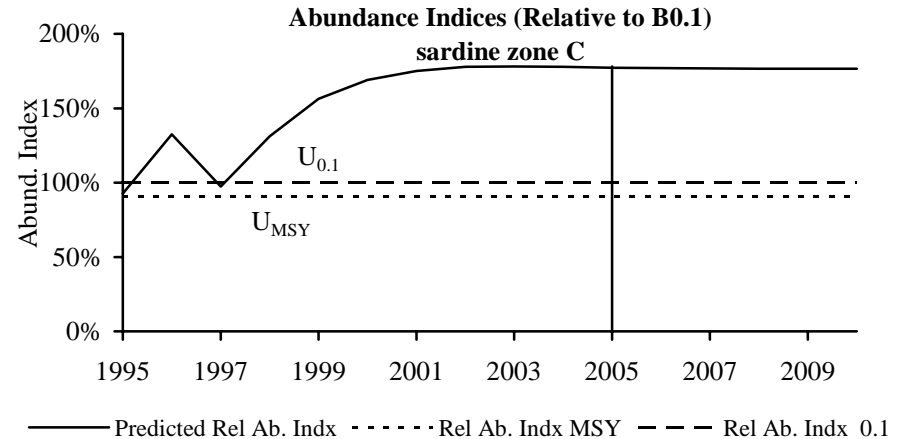
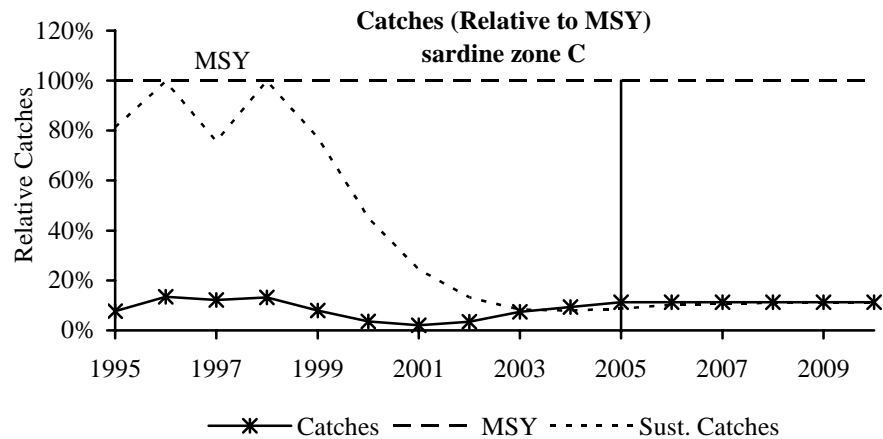


**Figures 2.7.1a:** Predicted trends in catches and abundance of sardine in zone A+B – Scenario I (status quo)/Prédictions des captures et de l’abondance de sardines dans la zone A+B – Scénario I (statu quo)

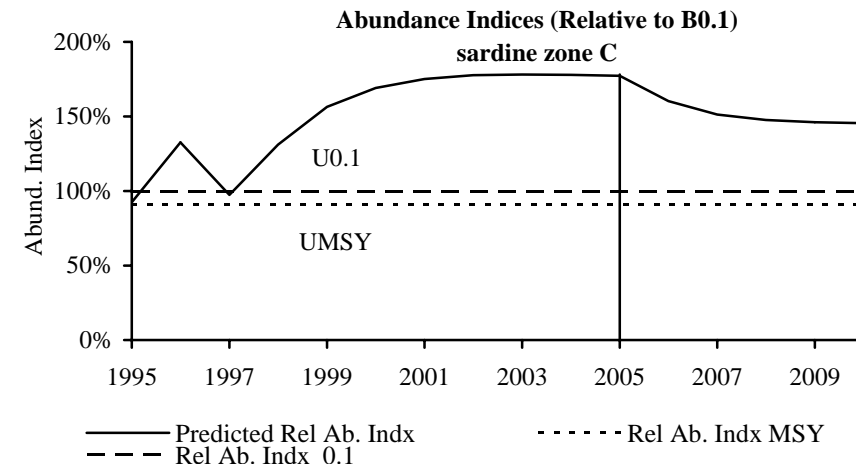
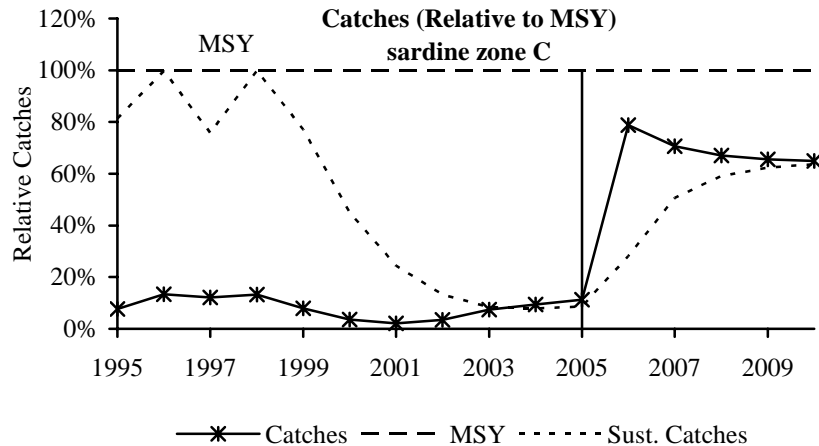


**Figures 2.7.1b:** Predicted trends in catches and abundance of sardine in zone A+B – Scenario II (10% increase in effort)/Prédictions des captures et de l’abondance de sardines dans la zone A+B – Scénario II (10% d’accroissement de l’effort)

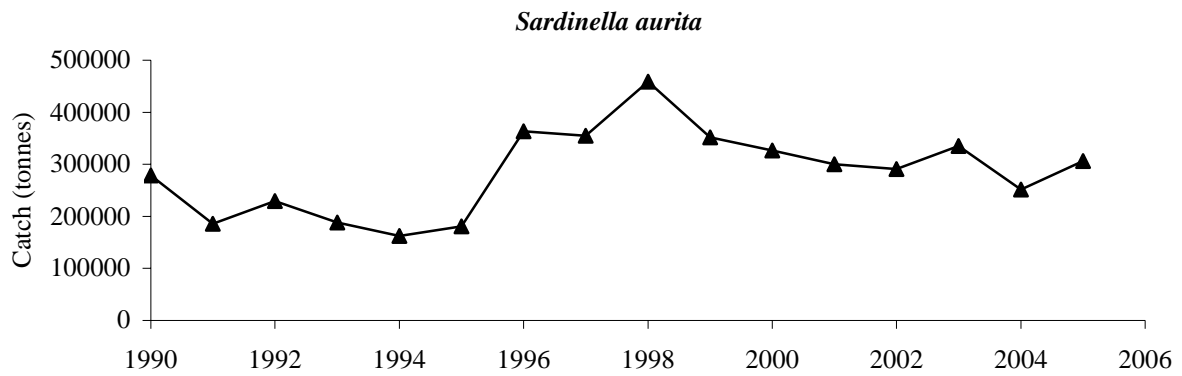




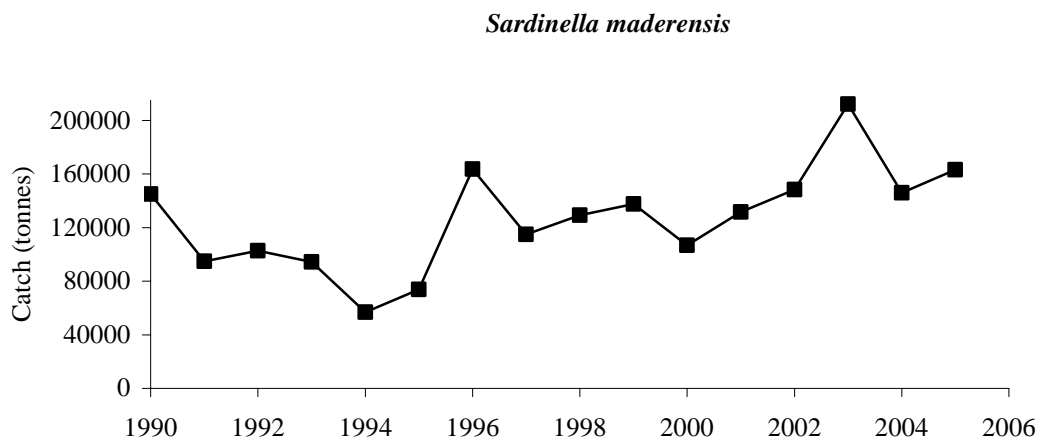
**Figure 2.7.2a:** Predicted catches and abundance of sardine in zone C – Scenario I (status quo)/Prédictions des captures et de l’abondance de sardines dans la zone C – Scénario I (statu quo)



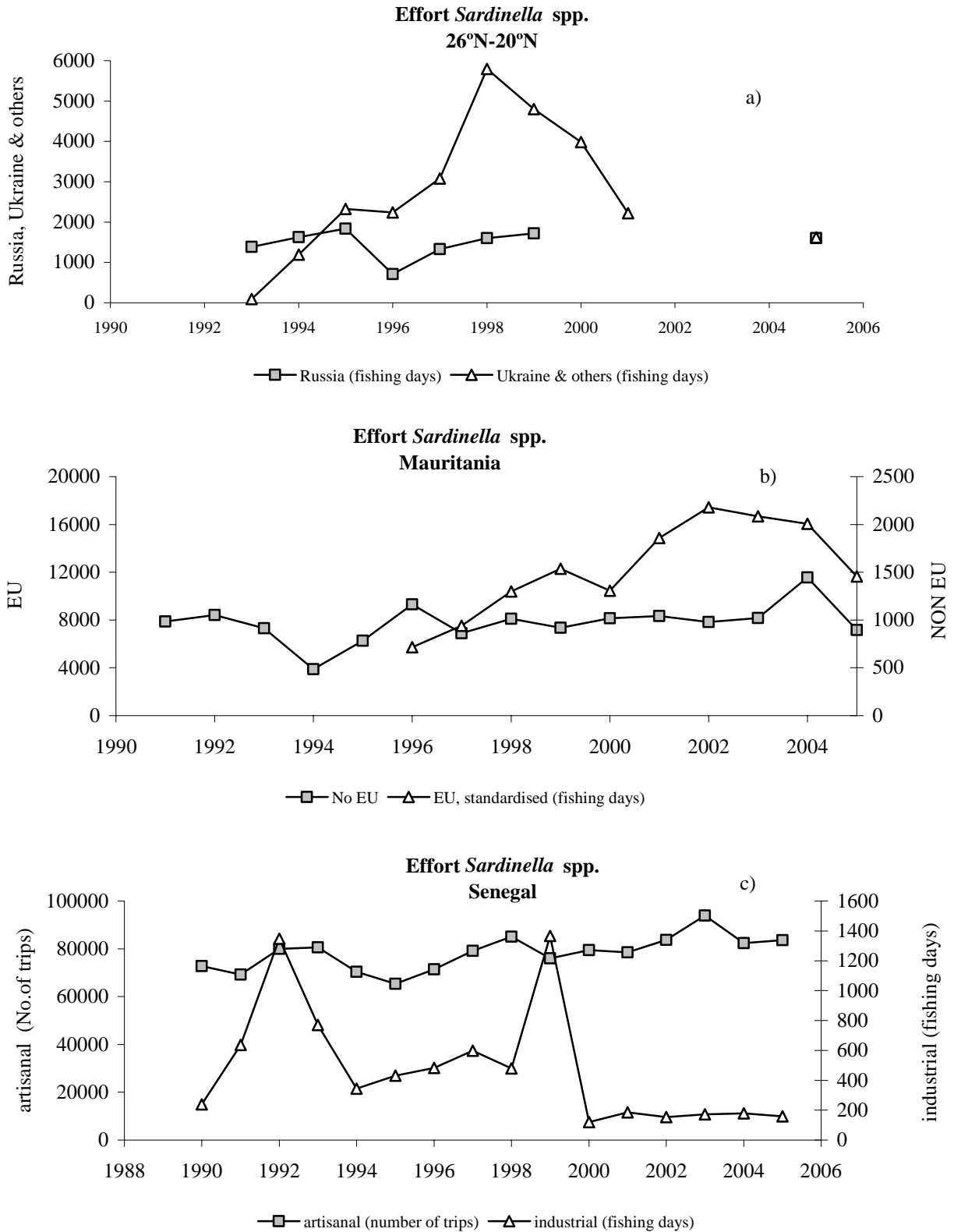
**Figure 2.7.2b:** Predicted catches and abundance of sardine in zone C – Scenario II (700% increase in effort)/Prédictions des captures et de l’abondance de sardines dans la zone C – Scénario II (700% d’accroissement de l’effort)



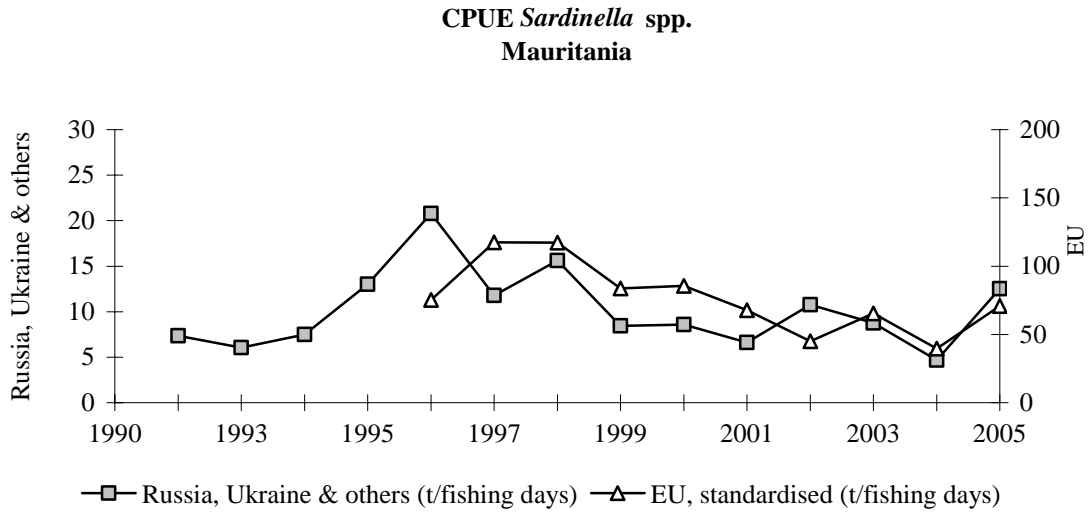
**Figure 3.2.1a:** Total catch of *Sardinella aurita* (1990–2005) in the whole subregion/Captures totales de *Sardinella aurita* (1990-2005) dans toute la sous-région



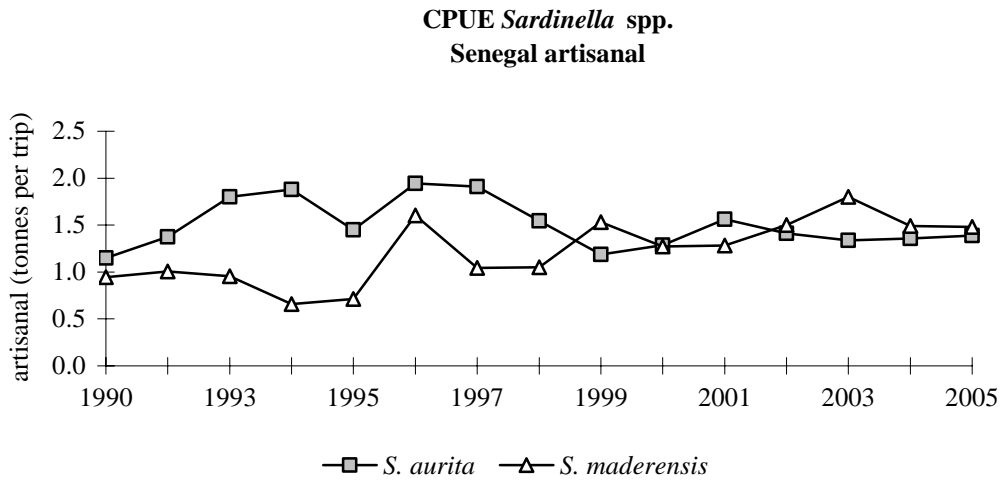
**Figure 3.2.1b:** Total catch of *Sardinella maderensis* (1990–2005) in the whole subregion/Captures totales de *Sardinella maderensis* (1990-2005) dans toute la sous-région



