

# THE WESTERN AND CENTRAL PACIFIC TUNA FISHERY:

2009 OVERVIEW AND STATUS OF STOCKS

Shelton Harley, Peter Williams, Simon Nicol and John Hampton

Secretariat of the Pacific Community

Oceanic Fisheries Programme

Tuna Fisheries Assessment Report No. 10

© Copyright Secretariat of the Pacific Community (SPC) 2011

All rights for commercial / for profit reproduction or translation, in any form, reserved. SPC authorises the partial reproduction or translation of this material for scientific, educational or research purposes, provided that SPC and the source document are properly acknowledged. Permission to reproduce the document and/or translate in whole, in any form, whether for commercial / for profit or non-profit purposes, must be requested in writing. Original SPC artwork may not be altered or separately published without permission.

Original text: English

Secretariat of the Pacific Community Cataloguing-in-publication data

Harley, Shelton

The western and central Pacific tuna fishery: 2009 overview and status of stocks / Shelton Harley, Peter Williams, Simon Nicol, and John Hampton

(Tuna Fisheries Assessment Report, no. 10 / Secretariat of the Pacific Community)

ISSN: 1562-5206

1. Tuna fisheries — Oceania.
2. Tuna populations — Oceania.
3. Fishery resources — Oceania.

I. Harley, Shelton II. Williams, Peter III. Nicol, Simon IV. Hampton, John V. Title VI. Secretariat of the Pacific Community VII. Series

639.277830995

AACR2

ISBN: 978-982-00-0459-7

ISSN: 1562-5206

This publication may be cited as:

Harley, S. J., Williams, P., Nicol, S. and Hampton, J., 2011. The western and central Pacific tuna fishery: 2009 overview and status of stocks. Tuna Fisheries Assessment Report 10. Noumea, New Caledonia: Secretariat of the Pacific Community.

Prepared for publication and printed at  
the Secretariat of the Pacific Community  
Noumea, New Caledonia, 2011

# Contents

Preface

- 1 The western and central Pacific tuna fishery..... 1
- 2 Status of tuna stocks..... 2
  - 2.1 Skipjack tuna..... 2
    - 2.1.1 Stock assessment..... 2
  - 2.2 Yellowfin tuna..... 3
    - 2.2.1 Stock assessment..... 3
  - 2.3 Bigeye tuna..... 3
    - 2.3.1 Stock assessment..... 4
  - 2.4 South Pacific albacore tuna..... 4
    - 2.4.1 Stock assessment..... 5
- 3 Ecosystem considerations..... 5
  - 3.1 Catch composition..... 5
  - 3.2 Impact of catches..... 6
- For further information..... 22

## Preface

Tuna fisheries assessment reports provide current information on the tuna fisheries of the western and central Pacific Ocean, the fish stocks (mainly tuna) that are impacted by them and their environment. The information provided in this document is summary in nature, but a list of references (mostly accessible via the internet) is included for those seeking further details.

This report focuses on the main tuna stocks targeted by the fishery — skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), bigeye tuna (*T. obesus*), and South Pacific albacore tuna (*T. alalunga*).

The report is in three main parts: the first section provides an overview of the fishery, with emphasis on developments during the past few years; the second summarises the most recent information on the status of the stocks; and the third summarises information concerning the interaction between the tuna fisheries and the environment. The data used in compiling the report are those which were available to the Oceanic Fisheries Programme (OFP) at the time of publication and are subject to change as improvements continue to be made to recent and historical catch statistics from the region. The fisheries statistics presented will usually be complete to the end of the year prior to publication; however, some minor revisions to statistics may be made for recent years from time to time. The stock assessment information presented is the most recent available, and is updated periodically for each species as new analyses are completed.

Inquiries regarding this report or other aspects of the work programme of the OFP should be directed to:

Oceanic Fisheries Programme Manager  
Secretariat of the Pacific Community  
BP D5  
98848 Noumea Cedex  
New Caledonia

For further information, including a complete online French version of this report, see the OFP web page: <http://www.spc.int/oceanfish/>.

---

Acknowledgements: We are grateful to the member countries of the Pacific Community and the fishing nations involved in the western and central Pacific tuna fishery for their cooperation in the provision of fishery data used in this report. Regional fisheries research and monitoring carried out by the Oceanic Fisheries Programme is currently funded by numerous sources, including the Australian Agency for International Development (AusAID), the New Zealand Aid Programme (NZAID), the Government of France, the Global Environment Facility (GEF) and the European Community project, Scientific Support for the Management of Coastal and Oceanic Fisheries (SciCOFISH).

# 1 The western and central Pacific tuna fishery

The tuna fishery in the western and central Pacific Ocean (WCPO), encompassed by the Convention Area of the Western and Central Pacific Fisheries Commission (WCP-CA) (Figure 1), is a diverse fishery ranging from small-scale, artisanal operations in the coastal waters of Pacific states to large-scale, industrial purse-seine, pole-and-line and longline operations in the exclusive economic zones of Pacific states as well as in international waters (high seas). The main species targeted by these fisheries are skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), bigeye tuna (*T. obesus*) and albacore tuna (*T. alalunga*).

Annual total catches of the four main tuna species (skipjack, yellowfin, bigeye and albacore) in the WCP-CA increased steadily during the 1980s as the purse-seine fleet expanded, and remained relatively stable during most of the 1990s until the sharp increase in catch in 1998. Over the past seven years, there has been an upward trend in total tuna catch, primarily due to increases in purse-seine fishery catches (Figure 2 and Table 1). The provisional total WCP-CA tuna catch for 2009 was estimated at 2,460,931 metric tonnes (mt), the highest annual catch recorded, and 44,000 mt higher than the previous record in 2008 (2,416,136 mt). In 2009, the purse-seine fishery accounted for an estimated 1,886,548 mt (77% of the total catch, and another record for this fishery), with pole-and-line taking an estimated 165,811 mt (7%), the longline fishery an estimated 224,050 mt (9%), and the remainder (7%) taken by troll gear and a variety of artisanal gears, mostly in eastern Indonesia and the Philippines. The WCP-CA tuna catch (2,460,931 mt) for 2009 represented 81% of the total Pacific Ocean catch of 3,042,092 mt, and 58% of the global tuna catch (the provisional estimate for 2009 is 4,222,289 mt).

The 2009 WCP-CA catch of skipjack (1,783,986 mt — 72% of the total catch) was clearly the highest recorded, and nearly 110,000 mt more than the previous record catch of 2007 (1,675,676 mt) (Table 2). The WCP-CA yellowfin catch for 2009 (433,275 mt — 18%) was 116,000 mt lower than the record catch taken in 2008 (549,829 mt). The WCP-CA bigeye catch for 2009 (118,023 mt — 5%) was the lowest since 2001, mainly due to a drop in 2009 provisional estimates for the longline fishery. The 2009 WCP-CA albacore catch (125,647 mt — 5%) was the second highest on record, with very good catches from the longline fishery.

The 2009 purse-seine catch of 1,886,548 mt was the sixth consecutive record catch for this fishery and 46,000 mt higher than the previous record in 2008 (Figure 3 and Table 1). The 2009 purse-seine skipjack catch (1,579,012 mt — 89% of the total skipjack catch) was clearly higher than both the 2008 catch (by nearly 180,000 mt) and the record catch in 2007 (by 130,000 mt). The purse-seine skipjack catch has now increased by nearly 700,000 mt (or 79%) since 2001 (890,605 mt), at an average of about 86,000 mt per year. The proportion of skipjack tuna in the total purse-seine catch (84%) was the highest since 1996. The 2009 purse-seine catch of yellowfin tuna (263,963 mt) was a significant reduction (124,000 mt) on the record catch taken in 2008 (388,187 mt) but still the fourth highest on record. The provisional catch estimate for bigeye tuna for 2009 (42,747 mt) was the second highest on record (5,665 mt less than the 2008 record catch) but this figure may be revised once all observer data for 2009 have been received and processed.

The 2009 longline catch of 224,050 mt was slightly below the average annual catch for the period 2000-2009 and around 10% (22,500 mt) lower than the highest on record attained in 2002 (256,582 mt) (Figure 4 and Table 1). The WCP-CA albacore longline catch (87,744 mt) for 2009 was only 2,000 mt lower than the highest catch on record (89,883 mt in 2002). The provisional bigeye catch (65,805 mt — 29%) for 2009 was the lowest since 1996, but may be revised upwards when revised estimates are provided. The yellowfin catch for 2009 (69,282 mt — 31%) was similar to the average catch level for this species over the period 2000-2009.

The 2009 pole-and-line catch of 165,811 mt was the lowest annual catch for this fishery since the mid-1960s (Figure 5 and Table 1). Skipjack tends to account for the majority of the catch (~70-80% in recent years, but typically more than 85% of the total catch in tropical areas) and albacore (8-20% in recent years) is taken by the Japanese coastal and offshore fleets in the temperate waters of the northern Pacific Ocean. Yellowfin tuna (5-10%) and a small component of bigeye tuna (1-6%) make up the remainder of the catch. The Japanese distant-water and offshore (104,232 mt in 2009) fleets, and the Indonesian fleets (60,415 mt in 2007), account for most of the WCP-CA pole-and-line catch.

The 2009 troll albacore catch in the South Pacific of 2,027 mt was the lowest since 1986, and was apparently due to poor catches experienced in the New Zealand domestic fishery. The New Zealand troll fleet (165 vessels catching 1,790 mt in 2009) and the United States troll fleet (four vessels catching 237 mt in 2009) typically account for most of the albacore troll catch, with minor contributions coming from the Canadian, the Cook Islands and French Polynesian fleets.

---

## 2 Status of tuna stocks

The sections below provide a summary of the recent developments in fisheries for each species and the results from the most recent stock assessments.

### 2.1 Skipjack tuna

The 2009 WCP-CA skipjack catch of 1,783,986 mt was the highest on record and nearly 110,000 mt higher than the previous record in 2007 (Figure 6 and Table 3). As has been the case in recent years, the main determinant in the overall catch of skipjack is catch taken in the purse-seine fishery (1,579,012 mt in 2009 — 89%). A declining proportion of the catch was taken by the pole-and-line gear (115,144 mt — 6%) and the ‘unclassified’ gears in the domestic fisheries of Indonesia, the Philippines and Japan (~84,062 mt — 5%). The longline fishery accounted for less than 1% of the total catch.

The majority of the skipjack catch is taken in equatorial areas, and most of the remainder is taken in the seasonal home-water fishery of Japan. The domestic fisheries in Indonesia (purse-seine, pole-and-line and unclassified gears) and the Philippines (e.g. ring-net and purse-seine) account for the majority of the skipjack catch in the western equatorial portion of the WCP-CA.

The dominant mode of the WCP-CA skipjack catch (by weight) typically falls in the size range between 40 cm and 60 cm, corresponding to 1–2+ year-old fish (Figure 6). There was a greater proportion of medium-large (60–80 cm) skipjack caught in the purse-seine fishery during 2005 (unassociated, free-swimming school sets account for most of the large skipjack). In contrast, the WCP-CA skipjack purse-seine catch in 2004, 2007 and 2009 comprised younger fish, mainly from associated schools. There was a strong mode of skipjack at 48 cm from associated sets during 2009, but also a pulse of larger fish >70 cm from unassociated sets.

#### 2.1.1 Stock assessment

The most recent assessment of skipjack in the WCPO was conducted in 2010 and included data from 1972 to 2009.

While estimates of fishing mortality for skipjack have increased over time, current fishing mortality rates for skipjack tuna are estimated to be about half the level of fishing mortality associated with maximum sustainable yield (FMSY). Therefore, overfishing is not occurring (i.e.  $F_{CURRENT} < F_{MSY}$ ) (Figure 7). Estimated recruitment shows an upward trend over time and, in a change from previous assessments, estimated biomass is declining over time to about 60% of the level predicted in the absence of fishing. Nevertheless, recent biomass levels are estimated to be well above the BMSY level. Based on these results, the WCPFC Scientific Committee noted that the assessment continues to show that the stock is currently only moderately exploited and fishing mortality levels are sustainable. Catch rate levels are likely to decline and catch should decrease as stock levels are fished down to MSY levels. Due to the rapid change of the fishing mortality and biomass indicators relative to MSY in recent years, increases of fishing effort should be monitored. Additional purse-seine effort will yield only modest gains in skipjack catches and may result in a corresponding increase in fishing mortality for bigeye and yellowfin tunas. The management of total effort in the WCPO should recognise this.

## 2.2 Yellowfin tuna

The WCP-CA yellowfin catch dropped by 116,500 mt in 2009 to 433,275 mt as result of a decline in the purse-seine fishery (263,963 mt — 61%). (Figure 8 and Table 4). The remainder of the yellowfin tuna catch comes from the pole-and-line fishery and the domestic Indonesian and Philippines ‘other’ gears. In recent years, the yellowfin longline catch has ranged from 75,000 mt to 82,000 mt, which is well below catches taken in the late 1970s to early 1980s (90,000–120,000 mt), presumably related to changes in targeting practices by some of the large fleets and the gradual reduction in the number of distant-water vessels. The WCP-CA longline catch for 2009 was similar to the average catch level over the period 2000–2009. However, in recent years, the purse-seine catch of yellowfin tuna has attained a level of about four times the longline catch (69,282 mt in 2009 — 16%).

As with skipjack, the great majority of the yellowfin catch is taken in equatorial areas by large purse-seine vessels, and a variety of gears in the Indonesian and Philippine fisheries. The domestic surface fisheries of the Philippines and Indonesia take large numbers of small yellowfin in the range 20–50 cm. In the purse-seine fishery, smaller yellowfin are caught in log and FAD sets than in unassociated sets. A major portion of the purse-seine catch is adult (> 100 cm) yellowfin tuna, to the extent that the purse-seine catch (by weight) of adult yellowfin tuna is usually higher than the longline catch, which was the case in 2008, where exceptional catches of large yellowfin in the size range 120–130 cm were experienced in the purse-seine fishery.

### 2.2.1 Stock assessment

The most recent assessment of yellowfin tuna in the WCPO was conducted in 2009 and included data from 1952 to 2008.

Fishing mortality has increased in recent years, but is still estimated to be below FMSY, indicating that overfishing is not occurring (Figure 9). Both biomass and recruitment have declined gradually over the duration of the fishery, but biomass levels are estimated to still be above BMSY, so the stock is not considered to be in an overfished state. This optimism at the stock level must be tempered by the patterns observed at the subregional level within the stock assessment. Patterns of exploitation and fishery impacts are not the same across the entire model region, with much higher fishery impacts estimated for Region 3, western equatorial Pacific. This region, from which 95% of catches are taken, is at least fully exploited with no potential for increased catches. The ‘optimistic’ overall stock status is because of the estimated buffering due to lower fishery impacts in other subregions. The WCPFC Scientific Committee reiterated early advice that there be no increase in fishing mortality in the western equatorial Pacific.

## 2.3 Bigeye tuna

The WCP-CA 2008 bigeye tuna catch was 118,023 mt. Longline bigeye catches have fluctuated between 70,000 mt and 98,000 mt since 1999, but the 2009 longline catch (65,805 mt) was the lowest since 1996 (Figure 10 and Table 5). The provisional WCP-CA purse-seine bigeye catch for 2009 was estimated to be 42,747 mt, which is the second highest on record after 2008, but this estimate may change since there is a substantial amount of 2009 observer data, which are used to estimate the purse-seine bigeye catch, that have not yet been received and processed. The WCP-CA pole-and-line fishery has generally accounted for between 2,000 mt and 4,000 mt of bigeye catch annually over the past decade, although recent revisions to the estimates for the Indonesian fishery have resulted in an increase (to 6,000–11,000 mt) since 2004. The ‘other’ category, representing various gears in the Philippine, Indonesian and Japanese domestic fisheries, has accounted for an estimated 4,000–8,000 mt (4–6% of the total WCP-CA bigeye catch) in recent years. Previous estimates of catches from Philippine and Indonesian fisheries were considerably higher, but have been revised downwards in recent years as work to improve these catch statistics continues.



The majority of the WCP-CA catch is taken in equatorial areas, both by purse-seine and longline, but with some longline catch in sub-tropical areas (e.g. east of Japan and off the east coast of Australia). In the equatorial areas, much of the longline catch is taken in the central Pacific, continuous with the important traditional bigeye longline area in the eastern Pacific.

As with skipjack and yellowfin tuna, the domestic surface fisheries of the Philippines and Indonesia take large numbers of small bigeye in the range 20–60 cm. The longline fishery clearly accounts for most of the catch (by weight) of large bigeye in the WCP-CA. This is in contrast to large yellowfin tuna, which (in addition to the longline gear) are also taken in significant amounts from unassociated (free-swimming) schools in the purse-seine fishery and in the Philippines handline fishery. Large bigeye are very rarely taken in the WCPO purse-seine fishery and only a relatively small amount comes from the handline fishery in the Philippines. Bigeye sampled in the longline fishery are predominantly adult fish with a mean size of ~130 cm FL (range 80–160 cm FL).

### 2.3.1 Stock assessment

The most recent assessment of bigeye tuna in the WCPO was conducted in 2010 and included data from 1952 to 2009.

