SCIENTIFIC COMMITTEE
FOURTH REGULAR SESSION

11–22 August 2008
Port Moresby, Papua New Guinea

COMPENDIUM OF FISHERIES INDICATORS FOR TARGET TUNA SPECIES

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Abstract

This paper presents a compendium of fishery indicators for the principal target tuna species - skipjack, yellowfin, bigeye and South Pacific albacore tuna - to complement the information provided in full assessments and to provide the latest fishery information for stocks for which full assessments have not been conducted. The indicators that are documented include: total catch by gear, nominal CPUE trends, spatial distribution of catch and associated trends, size composition of the catch and trends in average size.

Introduction

The Scientific Committee's Work Programme for 2008-2010, developed at its 3rd session, included Project 24: *Development and reporting of stock indicators for those key species not formally assessed*. The development of fishery indicators was a priority activity of the Stock Assessment SWG, and is required to assist the group to formulate the most up to date management advice to the Commission for stocks where full assessments are not undertaken. Yellowfin tuna was noted as the priority species for the development and reporting of such indicators at SC4. However, it was felt that a common suite of indicators for all four main target tuna stocks, skipjack, yellowfin, bigeye and South Pacific albacore, would provide more comprehensive treatment of fishery indicators for all stocks, complementing the full assessments to be tabled at SC4. Therefore, fishery indicators for these four stocks are presented in this paper.

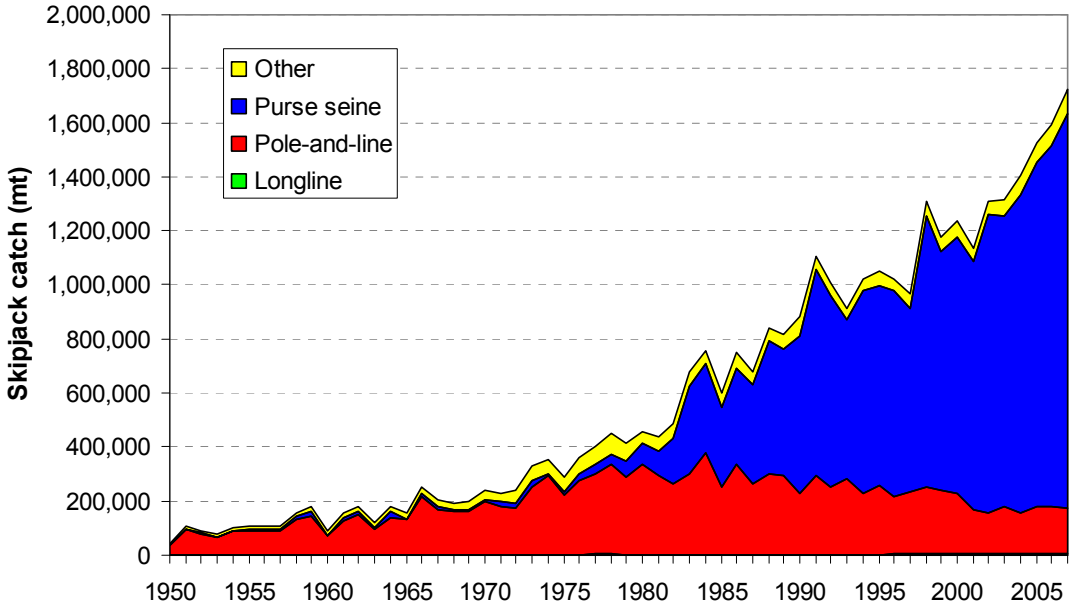
Fishery Indicators

The species-specific fishery indicators that are considered useful and are included in this paper are as follows:

A. Total annual catch biomass, by gear type
B. Nominal catch per unit effort (CPUE), by gear type and in some cases by flag
C. Recent estimates of catch by gear type by spatial cells
D. The total number of spatial cells fished per year, by gear type
E. Recent estimates of catch-at-size, by gear type
F. Average weight of fish caught, by gear type or fishery category