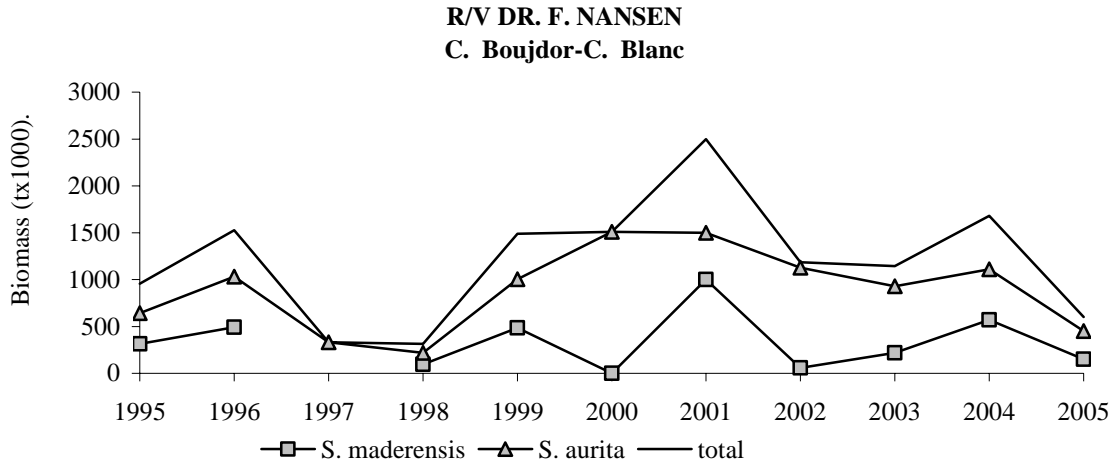
**Figure 3.2.2a,b,c:** Effort of *Sardinella* spp. (1990–2005) by fleet and year (a) Zone 26°N–20°N, (b) Mauritania and (c) Senegal (effort in fishing days or number of trips)/Effort de *Sardinella* spp. (1990–2005) par flottille et par année (a) zone 26°N-20°N, (b) en Mauritanie et (c) au Sénégal (effort en jours de pêche ou en nombre de sorties)



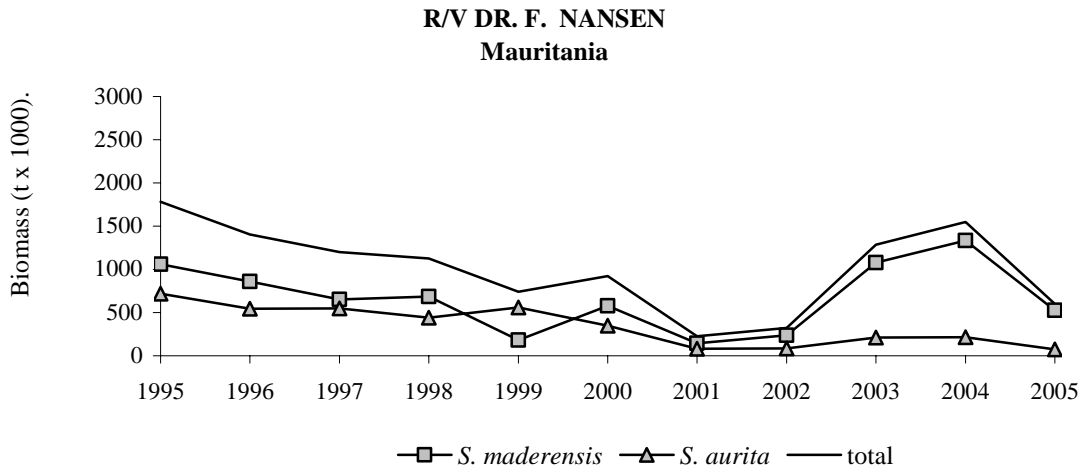
**Figure 3.3.1a:** CPUE of *Sardinella* spp. (1990–2005) by fishery in Mauritania (tonnes/fishing days)/CPUE de *Sardinella* spp. (1990-2005) par pêcherie en Mauritanie (tonnes/jours de pêche)



**Figure 3.3.1b:** CPUE of *Sardinella* spp. (1990–2005) by species for the artisanal fishery in Senegal (tonnes/number of trips)/CPUE de *Sardinella* spp. (1990-2005) par espèce pour la pêche artisanale au Sénégal (tonnes/nombre de sorties)

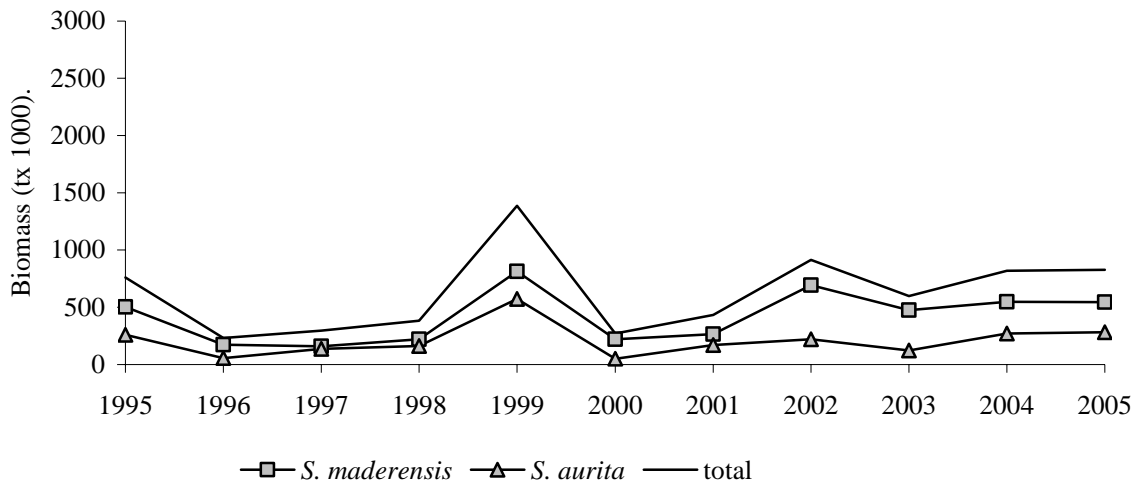


**Figure 3.3.2a:** Biomass estimates of *S. aurita* and *S. maderensis* (1995–2005) North of Cape Blanc, R/V DR. FRIDTJOF NANSEN (weight in thousand tonnes)/Estimations de la biomasse de *S. aurita* et *S. maderensis* (1995-2005) pour la zone nord du Cap Blanc, N/R DR. FRIDTJOF NANSEN (poids en milliers de tonnes)

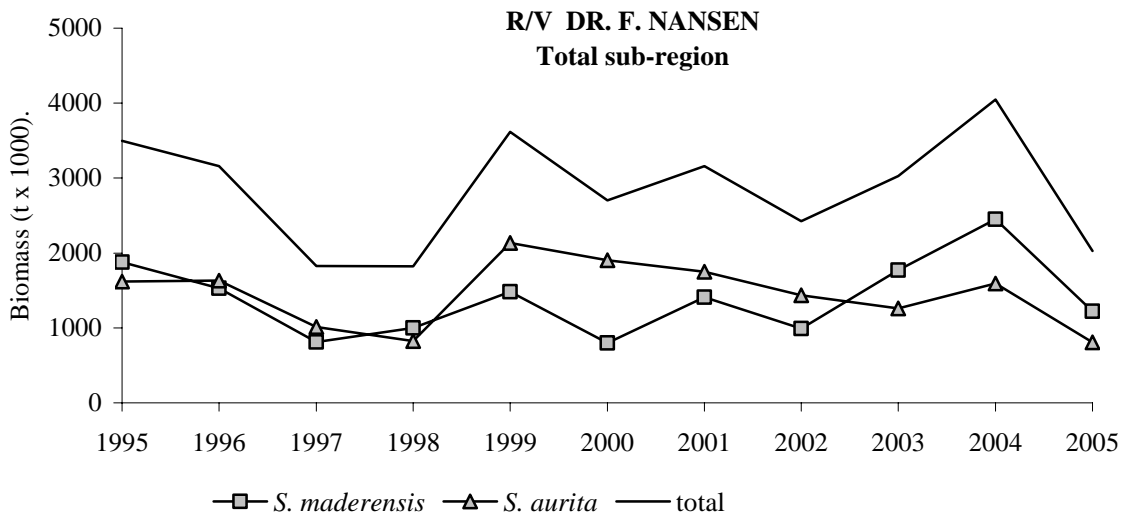


**Figure 3.3.2b:** Biomass estimates of *S. aurita* and *S. maderensis* (1995–2005) for Mauritania, R/V DR. FRIDTJOF NANSEN (weight in thousand tonnes)/Estimations de la biomasse de *S. aurita* et *S. maderensis* (1995-2005) pour la Mauritanie, N/R DR. FRIDTJOF NANSEN (poids en milliers de tonnes)

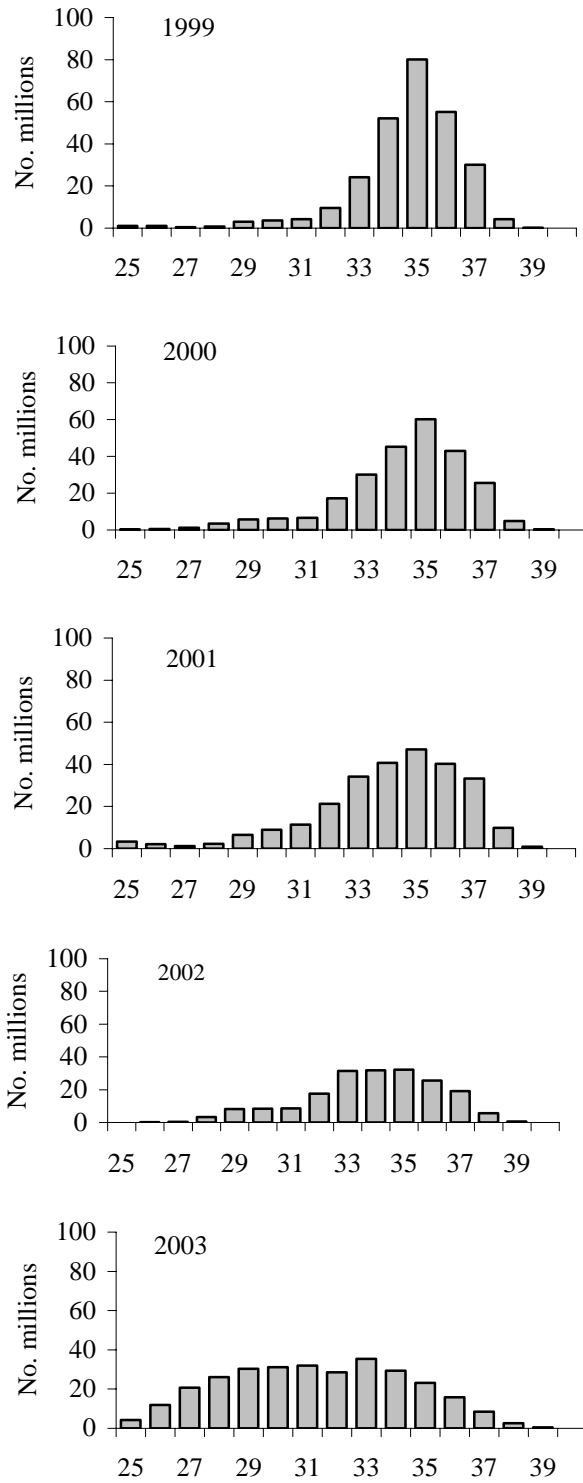
R/V DR. F. NANSEN  
Senegal & The Gambia



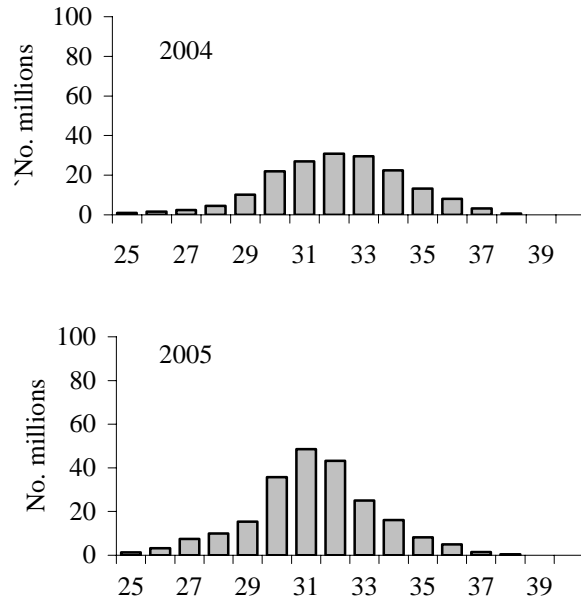
**Figure 3.3.2c:** Biomass estimates of *S. aurita* and *S. maderensis* (1995–2005) for Senegal and Gambia, R/V DR. FRIDTJOF NANSEN (weight in thousand tonnes)/Estimations de la biomasse de *S. aurita* et *S. maderensis* (1995-2005) pour le Sénégal et la Gambie, N/R DR. FRIDTJOF NANSEN (poids en milliers de tonnes)



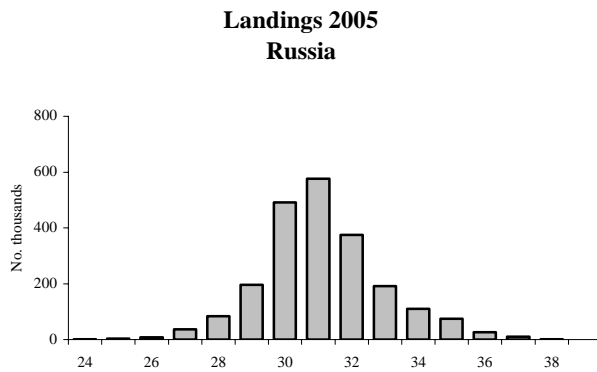
**Figure 3.3.2d:** Biomass estimates of *S. aurita* and *S. maderensis* (1995–2005) for the subregion, R/V DR. FRIDTJOF NANSEN (weight in thousand tonnes)/Estimations de la biomasse de *S. aurita* et *S. maderensis* (1995-2005) pour la sous-région, N/R DR. FRIDTJOF NANSEN (poids en milliers de tonnes)



**Figure 3.5.1a:** Length distributions of Dutch landings of *Sardinella aurita* in Mauritania (1999–2005)/Distributions par taille des débarquements néerlandais de *Sardinella aurita* en Mauritanie (1999-2005)



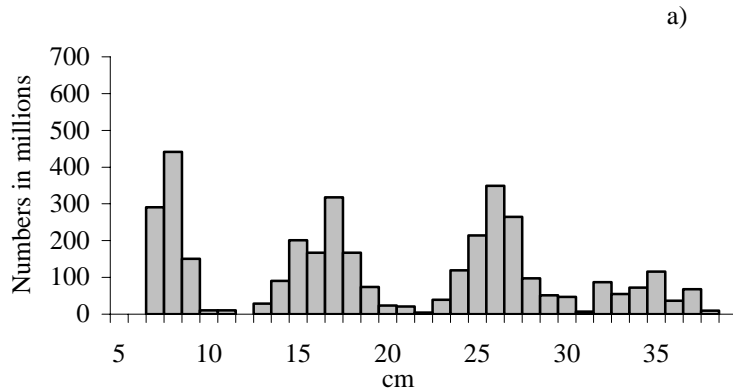
**Figure 3.5.1a (cont.) :** Length distributions of Dutch landings of *Sardinella aurita* in Mauritania (1999–2005)/Distributions par taille des débarquements néerlandais de *Sardinella aurita* en Mauritanie (1999-2005)



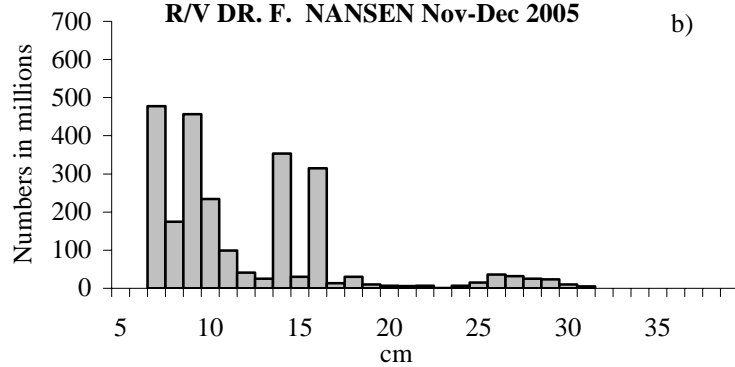
**Figure 3.5.1b:** Length distributions of Russian landings of *Sardinella aurita* in Mauritania (1999–2005)/Distributions par taille des débarquements russes de *Sardinella aurita* en Mauritanie (1999-2005)



