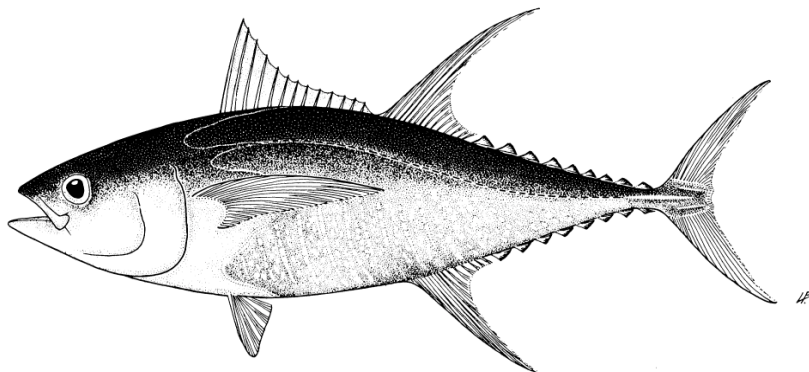




**A summary of aggregate catch/effort and size composition data
available to the SCTB, highlighting the main data gaps**

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INTRODUCTION

The OFP Data Catalogue (available at <http://www.spc.int/oceanfish/Html/Statistics/DataCat/DATACAT.htm>) provides, *inter alia*, a summary of the available aggregate catch/effort and size composition data, which is of importance to the HMS Stock Assessment Working Group of the Standing Committee on Tuna and Billfish (SCTB). The OFP Data Catalogue contains quantitative information for each type of data, broken down by year, gear, vessel nationality, source of data and species. Specifically, the OFP Data Catalogue includes the following tables :

- Catch and effort data held by the SPC Oceanic Fisheries Programme
- Tag release data held by the SPC Oceanic Fisheries Programme
- Tag recapture data held by the SPC Oceanic Fisheries Programme
- Size composition data held by the SPC Oceanic Fisheries Programme
- Unloadings data held by the SPC Oceanic Fisheries Programme
- Observer data held by the SPC Oceanic Fisheries Programme

Aggregate catch and size composition data have been made available in two forms, (i) aggregated data provided by fishing nations and (ii) data held by the OFP at the fishing operation level that have been aggregated for inclusion in the SCTB data holdings. The distinction between data provided at the aggregate or operational level is made in the OFP Data Catalogue.

The purpose of this paper is to present an indication of the coverage of available aggregate catch and size composition data through a series of graphs, and to then list the main data gaps, based on the information presented and experiences with the data, for the benefit of future work in improving data coverage.

MAIN DATA GAPS AND PROBLEMS

Appendix 1 contains the legend to graphs showing the coverage of aggregated catch and size composition data by species, gear and fleet, which are presented in Appendices 2–6. Appendix 7 shows a summary of the coverage of aggregated catch and size composition data by gear and fleet for recent years (1999–2002).

The following is a list (in perceived order of importance) of the main data gaps encountered in the aggregated catch/effort and size composition data holdings used in stock assessments –

- Indonesian tuna fisheries.
 - General lack of aggregated catch/effort and size composition data in all fisheries;
 - The “unclassified” fisheries of Indonesia take significant amounts of skipjack and yellowfin tuna (Lawson, 2003), but (i) there is no information on the method of fishing, (ii) there are no catch/effort data available from these fisheries and (iii) there are no size composition data available from these fisheries;
- Philippines tuna fisheries.
 - General lack of aggregated catch/effort and size composition data in all fisheries, although there has been more data collected than in the Indonesian tuna fisheries;
 - Data collected from the Philippines National Stock Assessment Programme (NSAP, 1997–2002) are included in the graphs, but are currently being reviewed for future inclusion into stock assessments.
- Vietnamese tuna fisheries.
 - There are no annual catch estimates, aggregated catch/effort or size composition data currently available from this fishery, despite reports that the longline fishery has taken an estimated 20,000 t. in recent years (Anon, 2003).