Fishing mortality is estimated to have increased through time, particularly in recent years, and current levels are far in excess of FMSY level ( $F_{CURRENT} > F_{MSY}$ ). Therefore, overfishing is occurring (Figure 11). The biomass of spawners is estimated to have declined over the duration of the fishery and is now approaching BMSY, indicating that the stock is either in a slightly overfished state or will be so in the near future. The model estimates that recent catches have been sustained by higher-than-average levels of recruitment, which have also maintained biomass above the BMSY level.

Based on the results of the assessment, and an evaluation of the potential impacts of the new WCPFC Conservation and Management Measure for bigeye and yellowfin tuna (CMM2008-01), the Scientific Committee of the WCPFC noted the continued decline in the stock and that CMM2008-01 was unlikely to achieve its objective of a 30% reduction in fishing mortality and that further actions be identified and implemented to ensure the achievement of these objectives.

## 2.4 South Pacific albacore tuna

The South Pacific albacore catch in 2009 (66,996 mt) was the highest on record, slightly higher than the previous record of 65,798 mt in 2006 (Figure 12 and Table 6). In the post-driftnet era, longline has accounted for most (> 75% in the 1990s, but > 90% in recent years) while the troll catch, for a season spanning November to April, has generally been in the range of 3,000–8,000 mt, although it has declined to <3,000 mt in recent years.

The longline catch is widely distributed in the South Pacific, but with catches concentrated in the western part of the Pacific. The Chinese-Taipei distant-water longline fleet catch is taken in all three regions, while the Pacific Island domestic longline fleet catch is restricted to latitudes 10°–25°S. Troll catches are distributed in New Zealand's coastal waters, mainly off the South Island, and along the sub-tropical convergence zone (STCZ). Less than 20% of the overall South Pacific albacore catch is usually taken east of 150°W.

The longline fishery takes adult albacore, mostly in the narrow size range 90–105 cm, and the troll fishery takes juvenile fish in the range 45–80 cm. Juvenile albacore also appear in the longline catch from time to time (e.g. fish in the range 60–70 cm sampled in the longline catch during 2004 and 2006).



### 2.4.1 Stock assessment

The most recent stock assessment for South Pacific albacore tuna was undertaken in 2009 and was based on data from 1960 to 2008.

The assessment indicates that fishing mortality on adult fish has increased considerably over the past decade, but that overall estimates of fishing mortality are well below FMSY. Therefore, overfishing is not occurring (Figure 13). Biomass levels have declined over the last decade due to a decline in recruitment; however, current biomass levels remain well above BMSY, so the stock is not in an overfished state. Nevertheless, the current level of longline catch is estimated to be having a considerably higher impact on the portion of the stock vulnerable to the longline fishery. The assessment indicates that the current level of impact is about 50% for fish of the sizes taken in the northern longline fisheries, having increased sharply in recent years. From the results of the assessment, the WCPFC Scientific Committee concluded that current levels of catch are sustainable, with low risk of recruitment overfishing. Nevertheless, current levels of fishing mortality may be affecting longline catch rates on adult albacore.

---

## 3 Ecosystem considerations

The Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean has identified ecosystem issues as an important element of the principles for conservation and management of the tuna resource in the WCP-CA. This section of the report provides a brief summary of the information available from the WCP-CA tuna fishery concerning associated and dependent species, including information on the species composition of the catch from the tuna fisheries and an assessment of the impact of the fishery on these species. It is important to note that most of these species have received limited attention to date and, consequently, it is possible to provide an assessment of the impact of the fishery for a few species only. The section also includes a summary of the biophysical conditions in the WCPO and provides a review of recent and current research that is being undertaken to learn more about the relationship between the main tuna species and the pelagic ecosystem.

### 3.1 Catch composition

The tuna fisheries of the WCPO principally target four main tuna species: skipjack, yellowfin, bigeye and albacore tuna. However, the fisheries also catch a range of other species in association with these. Some of the associated species are of commercial value (by-products), while many others are of no value and are discarded. There are also incidents of the capture of species of ecological and/or social significance ('protected species'), including marine mammals, sea turtles and some species of shark (e.g. whale sharks).

The information concerning the catch composition of the main tuna fisheries in the WCPO comes largely from the various observer programmes operating in the region. Overall, catches from unassociated and associated purse-seine sets are dominated by tuna species (99.6% and 98.4%, respectively) and there has been limited interaction with protected species (Figure 14). Most of the observed interactions involved unidentified species of marine mammals, and few mortalities have been recorded.

Species composition of the catch has also been estimated for three main longline fisheries operating in the WCPO: the western tropical Pacific (WTP) shallow-setting longline fishery, the WTP deep-setting longline fishery, and the western South Pacific (WSP) albacore fishery. While estimates are uncertain due to the low level of observer coverage, some general conclusions are possible. The main tuna species account for 44%, 71% and 69% of the total catch (by weight) of the three fisheries respectively (Figure 14). Blue

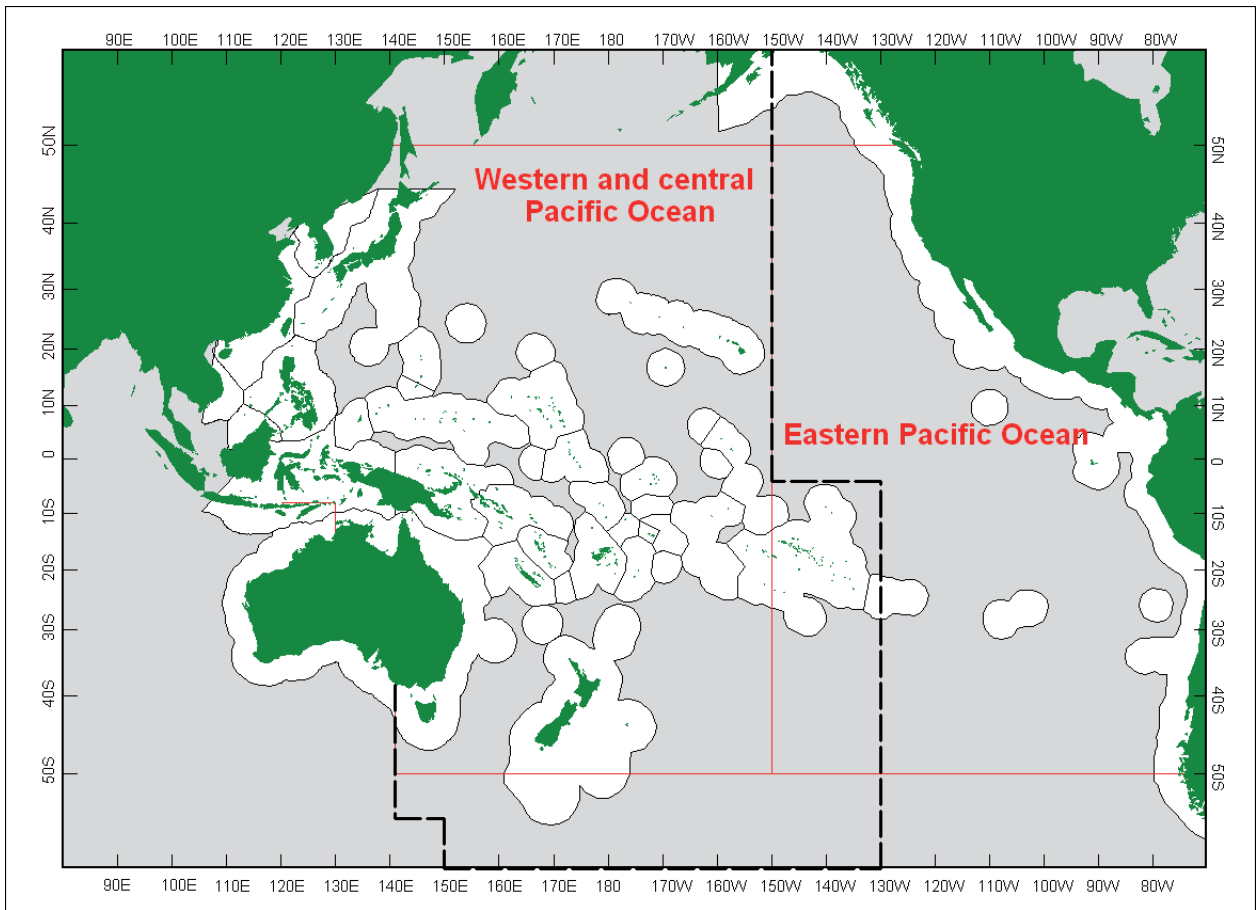
shark was in the top four-ranked species in the catch composition of all three fisheries. The WTP shallow fishery has a higher proportion of non-tuna species in the catch, principally shark and billfish species, while opah (moonfish) represents a significant component of the WSP albacore longline catch. There are also considerable differences in the species composition of the billfish catch in the three fisheries while, overall, the WTP shallow and WSP albacore fisheries catch a higher proportion of surface-orientated species than does the WTP deep-setting fishery.

Interactions with seabirds and marine mammals were very low in all three longline fisheries. Catches of five species of marine turtles were observed in the equatorial longline fishery, although the observed encounter rate was very low and most of the turtles caught were alive at the time of release.

### **3.2 Impact of catches**

In addition to the main tuna species, annual catch estimates for the WCPO in 2009 are available for the main species of billfish (swordfish [19,280 mt], blue marlin [14,259 mt], striped marlin [4123 mt] and black marlin [2,155 mt]). However, the catches of other associated species have not been accurately quantified. For the billfish species, preliminary stock assessments have been undertaken (Pacific-wide blue marlin, North Pacific swordfish, southwest Pacific swordfish, and southwest striped marlin), although they are hampered by limited information concerning species biology and stock structure. Nevertheless, the assessments generally indicate that these stocks are not overexploited at current levels of fishing effort.

Large-scale tagging experiments are required to provide the level of information (fishery exploitation rates and population size) necessary for tuna stock assessments of tropical tunas in the western and central Pacific Ocean. Tagging data have the potential to provide much information of relevance to stock assessment, either by way of stand-alone analyses or, preferably, through integration with other data directly in the stock assessment model. Tuna tagging has been a core activity of the Oceanic Fisheries Programme for the last 30 years, with tagging campaigns occurring in the 1970s, 1990s and, most recently, since 2006. This most recent campaign has now tagged and released over 270,000 tuna in the equatorial western and central Pacific Ocean (Figure 15). A detailed summary of tag releases and recoveries is provided in Table 7. The recovery of tags supports the current estimates of stock status for the tuna species, with exploitation rates higher for bigeye and yellowfin than for skipjack. Information on movement demonstrates higher mobility in skipjack than in yellowfin and bigeye.



**Figure 1: The western and central Pacific Ocean (WCPO), the eastern Pacific Ocean (EPO) and the WCPFC Convention Area boundary (WCP-CA in dashed lines).**

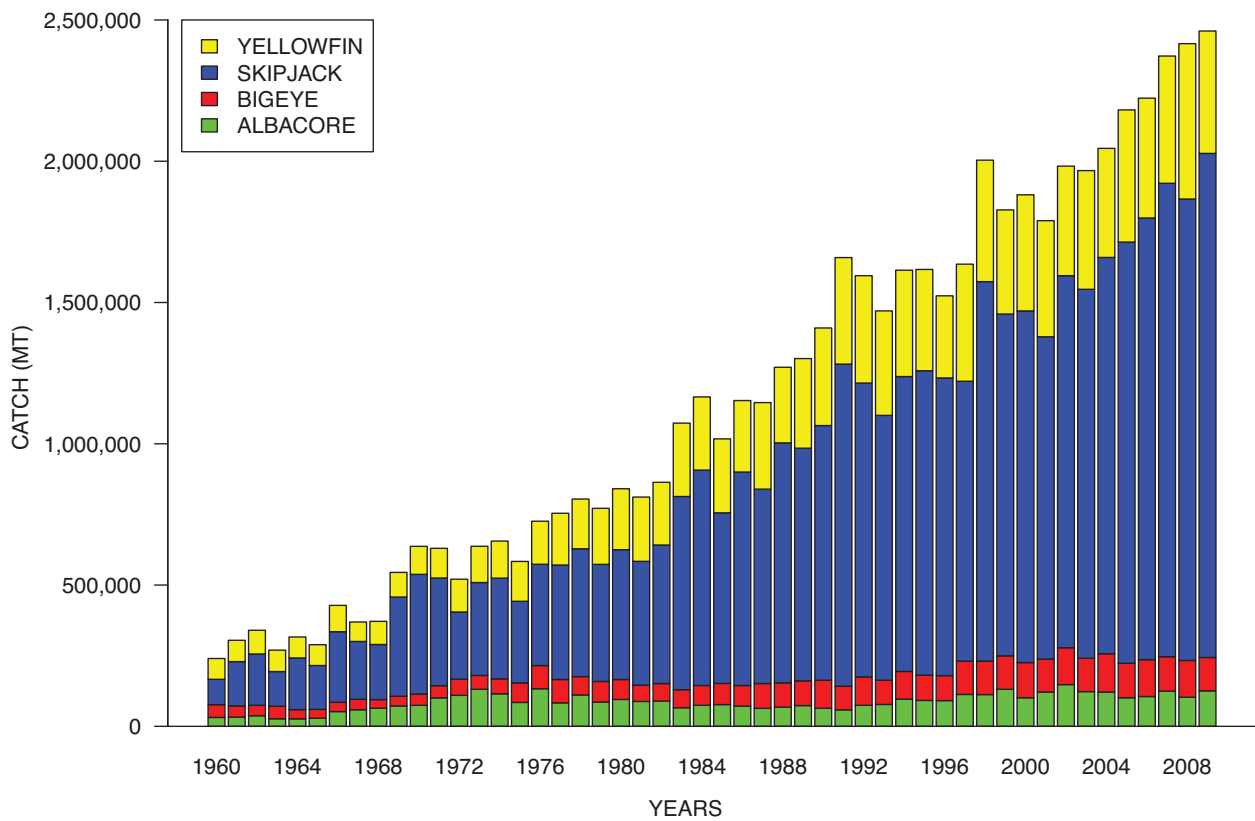
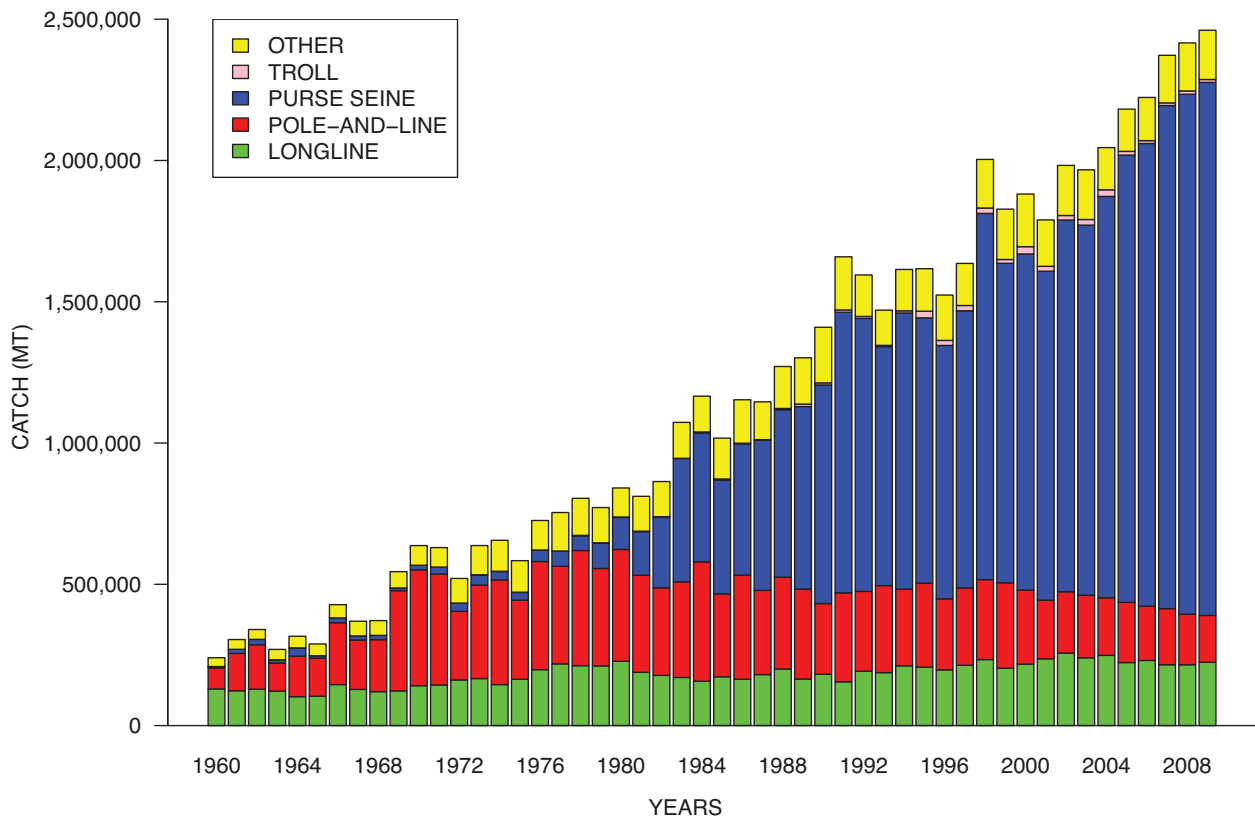


Figure 2: Catch (metric tonnes) by gear (top) and species (bottom) for the western and central Pacific region, 1960–2009. Note: data for 2009 are preliminary.