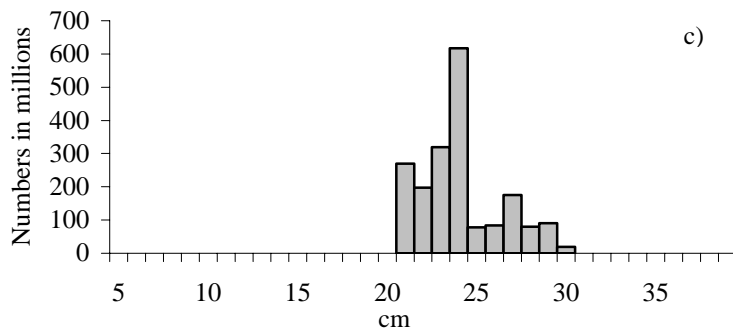
**C. Boujdor-C. Blanc**  
**R/V DR. F. NANSEN Nov-Dec 2005**



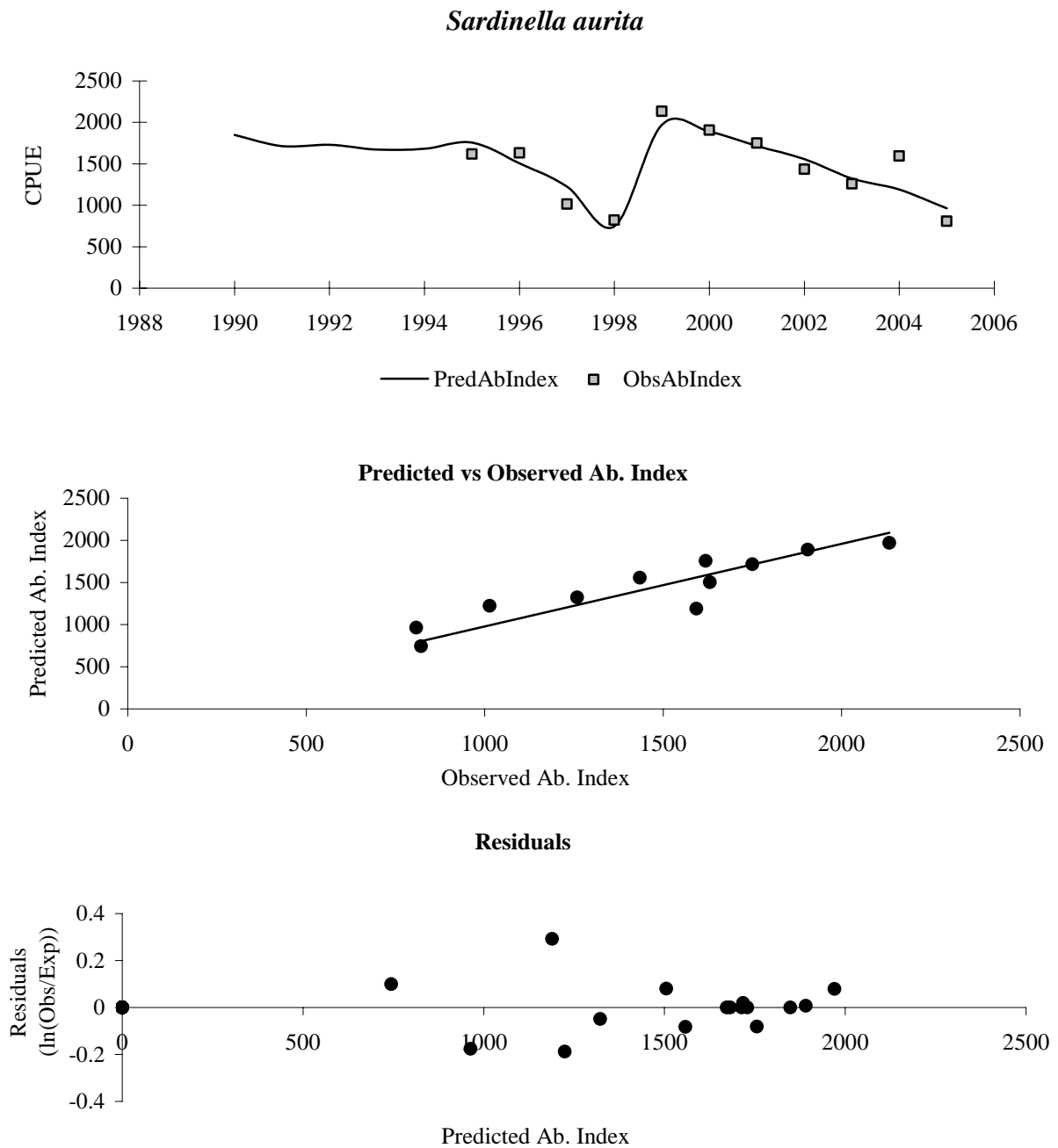
**Mauritania**  
**R/V DR. F. NANSEN Nov-Dec 2005**



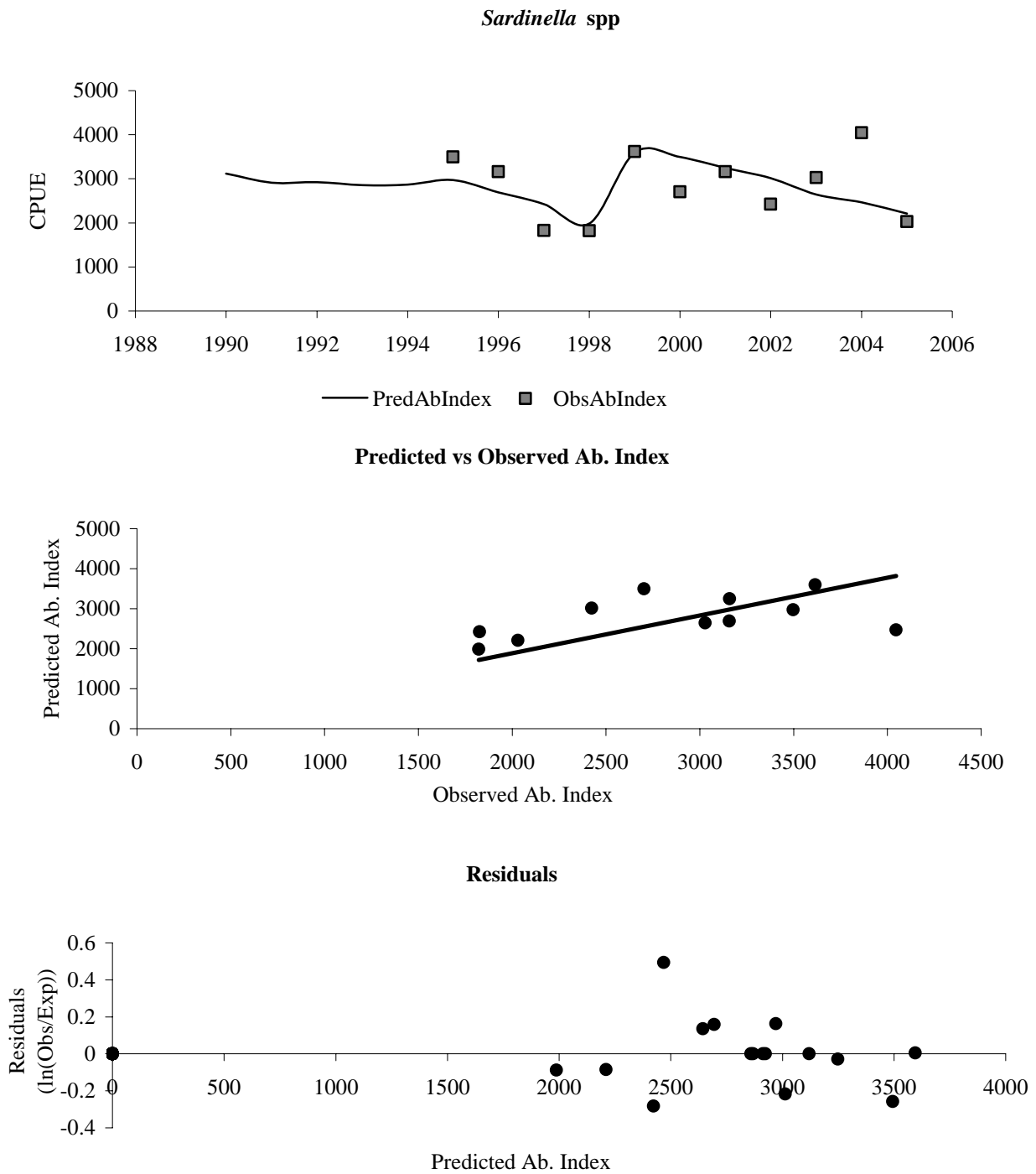
**Senegal -Gambia**  
**R/V DR. F. NANSEN Nov-Dec 2005**



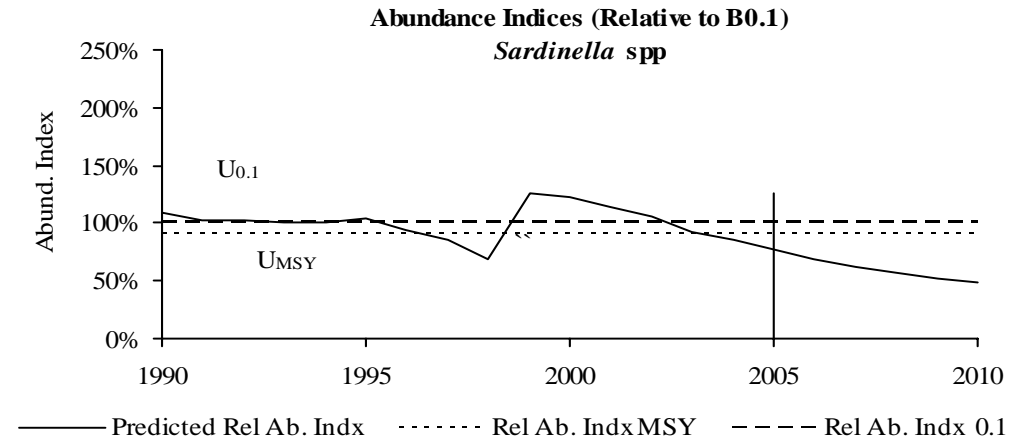
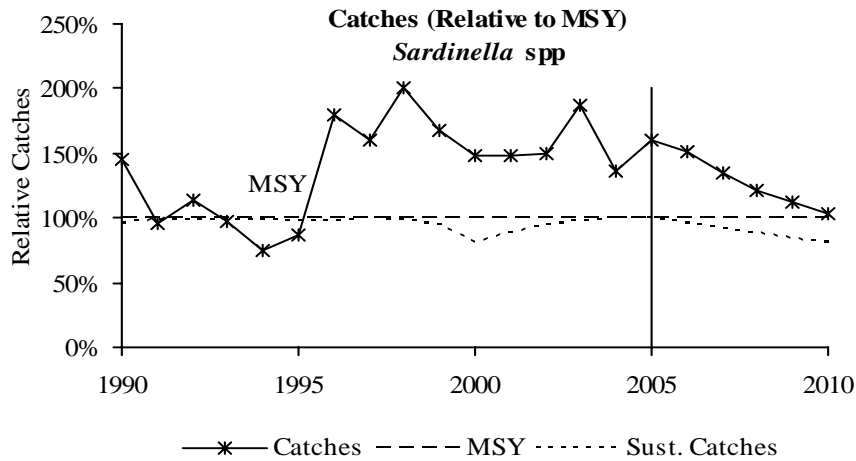
**Figure 3.5.2a,b,c:** Length distribution of *Sardinella aurita* (2005) in a) C. Boujdor–C. Blanc, b) Mauritania, c) Senegal and Gambia (in millions of individuals) – R/V DR. FRIDTJOF NANSEN/Distribution par taille (2005) de *Sardinella aurita*) Cap Boujador–Cap Blanc, b) en Mauritanie, c) au Sénégal et en Gambie (en millions d’individus) – N/R DR. FRIDTJOF NANSEN



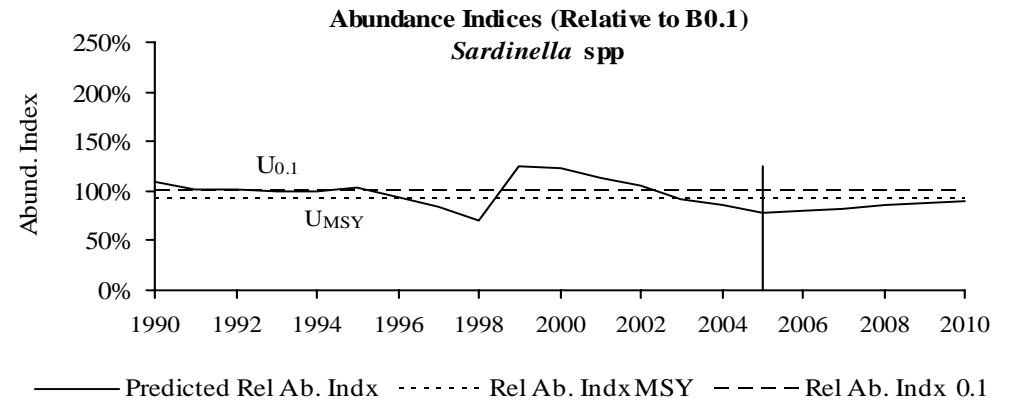
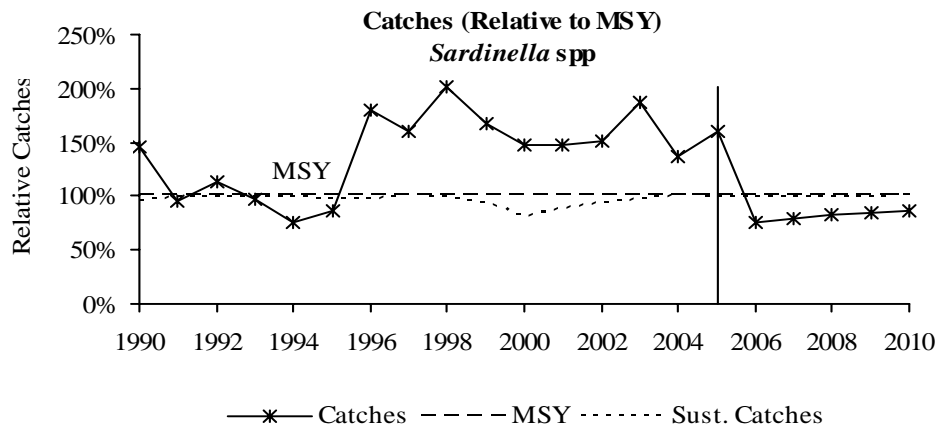
**Figure 3.6.1:** Observed and predicted abundance indices for *Sardinella aurita* using biomass estimates from R/V DR. FRIDTJOF NANSEN (1995–2005), and diagnostics of the model fit/Indices d’abondance observés et prévus pour *Sardinella aurita* en utilisant les estimations de biomasse du N/R DR. FRIDTJOF NANSEN (1995-2005) et les diagnostics du modèle



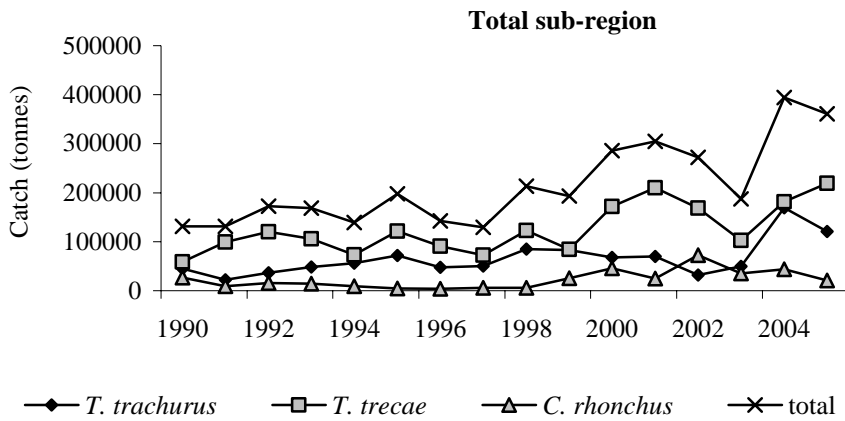
**Figure 3.6.2:** Observed and predicted abundance indices for *Sardinella* spp. using biomass estimates from R/V DR. FRIDTJOF NANSEN (1995–2005) and diagnostics of the model fit/Indices d'abondance observés et prévus pour *Sardinella* spp. en utilisant les estimations de biomasse du N/R DR. FRIDTJOF NANSEN (1995-2005) et les diagnostics du modèle