- Catch data for the Taiwanese and Korean purse seine fleets prior to 1993 has been under-reported (see Lawson, 1994) and therefore inadequate for stock assessment purposes.
- There are no aggregated catch/effort data, nor size composition data, available for the Taiwanese domestic longline fleet, despite this fleet taking a significant amount of catch over a number of years (Lawson, 2003).
- There are no aggregated catch/effort data, nor size composition data, for the Japanese Coastal longline fleet.
- Aggregate bigeye catch data is under-reported for most purse seine fleets. This is due to vessels tending to include the catch of bigeye in the reported catch of yellowfin tuna, since there is no economic incentive for reporting bigeye separately.
- Aggregate catch/effort data for the Korean and Taiwanese distant-water longline fleets for 2002 and 2003 have yet to be provided. Also, there are no aggregate catch data for the Korean longline fleet for the period 1958–1974 and for the Taiwanese fleet for the period 1963–1966.
- There are very few YFT and BET size composition samples available from the Korean and Taiwanese distant-water longline fleets.
- There are no aggregated catch/effort data, nor size composition data, for the Japanese Pole-and-line fleet prior to 1972.
- The coverage of catch/effort data for the Taiwanese offshore longline fleet fishing in Micronesia is lower than the coverage of size composition (individual weight) data. This is due to the relatively good coverage provided from individual weight data collected from a substantial proportion of this fleet unloading in Guam, although logsheets are not collected from these vessels (i.e. those based in Guam).
- The coverage of aggregated yellowfin catch data for the Chinese longline fleet has declined in recent years, although aggregated bigeye catch data coverage has not declined to this extent. This is possibly due to poor coverage of the distant-water fleet, which has only become established in recent years. In any event, this probably deserves closer investigation.
- The coverage of aggregated albacore catch data for the distant-water Chinese longline fleet is low.
- There are no aggregated catch/effort data, nor size composition data, for the Canadian Troll fleet.
- The coverage of size composition data in the French Polynesia longline fishery has been very low in recent years (collected by observers only).
- Size composition data are lacking in most Pacific Islands longline fisheries in their development years, although catches were relatively small.
- There are no aggregated catch/effort data available for the New Zealand Troll fishery prior to 1983.
- There has not been any size composition data provided for the New Zealand domestic longline fishery in recent years (provision up to and including 1999).
- The sampling procedure for the collection of size data from the Samoan longline fishery during 2000–2001 was found to be inappropriate. These data have therefore been excluded from the SCTB data holdings.
- There are several instances where the annual catch, according to the aggregate data, exceed the annual catch estimate for that fleet. The following are examples where this might occur:
 - There has been a delay in receiving all logsheets for a fleet and the annual catch estimate was therefore provisional;
 - The annual catch estimate provided by the fishing nation is lower than what SPC has according to catch logsheets. In such cases, every effort is made to reconcile the data and eventually correct the annual catch estimate.
 - The aggregate catch data provided for the Japanese distant-water longline fleet is in numbers of fish only. While this is useful for stock assessment work, it has been

necessary to apply an estimate of average weight by species (based on size composition data, where this is available) to come up with an estimate of catch in weight. In some instances, therefore, the annual catch estimate provided by Japan may in fact be less than the estimated annual catch (weight) according to the aggregate data.

For recent years (1999–2002), the following are the main data deficiencies:

- For longline, there is a complete lack of aggregated catch and size composition data for the domestic Indonesian, Coastal Japanese, domestic Taiwanese, domestic Philippine and Vietnamese fleets. Size composition data coverage is relatively low for the Korean, New Zealand, French Polynesian and distant-water Taiwanese fleets.
- For purse seine, there is a complete lack of aggregated catch and size composition data for the domestic Indonesian fleet. Size composition data coverage is relatively low for the Spanish, Japanese, Korean and Philippine fleets. There are no aggregated catch data for the domestic Philippines fleet.

FUTURE WORK

Future work in this area includes the following:

- There are some components of catch and effort data at the fishing operation level that are required for stock assessments. With this in mind, it will be necessary to obtain information on the coverage and availability of operational data from fishing nations, and present this in future versions of this paper.
- Consider the merits of presenting length and weight composition data separately in the graphs.

APPENDIX 1. LEGEND FOR GRAPHS SHOWING COVERAGE

The following descriptions apply to the graphs presented in APPENDICES 2–6.

The graphs show trends in the coverage of aggregated catch and effort and size composition data by species, gear type and fleet.

In each graph, the GREEN line represents the years where annual catch estimates are available, and therefore, should reflect the periods when respective fleets caught that species.

The GREY line shows the trend in annual catches according to the SPC Tuna Fishery Yearbook (Lawson, 2003), and refers to the left-hand Y-AXIS. This is used to give some indication of the relative importance of the coverage of aggregate catch and size composition data for each year.

The BLUE histograms represent the total catch according to the available Aggregated Catch data for that species, and refers to the left-hand Y-AXIS.

The RED Histograms represent the coverage of the Size composition data with respect to the Annual catch estimate (from Lawson, 2003), and refers to the right-hand Y-AXIS. Note that the value for size composition is either (i) the coverage of length samples, or (ii) the coverage of weight samples, depending on which has the highest coverage value.

The following descriptions apply to the graphs presented in APPENDIX 7.

The GREEN histograms represent the total catch estimate (Lawson, 2003) for each flag, and refers to the left-hand Y-AXIS.

The BLUE histograms represent the total target catch according to the available Aggregated Catch data for each flag, and refers to the left-hand Y-AXIS.

The RED Histograms represent the coverage of the Size composition data with respect to the Annual catch estimate (from Lawson, 2003) for that flag, and refers to the right-hand Y-AXIS. Note that the value for size composition is either (i) the coverage of length samples, or (ii) the coverage of weight samples, depending on which has the highest coverage value.