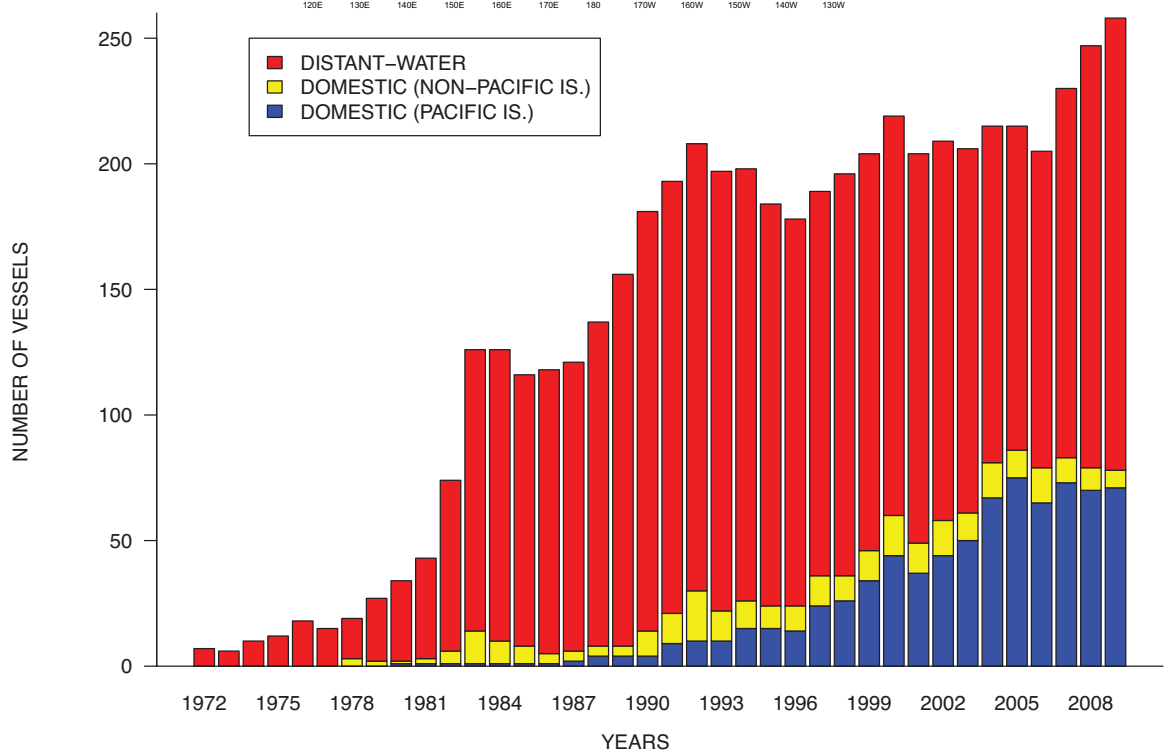
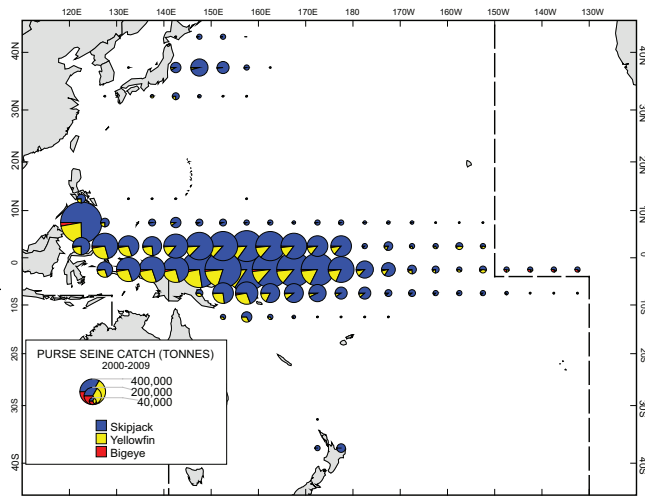
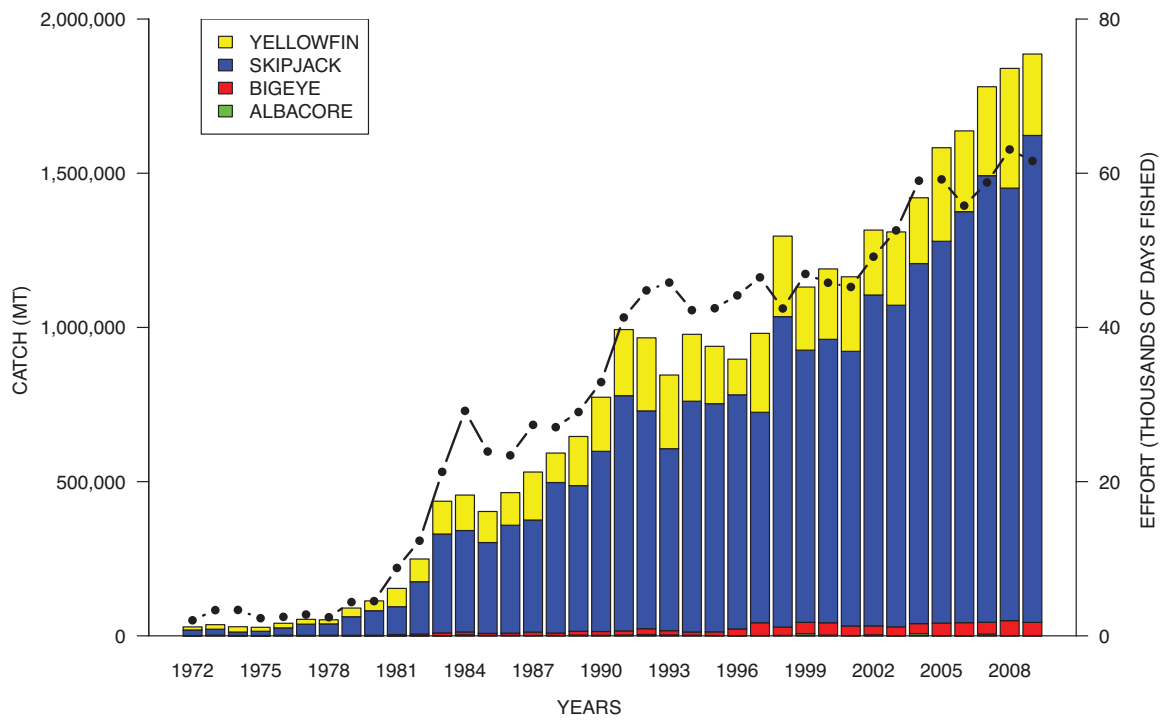


Figure 3: Time series of catch (mt) and effort (top), recent spatial distribution of catches (middle), and fleet sizes (bottom) for the purse-seine fishery in the western and central Pacific Ocean (WCPO).

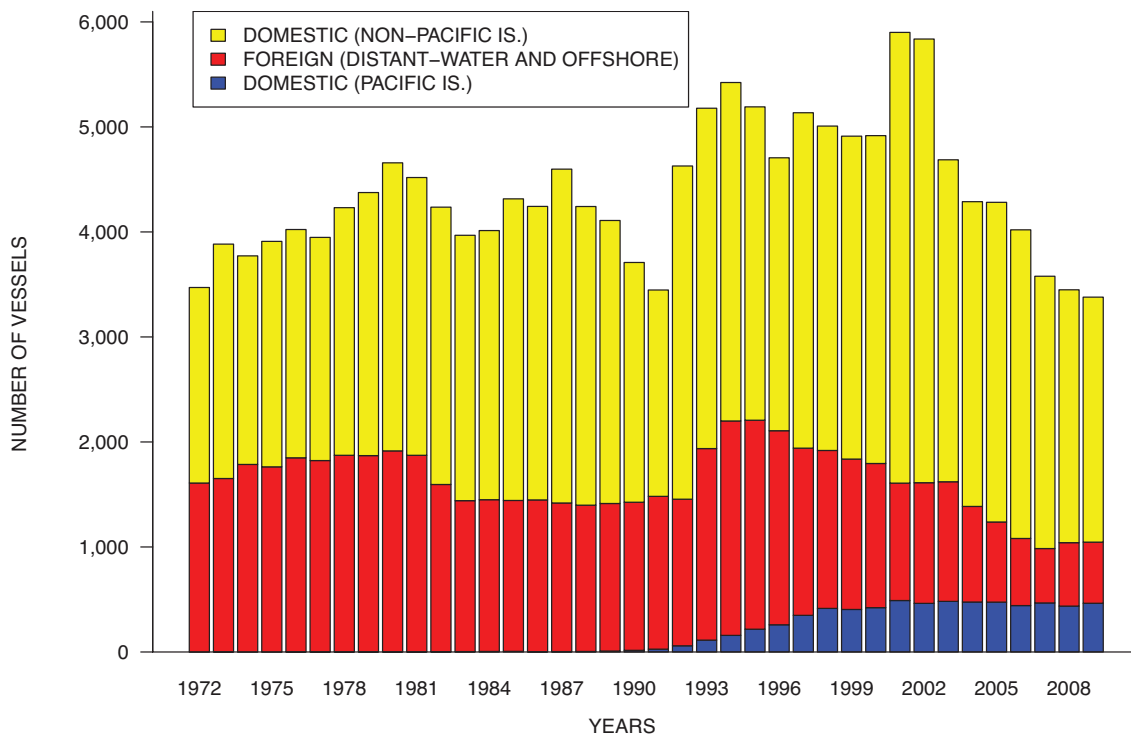
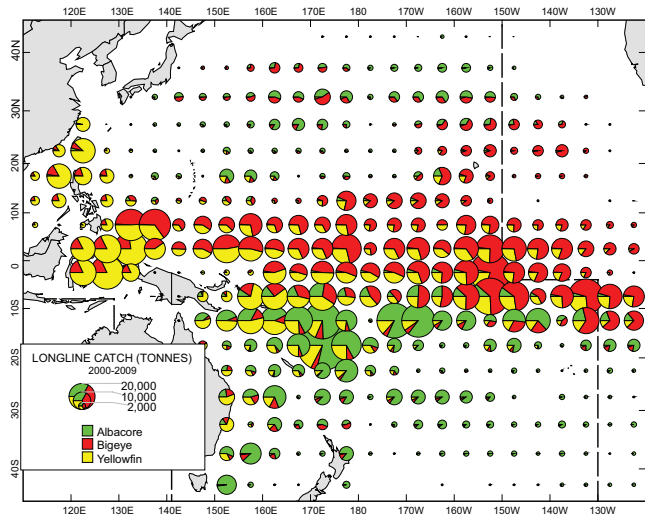
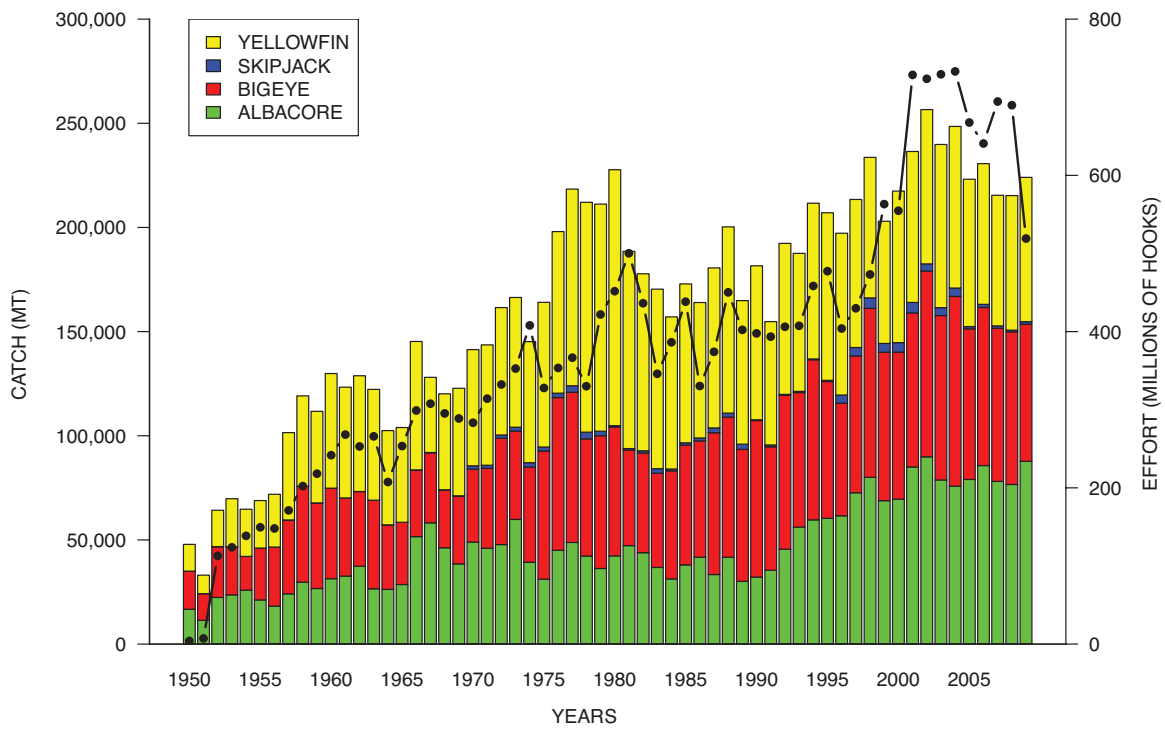


Figure 4: Time series of catch (mt) and effort (top), recent spatial distribution of catches (middle), and fleet sizes (bottom), for the longline fishery in the western and central Pacific Ocean (WCPO).

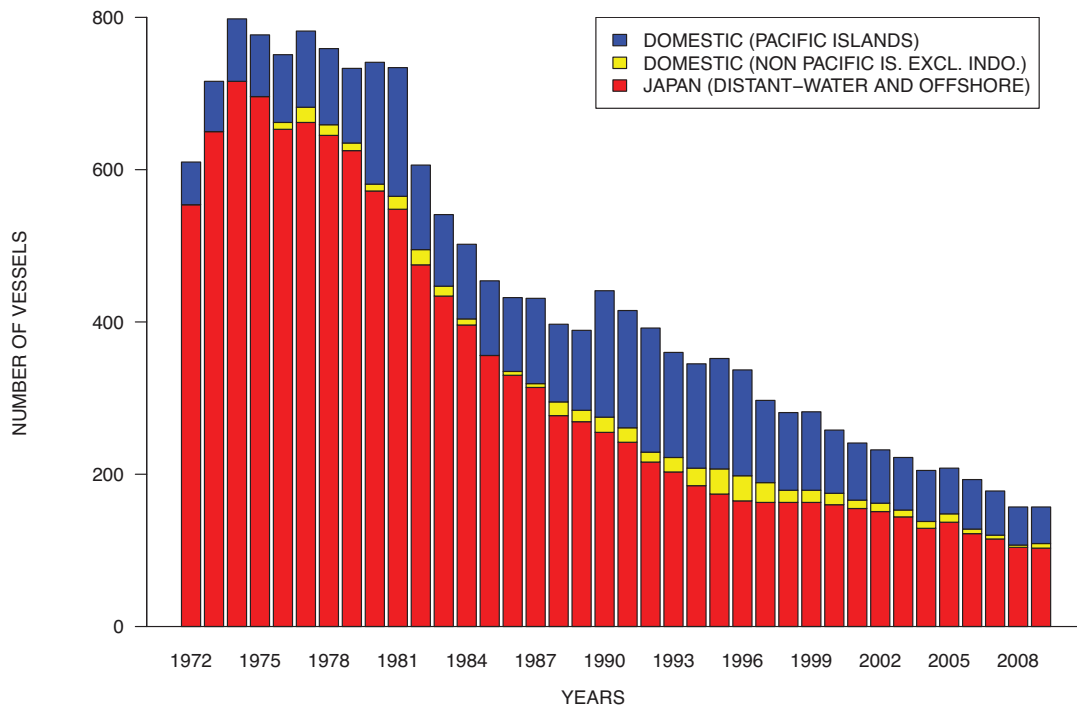
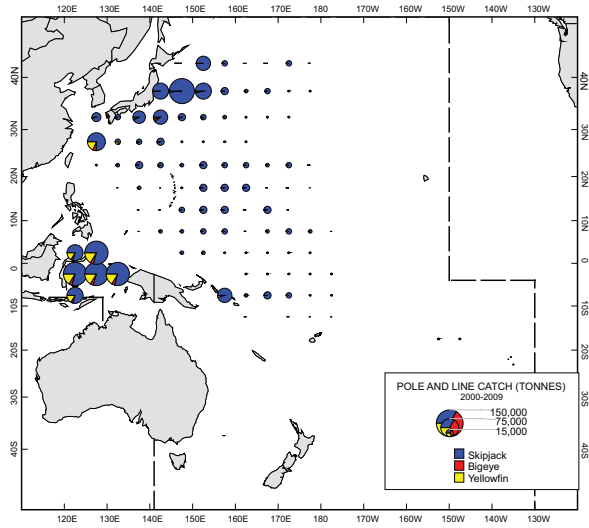
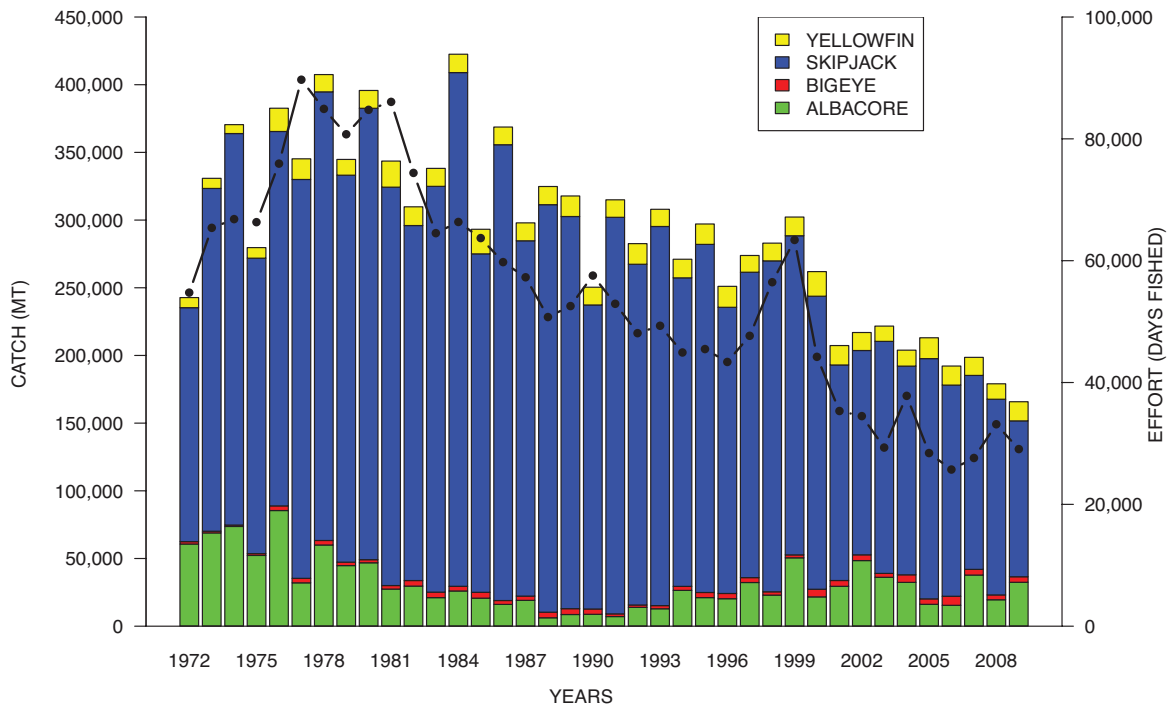


Figure 5: Time series of catch (mt) and effort (top), recent spatial distribution of catches (middle), and fleet sizes (bottom), for the pole-and-line fishery in the western and central Pacific Ocean (WCPO).