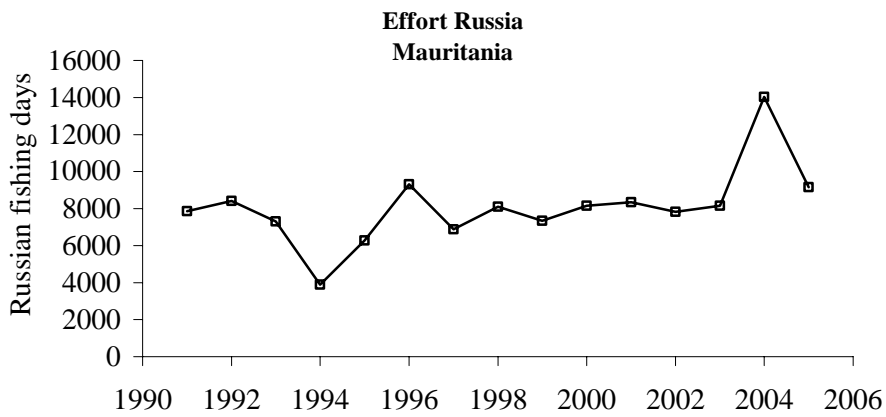
**Figures 3.7.1:** Predicted trends in catches and abundance of *Sardinella* spp. – Scenario I (*status quo*)/Prédictions des captures et de l’abondance pour les *Sardinella* spp. – Scénario I (*statu quo*)



**Figures 3.7.2:** Predicted trends in catches and abundance of *Sardinella* spp. Scenario II (50% decrease in effort)/Prédictions des captures et de l’abondance pour les *Sardinella* spp. – Scénario II (diminution de 50% de l’effort)

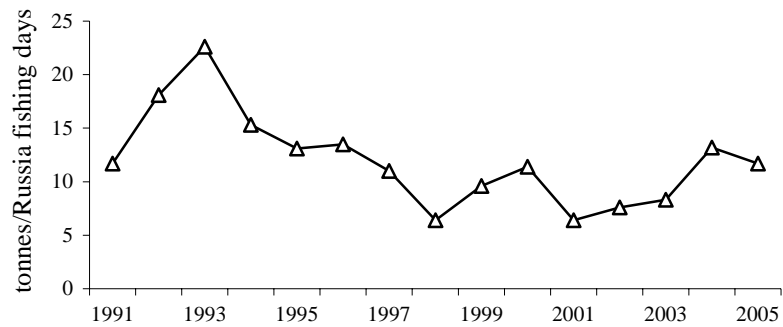


**Figure 4.2.1:** Total catches (tonnes) of horse mackerel in the subregion by species and year (1990–2005)/Captures totales (tonnes) de chinchards dans la sous-région par espèce et par année (1990-2005)



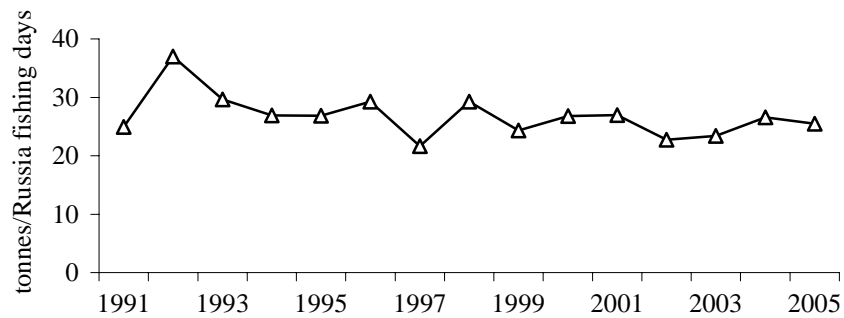
**Figure 4.2.2:** Effort (fishing days) of Russian fleet in Mauritania (1990–2005)/Effort (jours de pêche) de la flottille russe en Mauritanie (1990-2005)

*Trachurus trachurus*  
CPUE - Mauritania

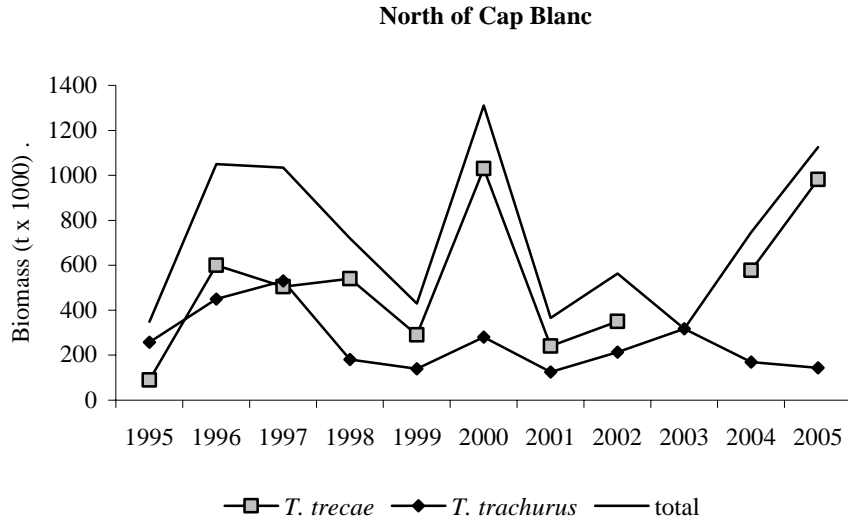


**Figure 4.3.1a:** CPUE of *Trachurus trachurus*, Mauritania (1990–2005) (tonnes/standardized fishing days)/CPUE de *Trachurus trachurus*, Mauritanie (1990-2005) (tonnes/jours de pêche standardisés)

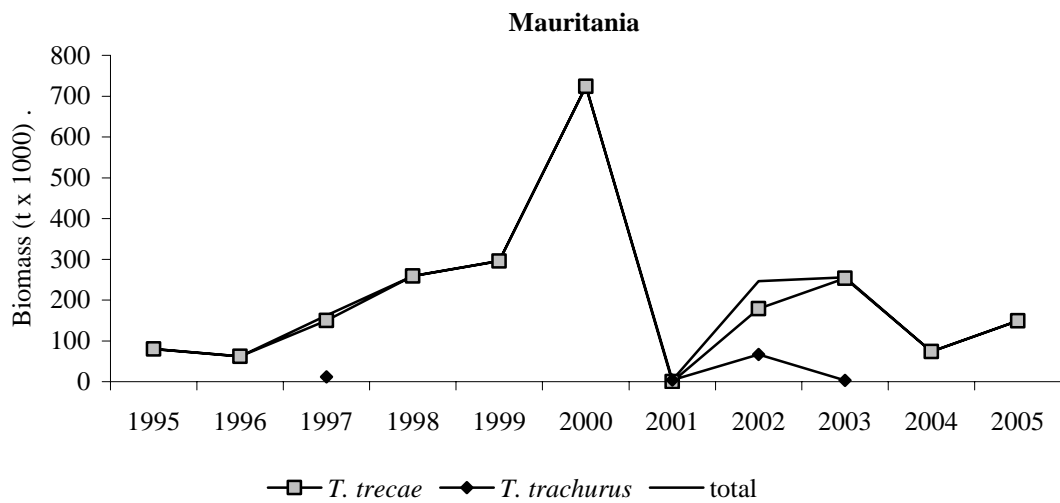
*Trachurus trecae*  
CPUE - Mauritania



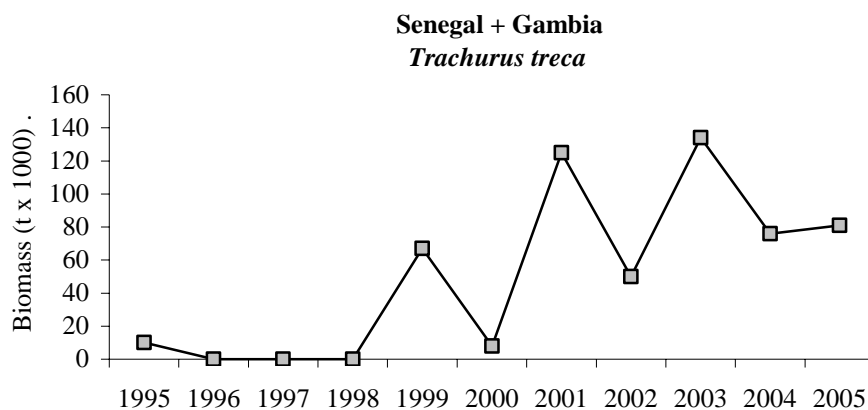
**Figure 4.3.1b:** CPUE of *Trachurus trecae*, Mauritania (tonnes/standardized fishing days)/CPUE de *Trachurus trecae*, Mauritanie (tonnes/jours de pêche standardisés)



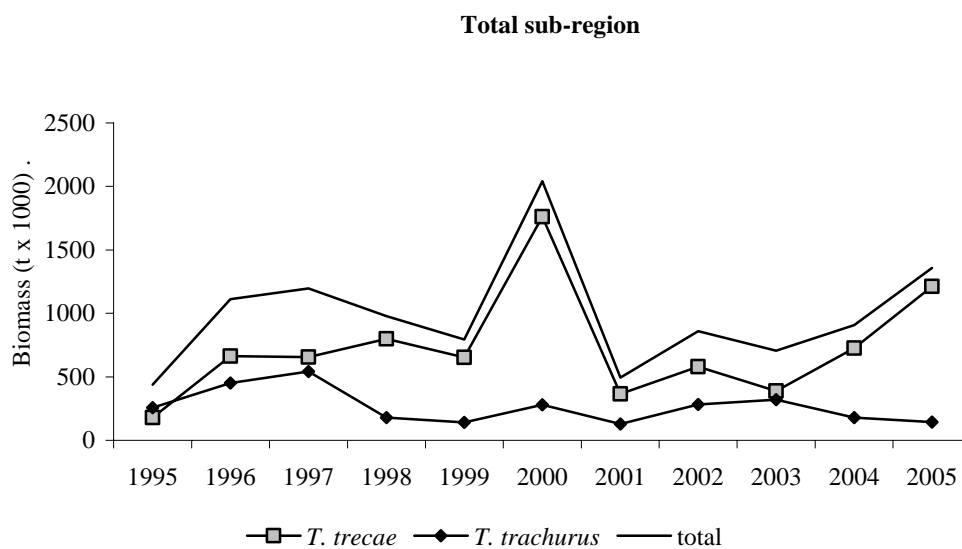
**Figure 4.3.2a:** Biomass estimates of *Trachurus trachurus* and *T. trecae* (1995–2005) for the Zone north of Cape Blanc, R/V DR. FRIDTJOF NANSEN (Nov.–Dec.)/Estimations de biomasse de *Trachurus trachurus* et *T. trecae* (1995-2005) pour la zone au nord du Cap Blanc, N/R DR. FRIDTJOF NANSEN



**Figure 4.3.2b:** Biomass estimates of *Trachurus trachurus* and *T. trecae* (1995–2005) for Mauritania, R/V DR. FRIDTJOF NANSEN (Nov-Dec.)/Estimations de biomasse de *Trachurus trachurus* et *T. trecae* (1995-2005) en Mauritanie, N/R DR. FRIDTJOF NANSEN

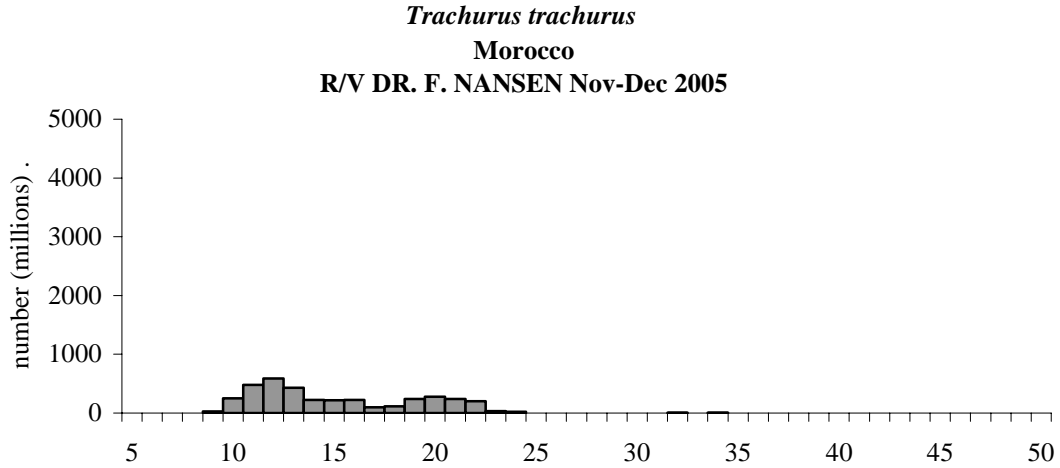


**Figure 4.3.2c:** Biomass estimates of *Trachurus trecae* (1995–2005) for Senegal and Gambia, R/V DR. FRIDTJOF NANSEN (Nov.–Dec.)/Estimations de biomasse de *Trachurus trecae* (1995-2005) au Sénégal et en Gambie, N/R DR. FRIDTJOF NANSEN (nov.-déc.)

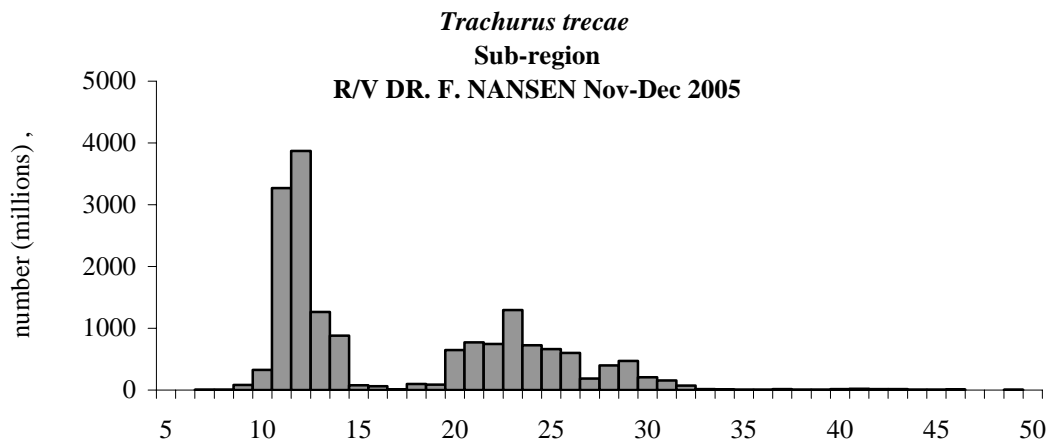


**Figure 4.3.2d:** Biomass estimates of *Trachurus trecae* and *T. trachurus* (1995–2005) for total subregion, R/V DR. FRIDTJOF NANSEN (Nov.–Dec.)/Estimations de biomasse de *Trachurus trachurus* et *T. trecae* (1995-2005) pour toute la sous-région, N/R DR. FRIDTJOF NANSEN (nov.-déc.)