APPENDIX 2. SOUTH PACIFIC ALBACORE

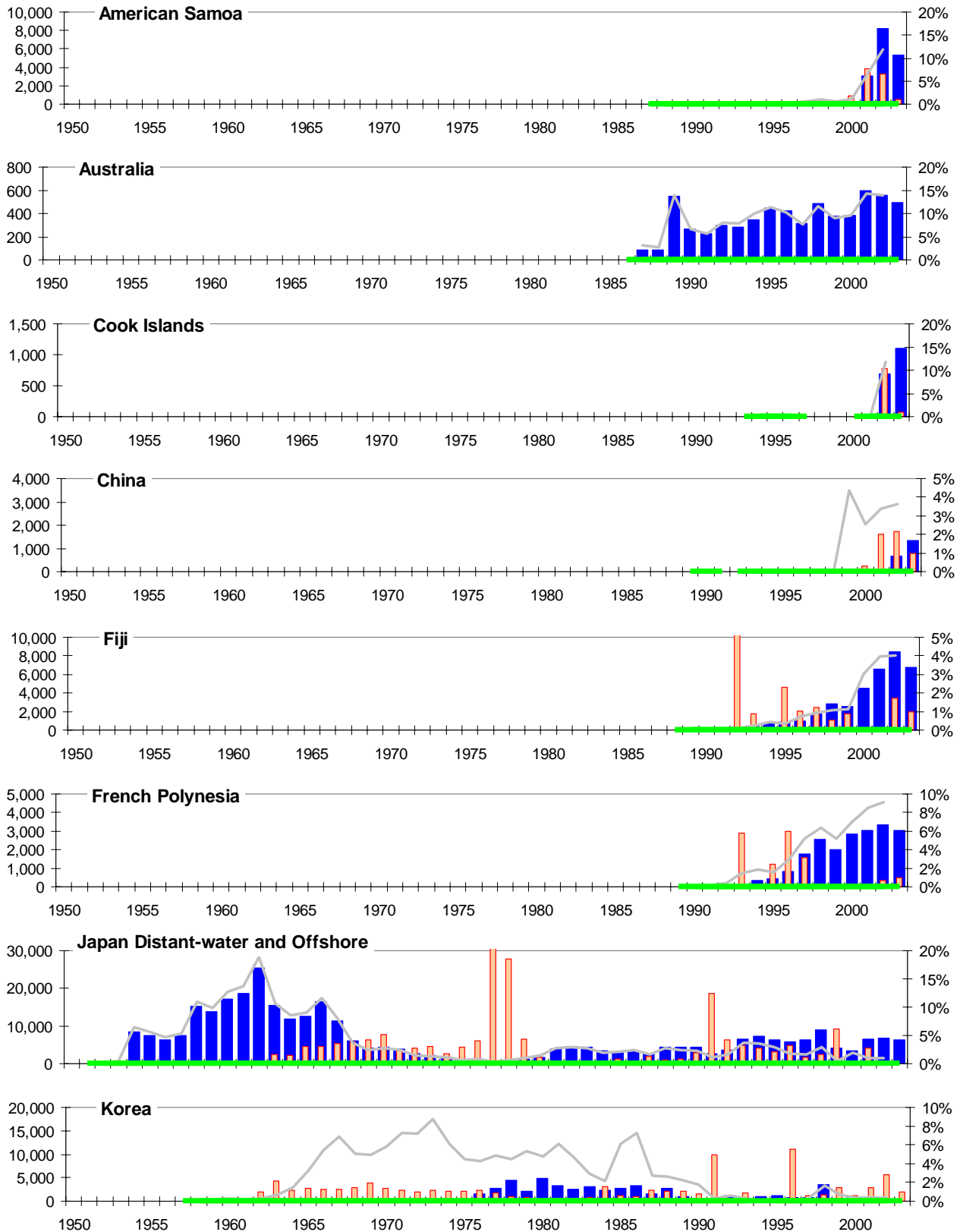


Figure 1. Coverage of ALBACORE catch and size composition data in the SOUTH PACIFIC LONGLINE FISHERY, by year and fleet