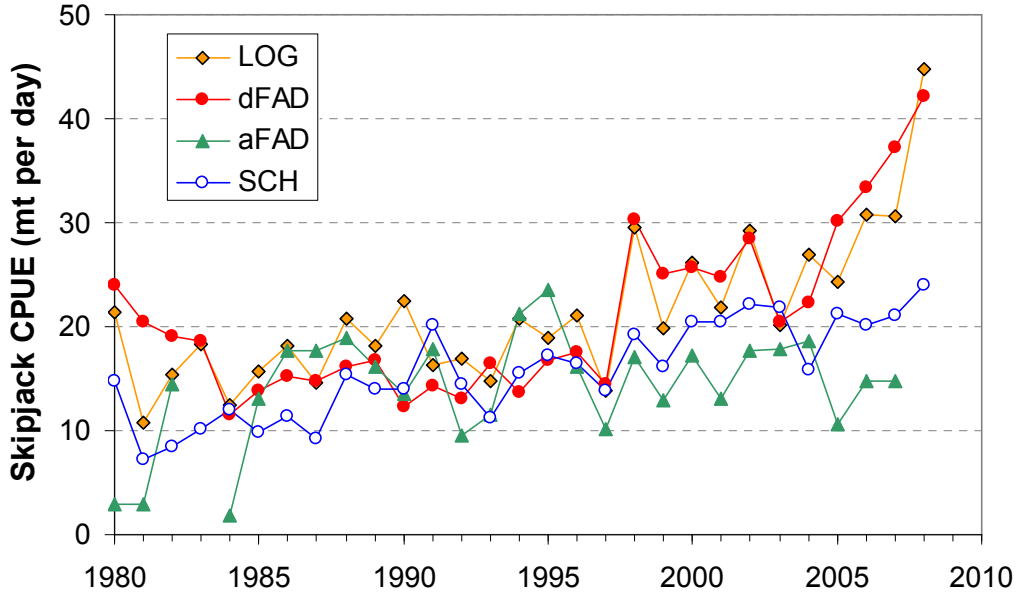
SKIPJACK TUNA

A. Total Annual Catch

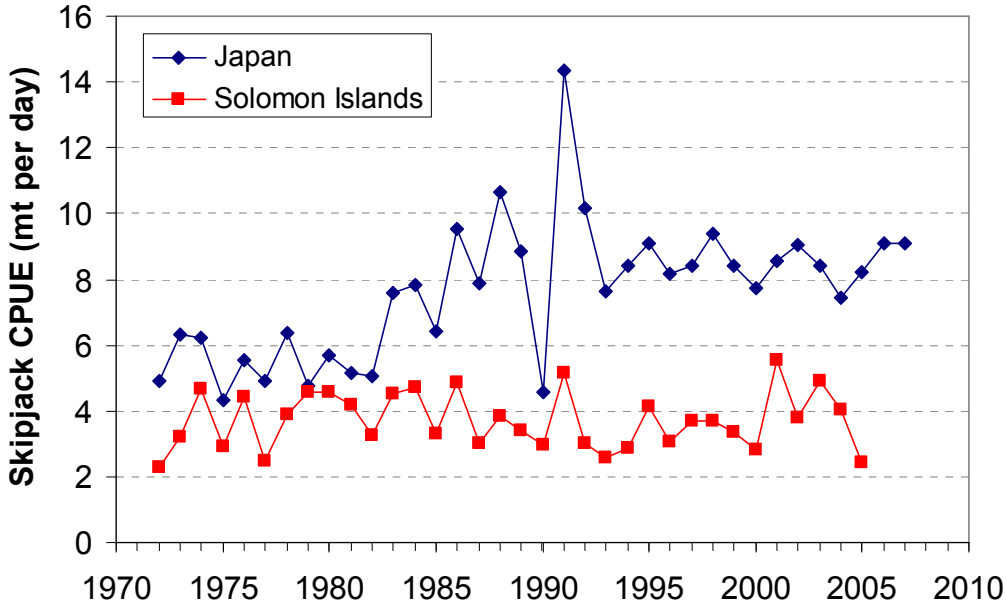


B. Nominal CPUE

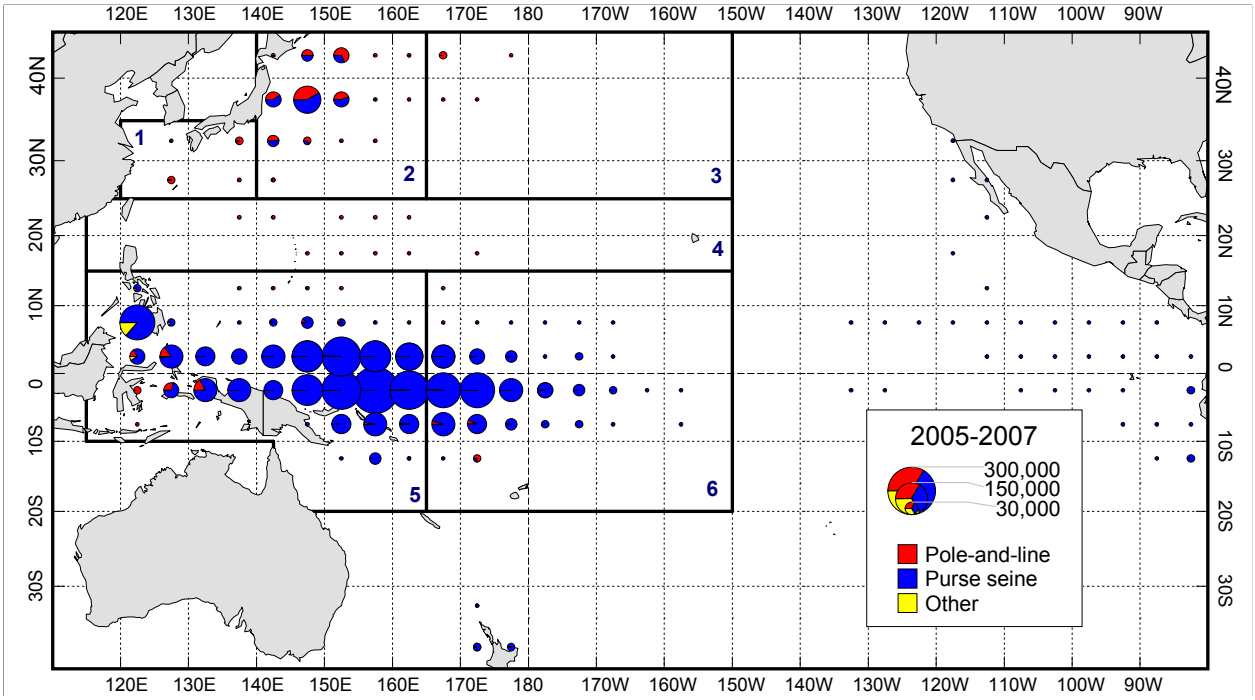
(i) Purse Seine 20°N–20°S

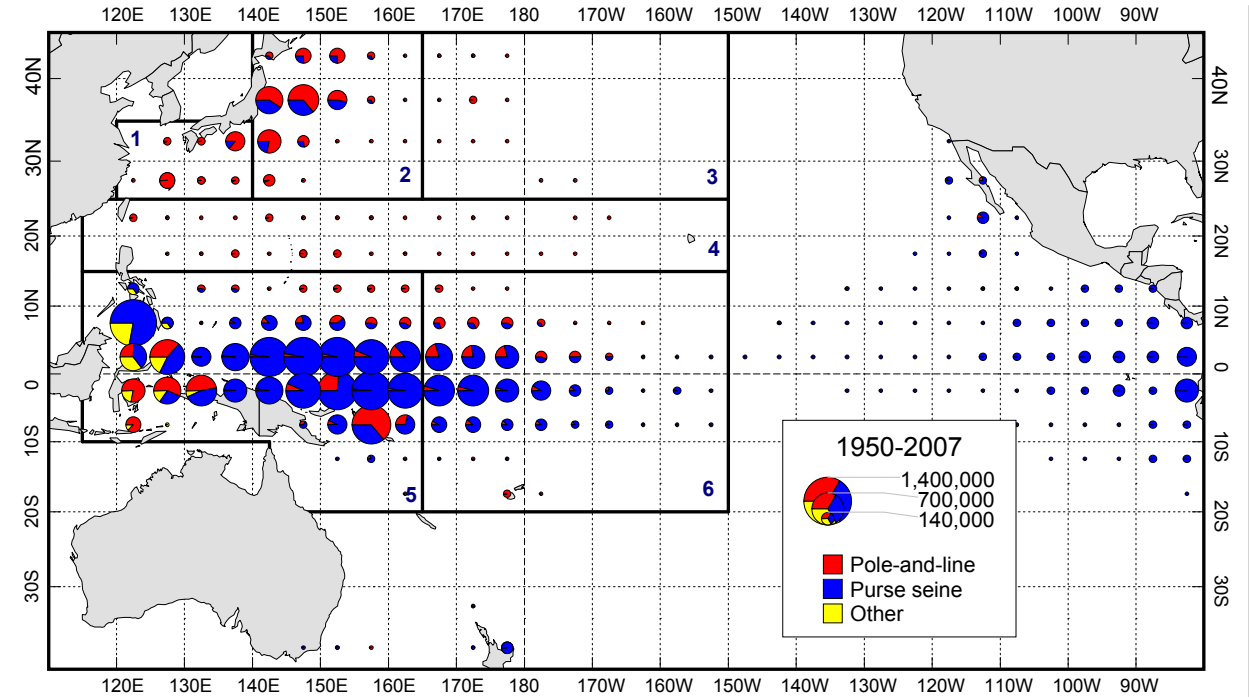


(ii) Pole-and-line 20°N–20°S

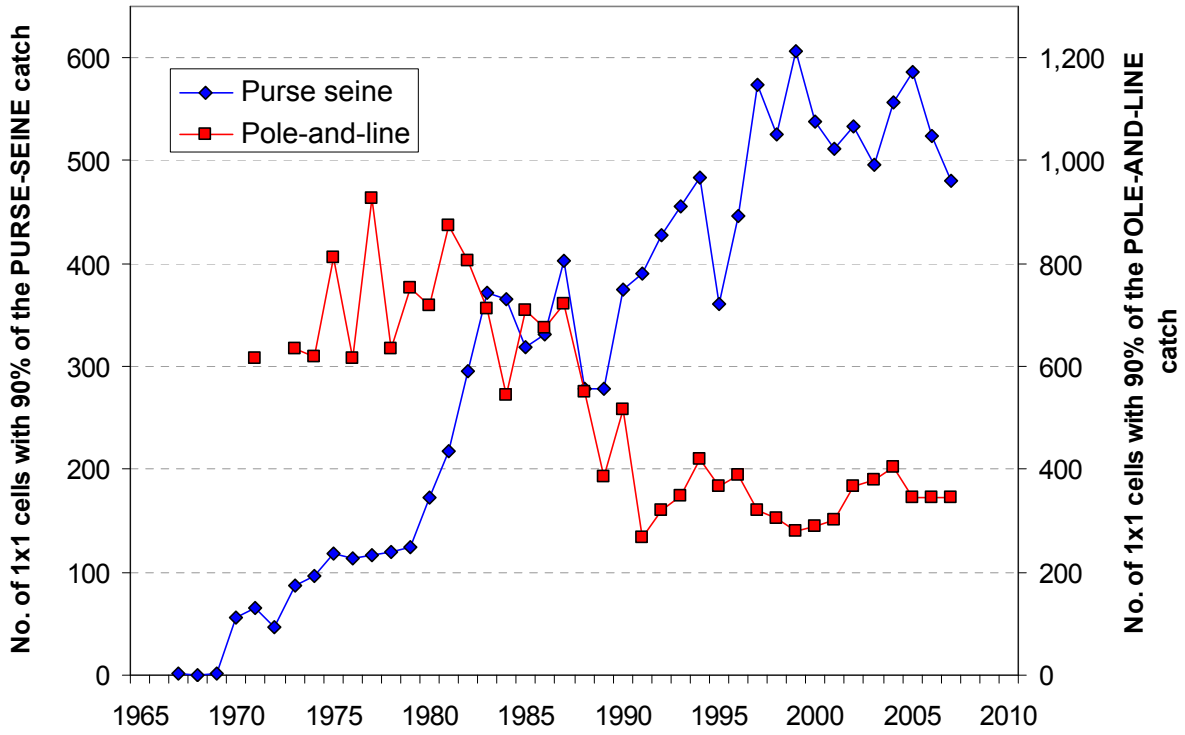