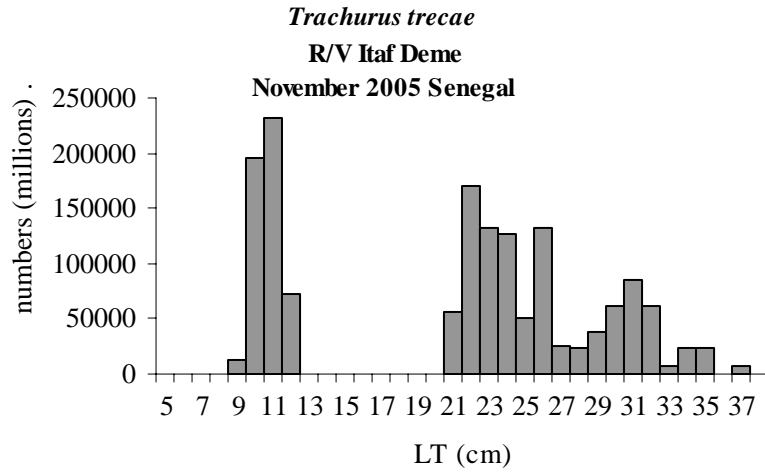




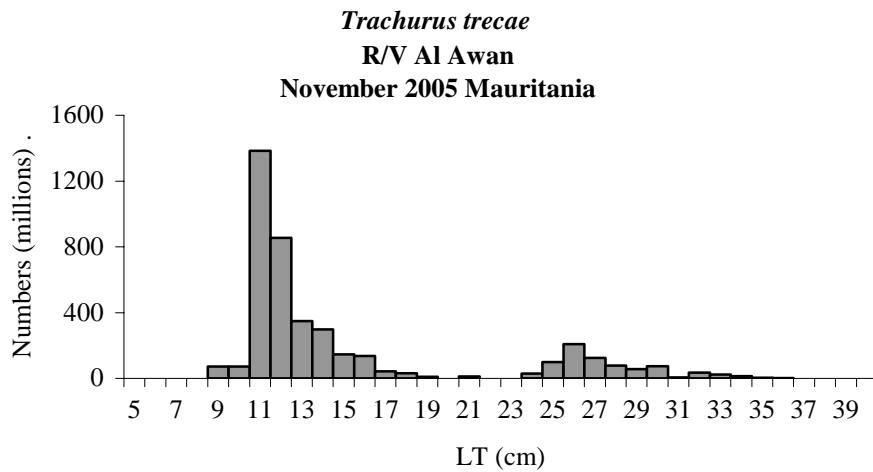
**Figure 4.5.1a:** Length composition (in millions of individuals) for *Trachurus trachurus* (Nov.–Dec. 2005), R/V DR. FRIDTJOF NANSEN/Composition en taille (en millions) de *Trachurus trachurus* (nov.-déc. 2005), N/R DR. FRIDTJOF NANSEN



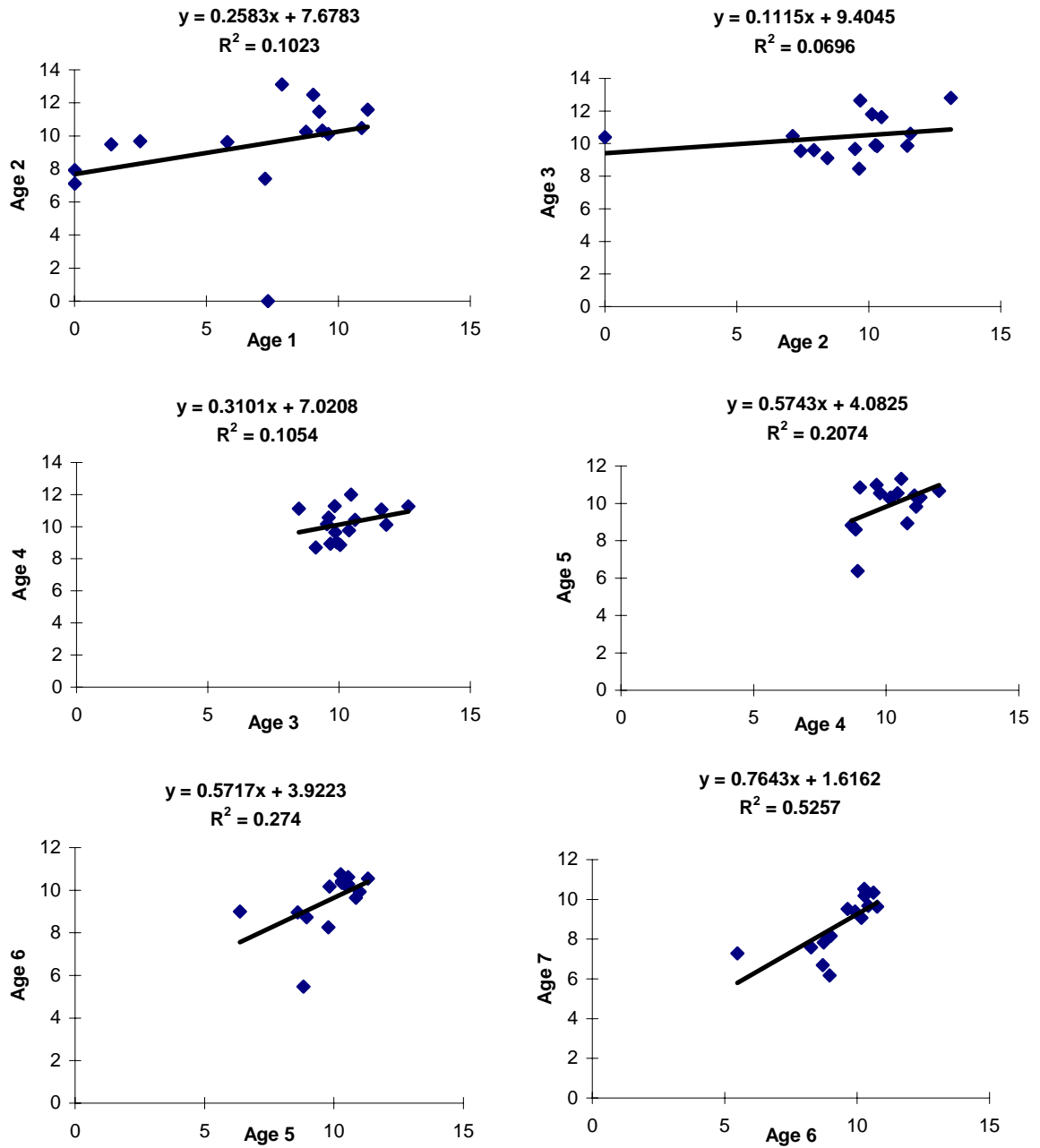
**Figure 4.5.1b:** Length composition (in millions of individuals) for *Trachurus trecae* (Nov.–Dec. 2005), R/V DR. FRIDTJOF NANSEN/Composition en taille (en millions) de *Trachurus trecae* (nov.-déc. 2005), N/R DR. FRIDTJOF NANSEN



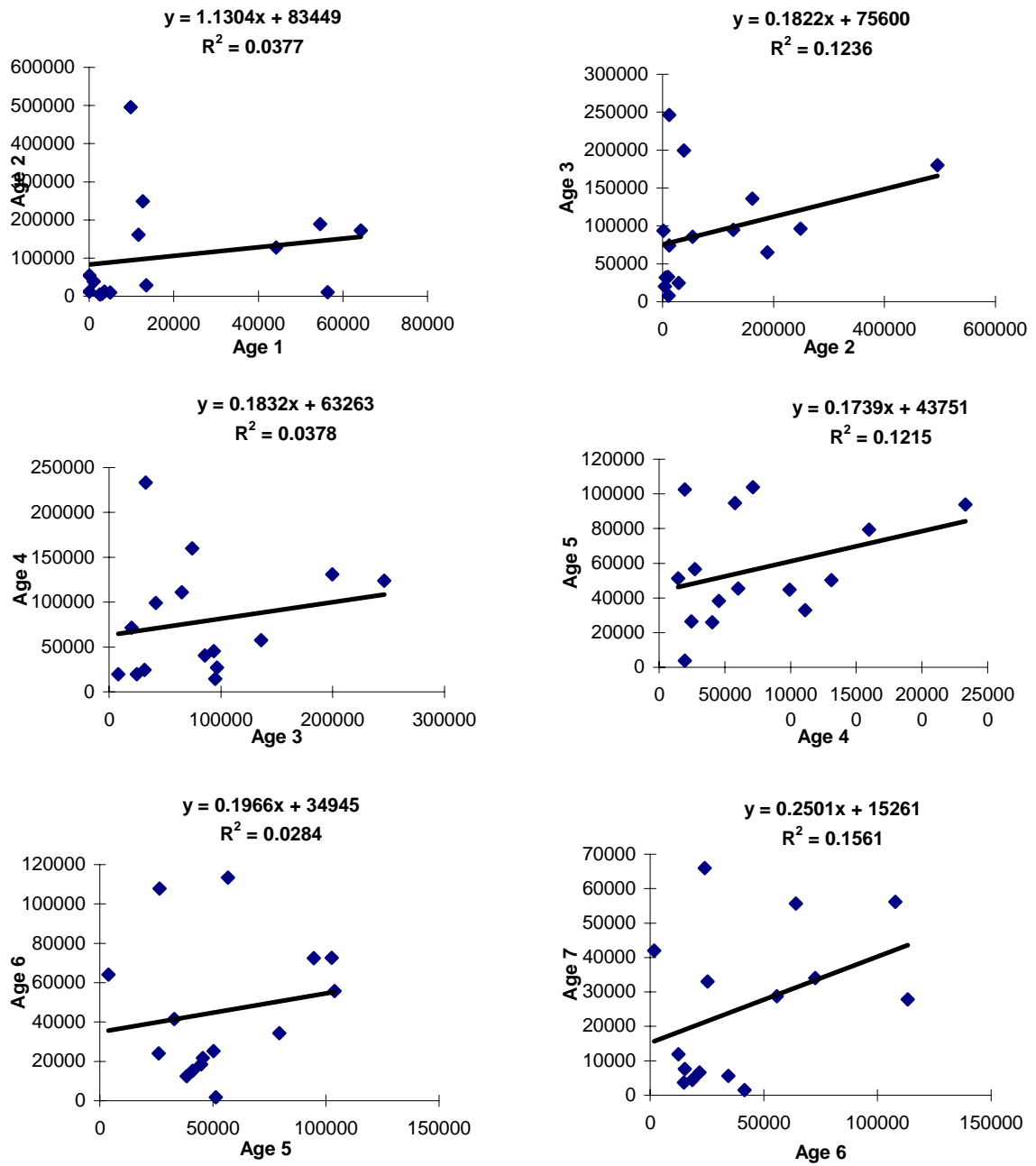
**Figure 4.5.2:** Length composition (in millions of individuals) for *Trachurus trecae* (Nov. 2005), R/V ITAF DEME/Composition en taille (en millions) de *Trachurus trecae* (nov. 2005), N/R ITAF DEME



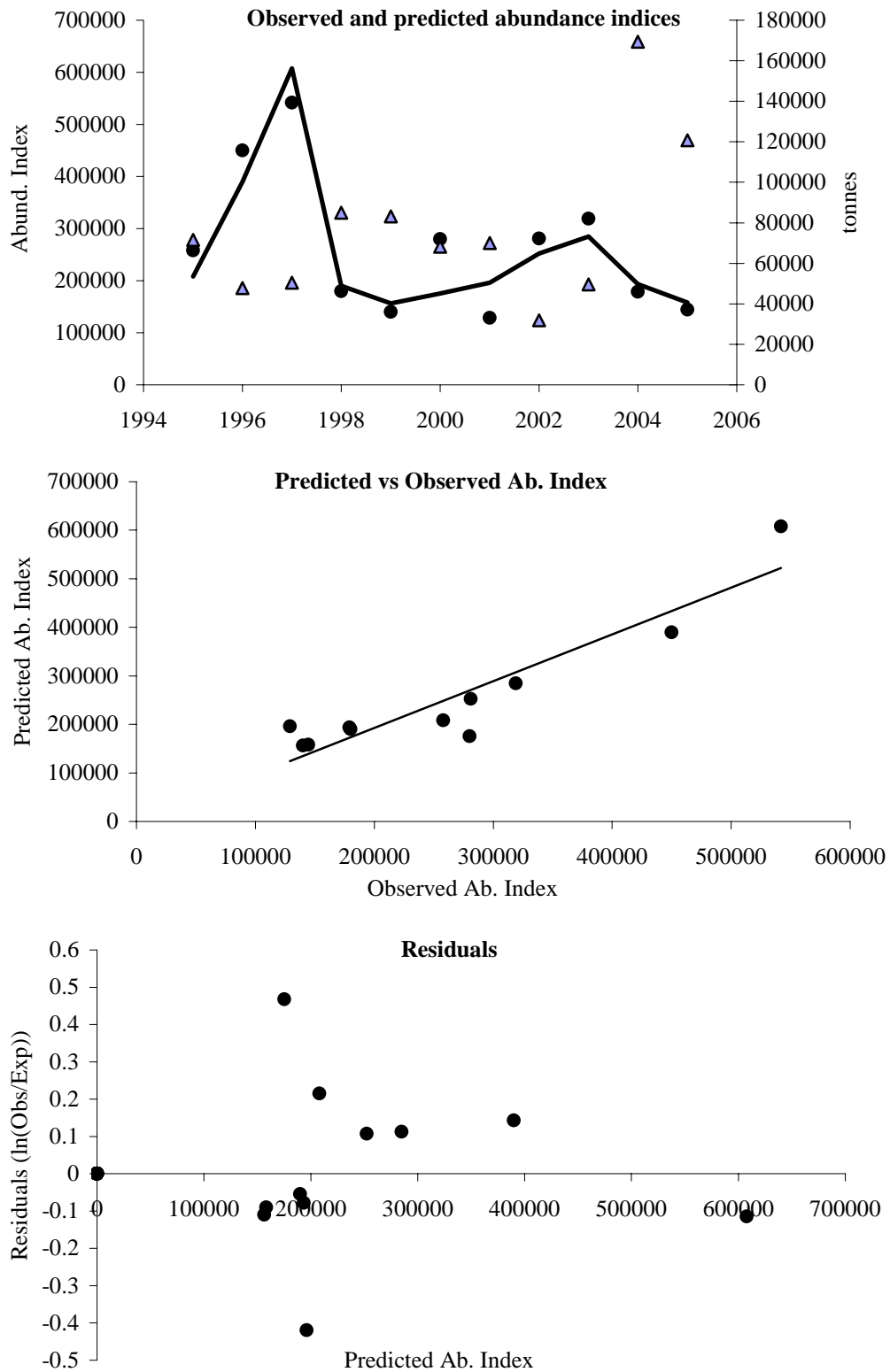
**Figure 4.5.3:** Length composition (in millions of individuals) for *Trachurus trecae* (Nov. 2005), R/V AL AWAM/Composition en taille (en millions) de *Trachurus trecae* (nov. 2005), N/R AL AWAM



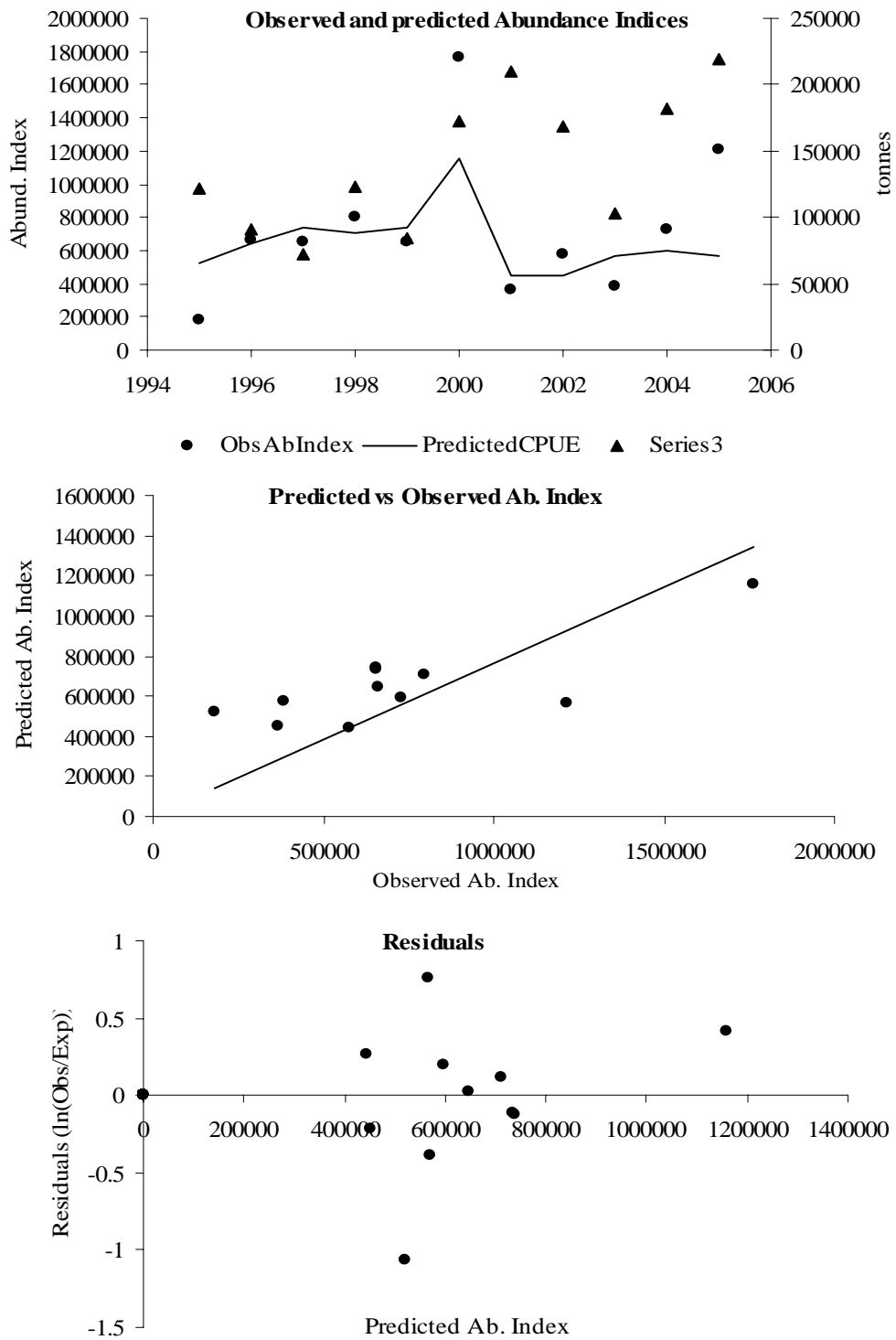
**Figure 4.6.1:** Exploratory analyses of the data for *Trachurus trachurus*/Analyses exploratoires des données pour le *Trachurus trachurus*