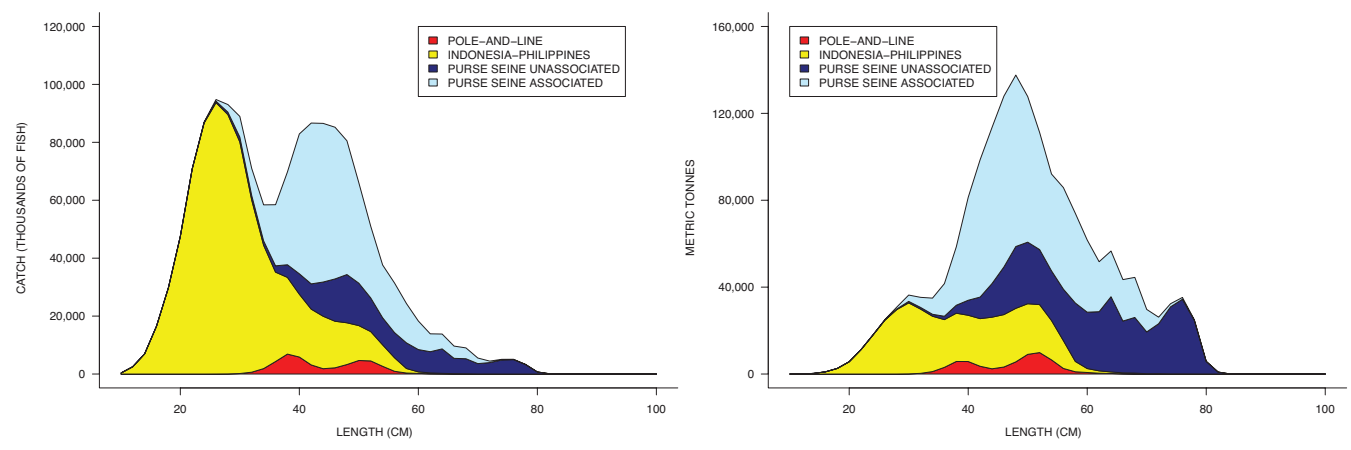
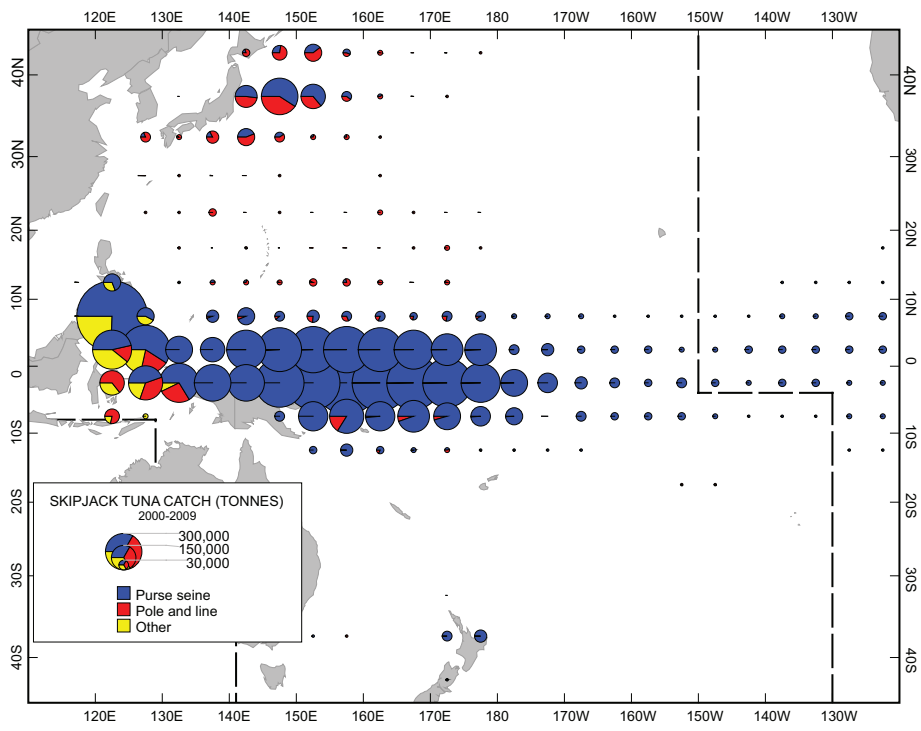
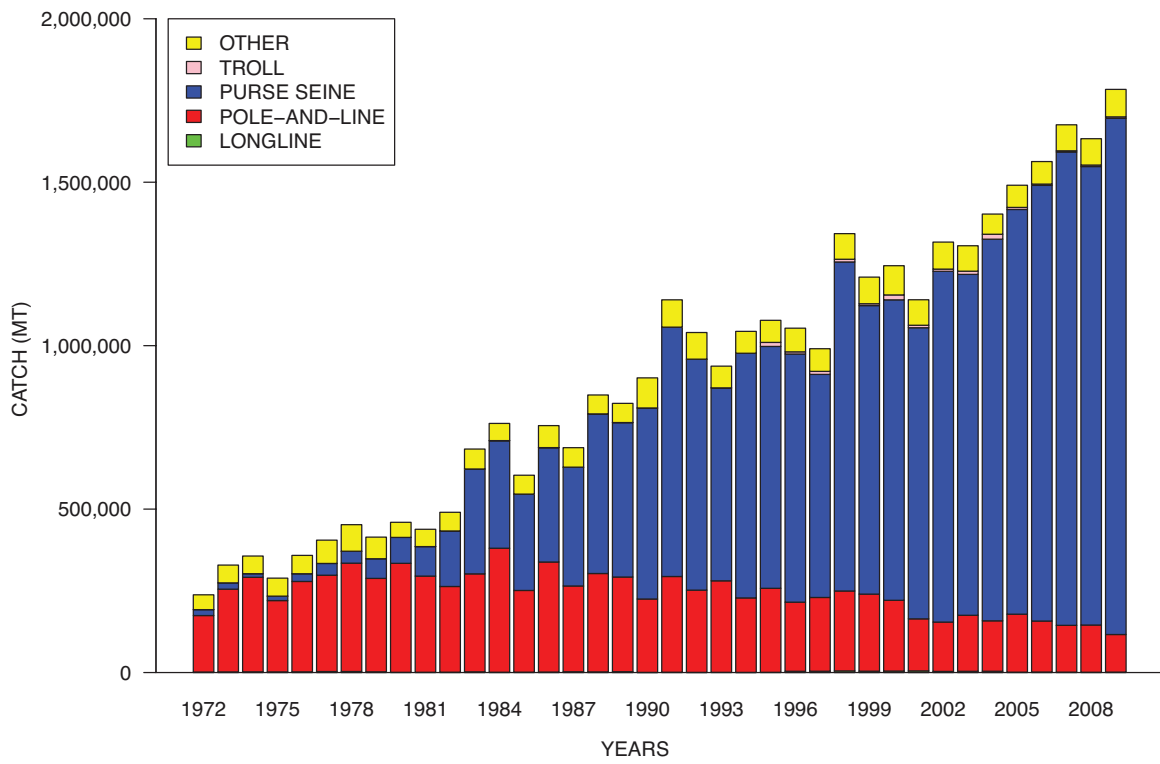


Figure 6: Time series (top), recent spatial distribution (middle), and size composition (bottom) of skipjack tuna catches (mt) by gear for the western and central Pacific Ocean (WCPO).

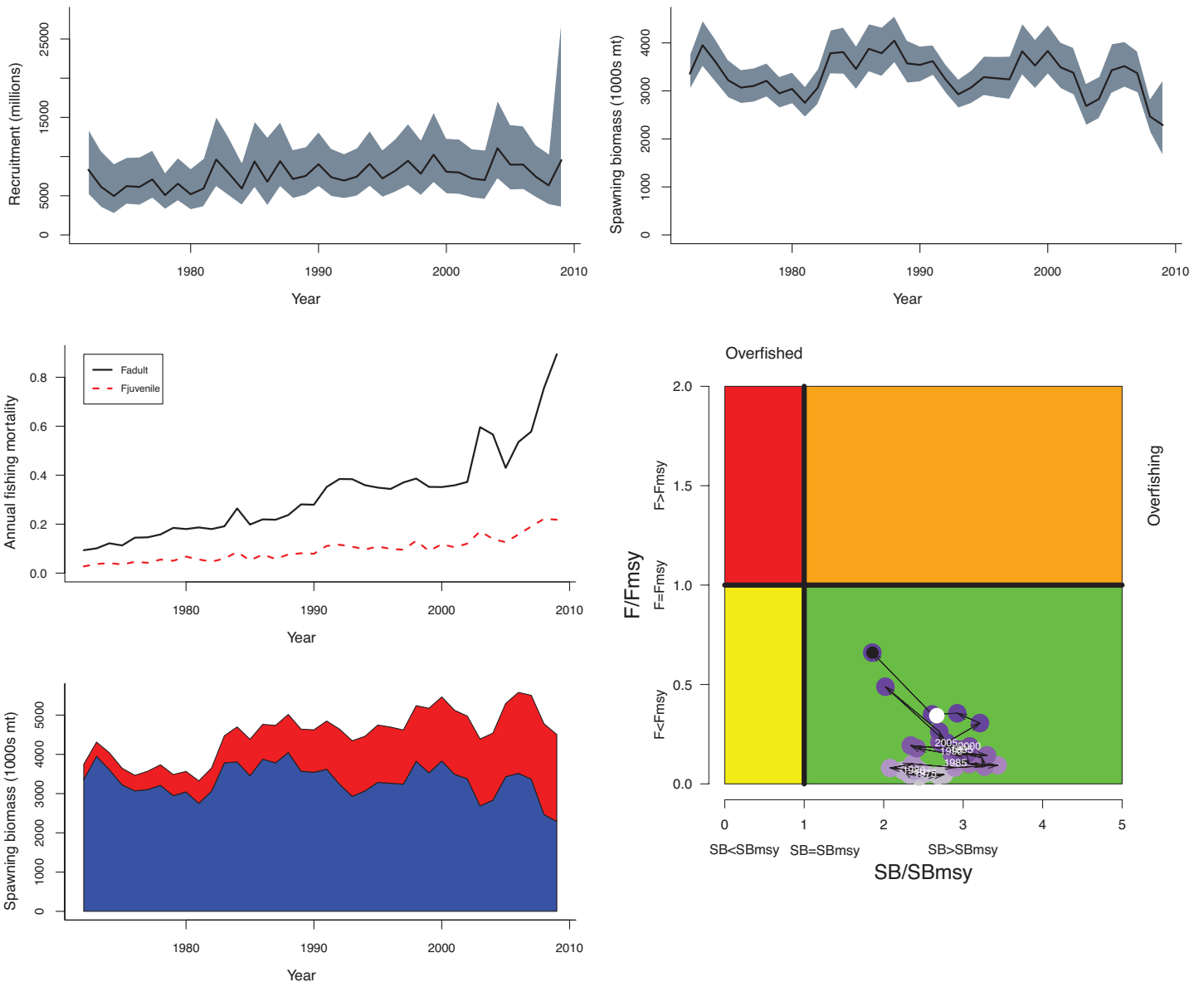


Figure 7: Estimated recruitment (top left), spawning biomass (top right), fishing mortality (middle left), stock status (middle right) and estimated spawning biomass with [blue] and without [red] fishing (bottom left) from the 2010 skipjack tuna stock assessment.