C. Spatial Distribution of the Catch

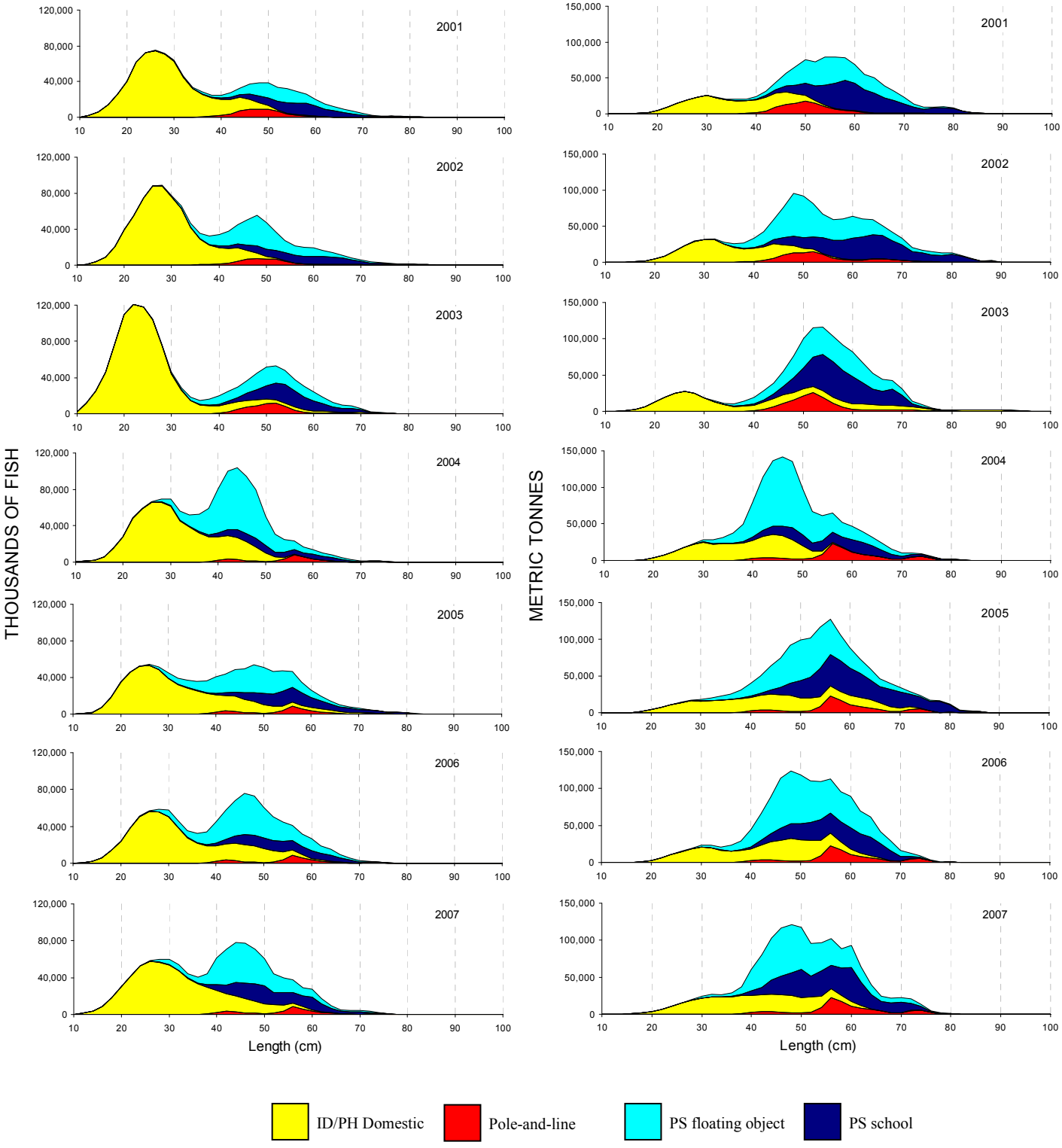




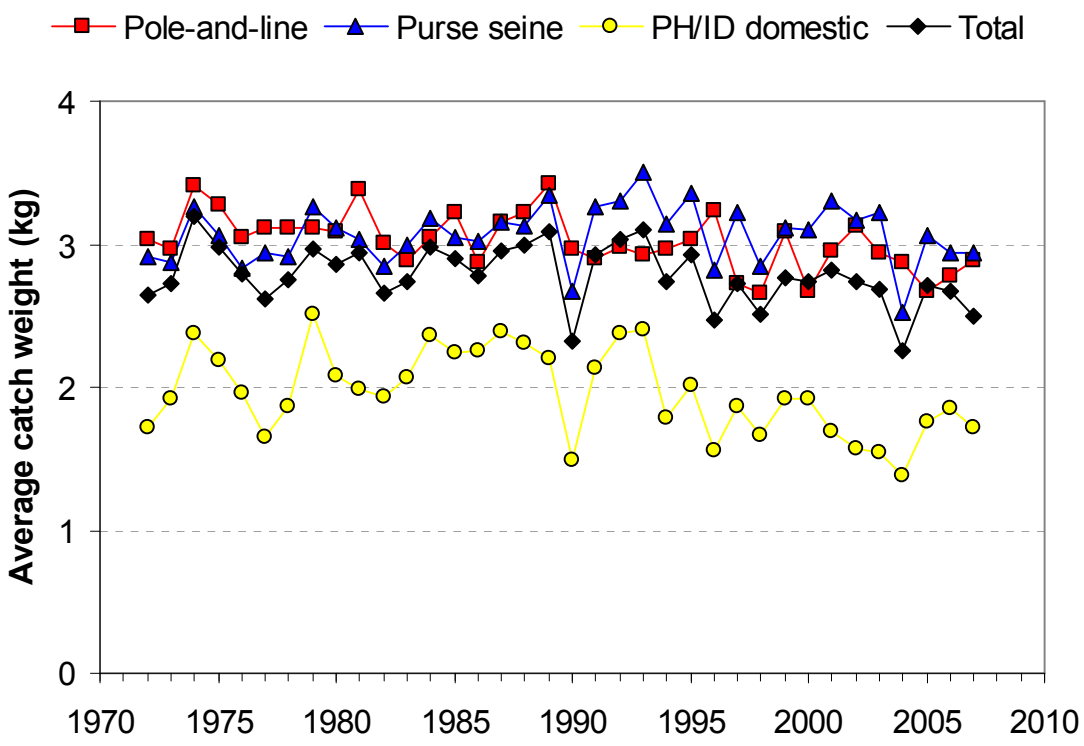
D. Spatial Cells Fished per Year



E. Recent Size Distribution of the Catch

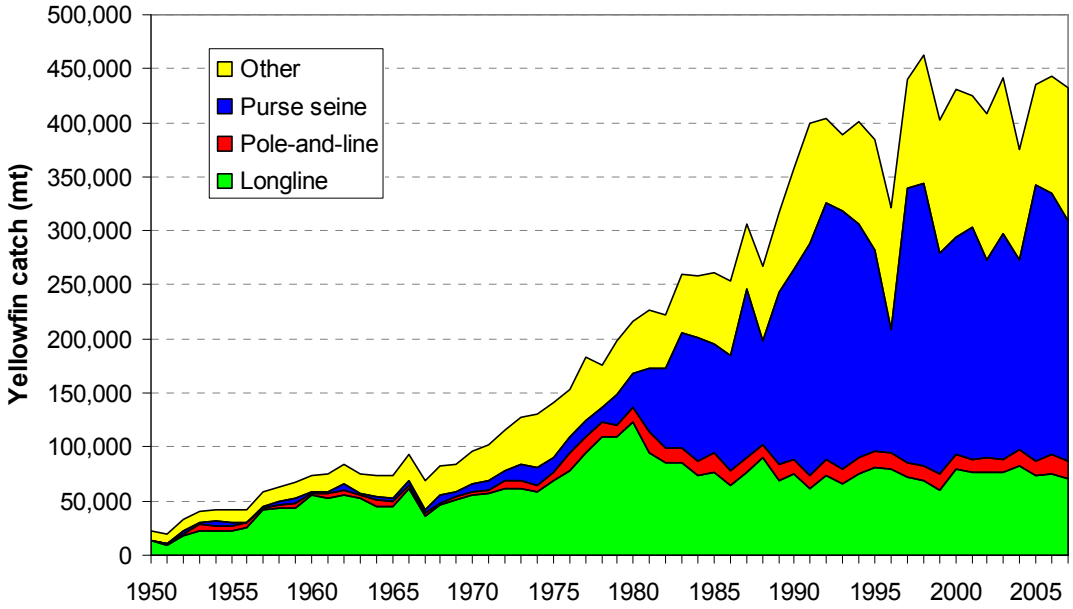


F. Average Weight of Fish Caught



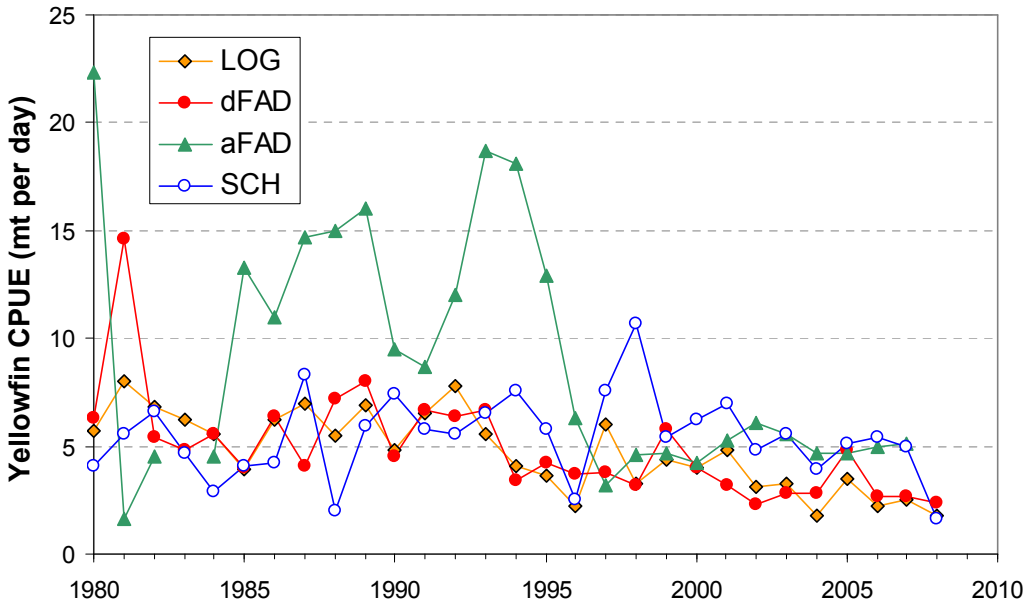