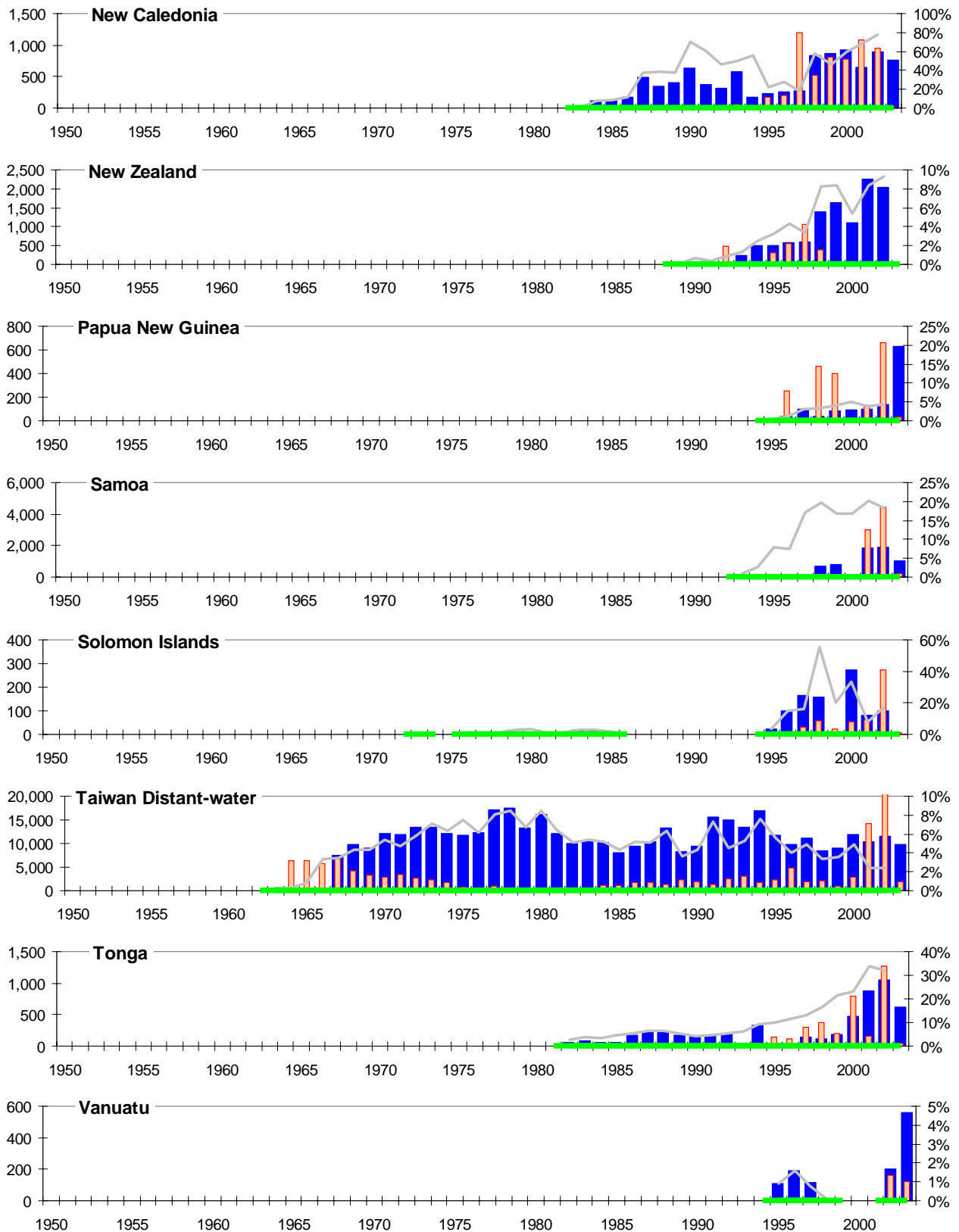


Figure 1. (continued)