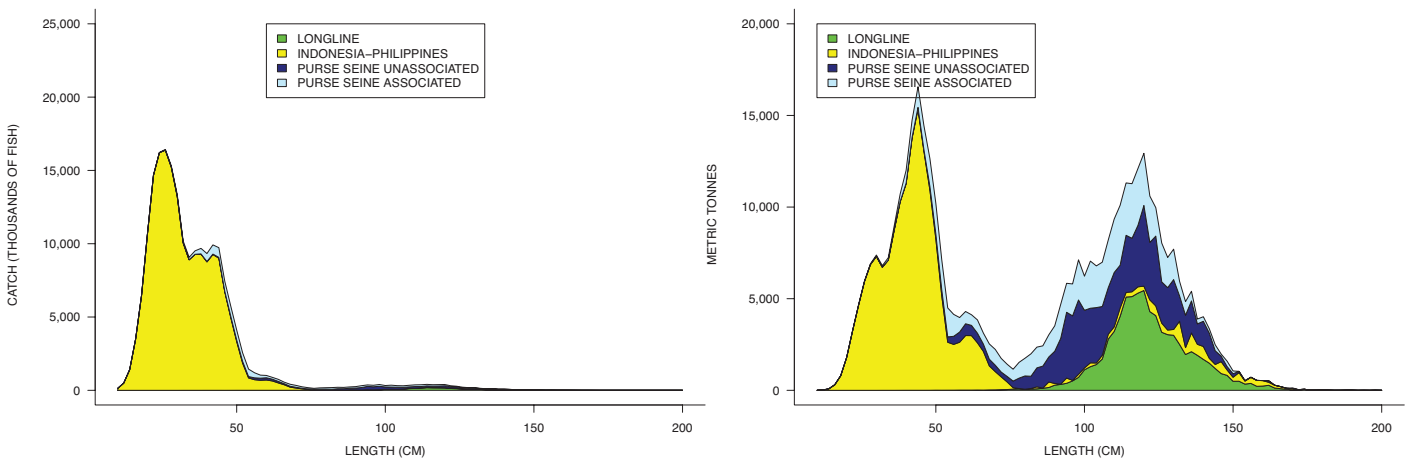
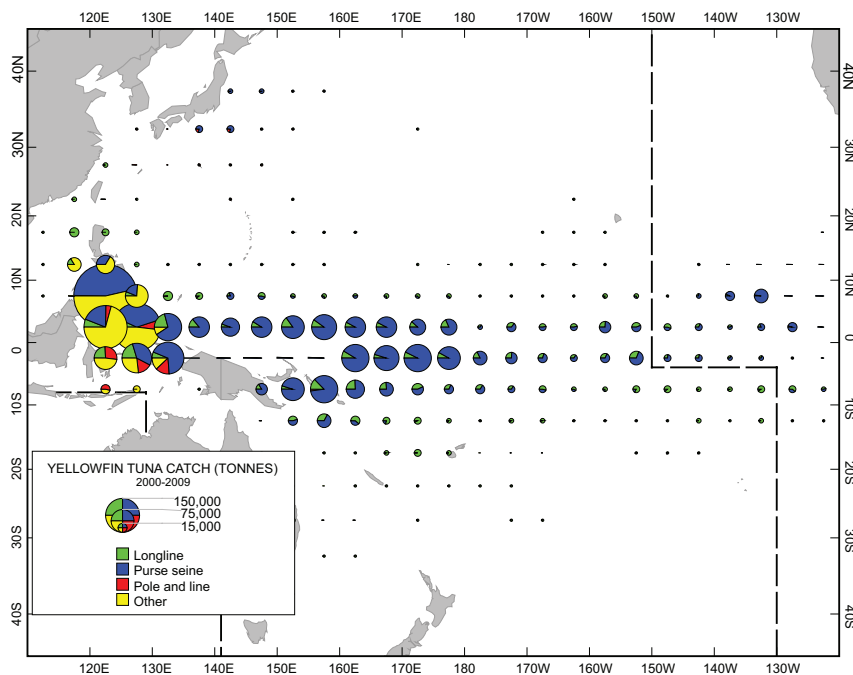
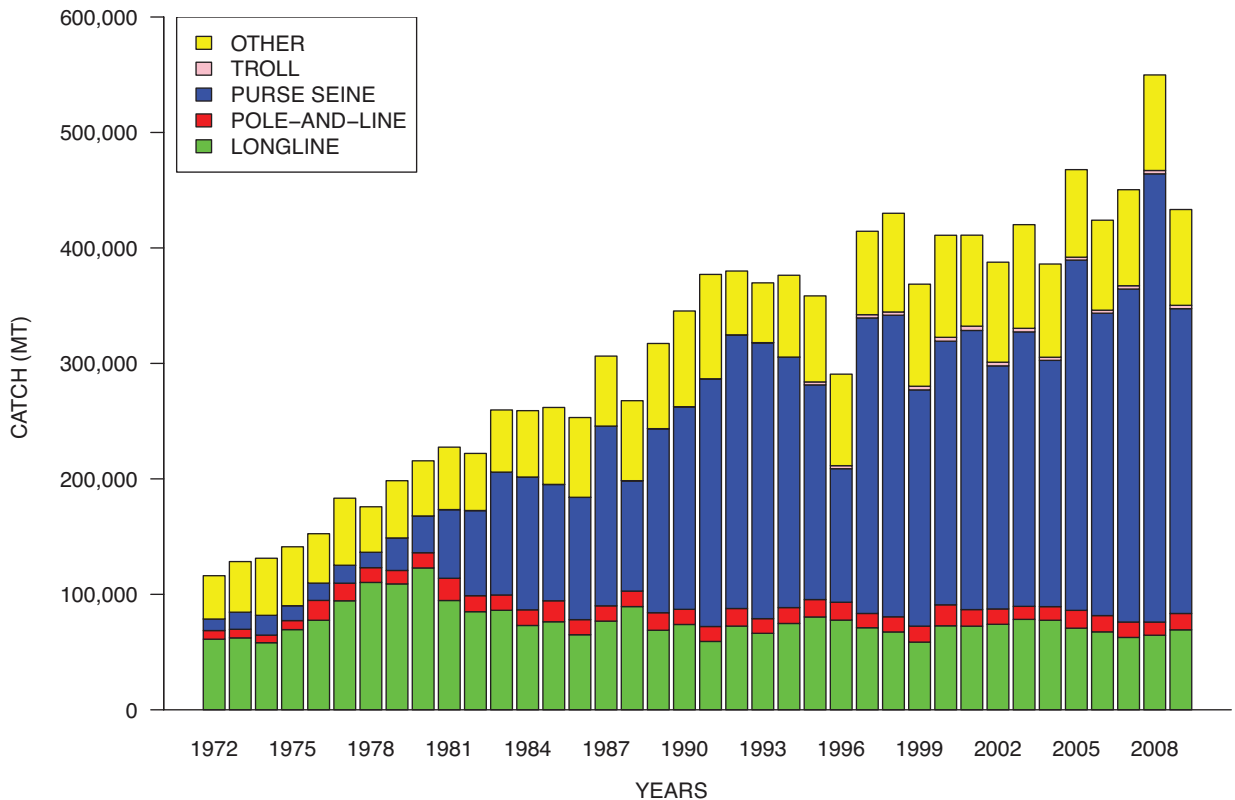
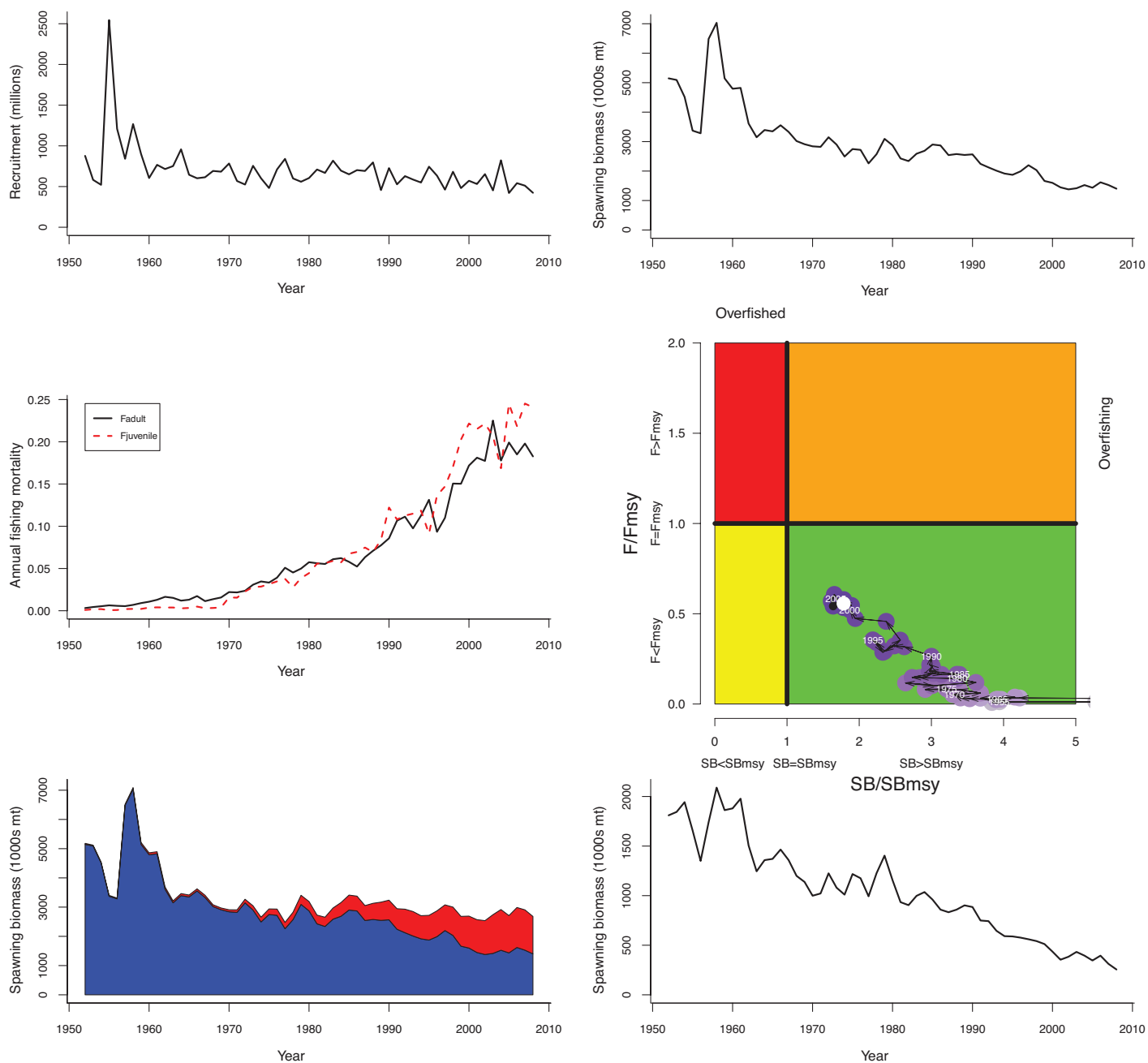


Figure 8: Time series (top), recent spatial distribution (middle), and size composition (bottom) of yellowfin tuna catches (mt) by gear for the western and central Pacific Ocean (WCPO).



**Figure 9: Estimated recruitment (top left), spawning biomass (top right), fishing mortality (middle left), stock status (middle right), estimated spawning biomass with [blue] and without [red] fishing (bottom left), and spawning biomass for the western equatorial region (bottom right) from the 2009 yellowfin tuna stock assessment.**

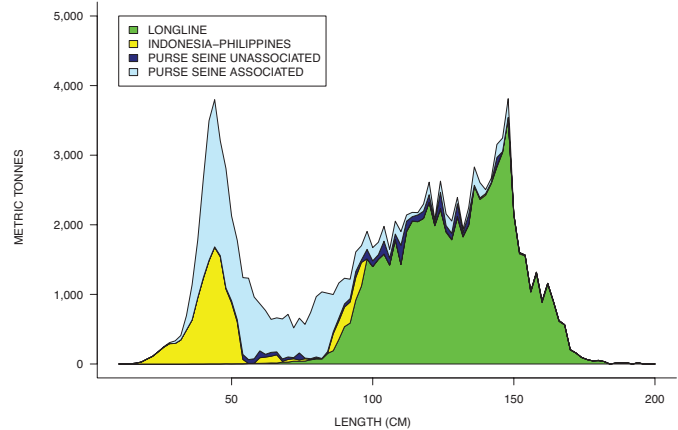
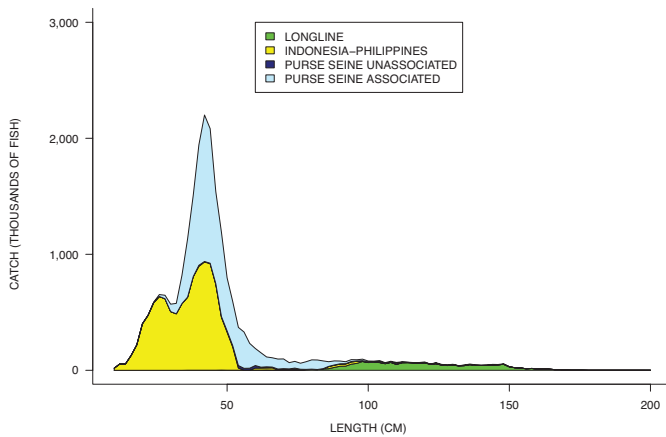
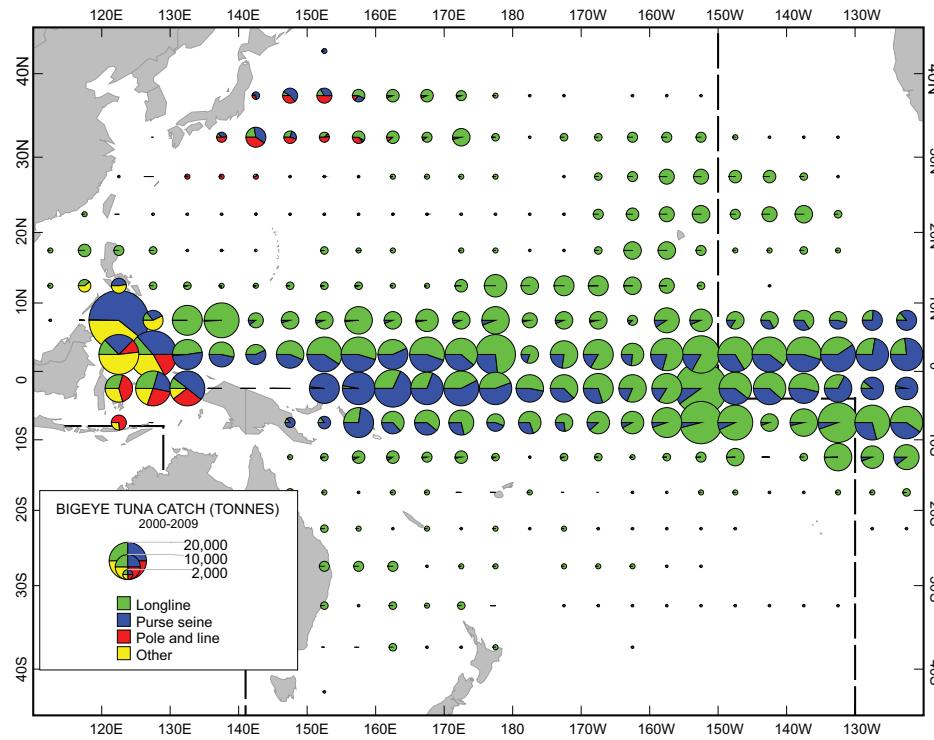
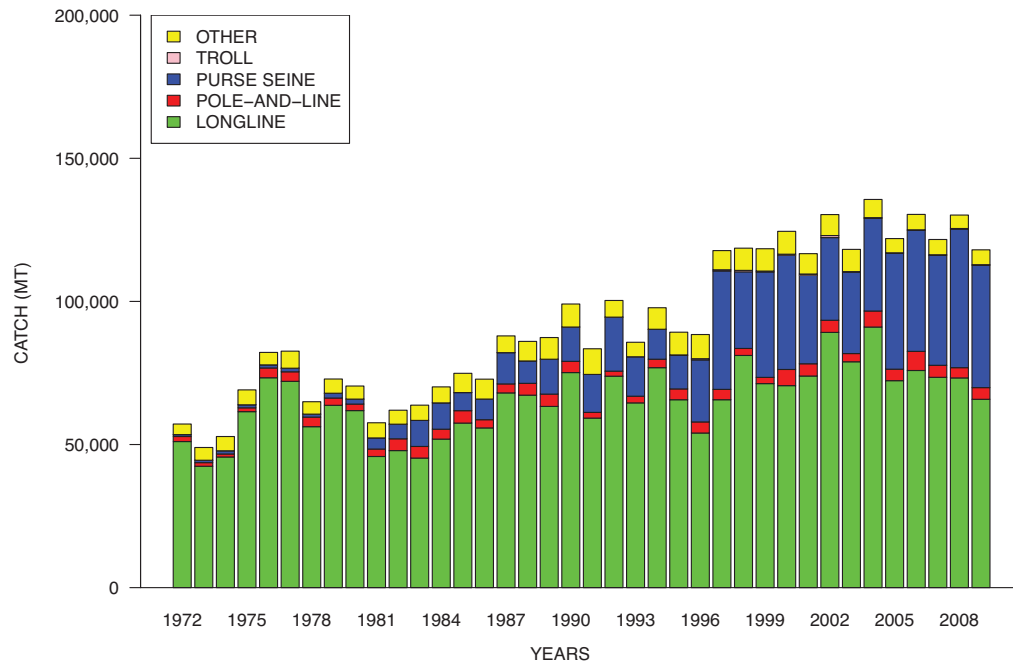


Figure 10: Time series (top), recent spatial distribution (middle), and size composition (bottom) of bigeye tuna catches (mt) by gear for the western and central Pacific Ocean (WCPO).