YELLOWFIN TUNA

A. Total Annual Catch

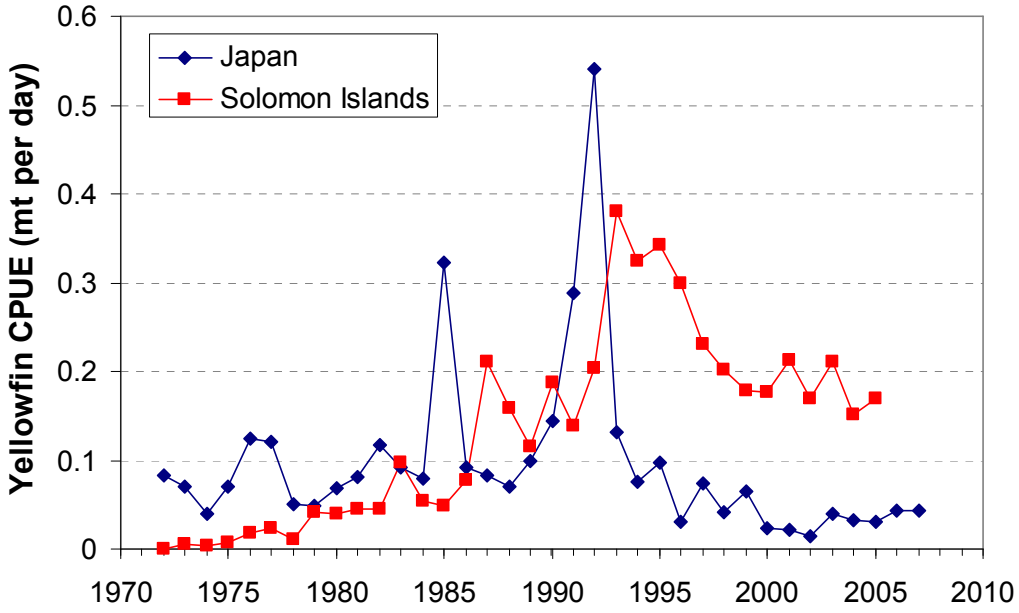


B. Nominal CPUE

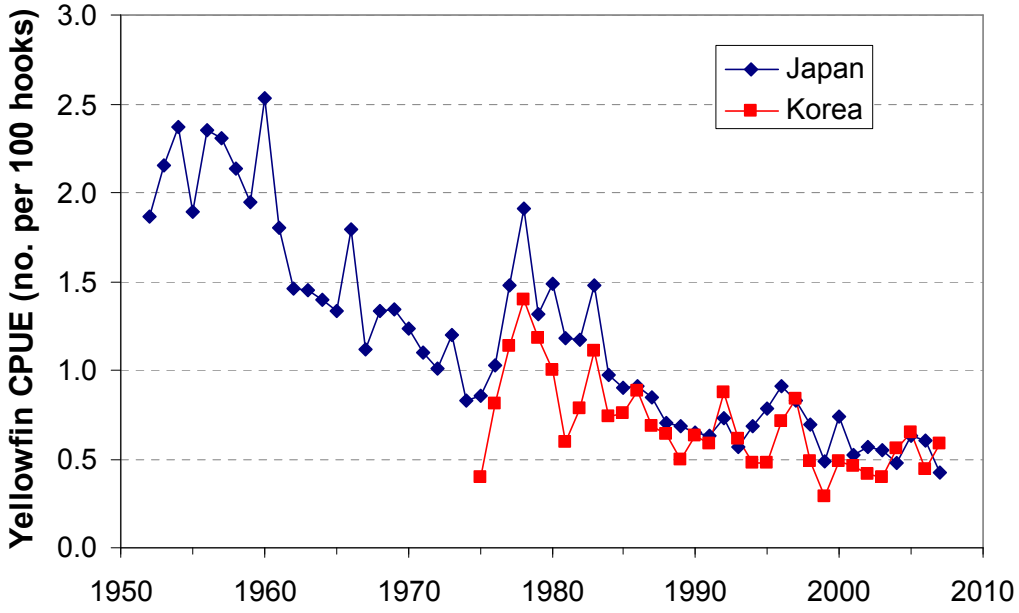
(i) Purse Seine 20°N–20°S



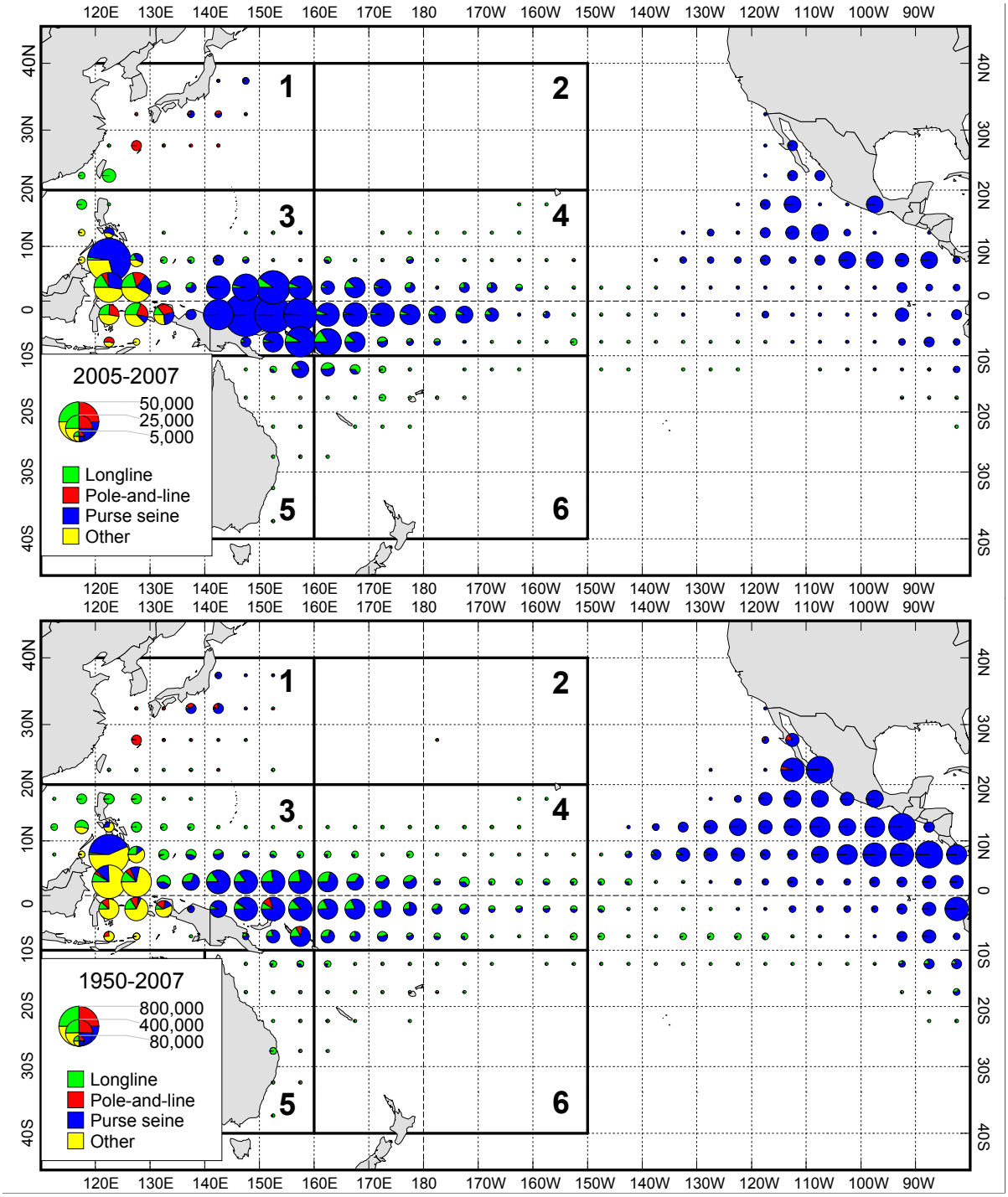
(ii) Pole-and-line 20°N–20°S



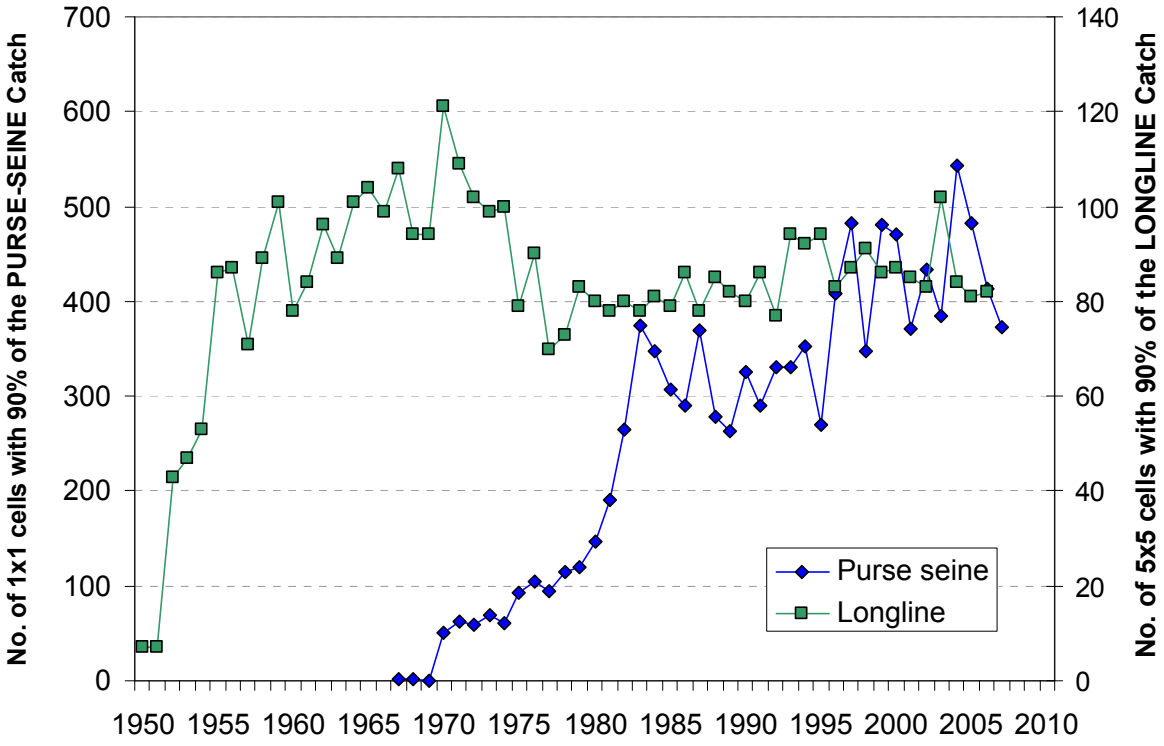
(iii) Longline (Japan and Korea)