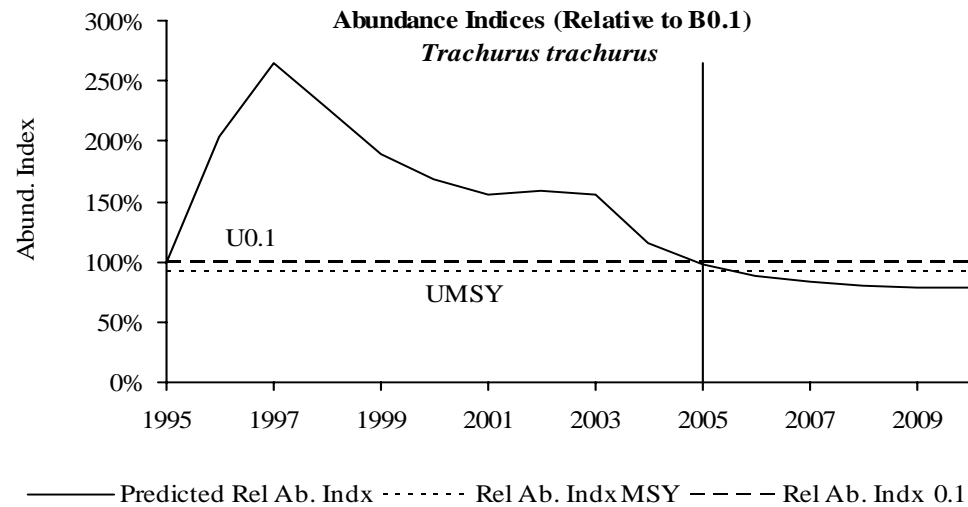
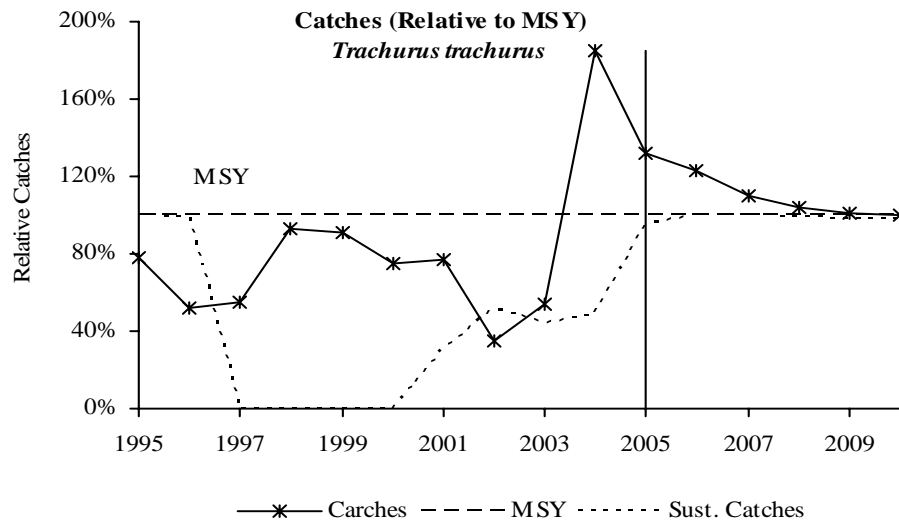
**Figure 4.6.2:** Exploratory analyses of the data for *Trachurus trecae*/Analyses exploratoires des données pour le *Trachurus trecae*



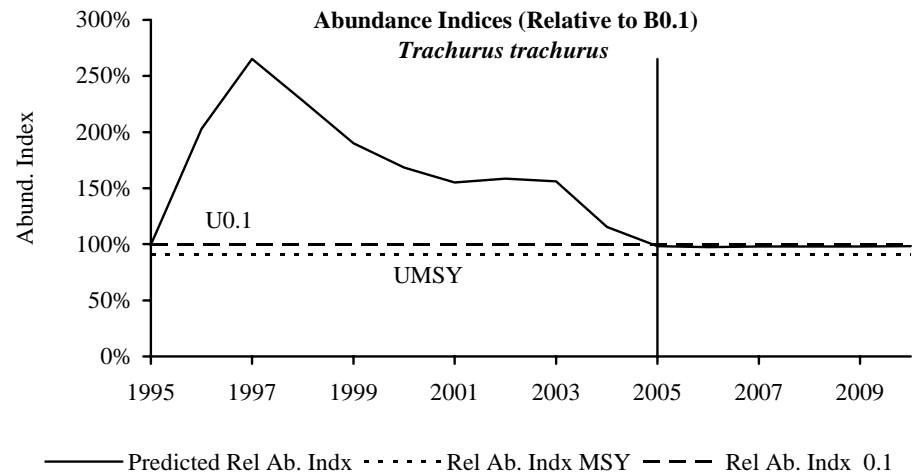
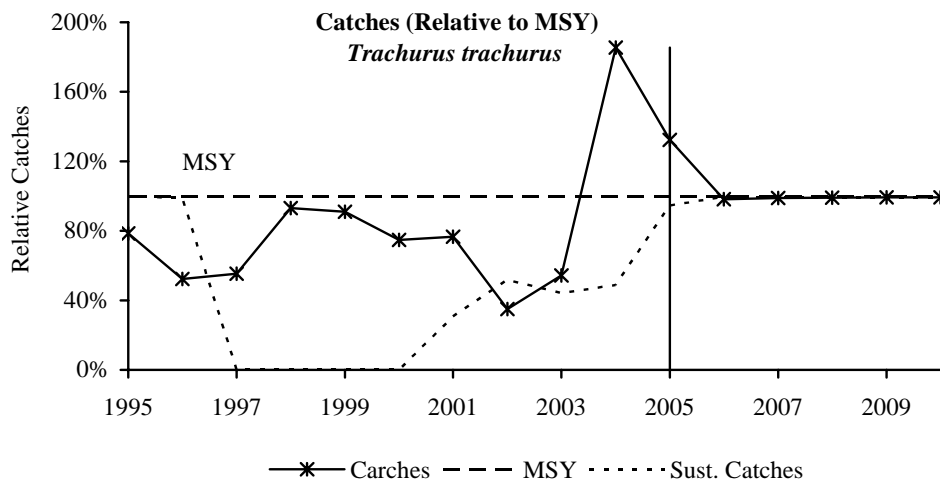
**Figure 4.6.3:** Observed and predicted abundance indices for *T. Trachurus* using biomass estimates from R/V DR. FRIDTJOF NANSEN and diagnostics of the model fit/Indices d'abondance observés et prévus pour *T. Trachurus* en utilisant les estimations de biomasse du N/R DR. FRIDTJOF NANSEN et les diagnostics du modèle



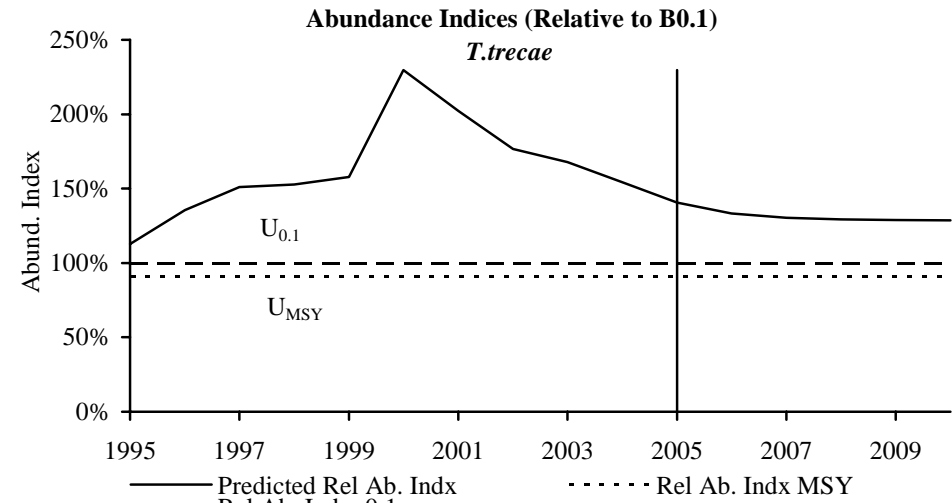
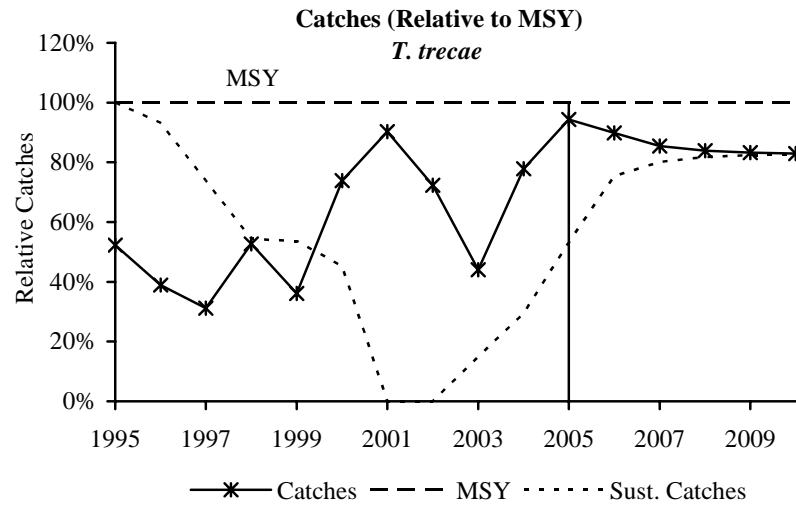
**Figure 4.6.4:** Observed and predicted abundance indices for *T. trecae* using biomass estimates from R/V DR. FRIDTJOF NANSEN and diagnostics of the model fit/Indices d'abondance observés et prévus pour *T. trecae* en utilisant les estimations du N/R DR. FRIDTJOF NANSEN et les diagnostics du modèle



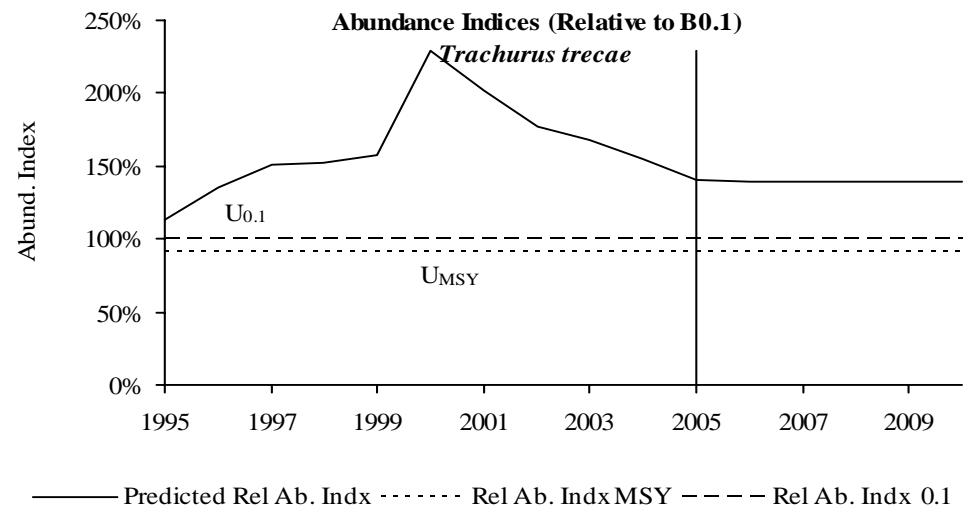
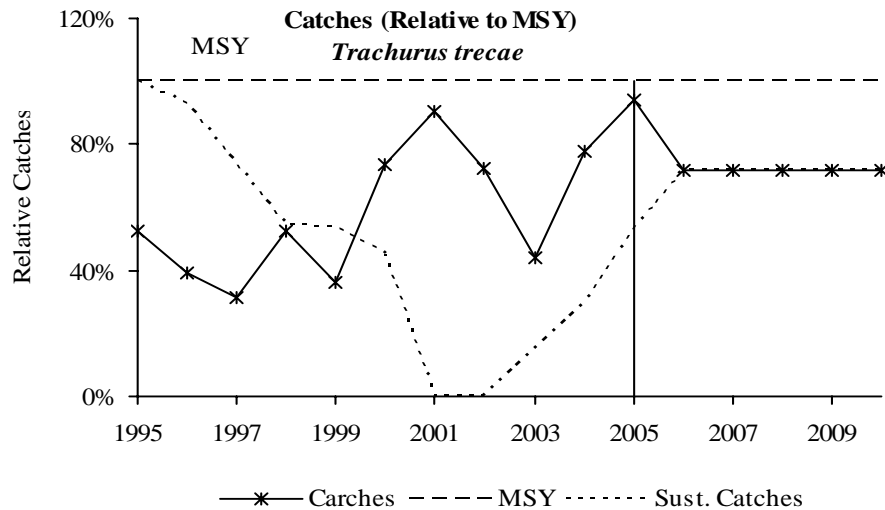
**Figures 4.7.1a:** Predicted trends in catches and abundance of *T. trachurus* – Scenario I (*statu quo*)/Prédictions des tendances dans les captures et de l'abondance pour *T. trachurus* – Scénario I (*statu quo*)



**Figure 4.7.1b:** Predicted trends in catches and ABUNDANCE of *T. trachurus* – Scenario II (20% decrease in effort)/Prédictions des tendances dans les captures et de l'abondance pour *T. trachurus* – Scénario II (diminution de 20% de l'effort)

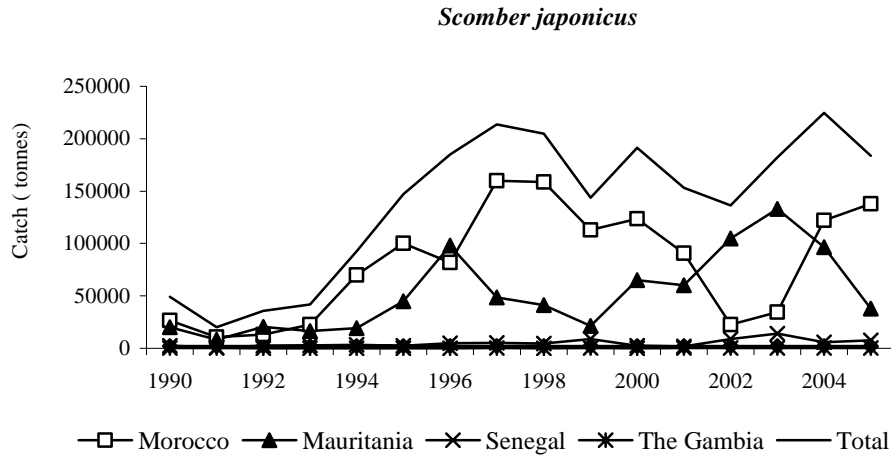


**Figures 4.7.2a:** Predicted trends in catches and abundance of *T. trecae* – Scenario I (*status quo*)/Prédictions des tendances dans les captures et de l'abondance pour *T. trecae* – Scénario I (*statu quo*)

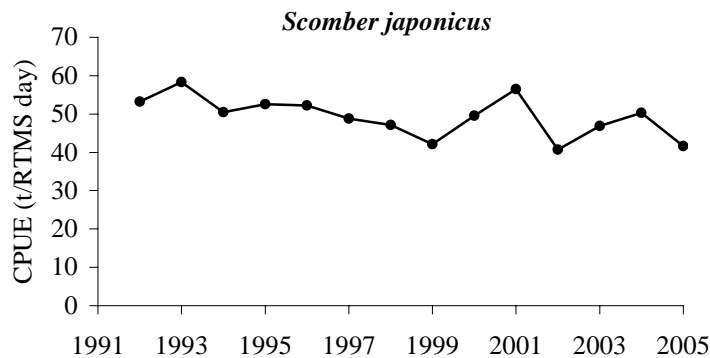


**Figure 4.7.2b:** Predicted trends in catches and abundance of *T. trecae* – Scenario II (20% decrease in effort)/Prédictions des tendances dans les captures et de l'abondance pour *T. trecae* – Scénario II (diminution de 20% de l'effort)