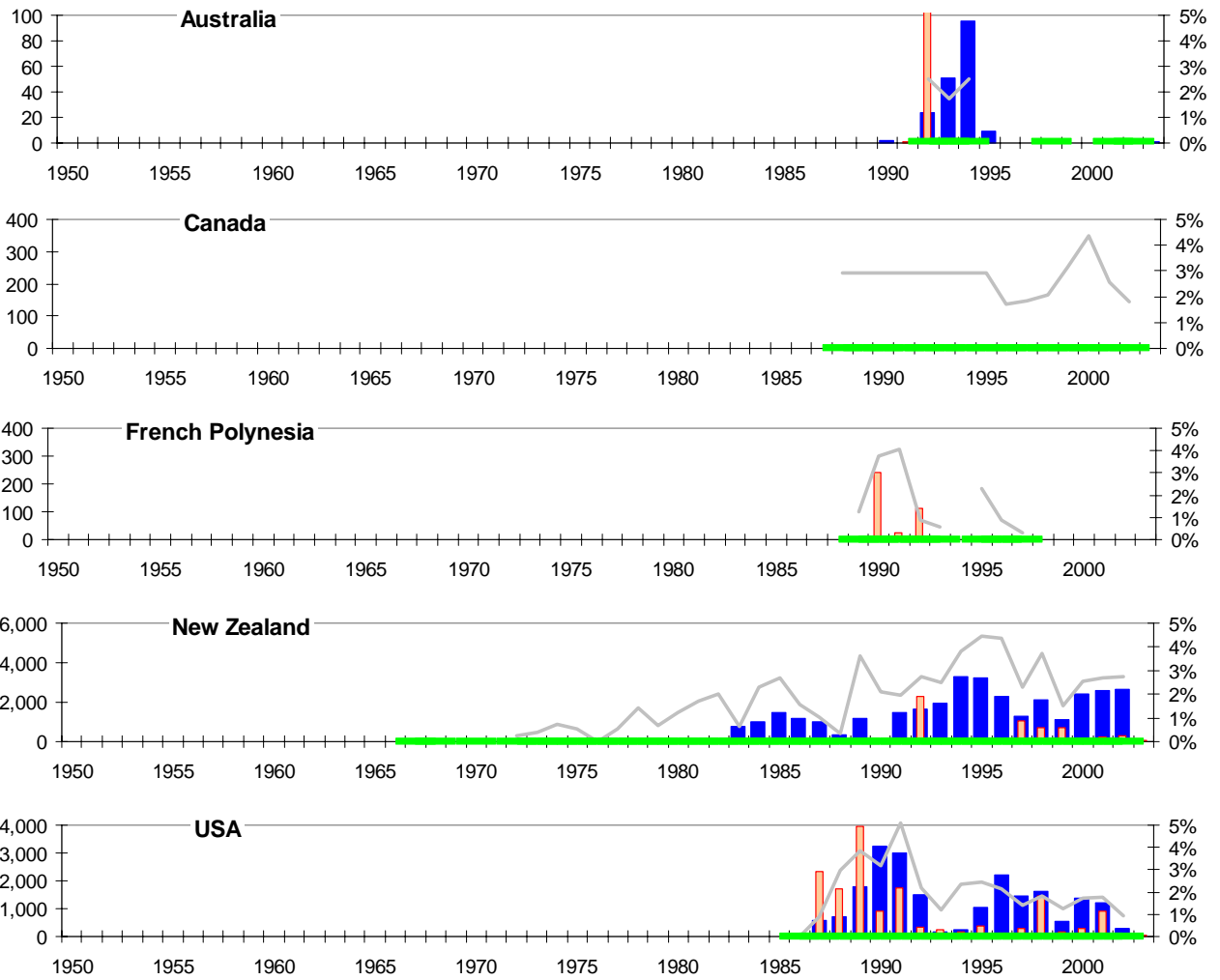


Figure 2. Coverage of ALBACORE catch and size composition data in the SOUTH PACIFIC TROLL FISHERY, by year and fleet

APPENDIX 3. WCPO BIGEYE

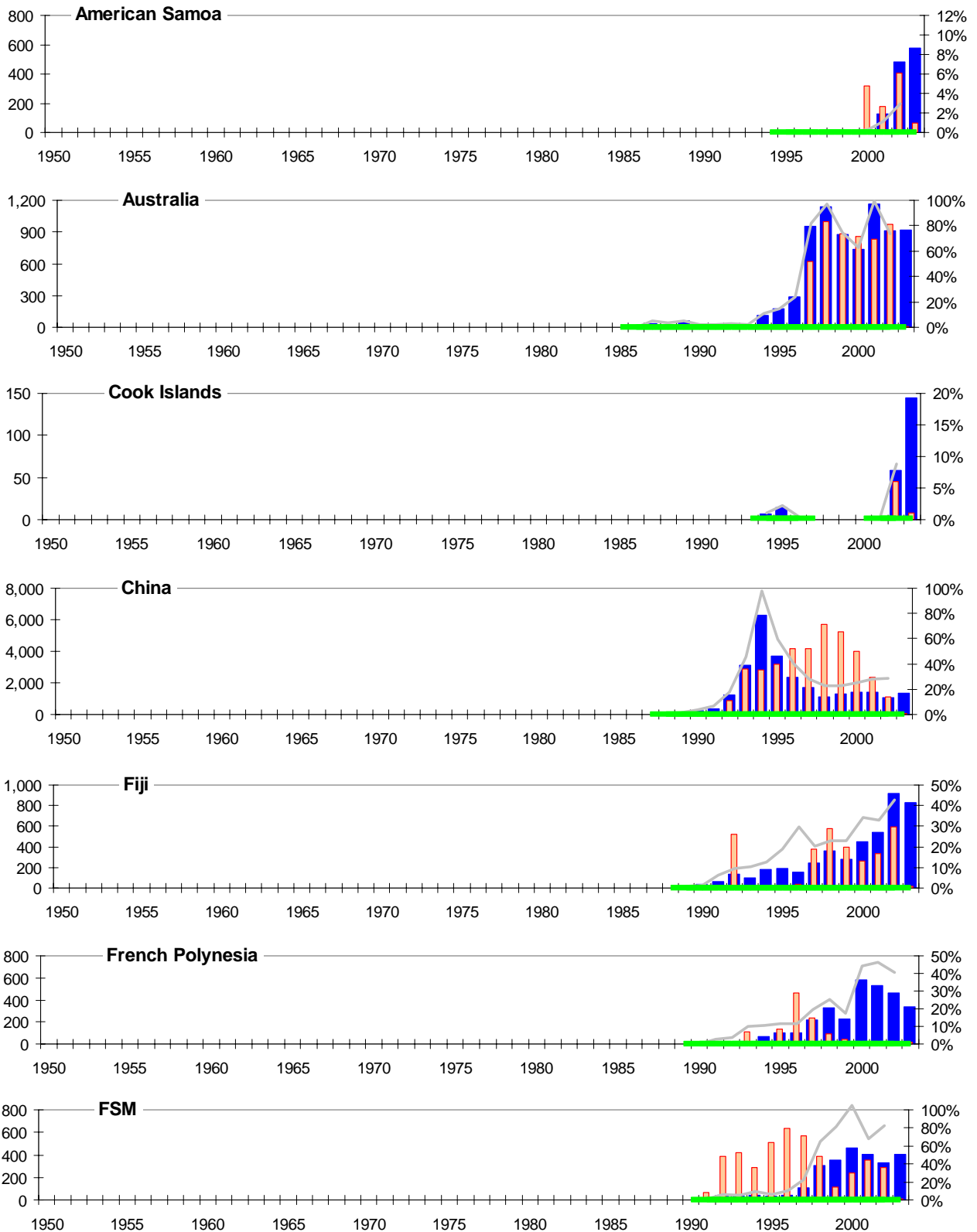


Figure 3. Coverage of BIGEYE and size composition data in the WCPO LONGLINE FISHERY, by year and fleet