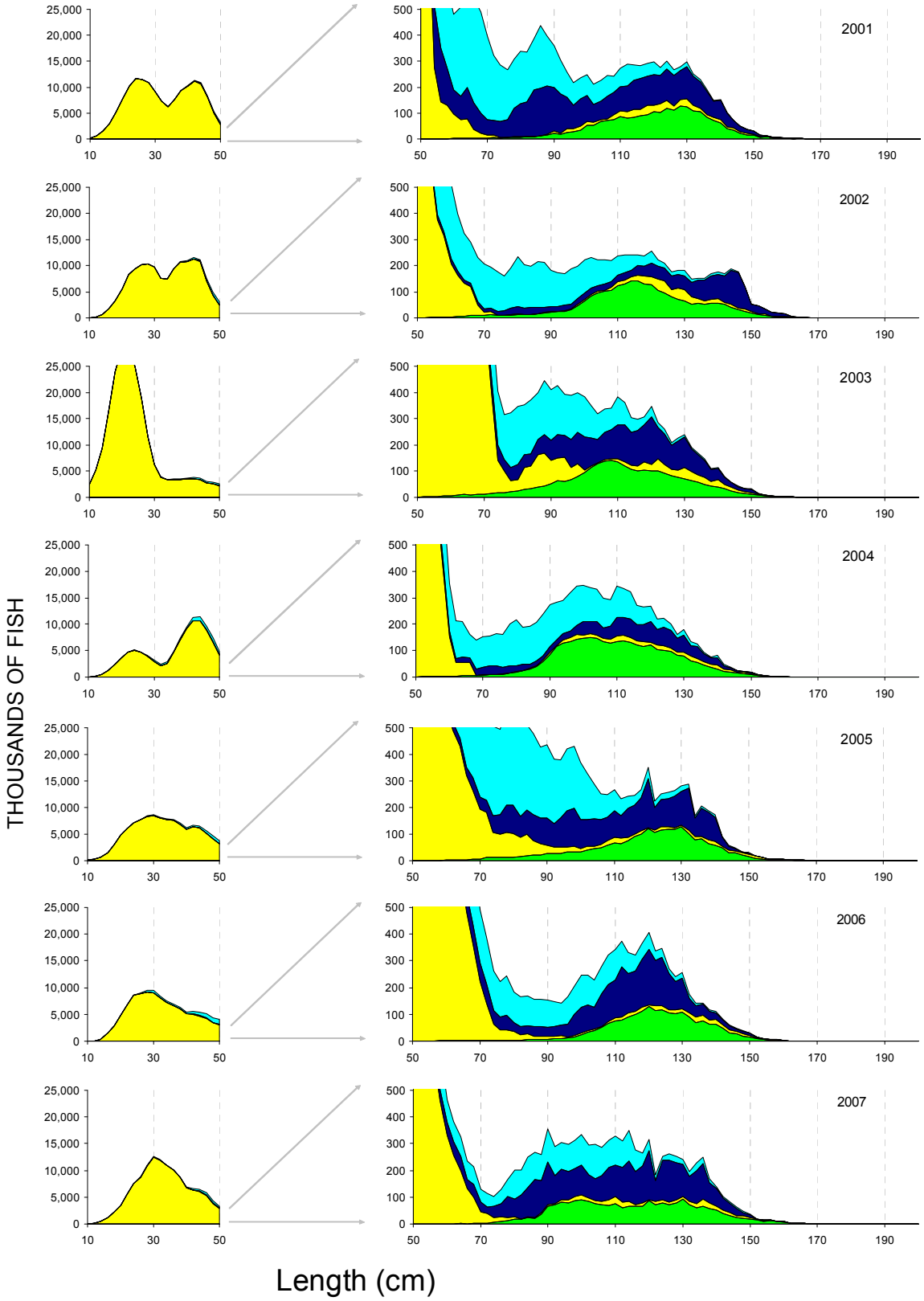
C. Spatial Distribution of the Catch

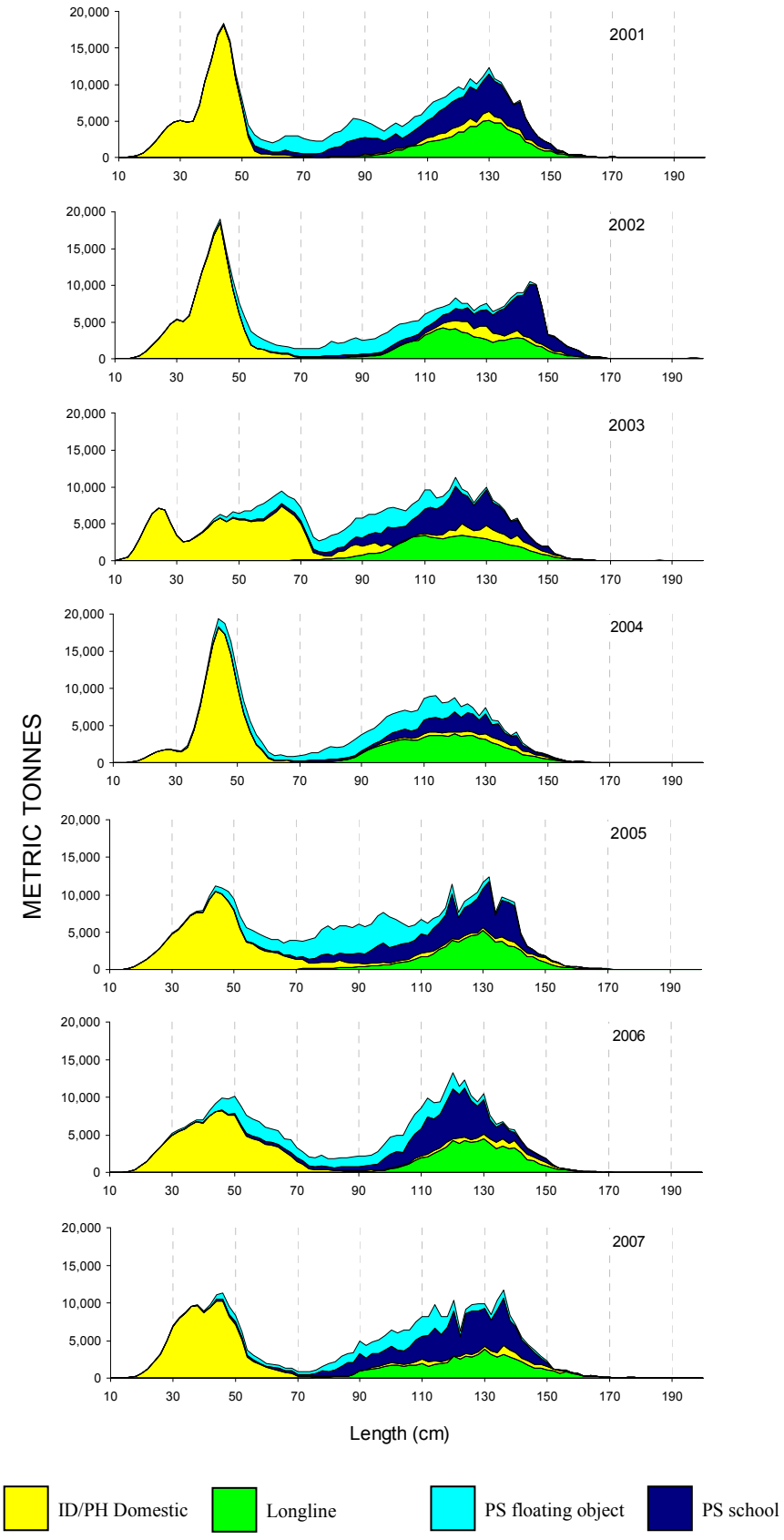


D. Spatial Cells Fished per Year

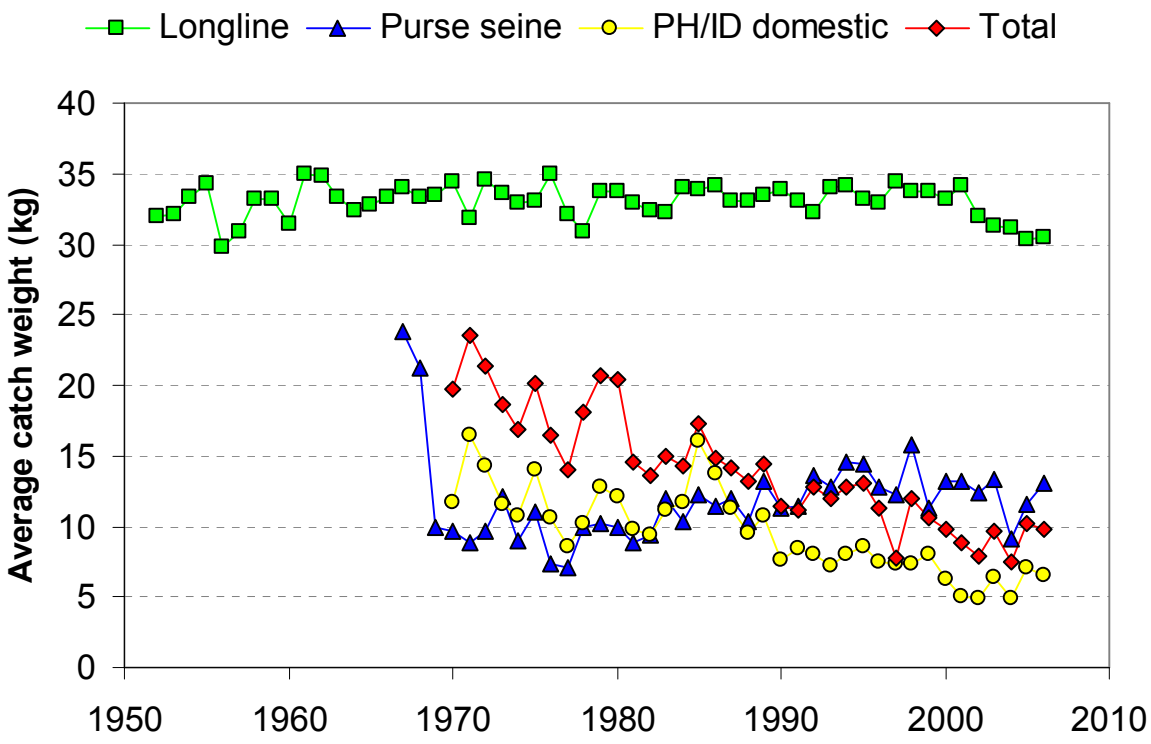


E. Recent Size Distribution of the Catch



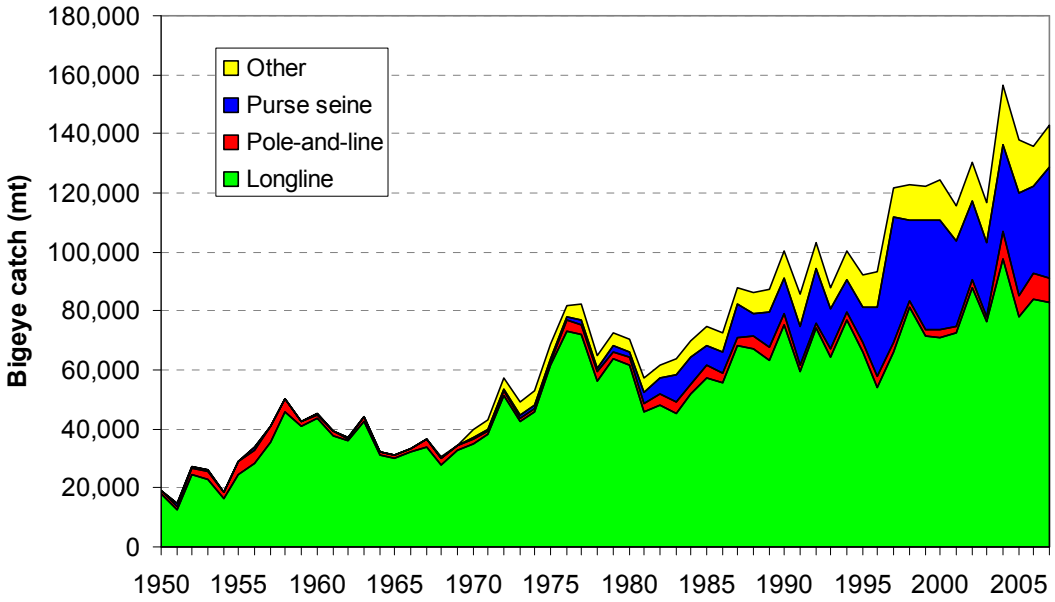

2001
2002
2003
2004
2005
2006
2007
20,000
15,000
10,000
5,000
0
10
30
50
70
90
110
130
150
170
190
METRIC TONNES
Length (cm)
ID/PH Domestic
Longline
PS floating object
PS school