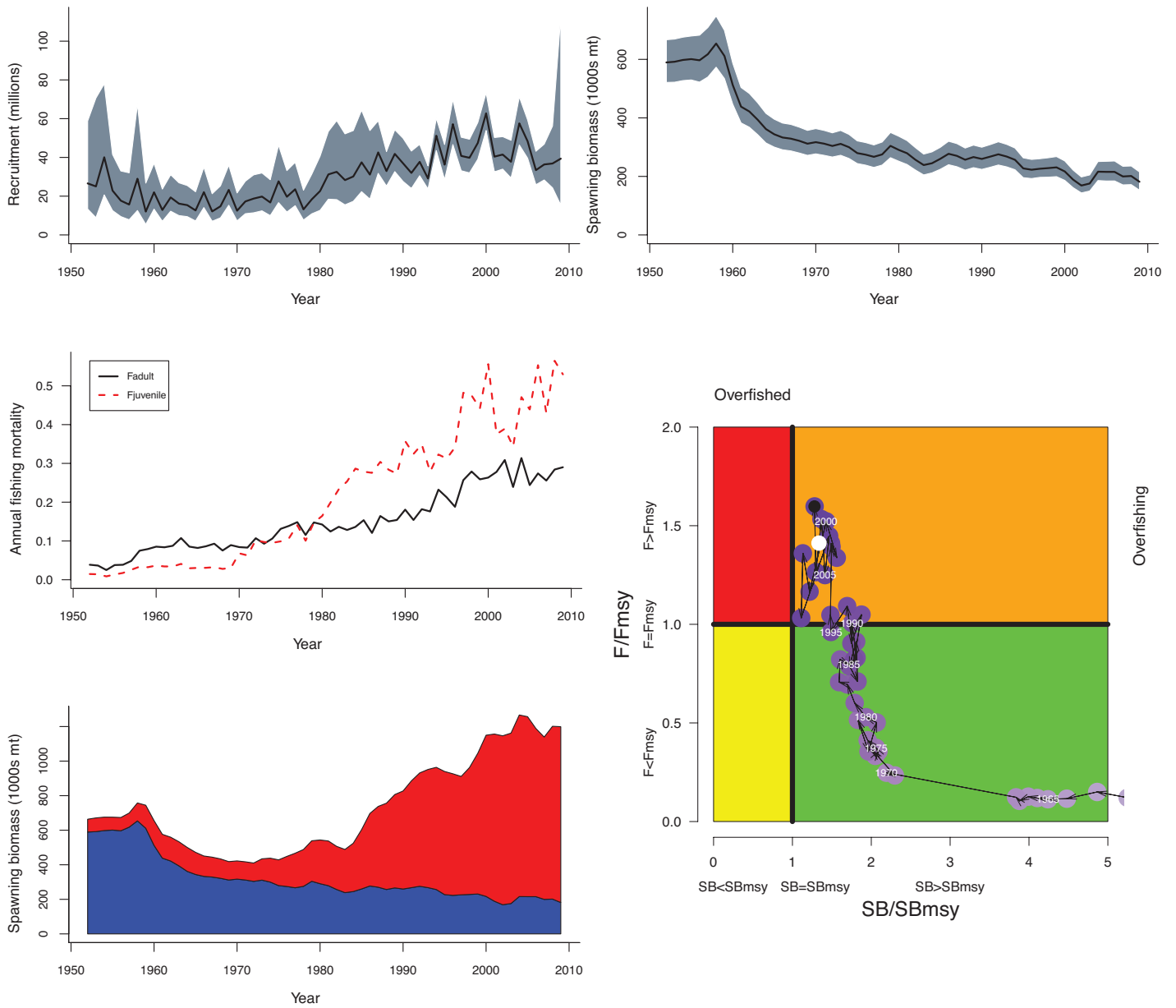
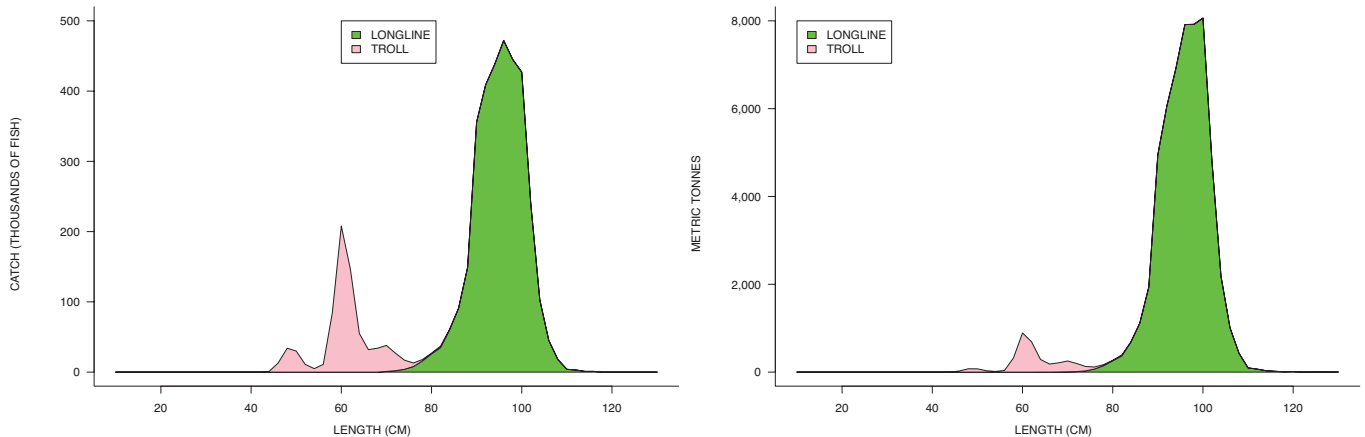
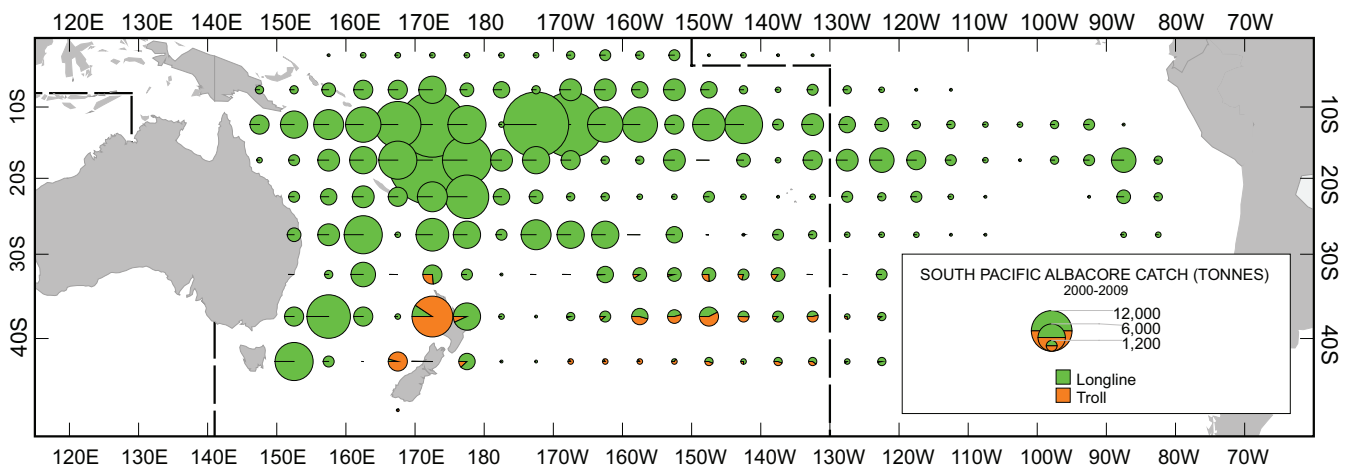
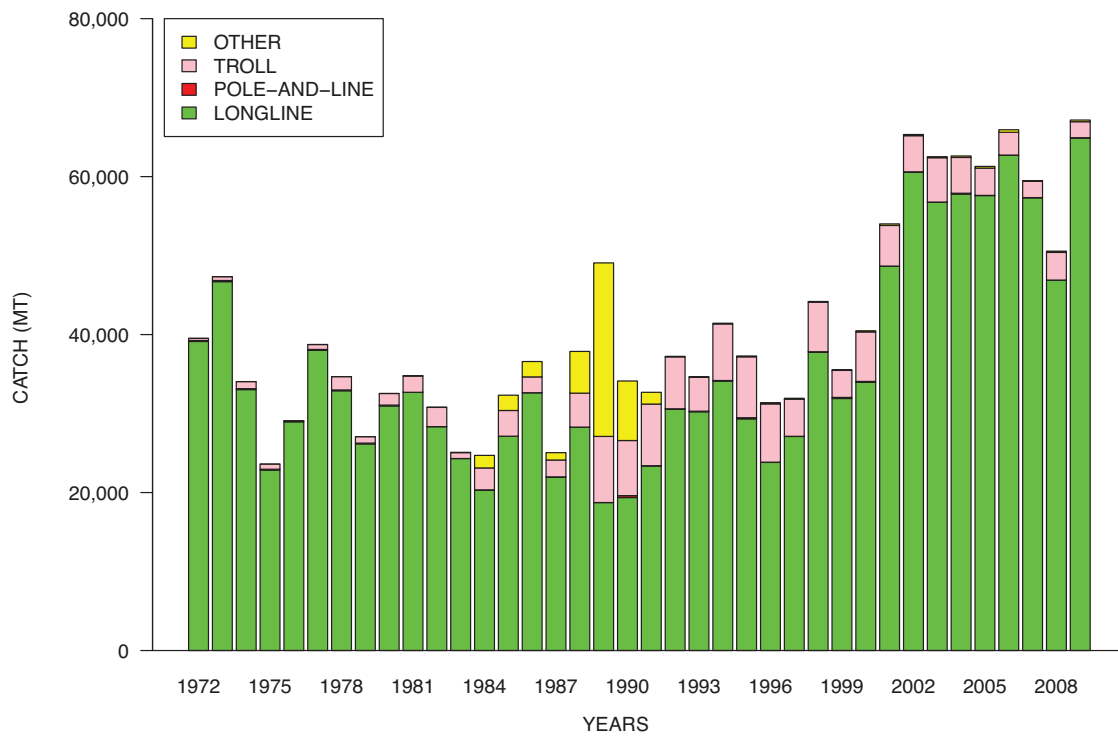
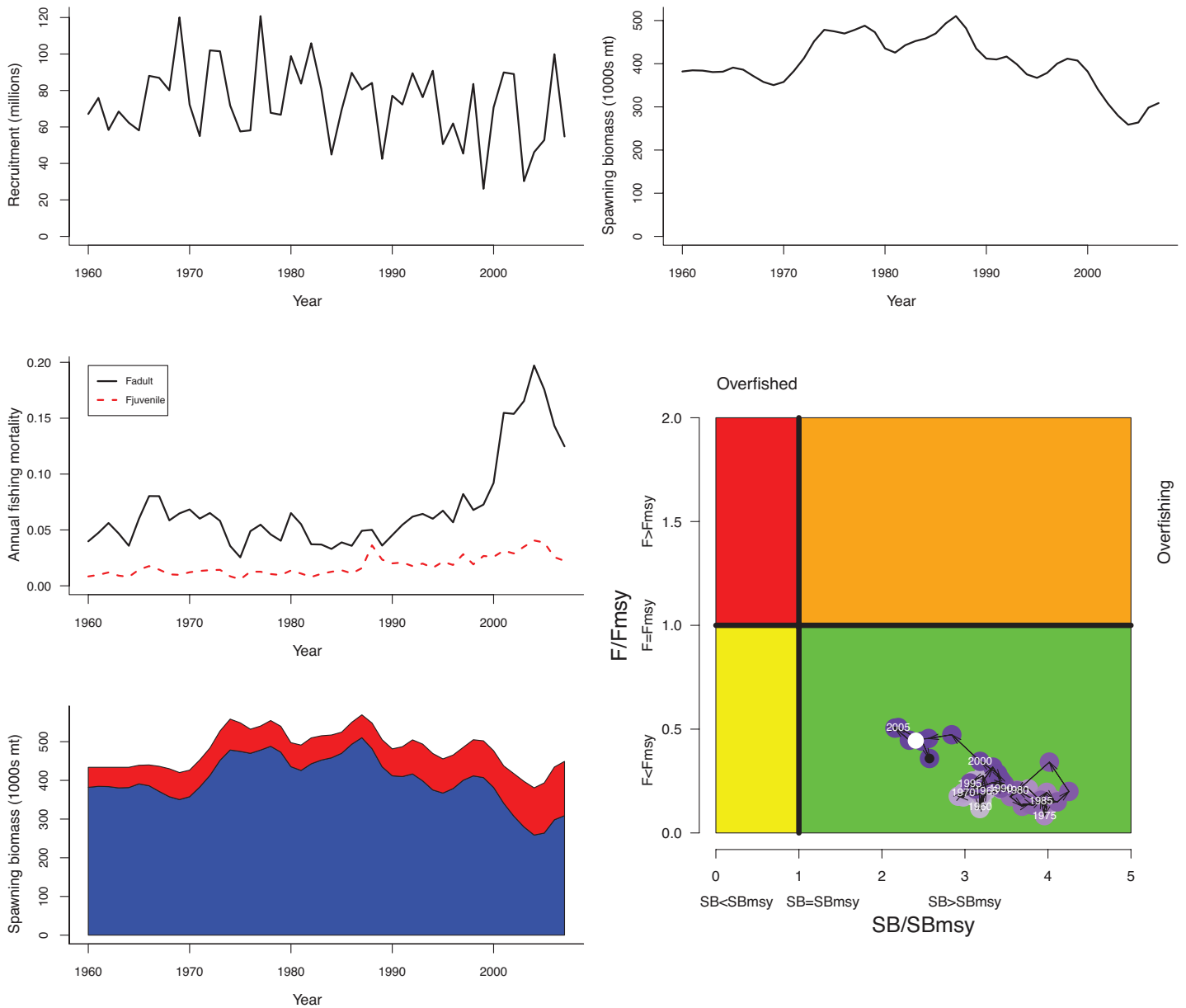


Figure 11: Estimated recruitment (top left), spawning biomass (top right), fishing mortality (middle left), stock status (middle right), and estimated spawning biomass with [blue] and without [red] fishing (bottom left) from the 2010 bigeye tuna stock assessment.



**Figure 12: Time series (top), recent spatial distribution (middle), and size composition (bottom) of South Pacific albacore tuna catches (mt) by gear for the western and central Pacific Ocean (WCPO).**





**Figure 13: Estimated recruitment (top left), spawning biomass (top right), fishing mortality (middle left), stock status (middle right), and estimated spawning biomass with [blue] and without [red] fishing (bottom left) from the 2009 South Pacific albacore tuna stock assessment.**

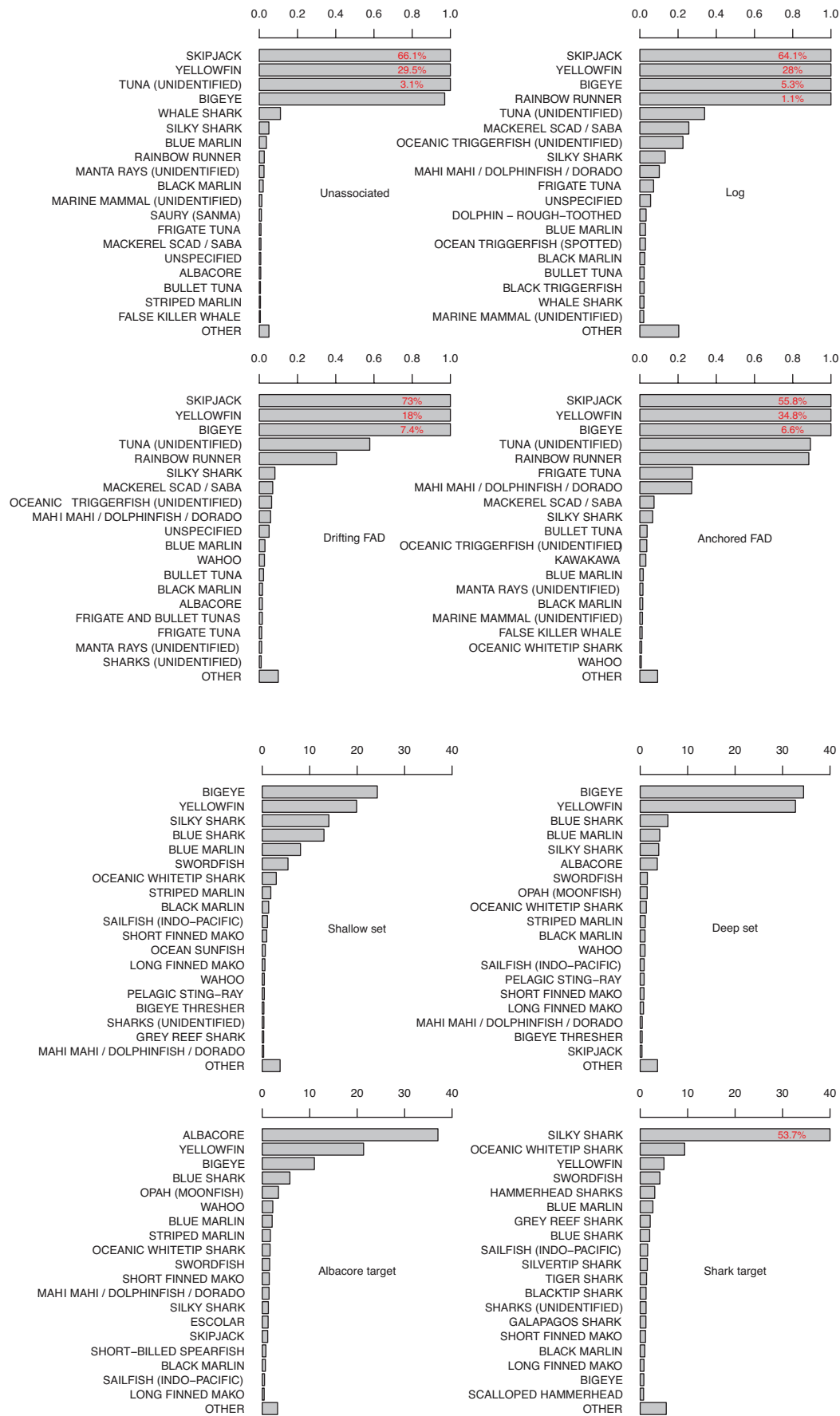


Figure 14: Catch composition of the various categories of purse-seine (top) and longline (bottom) fisheries operating in the WCPO.