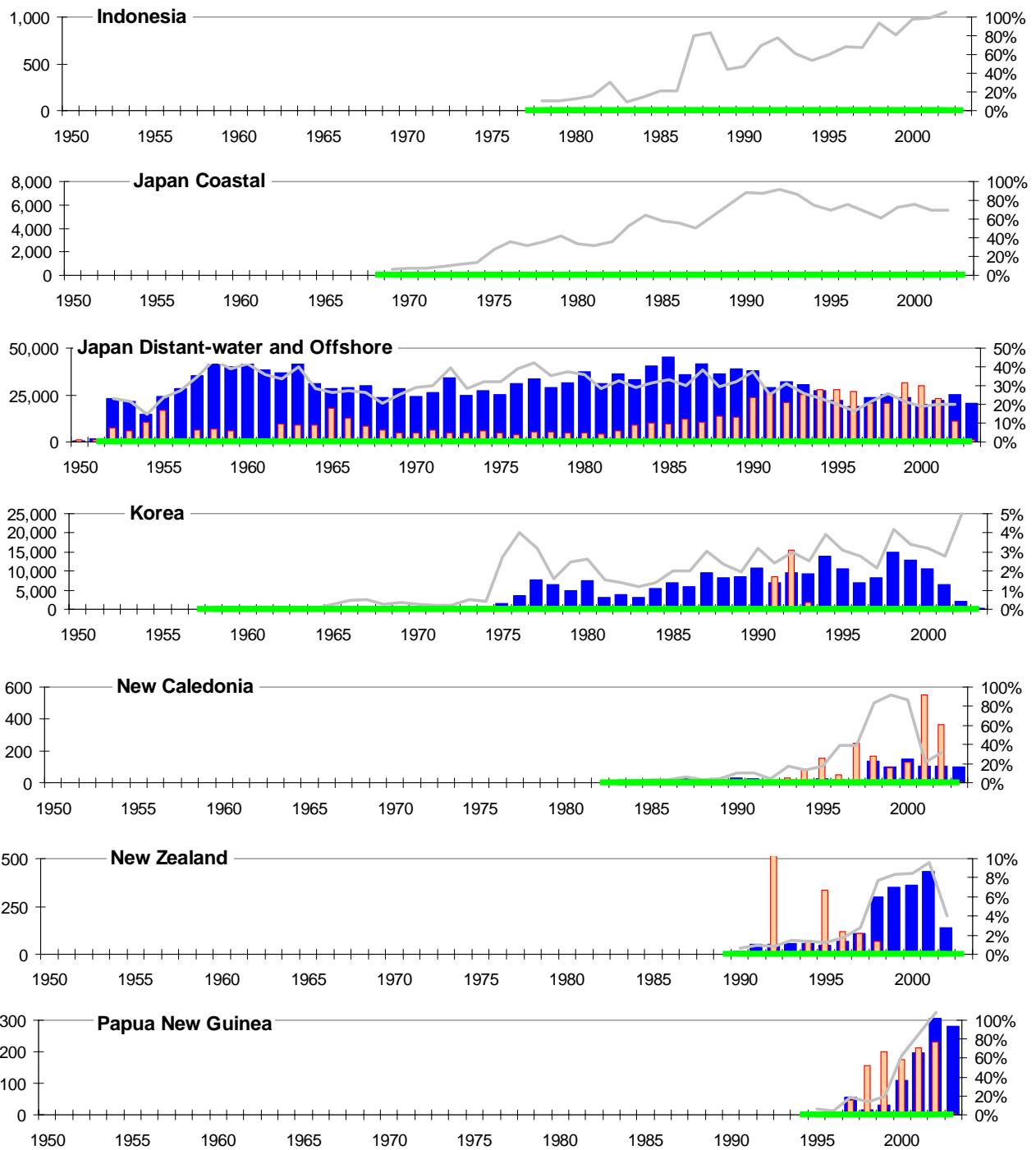


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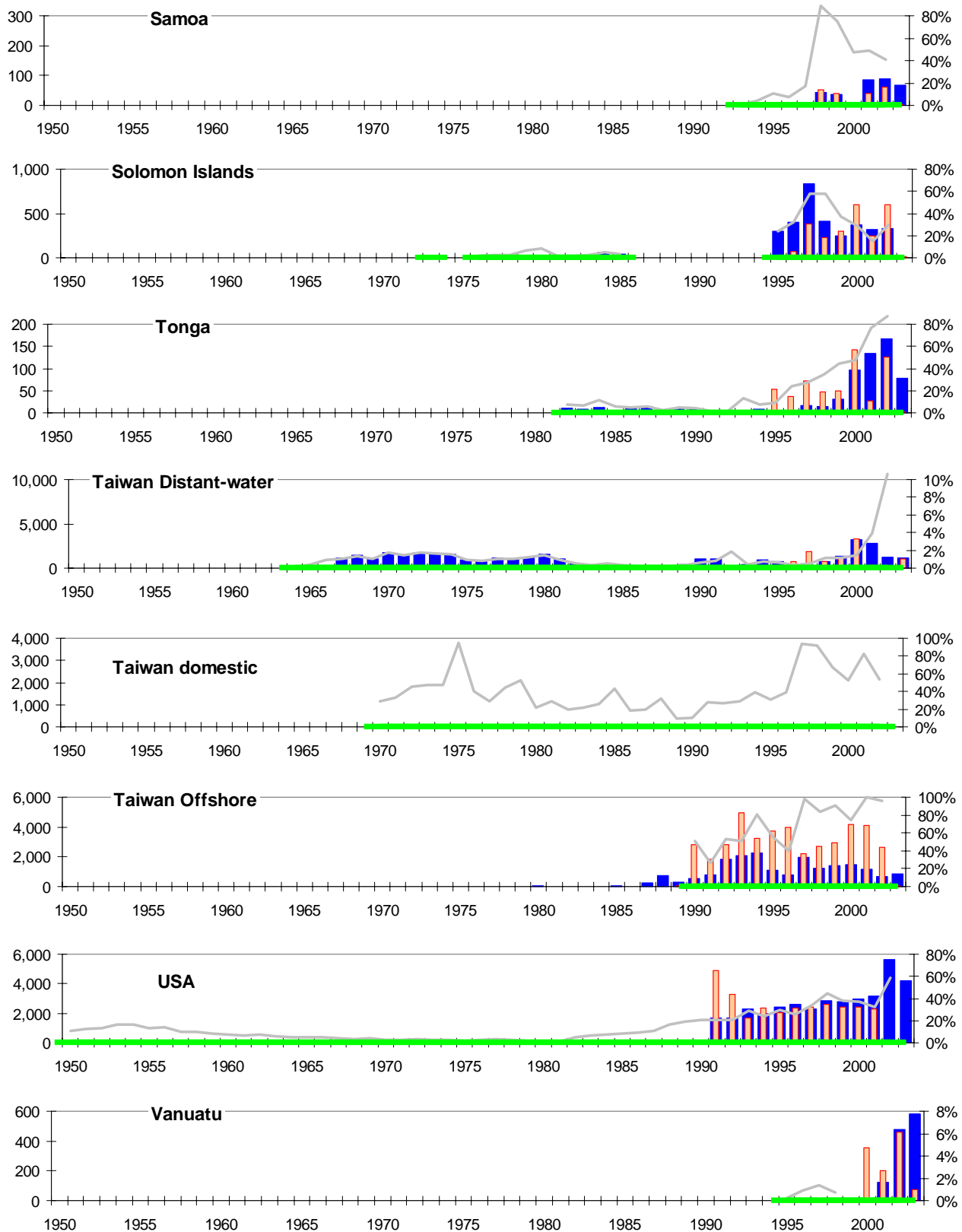