F. Average Weight of Fish Caught



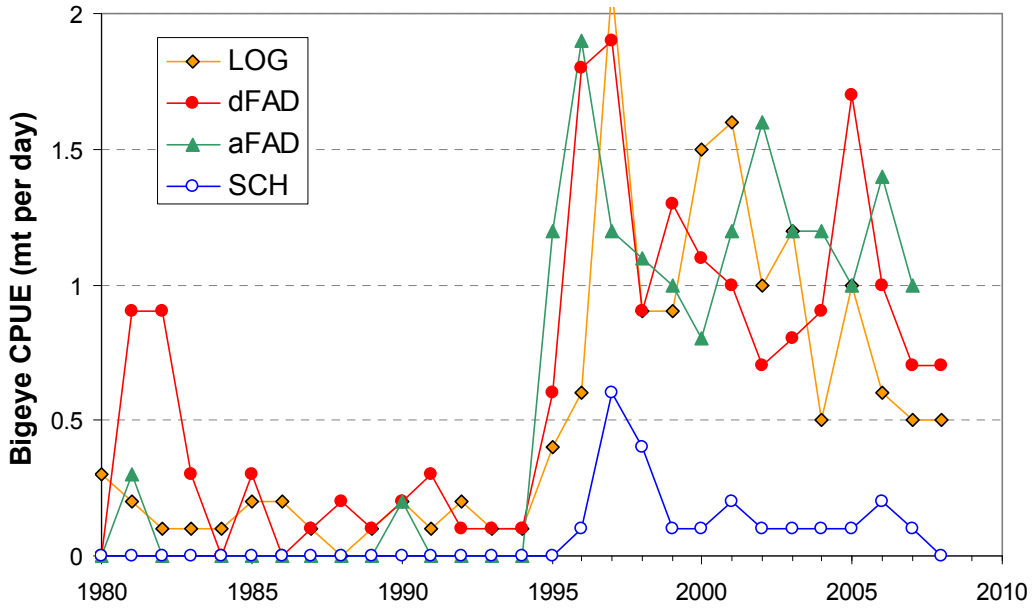
BIGEYE TUNA

A. Total Annual Catch

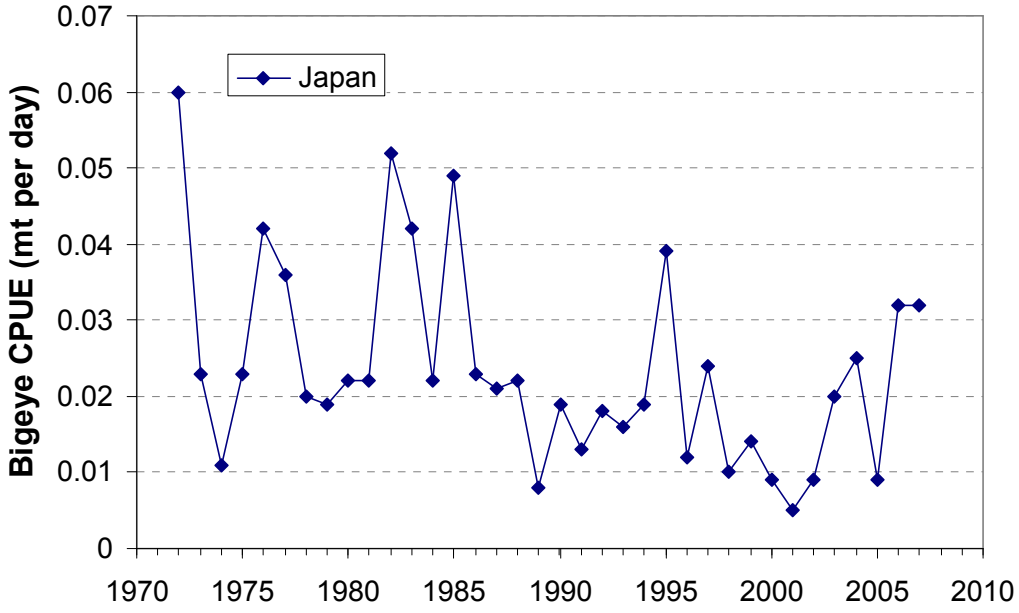


B. Nominal CPUE

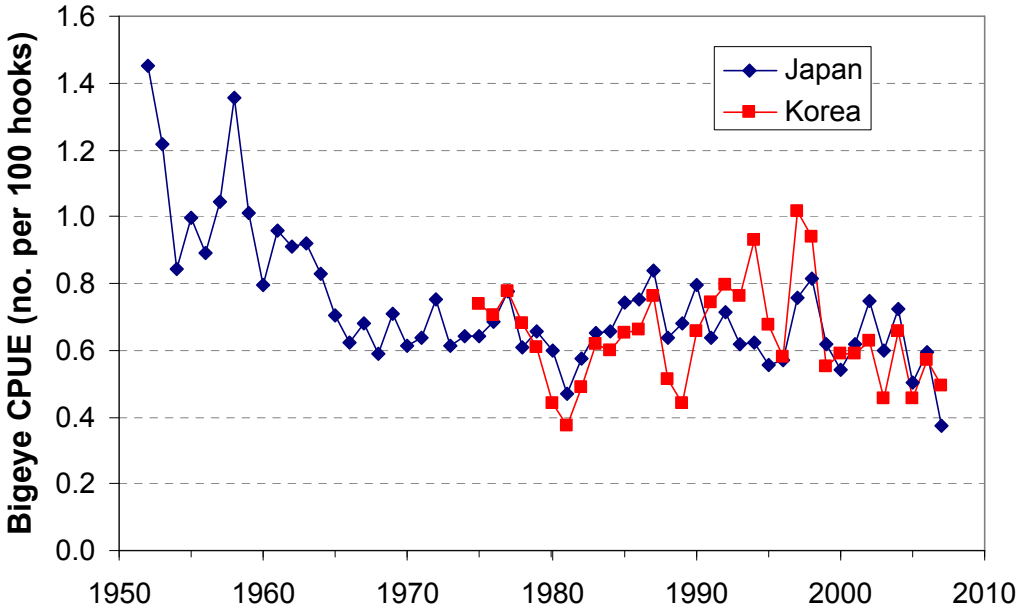
(i) Purse Seine 20°N–20°S



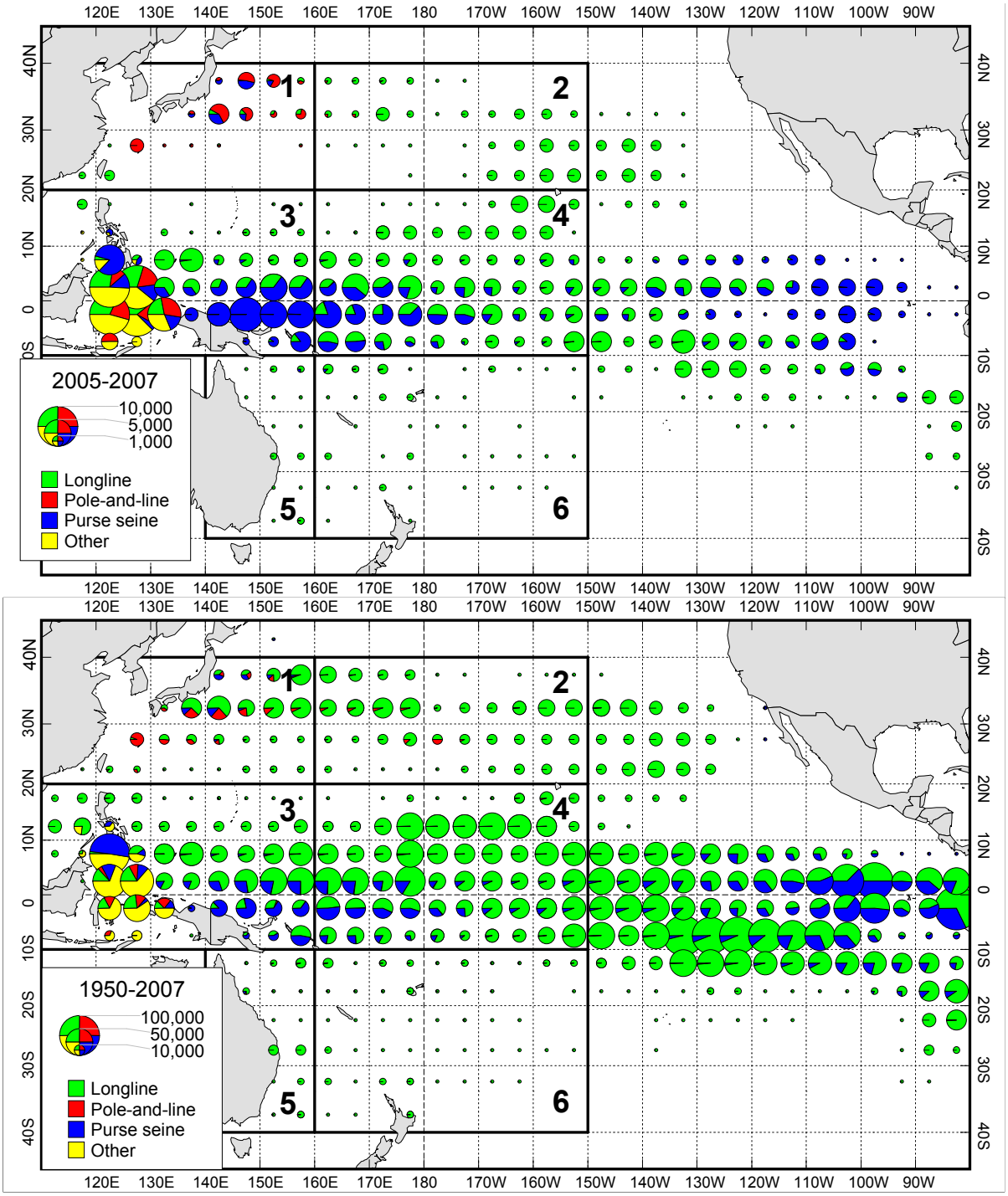
(ii) Pole-and-line 20°N–20°S



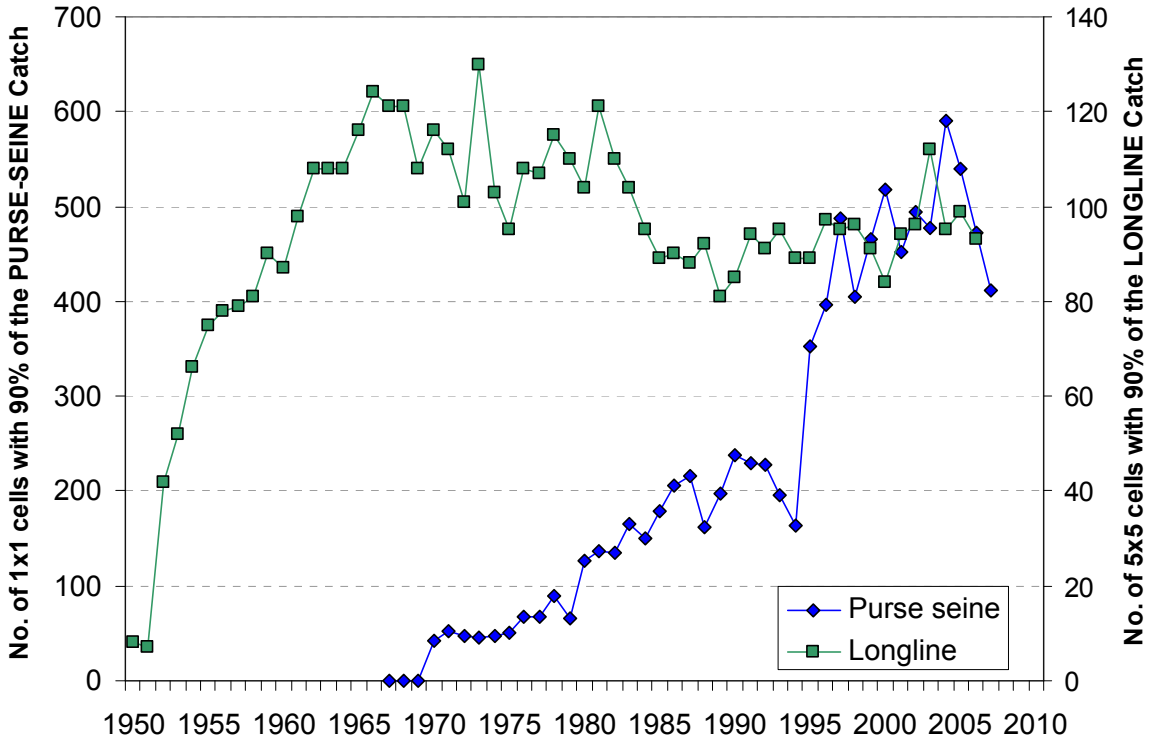
(iii) Longline (Japan and Korea)