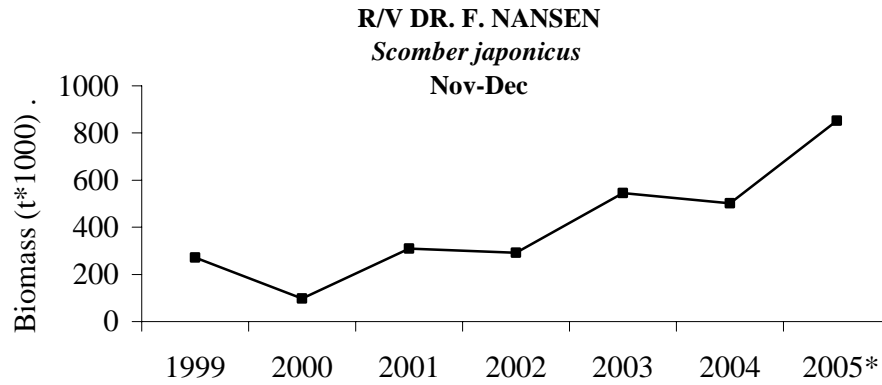




**Figure 5.2.1:** Total catches (tonnes) of *Scomber japonicus* in the subregion by species and year (1990–2005)/Captures totales (en tonnes) de *Scomber japonicus* dans la sous-région par espèce et par année (1990-2005)

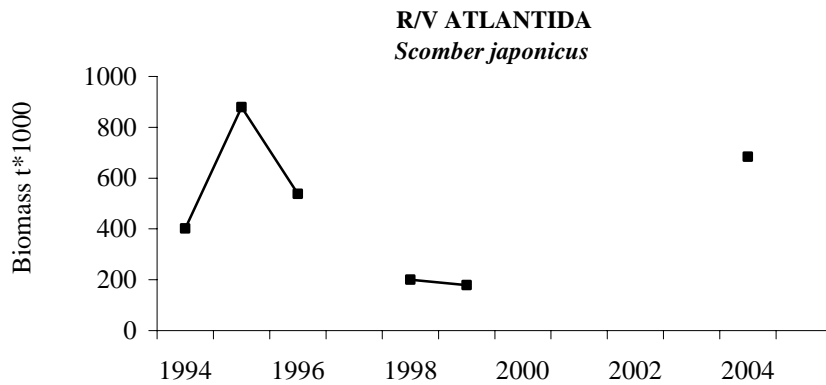


**Figure 5.3.1:** Standardized CPUE from Russian fleets of *Scomber japonicus*, in Mauritania (tonnes/RTMS day)/CPUE standardisées de la flottille russe de *Scomber japonicus* en Mauritanie (tonnes/jours RTMS)

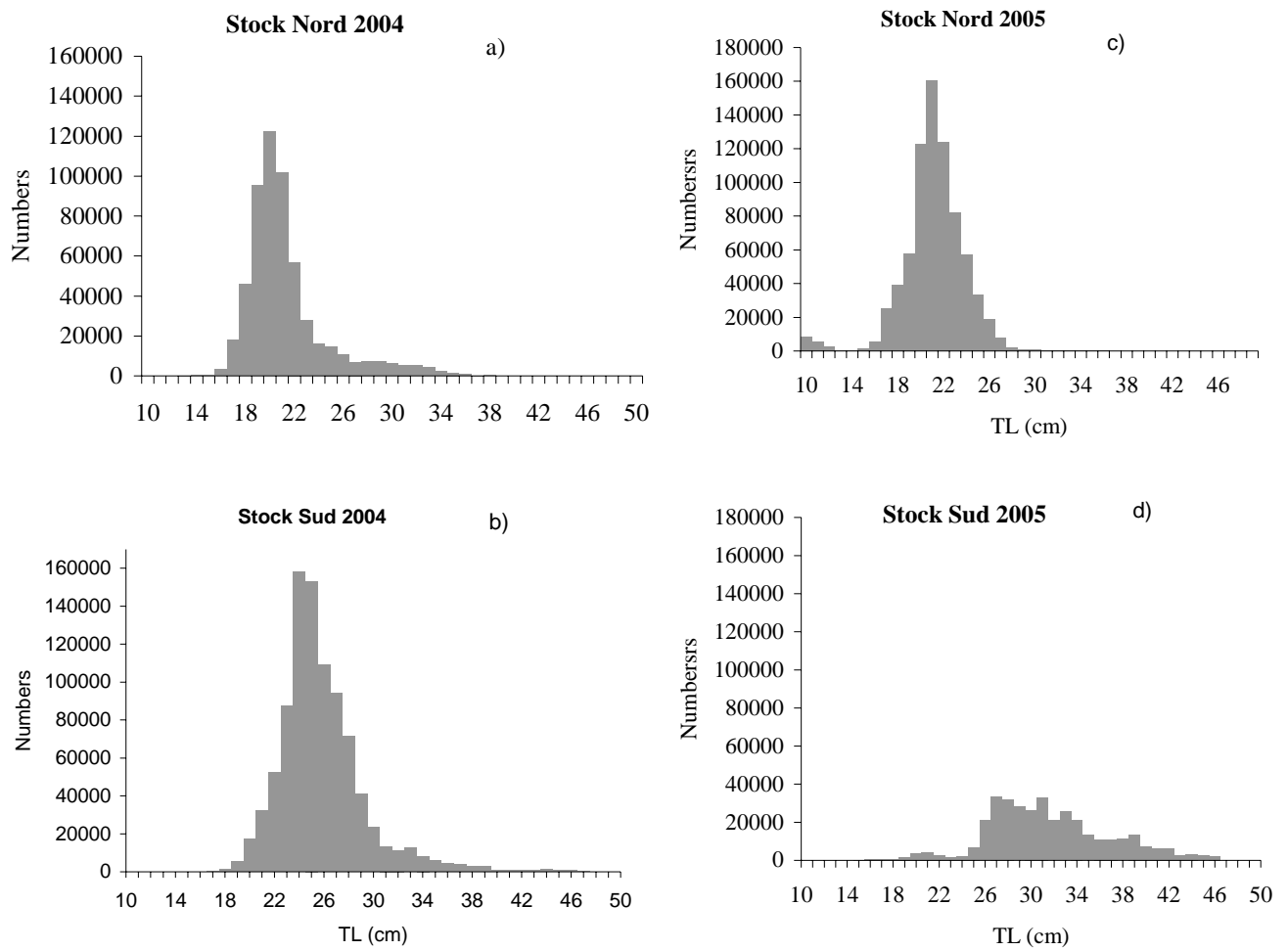


\* : partially estimated by R/V Al Amir My Abdellah with a correcting multiplicative factor (1,265) after a R/V DR. FRIDTJOF NANSEN technical brake.

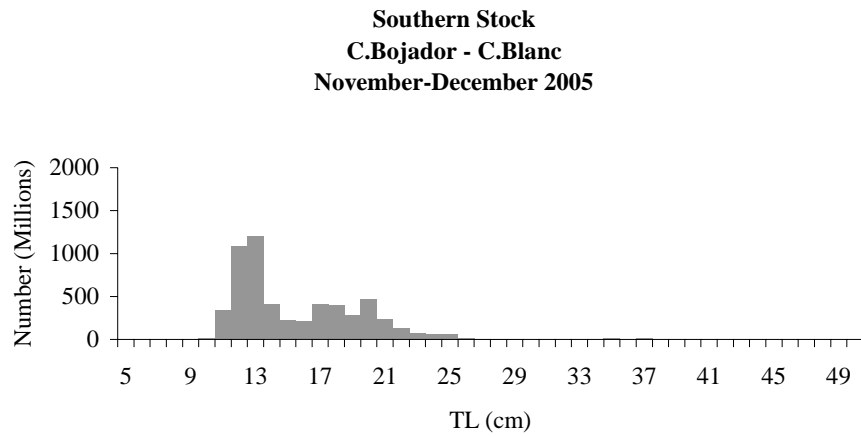
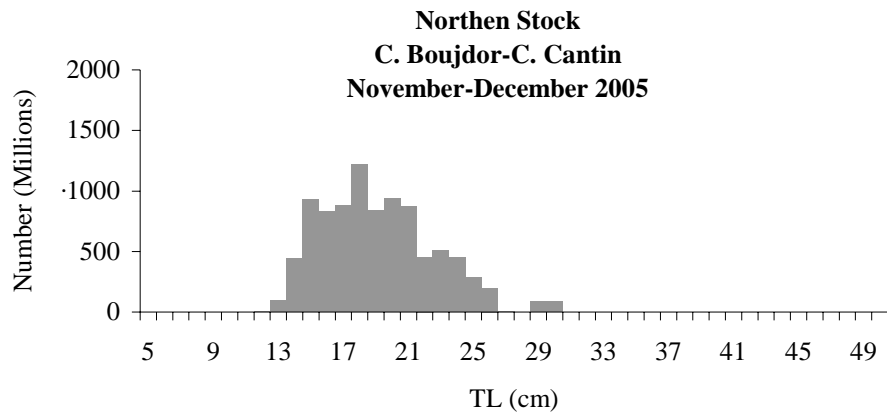
**Figure 5.3.2:** Biomass estimates of *Scomber japonicus* from the R/V DR. FRIDTJOF NANSEN surveys/Estimations de la biomasse du *Scomber japonicus* à partir des campagnes du N/R DR. FRIDTJOF NANSEN



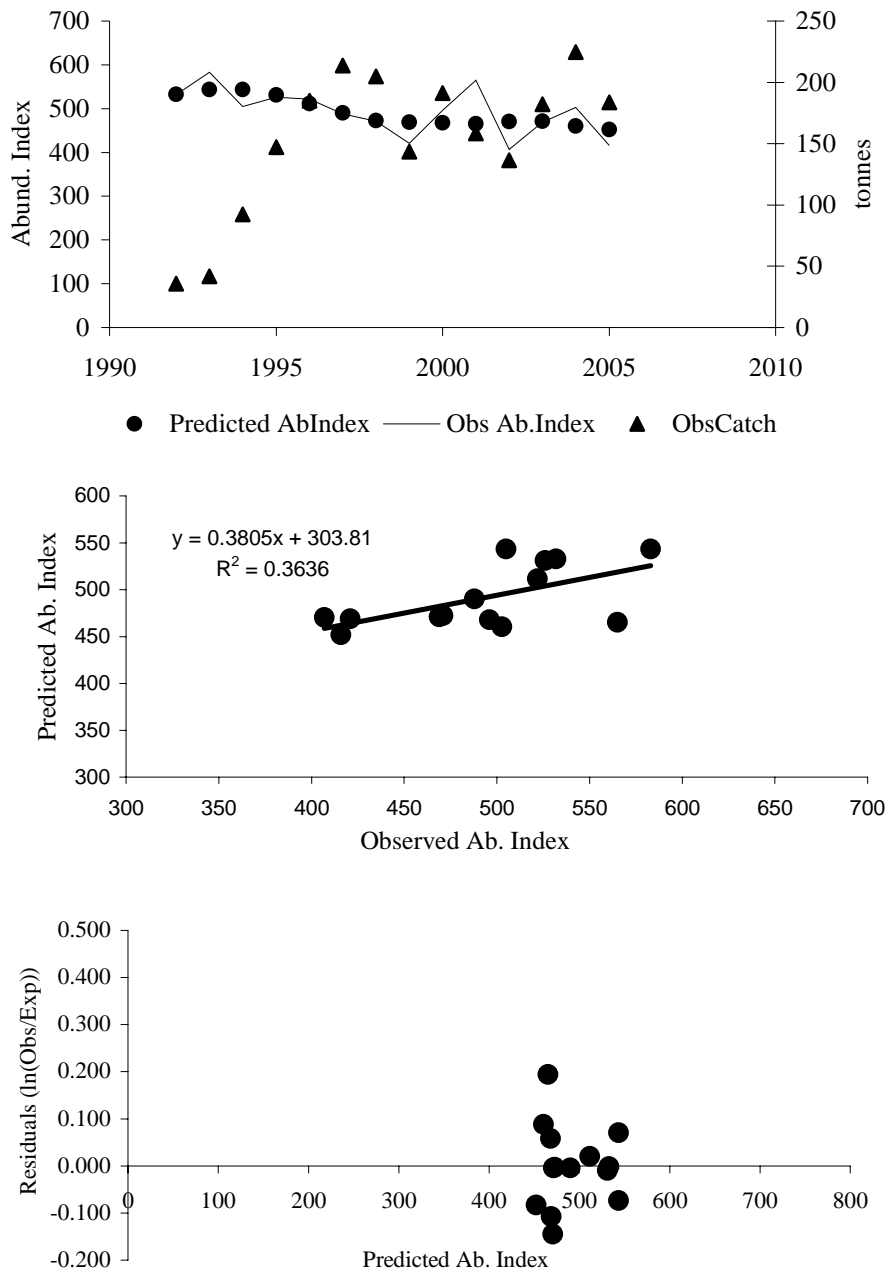
**Figure 5.3.3:** Biomass estimates of *Scomber japonicus* from the R/V ATLANTIDA surveys/Estimations de la biomasse du *Scomber japonicus* à partir des campagnes du N/R ATLANTIDA



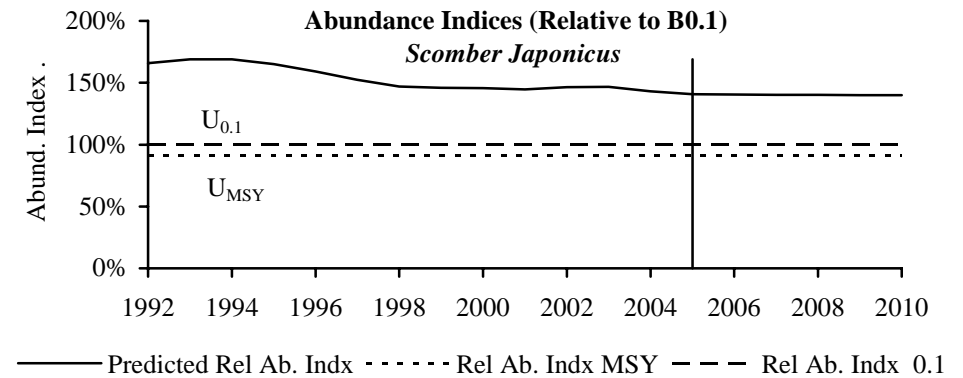
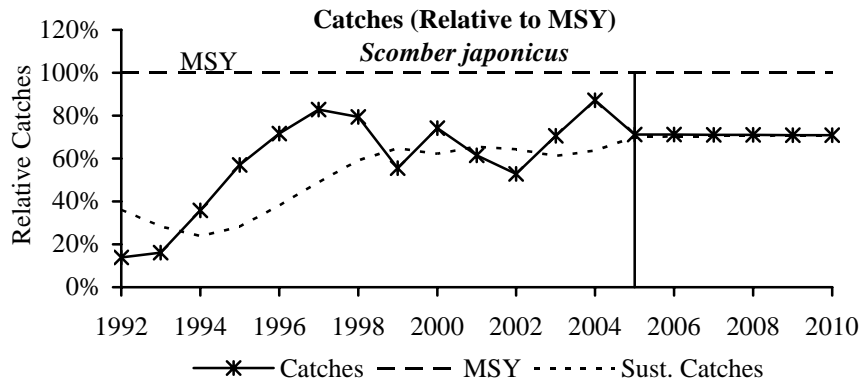
**Figure 5.5.1:** Length composition of landings of *Scomber japonicus* in the northern and southern fisheries (2004–2005)/Composition des tailles dans les débarquements de *Scomber japonicus* dans les pêcheries nord et sud (2004-2005)



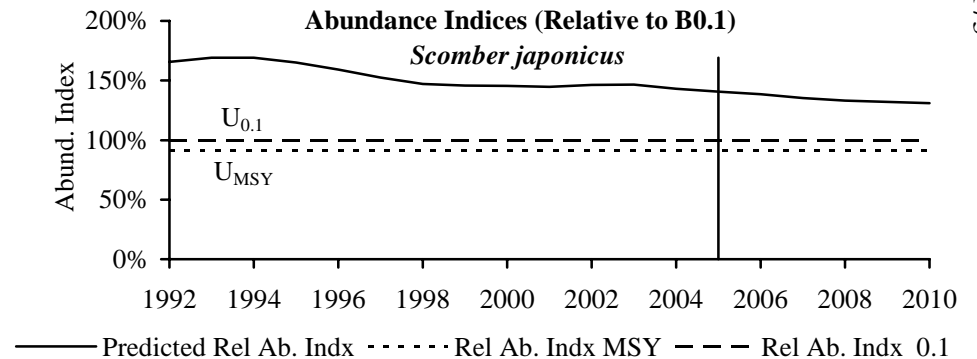
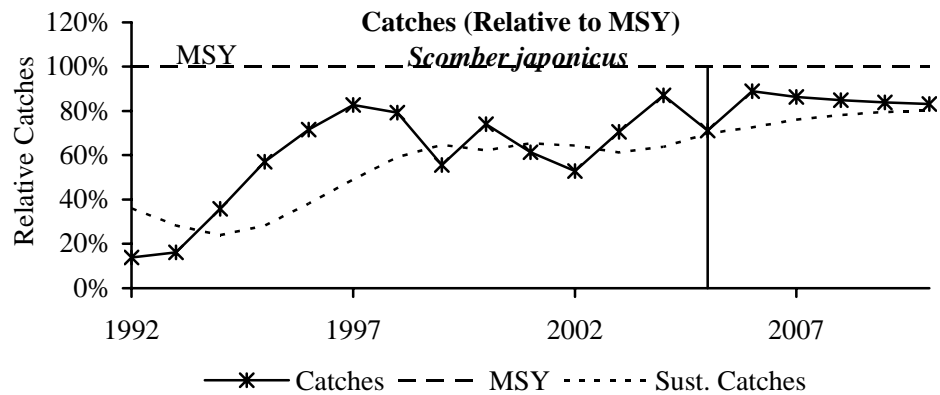
**Figure 5.5.2:** Length distribution of *Scomber japonicus* in 2005, R/V DR. FRIDTJOF NANSEN (in millions of fish)/Distribution des tailles de *Scomber japonicus* en 2005, N/R DR. FRIDTJOF NANSEN (en millions de poissons)