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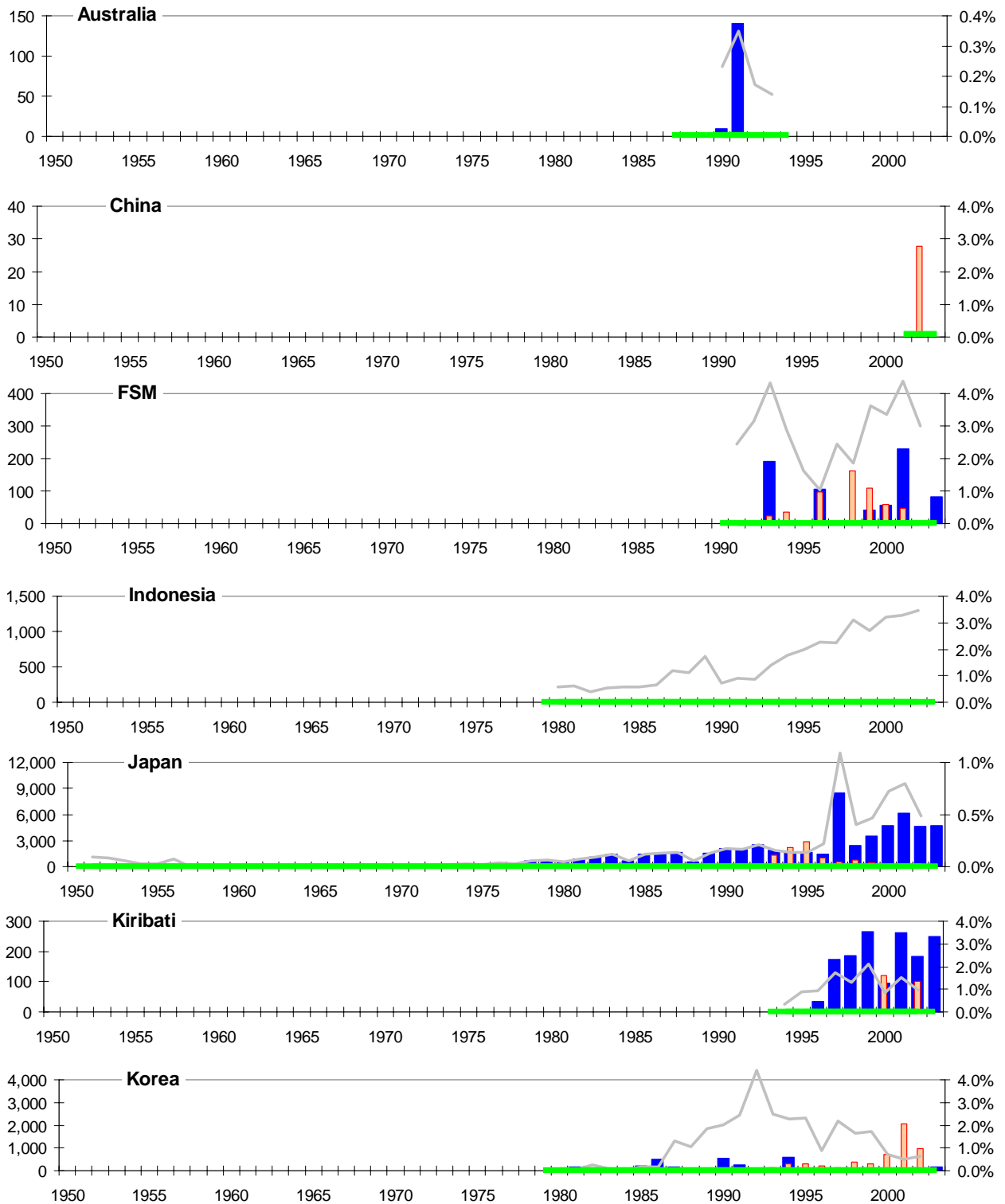