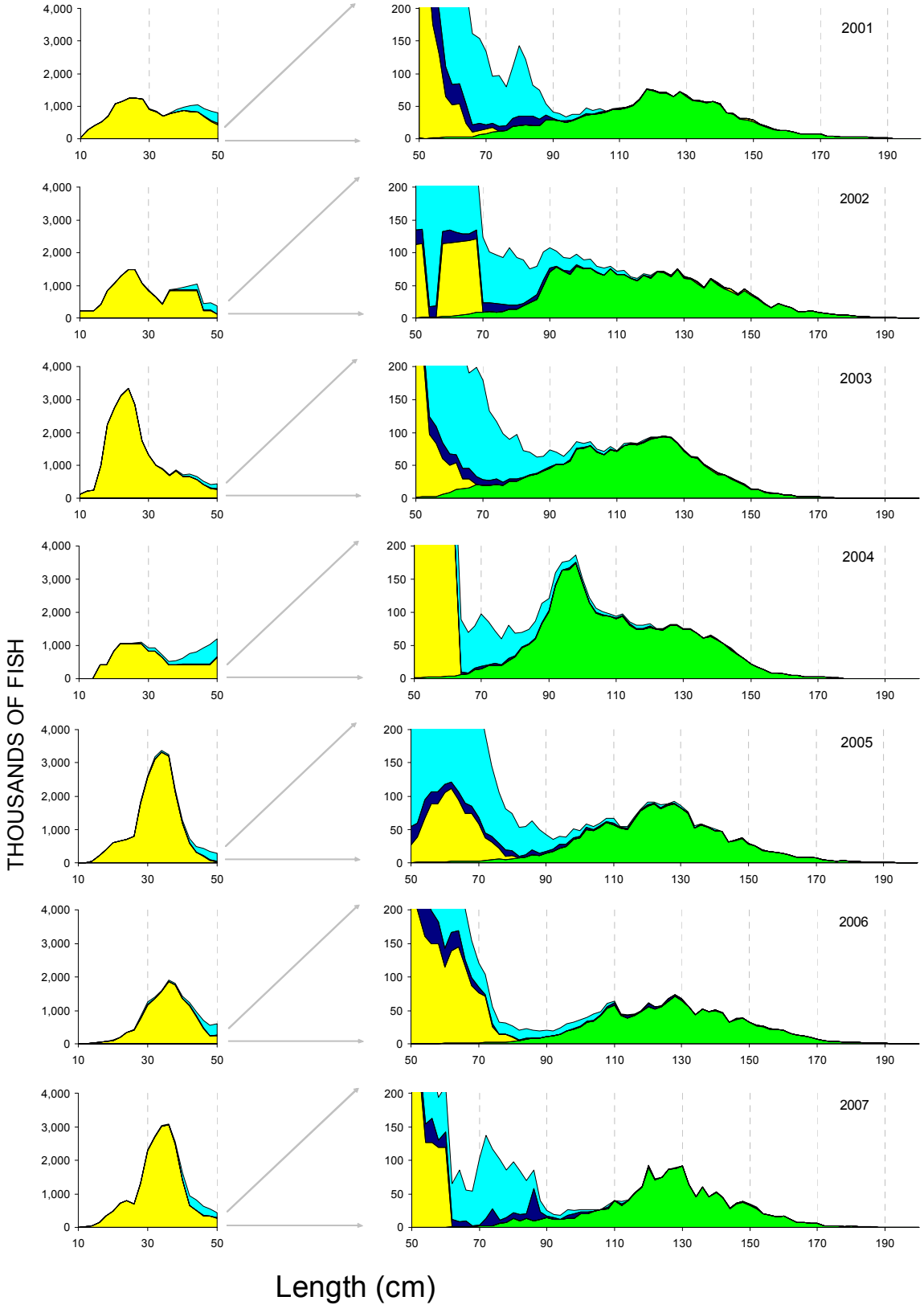
C. Spatial Distribution of the Catch

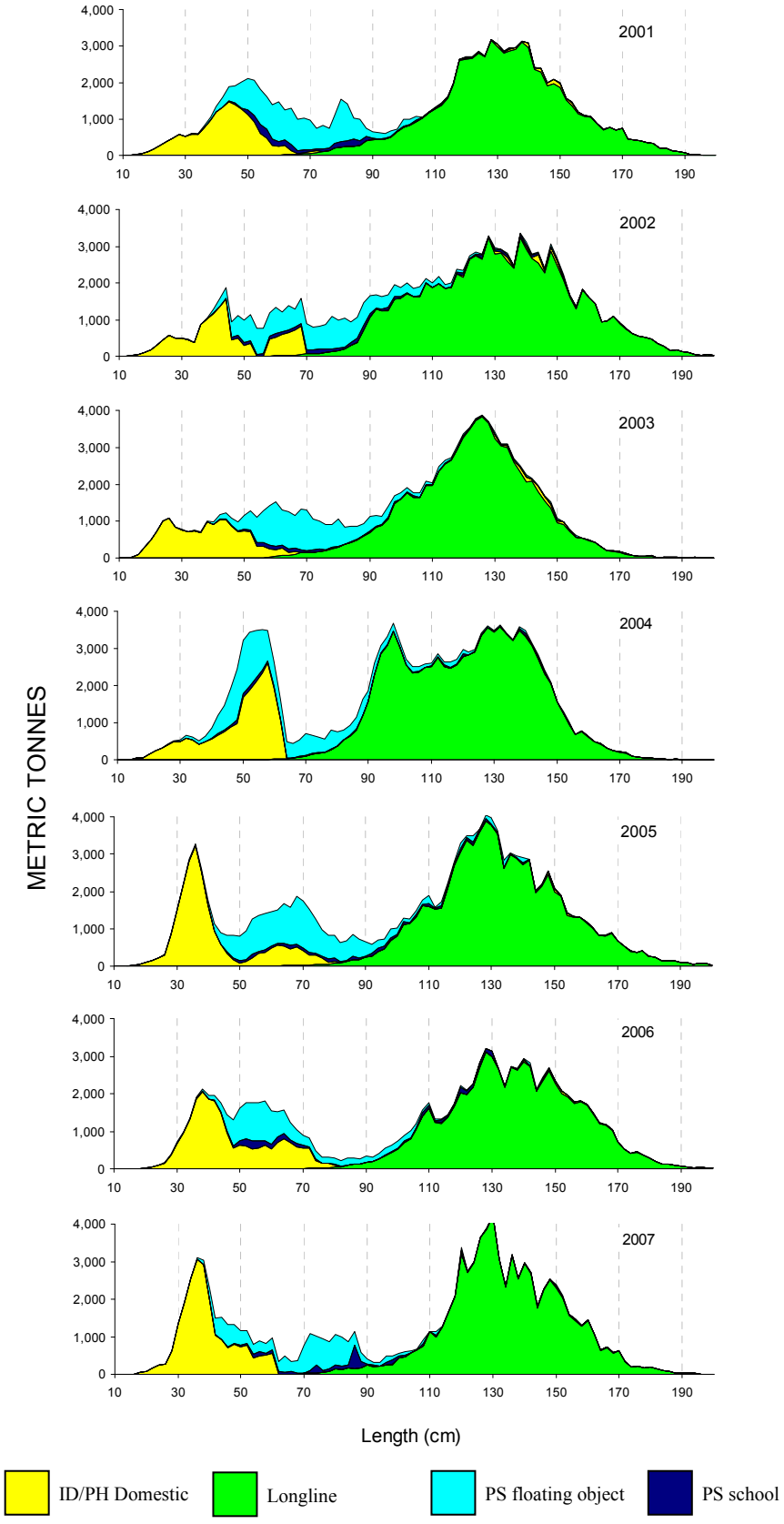


D. Spatial Cells Fished per Year

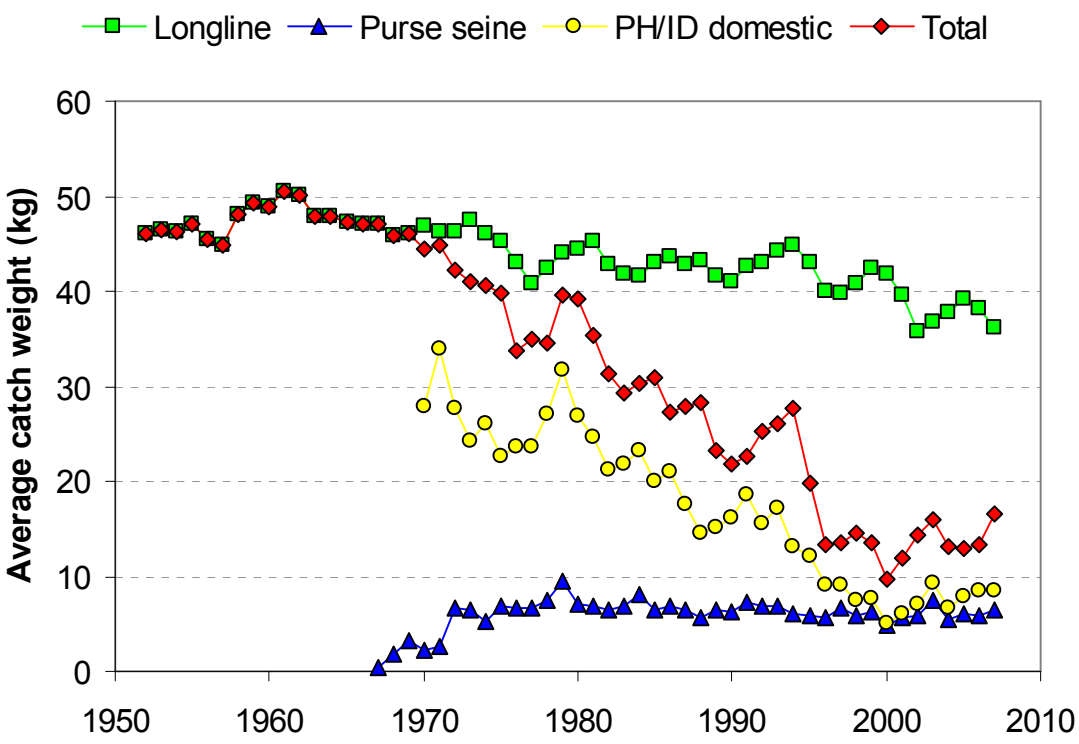


E. Recent Size Distribution of the Catch



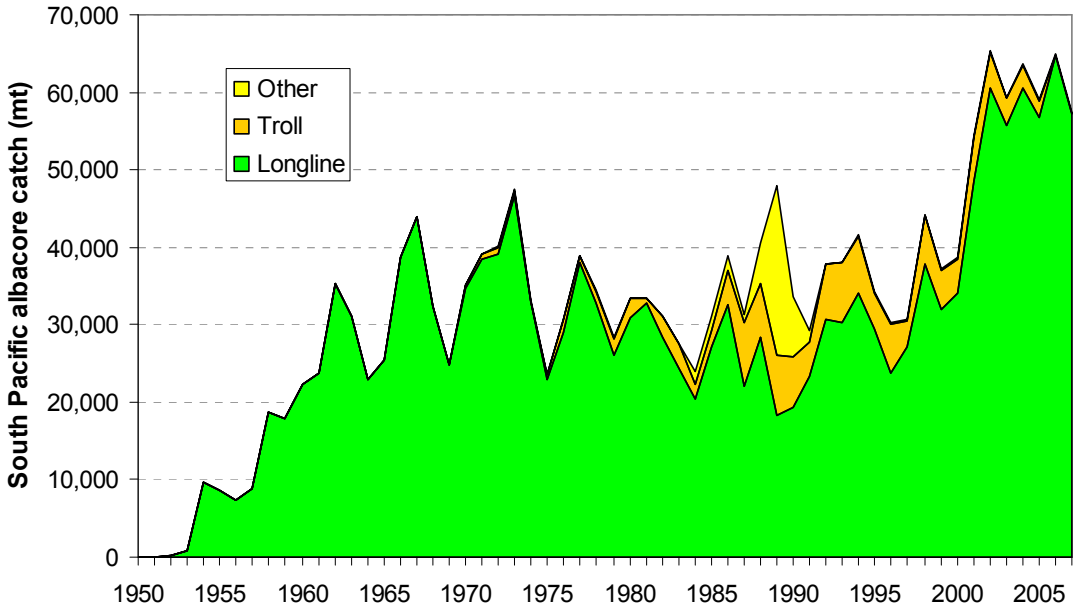

2001
2002
2003
2004
2005
2006
2007
METRIC TONNES
4,000
3,000
2,000
1,000
0
10
30
50
70
90
110
130
150
170
190
Length (cm)
ID/PH Domestic
Longline
PS floating object
PS school