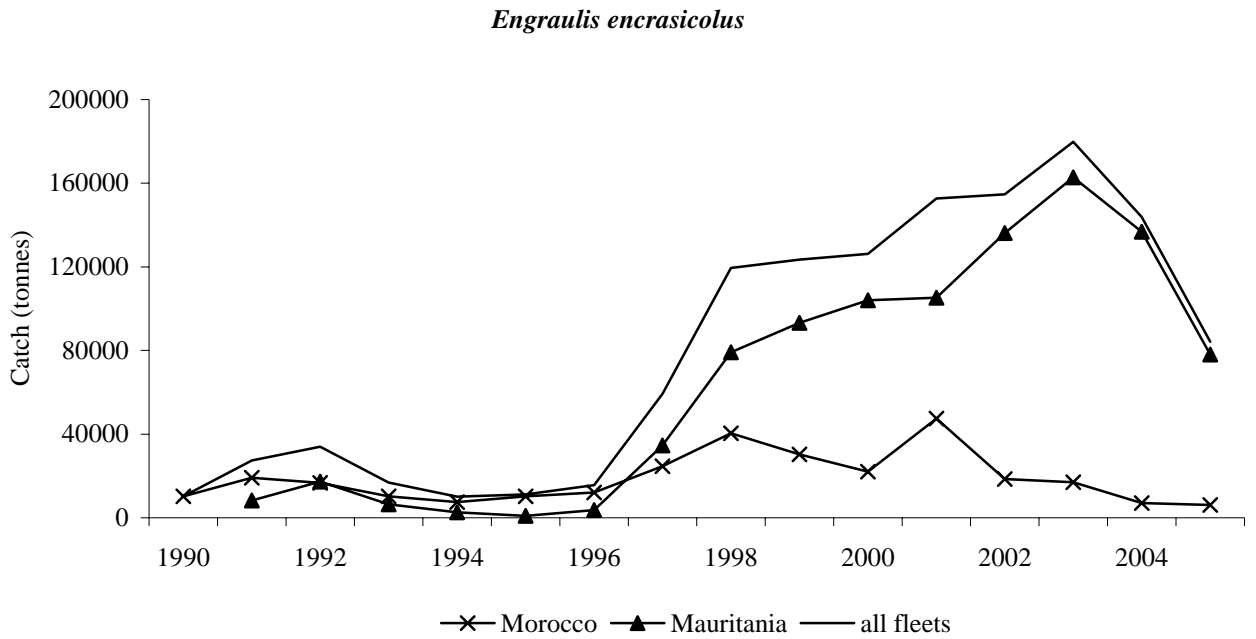
**Figure 5.6.3:** Observed and predicted abundance indices for *Scomber japonicus* using estimates from Russia CPUE and diagnostics of the model fit/Indices d'abondance observés et prévus pour *Scomber japonicus* en utilisant les estimations de CPUE russe et les diagnostics du modèle



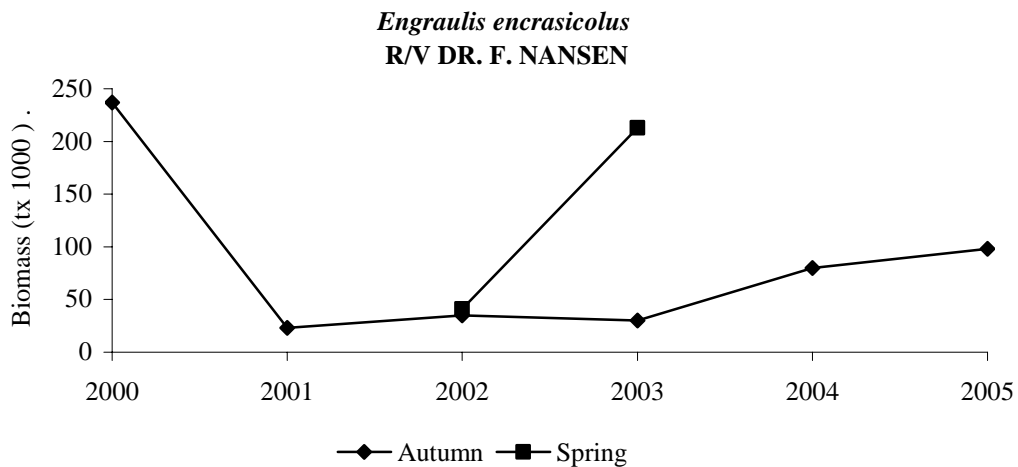
**Figures 5.7.1a:** Predicted trends in catches and abundance of *Scomber japonicus* – Scenario I (*status quo*)/Prédictions des captures et de l'abondance pour les *S. Japonicus* – Scénario I (*statu quo*)



**Figure 5.7.1b:** Predicted trends in catches and abundance of *S. japonicus* – Scenario II (25% increase in effort)/Prédictions des captures et de l'abondance pour les *S. japonicus* – Scénario II (augmentation de 25% de l'effort)

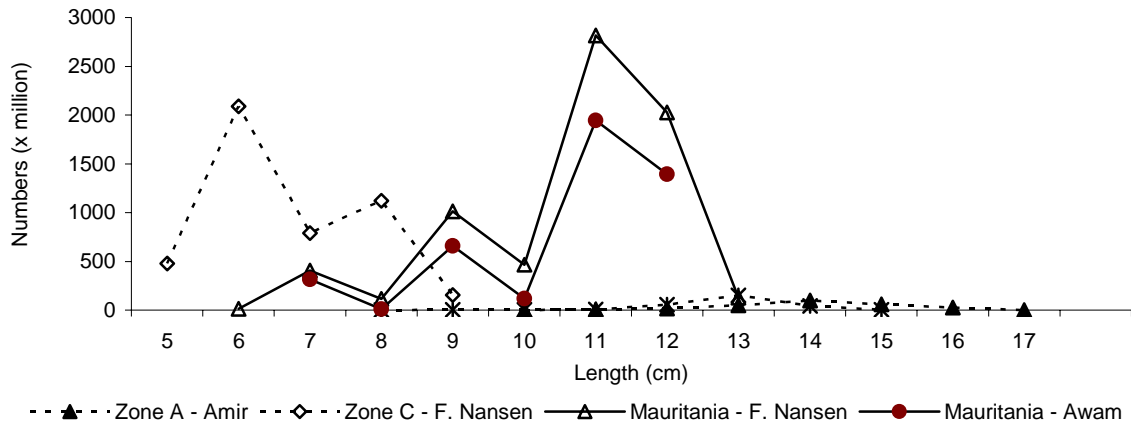


**Figure 6.2.1:** Total catches (tonnes) of *Engraulis encrasicolus* in the subregion by country and year (1990–2005)/Captures totales (en tonnes) de *Engraulis encrasicolus* dans la sous-région par pays et année (1990-2005)



**Figure 6.3.1:** Biomass estimates of *Engraulis encrasicolus* (2000–2005) for Mauritania, R/V DR. FRIDTJOF NANSEN/Estimations de biomasse de *Engraulis encrasicolus* (2000-2005) pour la Mauritanie, N/R DR. FRIDTJOF NANSEN

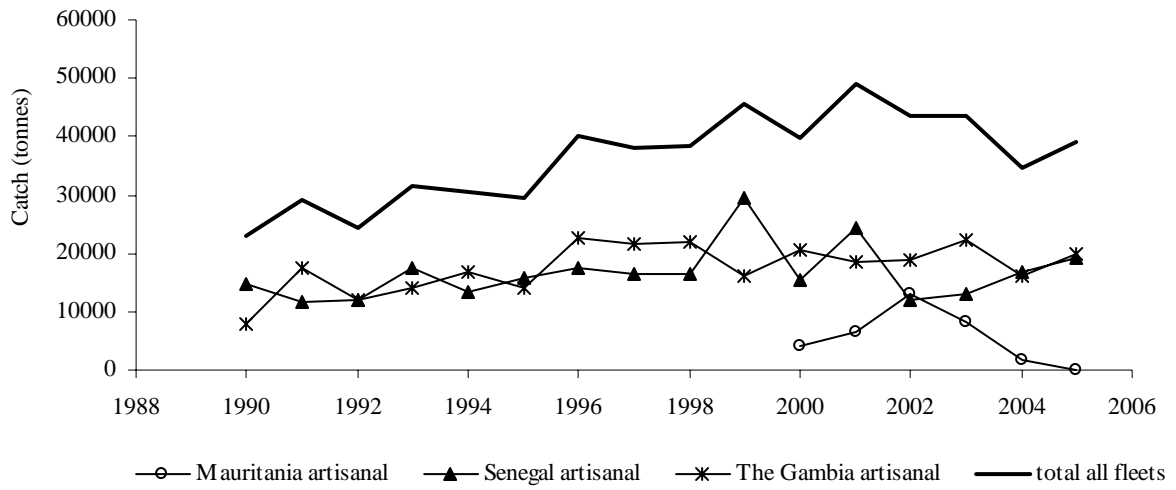
***Engraulis encrasicolus* in NW Africa 2005**  
 (R/V F. NANSEN, R/V Al Awam, R/V Al Amir)



**Figure 6.5.1:** Weighted length and total number estimates for *Engraulis encrasicolus* in the subregion in 2005 (R/V DR. FRIDTJOF NANSEN, R/V AL AWAM, R/V AL AMIR)/Estimations de la taille et du nombre d'individus pour *Engraulis encrasicolus* dans la sous-région en 2005 (N/R DR. FRIDTJOF NANSEN N/R AL AWAM, N/R AL AMIR)

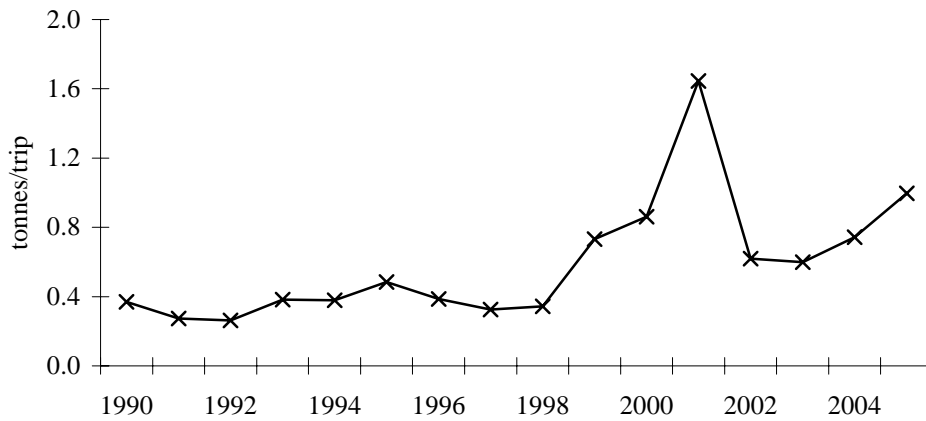


*Ethmalosa fimbriata*

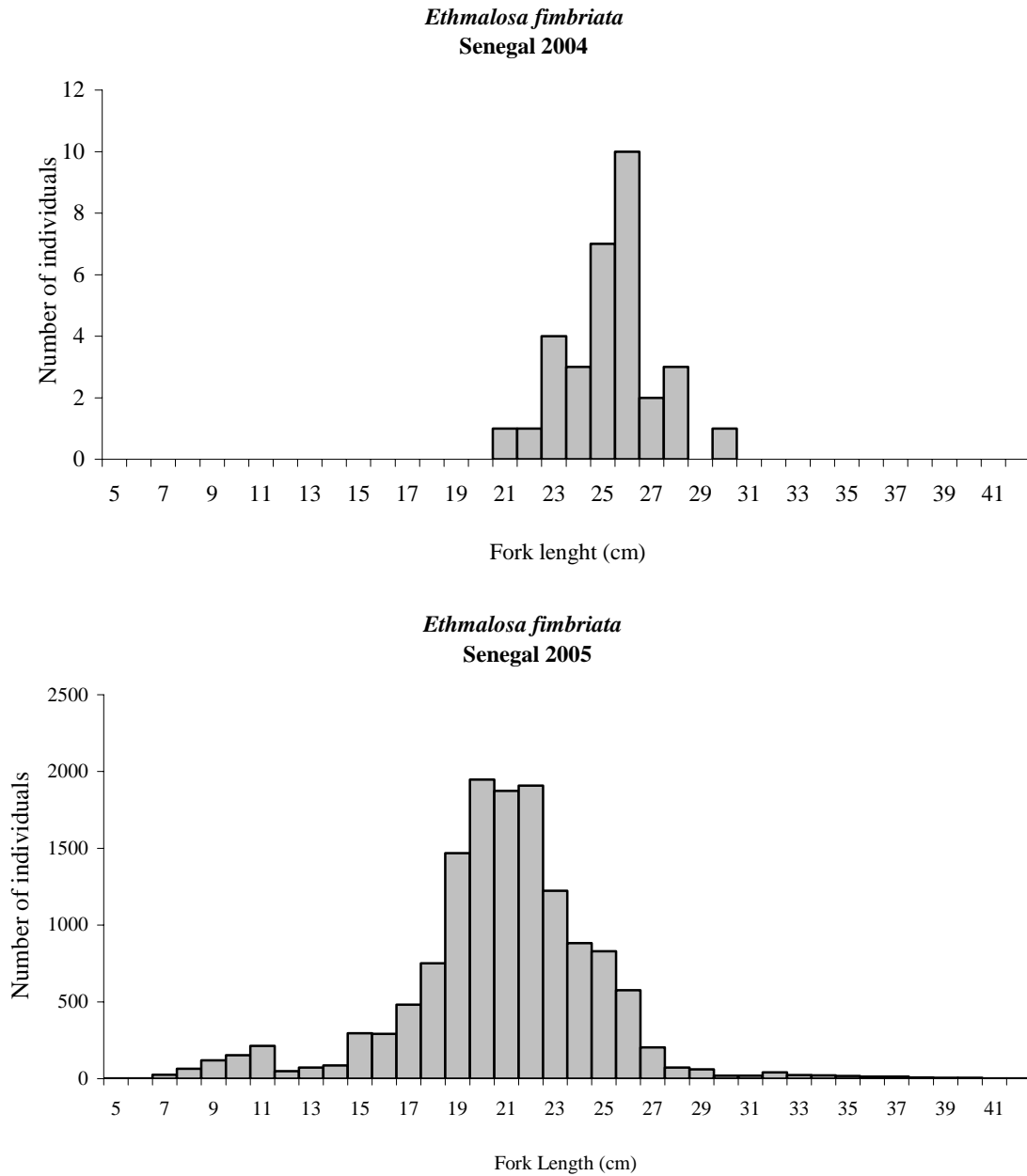


**Figure 7.2.1:** Catches (tonnes) of *Ethmalosa fimbriata* (1990–2005) by country, fleet and year/Captures (en tonnes) d'*Ethmalosa fimbriata* (1990-2005) par pays, flottille et année

*Ethmalosa fimbriata*  
CPUE Senegal surround gillnets



**Figure 7.3.1:** CPUE (tonnes/trips) of *Ethmalosa fimbriata* (1990–2005) of Senegalese surrounding gillnets/CPUE (tonnes/sorties) d'*Ethmalosa fimbriata* (1990-2005) de filets maillants tournants sénégalais



**Figure 7.5.1:** Length composition of *Ethmalosa fimbriata* in Senegal in 2004 and 2005/  
Composition en taille de *Ethmalosa fimbriata* au Sénégal en 2004 et 2005