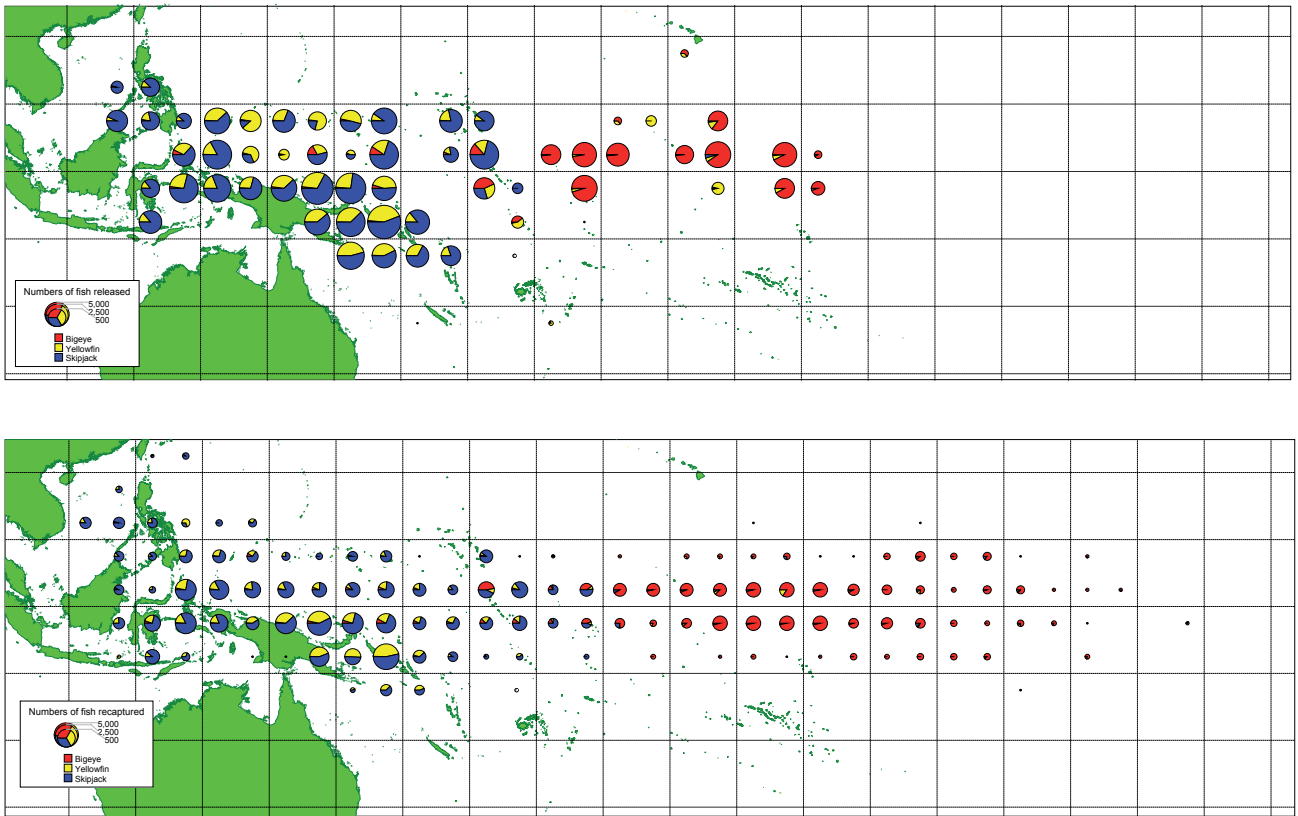


Figure 15: Tag releases (top) and recaptures (bottom) by species from the recent Pacific Tuna Tagging Programme (PTTP).

## For further information

### Fishery

Lawson, T. 2010. An update on the species composition of purse-seine catches determined from paired spill and grab samples collected by observers. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-ST-WP-02](#).

Williams, P. 2010. Estimates of annual catches in the WCPFC Statistical Area. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-ST-IP-1](#).

Williams, P. 2010. Changes to the data available for stock assessment. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-SA-IP-02](#).

Williams, P. and P. Terawasi (FFA). 2010. Overview of tuna fisheries in the western and central Pacific Ocean, including economic conditions – 2009. [WCPFC-SC6-GN-WP-1](#).

### Status of the stocks

Harley, S.J. et al. 2010. Stock assessment of bigeye tuna in the western and central Pacific Ocean. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-SA-WP-04](#).

Hampton, J. and S.J. Harley. 2010. Further analysis of CMM2008-01. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-SA-WP-05](#).

Hoyle, S., P. Kleiber, N. Davies, S.J. Harley and J. Hampton. 2010. Stock assessment of skipjack tuna in the western and central Pacific Ocean. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-SA-WP-10](#).

Langley, A., S. Harley, S. Hoyle, N. Davies, J. Hampton and P. Kleiber. 2009. Stock assessment of yellowfin tuna in the western and central Pacific Ocean. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC5-SA-WP-03](#).

Oceanic Fisheries Programme (OFP). 2010. Review of the implementation and effectiveness of CMM 2008–01. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC7-2010/15](#).

### Ecosystem considerations

Allain, V. 2010. Trophic structure of the pelagic ecosystems of the western and central Pacific Ocean. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-EB-IP-10](#).

Clarke, S. and S.J. Harley. 2010. A research plan to determine the status of the key shark species. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-EB-WP-01](#).

Clarke, S., T. Lawson, D. Bromhead and S. Harley. 2010. Progress toward shark assessments. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC7-2010-16](#).

Farley, J., A. Williams, C. Davies and S. Nicol. 2010. Regional study of South Pacific albacore population biology: Year 2 - biological sampling and analysis. Hobart, Australia: Commonwealth Scientific and Research Organization (CSIRO). [WCPFC-SC6-BI-WP-01](#).

Filippi, D., S. Waugh and S. Nicol. 2010. Revised spatial risk indicators for seabird interactions with longline fisheries in the western and central Pacific. New Zealand: Sextant Technology. [WCPFC-SC6-EB-IP-01](#).

Lehodey, P., I. Senina, B. Calmettes, M. Abescassis, J. Jurado Molina, K. Briand, J. Hampton, J. Polovina, P. Williams and S. Nicol. 2010, Project 62: SEAPODYM applications in WCPO – Progress report. Ramonville, France: Collecte Localisation Satellites (CLS). [WCPFC-SC6-EB-IP-02](#).

Morato, T., S. Hoyle, V. Allain and S. Nicol. 2010. Seamounts are hotspots of pelagic biodiversity in the open ocean. Proceedings of the National Academy of Sciences. [107: 9707-9711](#).

Nicol, S. et al. 2010, Pacific Tuna Tagging Project progress report and work plan for 2010. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-GN-IP-04](#).

Nicol, S., K. Sisor, S. Retalmai, D. Itano, K. Schaefer, J. Farley, H. Honda, C. Sanchez and M. Hoskins 2010, Bigeye tuna age, growth and reproductive biology (Project 35) – Progress report. Rev.1. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-BI-WP-03](#).

OFP. 2010. Non-target species interactions with the tuna fisheries of the western and central Pacific Ocean. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-EB-IP-08](#).

Williams, A., S. Nicol and B. Leroy. 2010, South Pacific albacore tagging project: 2010 summary report. Rev.1. Noumea, New Caledonia: Secretariat of the Pacific Community. [WCPFC-SC6-GN-IP-06](#).

**Table 1: Catch (metric tonnes) by gear for the western and central Pacific region, 1960–2009. Note: data for 2009 are preliminary.**

YEAR	LONGLINE		POLE-AND-LINE		PURSE SEINE		TROLL		OTHER		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	129,874	54	73,800	31	5,224	2	0	0	31,195	13	240,093
1961	123,330	41	132,070	43	14,540	5	0	0	34,536	11	304,476
1962	128,804	38	157,412	46	18,875	6	0	0	34,947	10	340,038
1963	122,263	45	98,628	37	11,934	4	0	0	36,795	14	269,620
1964	102,481	32	143,323	45	29,012	9	0	0	41,334	13	316,150
1965	103,955	36	134,621	47	8,621	3	0	0	41,727	14	288,924
1966	145,278	34	218,900	51	16,913	4	0	0	46,993	11	428,084
1967	128,047	35	174,774	47	14,508	4	5	0	52,006	14	369,340
1968	120,136	32	183,954	50	15,143	4	14	0	52,327	14	371,574
1969	122,806	23	354,784	65	9,483	2	0	0	57,703	11	544,776
1970	141,360	22	409,754	64	16,222	3	50	0	69,633	11	637,019
1971	143,625	23	392,914	62	24,511	4	0	0	68,925	11	629,975
1972	161,533	31	242,745	47	29,030	6	268	0	87,209	17	520,785
1973	166,399	26	330,841	52	36,269	6	484	0	103,281	16	637,274
1974	145,192	22	370,499	57	29,548	5	898	0	109,578	17	655,715
1975	164,049	28	279,663	48	27,685	5	646	0	111,669	19	583,712
1976	198,013	27	382,627	53	40,770	6	25	0	104,582	14	726,017
1977	218,413	29	345,257	46	53,492	7	621	0	136,322	18	754,105
1978	212,059	26	407,482	51	52,040	6	1,686	0	131,084	16	804,351
1979	211,221	27	344,799	45	90,102	12	814	0	124,684	16	771,620
1980	227,707	27	395,746	47	113,264	13	1,489	0	102,645	12	840,851
1981	188,516	23	343,584	42	153,907	19	2,118	0	123,315	15	811,440
1982	177,765	21	309,802	36	249,233	29	2,552	0	124,409	14	863,761
1983	170,385	16	338,181	32	436,509	41	949	0	127,088	12	1,073,112
1984	157,072	13	422,512	36	456,467	39	3,124	0	126,690	11	1,165,865
1985	172,886	17	293,206	29	403,252	40	3,468	0	144,604	14	1,017,416
1986	163,964	14	368,730	32	464,460	40	2,284	0	153,694	13	1,153,132
1987	180,581	16	297,935	26	531,142	46	2,350	0	133,813	12	1,145,821
1988	200,281	16	324,805	26	592,611	47	4,671	0	148,481	12	1,270,849
1989	164,878	13	317,802	24	646,441	50	8,687	1	163,829	13	1,301,637
1990	181,591	13	250,390	18	773,730	55	7,219	1	196,934	14	1,409,864
1991	154,805	9	314,979	19	993,149	60	8,004	0	188,156	11	1,659,093
1992	192,364	12	282,598	18	966,314	61	6,844	0	146,840	9	1,594,960
1993	187,553	13	307,966	21	845,646	58	4,612	0	124,526	8	1,470,303
1994	211,638	13	271,071	17	977,650	61	7,493	0	146,462	9	1,614,314
1995	207,042	13	297,106	18	938,748	58	23,585	1	150,516	9	1,616,997
1996	197,234	13	251,053	16	897,123	59	17,807	1	160,522	11	1,523,739
1997	213,450	13	273,844	17	980,797	60	18,732	1	148,946	9	1,635,769
1998	233,645	12	282,965	14	1,296,103	65	19,099	1	172,023	9	2,003,835
1999	202,973	11	302,239	17	1,130,946	62	13,476	1	178,130	10	1,827,764
2000	217,465	12	261,937	14	1,189,767	63	25,845	1	186,188	10	1,881,202
2001	236,468	13	207,308	12	1,164,273	65	17,332	1	164,309	9	1,789,690
2002	256,582	13	216,944	11	1,315,680	66	16,129	1	177,307	9	1,982,642
2003	239,841	12	221,676	11	1,309,692	67	19,875	1	175,877	9	1,966,961
2004	248,490	12	203,903	10	1,420,422	69	23,445	1	149,299	7	2,045,559
2005	223,146	10	213,055	10	1,582,723	73	13,293	1	149,516	7	2,181,733
2006	230,619	10	192,178	9	1,637,377	74	10,098	0	152,969	7	2,223,241
2007	215,432	9	198,590	8	1,780,514	75	9,249	0	168,580	7	2,372,365
2008	215,306	9	179,057	7	1,840,016	76	11,740	0	170,017	7	2,416,136
2009	224,050	9	165,811	7	1,886,548	77	10,254	0	174,268	7	2,460,931

**Table 2: Catch (metric tonnes) by species for the four main tuna species taken in the western and central Pacific region, 1960–2009. Note: data for 2009 are preliminary.**

YEAR	ALBACORE		BIGEYE		SKIPJACK		YELLOWFIN		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	31,463	13	45,025	19	89,938	37	73,667	31	240,093
1961	32,922	11	39,380	13	156,736	51	75,438	25	304,476
1962	37,602	11	36,868	11	181,624	53	83,944	25	340,038
1963	26,815	10	44,346	16	122,703	46	75,756	28	269,620
1964	26,687	8	32,391	10	182,918	58	74,154	23	316,150
1965	28,735	10	31,333	11	155,221	54	73,635	25	288,924
1966	52,284	12	33,187	8	249,514	58	93,099	22	428,084
1967	58,822	16	36,748	10	204,831	55	68,939	19	369,340
1968	64,213	17	30,416	8	194,978	52	81,967	22	371,574
1969	72,106	13	34,356	6	351,052	64	87,262	16	544,776
1970	74,350	12	40,082	6	423,431	66	99,156	16	637,019
1971	100,737	16	43,223	7	380,957	60	105,058	17	629,975
1972	109,655	21	57,164	11	237,818	46	116,148	22	520,785
1973	131,149	21	48,966	8	328,784	52	128,375	20	637,274
1974	115,162	18	52,800	8	356,484	54	131,269	20	655,715
1975	84,651	15	69,088	12	288,788	49	141,185	24	583,712
1976	132,947	18	82,183	11	358,389	49	152,498	21	726,017
1977	83,171	11	82,622	11	405,040	54	183,272	24	754,105
1978	111,161	14	64,956	8	452,387	56	175,847	22	804,351
1979	86,007	11	72,890	9	414,303	54	198,420	26	771,620
1980	95,156	11	70,437	8	459,608	55	215,650	26	840,851
1981	88,095	11	57,605	7	438,261	54	227,479	28	811,440
1982	89,496	10	61,983	7	490,244	57	222,038	26	863,761
1983	65,988	6	63,754	6	683,685	64	259,685	24	1,073,112
1984	74,540	6	70,140	6	762,093	65	259,092	22	1,165,865
1985	77,060	8	74,881	7	603,632	59	261,843	26	1,017,416
1986	71,757	6	72,840	6	755,407	66	253,128	22	1,153,132
1987	63,645	6	87,954	8	687,889	60	306,333	27	1,145,821
1988	67,948	5	86,034	7	849,161	67	267,706	21	1,270,849
1989	73,533	6	87,380	7	823,473	63	317,251	24	1,301,637
1990	63,872	5	99,094	7	901,487	64	345,411	24	1,409,864
1991	58,322	4	83,456	5	1,140,246	69	377,069	23	1,659,093
1992	74,452	5	100,333	6	1,040,181	65	379,994	24	1,594,960
1993	77,496	5	85,725	6	937,326	64	369,756	25	1,470,303
1994	96,461	6	97,793	6	1,043,717	65	376,343	23	1,614,314
1995	91,750	6	89,246	6	1,077,527	67	358,474	22	1,616,997
1996	91,140	6	88,434	6	1,053,477	69	290,688	19	1,523,739
1997	112,900	7	117,761	7	990,658	61	414,450	25	1,635,769
1998	112,465	6	118,605	6	1,342,741	67	430,024	21	2,003,835
1999	131,066	7	118,408	6	1,209,652	66	368,638	20	1,827,764
2000	101,161	5	124,489	7	1,244,571	66	410,981	22	1,881,202
2001	121,550	7	116,687	7	1,140,407	64	411,046	23	1,789,690
2002	147,782	7	130,344	7	1,316,865	66	387,651	20	1,982,642
2003	122,938	6	118,180	6	1,305,667	66	420,176	21	1,966,961
2004	121,266	6	135,621	7	1,402,601	69	386,071	19	2,045,559
2005	101,170	5	121,959	6	1,490,780	68	467,824	21	2,181,733
2006	105,578	5	130,395	6	1,563,241	70	424,027	19	2,223,241
2007	124,617	5	121,637	5	1,675,676	71	450,435	19	2,372,365
2008	102,995	4	130,169	5	1,633,143	68	549,829	23	2,416,136
2009	125,647	5	118,023	5	1,783,986	72	433,275	18	2,460,931



**Table 3: Skipjack tuna catch (metric tonnes) by gear type for the western and central Pacific region, 1950–2009. Note: data for 2009 are preliminary.**