F. Average Weight of Fish Caught



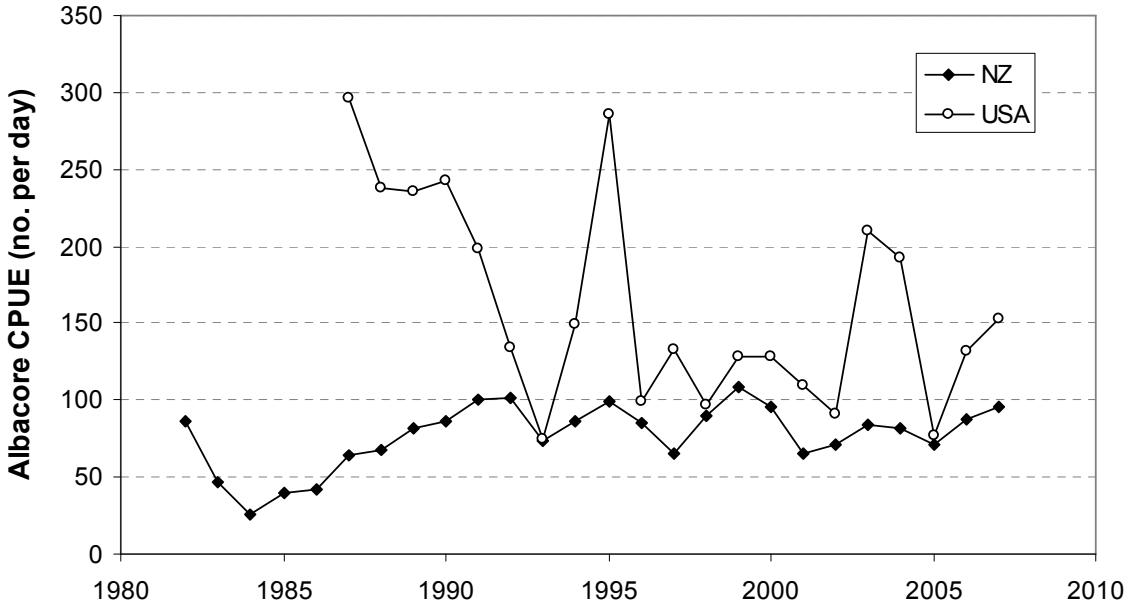
SOUTH PACIFIC ALBACORE TUNA

A. Total Annual Catch

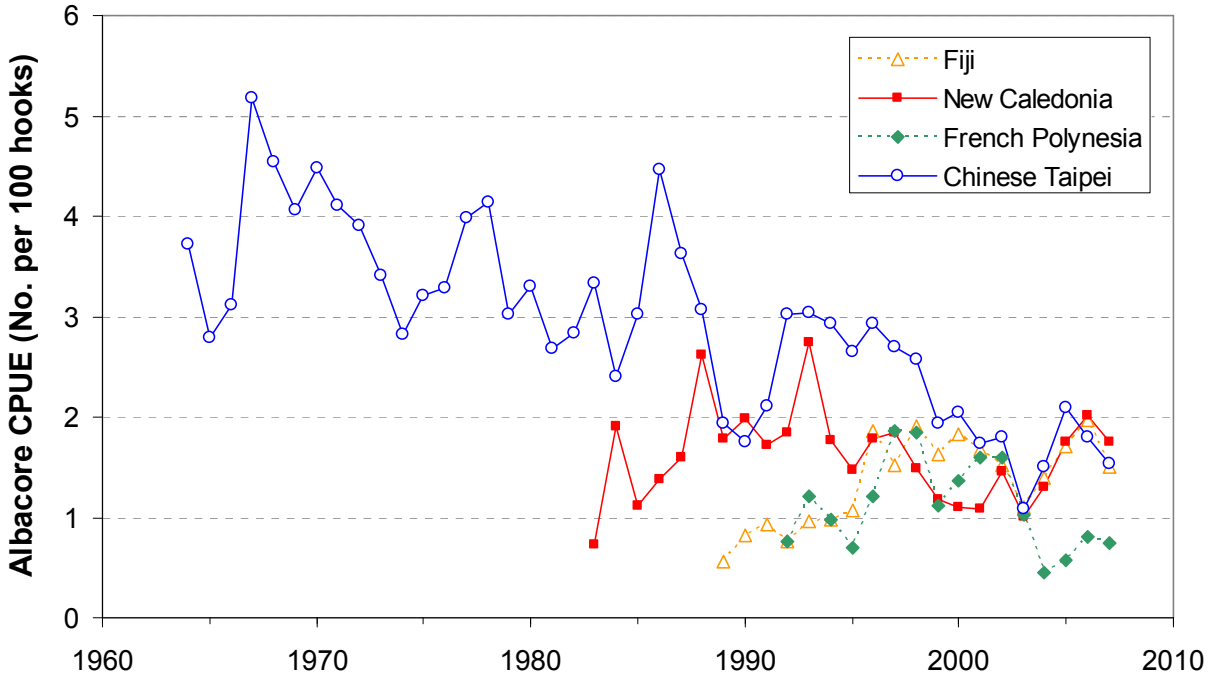


B. Nominal CPUE

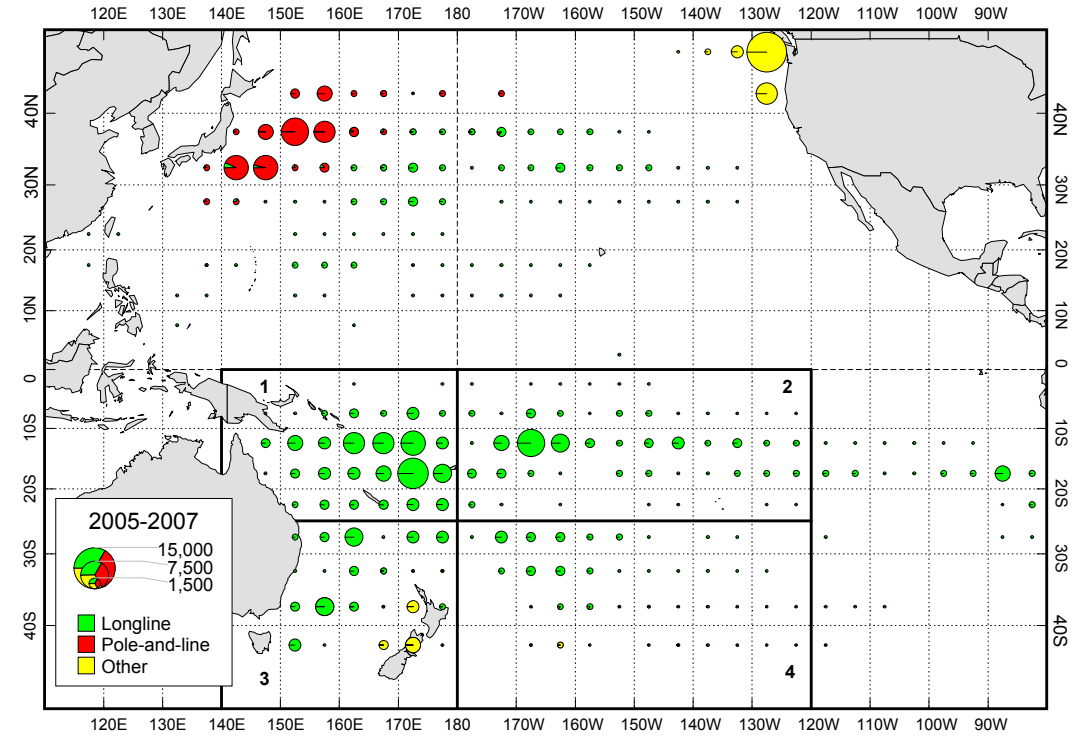
(i) Troll

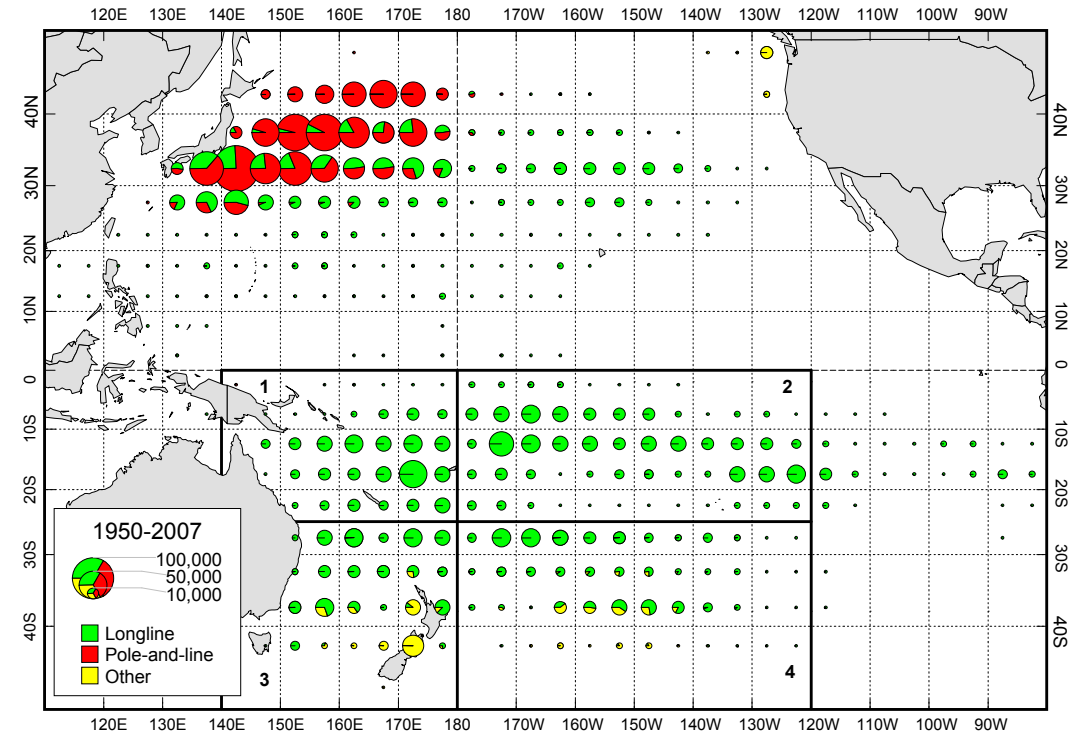


(ii) Longline

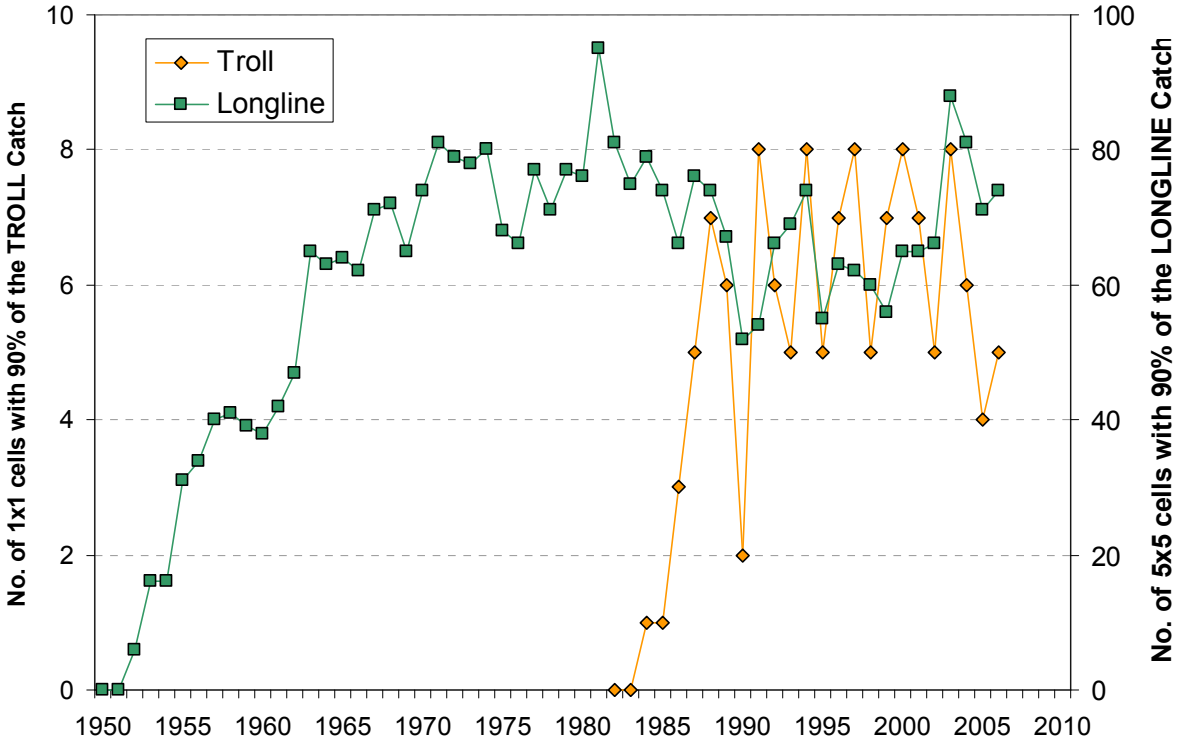

Albacore CPUE (No. per 100 hooks)
0
1
2
3
4
5
6
1960
1970
1980
1990
2000
2010
Fiji
New Caledonia
French Polynesia
Chinese Taipei

C. Spatial Distribution of the Catch

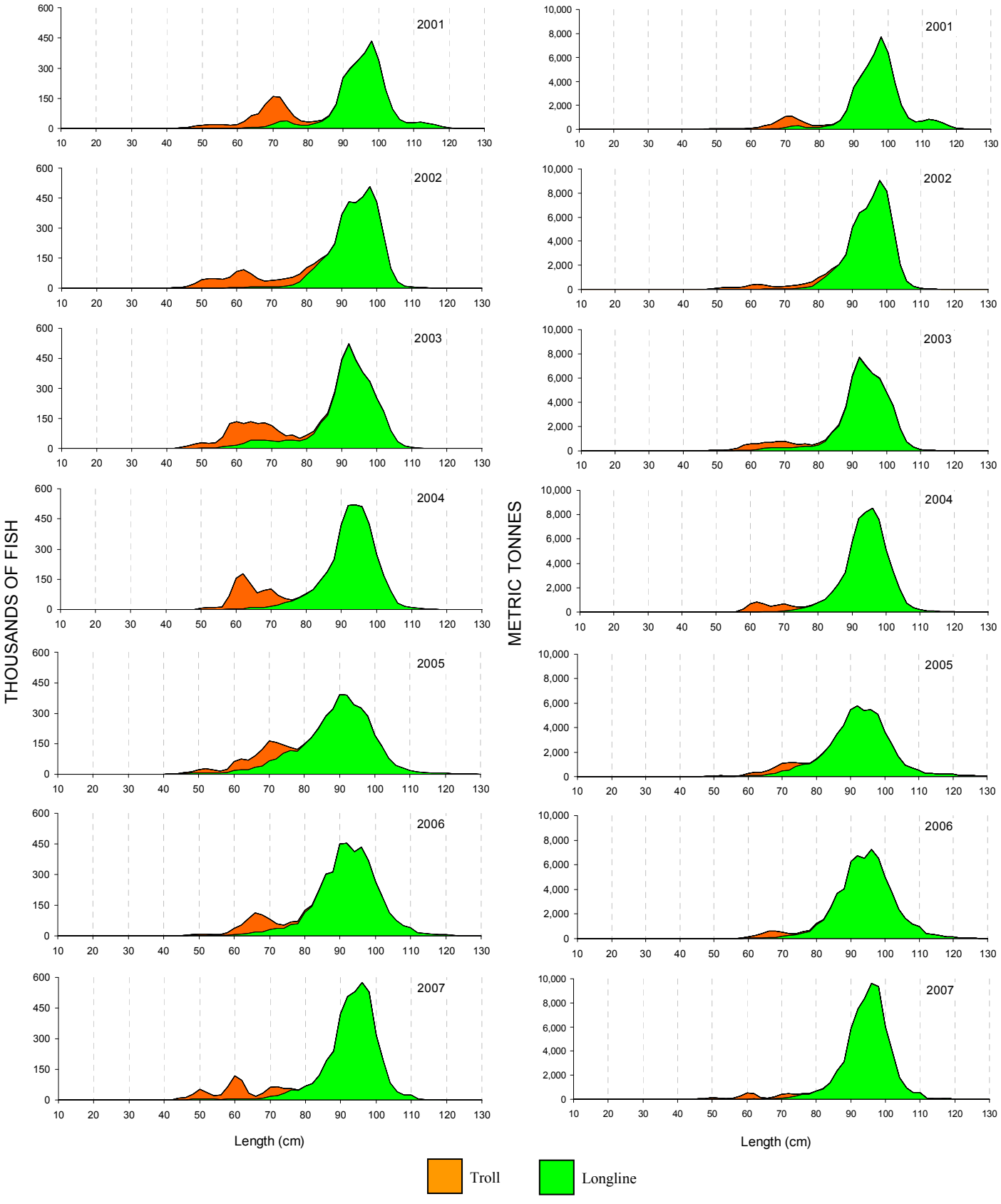




D. Spatial Cells Fished per Year



E. Recent Size Distribution of the Catch



F. Average Weight of Fish Caught