YEAR	LONGLINE		POLE-AND-LINE		PURSE SEINE		TROLL		OTHER		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1950	34	0	33,386	84	0	0	0	0	6,483	16	39,903
1951	12	0	96,214	90	1,748	2	0	0	8,602	8	106,576
1952	54	0	78,518	85	3,716	4	0	0	10,014	11	92,302
1953	1	0	65,546	82	3,371	4	0	0	11,403	14	80,321
1954	0	0	88,073	85	4,534	4	0	0	11,554	11	104,161
1955	157	0	92,524	85	2,906	3	0	0	12,664	12	108,251
1956	0	0	91,950	86	2,145	2	0	0	13,094	12	107,189
1957	17	0	92,156	86	2,813	3	0	0	11,955	11	106,941
1958	0	0	131,441	84	10,698	7	0	0	15,244	10	157,383
1959	33	0	145,447	82	16,941	10	0	0	14,853	8	177,274
1960	0	0	70,428	78	3,728	4	0	0	15,782	18	89,938
1961	0	0	127,011	81	11,693	7	0	0	18,032	12	156,736
1962	4	0	152,387	84	11,674	6	0	0	17,559	10	181,624
1963	0	0	94,757	77	9,592	8	0	0	18,354	15	122,703
1964	5	0	137,106	75	25,006	14	0	0	20,801	11	182,918
1965	11	0	129,933	84	4,657	3	0	0	20,620	13	155,221
1966	52	0	215,600	86	10,949	4	0	0	22,913	9	249,514
1967	124	0	168,846	82	10,931	5	0	0	24,930	12	204,831
1968	83	0	162,379	83	7,587	4	0	0	24,929	13	194,978
1969	130	0	315,795	90	5,057	1	0	0	30,070	9	351,052
1970	1,608	0	379,074	90	7,534	2	0	0	35,215	8	423,431
1971	1,475	0	333,284	87	13,769	4	0	0	32,429	9	380,957
1972	1,544	1	172,827	73	18,079	8	0	0	45,368	19	237,818
1973	1,861	1	253,217	77	19,271	6	0	0	54,435	17	328,784
1974	2,124	1	289,202	81	11,136	3	0	0	54,022	15	356,484
1975	1,919	1	218,271	76	13,579	5	0	0	55,019	19	288,788
1976	2,096	1	276,582	77	23,604	7	0	0	56,107	16	358,389
1977	3,127	1	294,641	73	36,032	9	0	0	71,240	18	405,040
1978	3,233	1	331,401	73	36,524	8	0	0	81,229	18	452,387
1979	2,179	1	285,859	69	60,123	15	0	0	66,142	16	414,303
1980	632	0	333,457	73	79,349	17	12	0	46,158	10	459,608
1981	756	0	294,292	67	90,304	21	17	0	52,892	12	438,261
1982	1,015	0	262,244	53	169,820	35	64	0	57,101	12	490,244
1983	2,144	0	299,762	44	320,690	47	154	0	60,935	9	683,685
1984	870	0	379,474	50	328,933	43	284	0	52,532	7	762,093
1985	1,108	0	250,010	41	294,654	49	146	0	57,714	10	603,632
1986	1,439	0	336,695	45	349,795	46	219	0	67,259	9	755,407
1987	2,329	0	262,467	38	363,392	53	168	0	59,533	9	687,889
1988	1,937	0	301,031	35	488,046	57	299	0	57,848	7	849,161
1989	2,507	0	289,706	35	472,376	57	244	0	58,640	7	823,473
1990	363	0	224,592	25	584,302	65	176	0	92,054	10	901,487
1991	885	0	292,950	26	762,738	67	148	0	83,525	7	1,140,246
1992	432	0	251,717	24	706,413	68	168	0	81,451	8	1,040,181
1993	573	0	280,066	30	590,078	63	175	0	66,434	7	937,326
1994	379	0	227,921	22	748,284	72	228	0	66,905	6	1,043,717
1995	598	0	257,147	24	739,901	69	12,298	1	67,583	6	1,077,527
1996	3,935	0	211,408	20	759,232	72	6,514	1	72,388	7	1,053,477
1997	4,070	0	225,612	23	682,423	69	9,218	1	69,335	7	990,658
1998	5,030	0	244,447	18	1,006,585	75	8,316	1	78,363	6	1,342,741
1999	4,208	0	235,739	19	882,640	73	5,660	0	81,405	7	1,209,652
2000	4,559	0	216,458	17	919,166	74	15,005	1	89,383	7	1,244,571
2001	5,059	0	159,225	14	890,605	78	7,539	1	77,979	7	1,140,407
2002	3,450	0	150,933	11	1,073,001	81	6,796	1	82,685	6	1,316,865
2003	3,824	0	171,403	13	1,042,875	80	9,721	1	77,844	6	1,305,667
2004	4,051	0	154,161	11	1,167,538	83	15,118	1	61,733	4	1,402,601
2005	1,084	0	177,474	12	1,238,073	83	6,302	0	67,847	5	1,490,780
2006	1,528	0	155,995	10	1,332,810	85	3,987	0	68,921	4	1,563,241
2007	1,167	0	143,272	9	1,448,020	86	3,598	0	79,619	5	1,675,676
2008	811	0	144,564	9	1,402,592	86	4,572	0	80,604	5	1,633,143
2009	1,219	0	115,144	6	1,579,012	89	4,549	0	84,062	5	1,783,986

**Table 4: Yellowfin tuna catch (metric tonnes) by gear type for the western and central Pacific region, 1950–2009. Note: data for 2009 are preliminary.**

YEAR	LONGLINE		POLE-AND-LINE		PURSE SEINE		TROLL		OTHER		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1950	12,844	57	799	4	0	0	0	0	8,919	40	22,562
1951	8,862	44	900	4	938	5	0	0	9,395	47	20,095
1952	17,453	54	2,595	8	2,565	8	0	0	9,901	30	32,514
1953	23,139	58	5,228	13	1,260	3	0	0	10,440	26	40,067
1954	22,662	54	4,268	10	4,001	10	0	0	11,013	26	41,944
1955	22,800	55	3,983	10	2,944	7	0	0	11,624	28	41,351
1956	25,336	59	4,399	10	724	2	0	0	12,274	29	42,733
1957	41,911	72	1,669	3	1,496	3	0	0	12,967	22	58,043
1958	43,421	68	2,934	5	3,338	5	0	0	13,705	22	63,398
1959	43,965	66	4,119	6	4,316	6	0	0	14,495	22	66,895
1960	55,020	75	1,872	3	1,438	2	0	0	15,337	21	73,667
1961	53,166	70	3,259	4	2,777	4	0	0	16,236	22	75,438
1962	55,547	66	4,225	5	6,975	8	0	0	17,197	20	83,944
1963	53,185	70	2,071	3	2,277	3	0	0	18,223	24	75,756
1964	45,247	61	5,074	7	3,647	5	0	0	20,186	27	74,154
1965	45,493	62	3,434	5	3,752	5	0	0	20,956	28	73,635
1966	61,654	66	2,192	2	5,844	6	0	0	23,409	25	93,099
1967	36,083	52	3,125	5	3,428	5	0	0	26,303	38	68,939
1968	46,070	56	2,706	3	7,106	9	0	0	26,085	32	81,967
1969	51,627	59	5,166	6	3,857	4	0	0	26,612	30	87,262
1970	55,806	56	4,606	5	7,811	8	0	0	30,933	31	99,156
1971	57,766	55	5,248	5	9,150	9	0	0	32,894	31	105,058
1972	61,175	53	7,465	6	10,002	9	0	0	37,506	32	116,148
1973	62,291	49	7,458	6	14,798	12	0	0	43,828	34	128,375
1974	58,116	44	6,582	5	17,130	13	0	0	49,441	38	131,269
1975	69,462	49	7,801	6	12,893	9	0	0	51,029	36	141,185
1976	77,570	51	17,186	11	14,976	10	0	0	42,766	28	152,498
1977	94,414	52	15,257	8	15,531	8	0	0	58,070	32	183,272
1978	110,329	63	12,767	7	13,350	8	0	0	39,401	22	175,847
1979	109,043	55	11,638	6	28,174	14	0	0	49,565	25	198,420
1980	122,875	57	13,168	6	31,849	15	9	0	47,749	22	215,650
1981	94,665	42	19,270	8	59,463	26	16	0	54,065	24	227,479
1982	84,988	38	13,835	6	73,738	33	54	0	49,423	22	222,038
1983	86,187	33	13,266	5	106,360	41	51	0	53,821	21	259,685
1984	73,036	28	13,558	5	114,961	44	67	0	57,470	22	259,092
1985	76,265	29	18,156	7	100,736	38	69	0	66,617	25	261,843
1986	65,019	26	13,074	5	105,901	42	62	0	69,072	27	253,128
1987	76,812	25	13,243	4	155,619	51	48	0	60,611	20	306,333
1988	89,400	33	13,433	5	95,536	36	76	0	69,261	26	267,706
1989	68,908	22	15,169	5	159,350	50	73	0	73,751	23	317,251
1990	73,917	21	13,103	4	175,435	51	68	0	82,888	24	345,411
1991	59,224	16	12,921	3	214,496	57	51	0	90,377	24	377,069
1992	72,508	19	15,225	4	236,915	62	98	0	55,248	15	379,994
1993	66,244	18	12,698	3	238,905	65	141	0	51,768	14	369,756
1994	74,779	20	13,743	4	216,871	58	101	0	70,849	19	376,343
1995	80,407	22	15,063	4	185,933	52	2,570	1	74,501	21	358,474
1996	77,682	27	15,479	5	115,645	40	2,636	1	79,246	27	290,688
1997	71,081	17	12,362	3	255,935	62	2,838	1	72,234	17	414,450
1998	67,450	16	13,110	3	261,192	61	2,806	1	85,466	20	430,024
1999	58,645	16	13,817	4	204,607	56	3,162	1	88,407	24	368,638
2000	72,760	18	18,179	4	228,310	56	3,343	1	88,389	22	410,981
2001	72,460	18	14,342	3	241,739	59	3,716	1	78,789	19	411,046
2002	74,072	19	13,297	3	210,496	54	3,172	1	86,614	22	387,651
2003	78,320	19	11,278	3	237,702	57	3,101	1	89,775	21	420,176
2004	77,563	20	11,787	3	213,294	55	2,706	1	80,721	21	386,071
2005	70,727	15	15,401	3	303,364	65	2,508	1	75,824	16	467,824
2006	67,526	16	14,075	3	261,891	62	2,607	1	77,928	18	424,027
2007	62,693	14	13,339	3	288,382	64	2,854	1	83,167	18	450,435
2008	64,599	12	11,397	2	388,187	71	2,903	1	82,743	15	549,829
2009	69,282	16	14,148	3	263,963	61	2,924	1	82,958	19	433,275

**Table 5: Bigeye tuna catch (metric tonnes) by gear type for the western and central Pacific region, 1950–2009. Note: data for 2009 are preliminary.**

YEAR	LONGLINE		POLE-AND-LINE		PURSE SEINE		TROLL		OTHER		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1950	18,244	97	646	3	0	0	0	0	0	0	18,890
1951	12,808	88	729	5	1,095	7	0	0	0	0	14,632
1952	24,355	89	2,100	8	1,039	4	0	0	0	0	27,494
1953	23,025	88	2,400	9	619	2	0	0	0	0	26,044
1954	16,204	87	2,100	11	360	2	0	0	0	0	18,664
1955	24,749	85	4,000	14	285	1	0	0	0	0	29,034
1956	28,342	84	4,400	13	908	3	0	0	0	0	33,650
1957	35,463	87	5,200	13	49	0	0	0	0	0	40,712
1958	45,994	92	4,200	8	48	0	0	0	0	0	50,242
1959	41,067	96	1,700	4	36	0	0	0	0	0	42,803
1960	43,467	97	1,500	3	58	0	0	0	0	0	45,025
1961	37,517	95	1,800	5	63	0	0	0	0	0	39,380
1962	35,895	97	800	2	173	0	0	0	0	0	36,868
1963	42,540	96	1,800	4	6	0	0	0	0	0	44,346
1964	30,989	96	1,143	4	231	1	0	0	28	0	32,391
1965	29,848	95	1,254	4	201	1	0	0	30	0	31,333
1966	31,984	96	1,108	3	9	0	0	0	86	0	33,187
1967	33,632	92	2,803	8	60	0	0	0	253	1	36,748
1968	27,757	91	2,272	7	183	1	0	0	204	1	30,416
1969	32,571	95	1,675	5	48	0	0	0	62	0	34,356
1970	34,965	87	1,589	4	560	1	0	0	2,968	7	40,082
1971	38,359	89	931	2	690	2	0	0	3,243	8	43,223
1972	51,040	89	1,762	3	672	1	0	0	3,690	6	57,164
1973	42,412	87	1,258	3	847	2	0	0	4,449	9	48,966
1974	45,653	86	1,039	2	1,121	2	0	0	4,987	9	52,800
1975	61,488	89	1,334	2	1,054	2	0	0	5,212	8	69,088
1976	73,325	89	3,423	4	1,081	1	0	0	4,354	5	82,183
1977	72,083	87	3,325	4	1,260	2	0	0	5,954	7	82,622
1978	56,237	87	3,337	5	1,051	2	0	0	4,331	7	64,956
1979	63,704	87	2,540	3	1,680	2	0	0	4,966	7	72,890
1980	61,857	88	2,278	3	1,737	2	0	0	4,565	6	70,437
1981	45,823	80	2,596	5	3,888	7	0	0	5,298	9	57,605
1982	47,886	77	4,108	7	5,114	8	0	0	4,875	8	61,983
1983	45,270	71	4,055	6	9,109	14	0	0	5,320	8	63,754
1984	51,889	74	3,465	5	9,193	13	0	0	5,593	8	70,140
1985	57,501	77	4,326	6	6,329	8	0	0	6,725	9	74,881
1986	55,804	77	2,865	4	7,222	10	0	0	6,949	10	72,840
1987	68,042	77	3,134	4	10,926	12	0	0	5,852	7	87,954
1988	67,250	78	4,125	5	7,821	9	0	0	6,838	8	86,034
1989	63,316	72	4,298	5	12,194	14	0	0	7,572	9	87,380
1990	75,141	76	3,918	4	11,998	12	0	0	8,037	8	99,094
1991	59,237	71	1,991	2	13,263	16	0	0	8,965	11	83,456
1992	73,873	74	1,757	2	18,882	19	0	0	5,821	6	100,333
1993	64,553	75	2,331	3	13,774	16	0	0	5,067	6	85,725
1994	76,851	79	2,951	3	10,469	11	0	0	7,522	8	97,793
1995	65,649	74	3,776	4	11,737	13	145	0	7,939	9	89,246
1996	54,027	61	3,864	4	21,665	24	432	0	8,446	10	88,434
1997	65,656	56	3,611	3	41,371	35	412	0	6,711	6	117,761
1998	81,123	68	2,446	2	26,772	23	507	0	7,757	7	118,605
1999	71,286	60	2,176	2	36,827	31	316	0	7,803	7	118,408
2000	70,574	57	5,648	5	39,883	32	397	0	7,987	6	124,489
2001	73,938	63	4,274	4	30,955	27	408	0	7,112	6	116,687
2002	89,177	68	4,242	3	28,880	22	713	1	7,332	6	130,344
2003	78,914	67	2,869	2	28,488	24	142	0	7,767	7	118,180
2004	91,051	67	5,590	4	32,390	24	232	0	6,358	5	135,621
2005	72,309	59	4,018	3	40,436	33	220	0	4,976	4	121,959
2006	75,865	58	6,679	5	42,312	32	157	0	5,382	4	130,395
2007	73,486	60	4,194	3	38,430	32	187	0	5,340	4	121,637
2008	73,276	56	3,576	3	48,412	37	212	0	4,693	4	130,169
2009	65,805	56	4,077	3	42,747	36	202	0	5,192	4	118,023

**Table 6: South Pacific albacore tuna catch (metric tonnes) by gear type for the South Pacific Ocean, 1960–2009. Note: data for 2009 are preliminary.**

YEAR	SOUTH PACIFIC OCEAN				
	LONGLINE	POLE-AND-LINE	TROLL	OTHER	TOTAL
1960	22,248	45	0	0	22,293
1961	23,742	0	0	0	23,742
1962	35,219	0	0	0	35,219
1963	31,095	16	0	0	31,111
1964	22,824	0	0	0	22,824
1965	25,455	0	0	0	25,455
1966	38,661	0	0	0	38,661
1967	43,952	0	5	0	43,957
1968	32,368	0	14	0	32,382
1969	24,805	0	0	0	24,805
1970	34,775	100	50	0	34,925
1971	38,530	100	0	0	38,630
1972	39,131	122	268	0	39,521
1973	46,705	141	484	0	47,330
1974	33,039	112	898	0	34,049
1975	22,849	105	646	0	23,600
1976	28,957	100	25	0	29,082
1977	38,019	100	621	0	38,740
1978	32,890	100	1,686	0	34,676
1979	26,162	100	814	0	27,076
1980	30,972	101	1,468	0	32,541
1981	32,694	0	2,085	5	34,784
1982	28,347	1	2,434	6	30,788
1983	24,309	0	744	39	25,092
1984	20,340	2	2,773	1,589	24,704
1985	27,138	0	3,253	1,937	32,328
1986	32,641	0	2,003	1,946	36,590
1987	21,979	9	2,134	930	25,052
1988	28,288	0	4,296	5,283	37,867
1989	18,738	0	8,370	21,968	49,076
1990	19,368	245	6,975	7,538	34,126
1991	23,385	14	7,805	1,489	32,693
1992	30,592	11	6,578	65	37,246
1993	30,229	74	4,296	70	34,669
1994	34,118	67	7,164	89	41,438
1995	29,332	139	7,716	104	37,291
1996	23,816	30	7,379	156	31,381
1997	27,103	21	4,679	133	31,936
1998	37,791	36	6,280	85	44,192
1999	31,909	138	3,419	74	35,540
2000	33,968	102	6,269	139	40,478
2001	48,638	37	5,142	199	54,016
2002	60,590	18	4,574	150	65,332
2003	56,769	12	5,612	130	62,523
2004	57,787	110	4,531	188	62,616
2005	57,597	29	3,451	215	61,292
2006	62,698	29	2,883	326	65,936
2007	57,330	17	2,082	60	59,489
2008	46,891	12	3,502	160	50,565
2009	64,905	21	2,027	211	67,164

**Table 7: Total of bigeye, skipjack, and yellowfin tuna tagged during the three major tropical tuna tagging projects in the western and central Pacific region. Separate EEZ results are provided for any region with more than 10,000 releases in any single programme. SSAP – Skipjack Survey and Assessment Programme (1977-81); RTTP – Regional Tuna Tagging Programme (1989-92); and PTPP – Pacific Tuna Tagging Programme (2006- ).**

EEZ	PTPP		RTTP		SSAP	
	Releases	Recoveries	Releases	Recoveries	Releases	Recoveries
Fiji	-	-	5,004	528	28,988	2,659
FSM	24,784	961	11,782	1,774	8,791	320
Indonesia	40,262	6,074	8,959	3,260	-	49
Kiribati	23,603	1,410	34,532	3,275	5,212	418
New Zealand	-	-	-	3	15,026	1,000
Papua New Guinea	100,858	11,483	44,758	3,738	9,675	1,073
French Polynesia	-	-	-	1	29,692	128
Palau	7,304	272	7,495	150	8,663	114
Solomon Islands	56,543	7,068	15,472	2,321	7,275	597
Other	16,387	2,866	23,666	2,367	48,958	602
TOTAL	269,741	30,134	151,668	17,417	162,280	6,960