Figure 4. Coverage of BIGEYE catch and size composition data in the WCPO PURSE SEINE FISHERY, by year and fleet

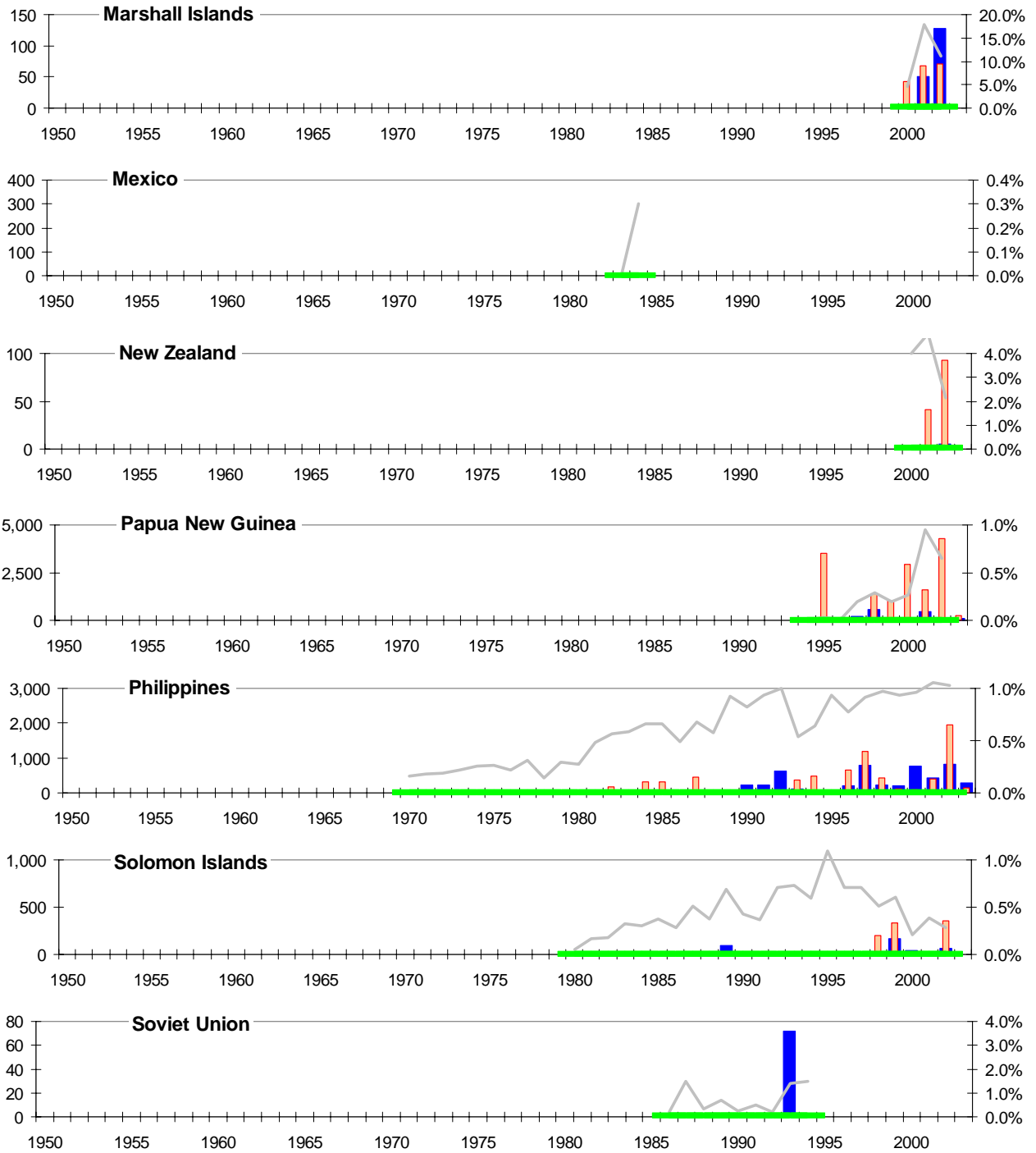


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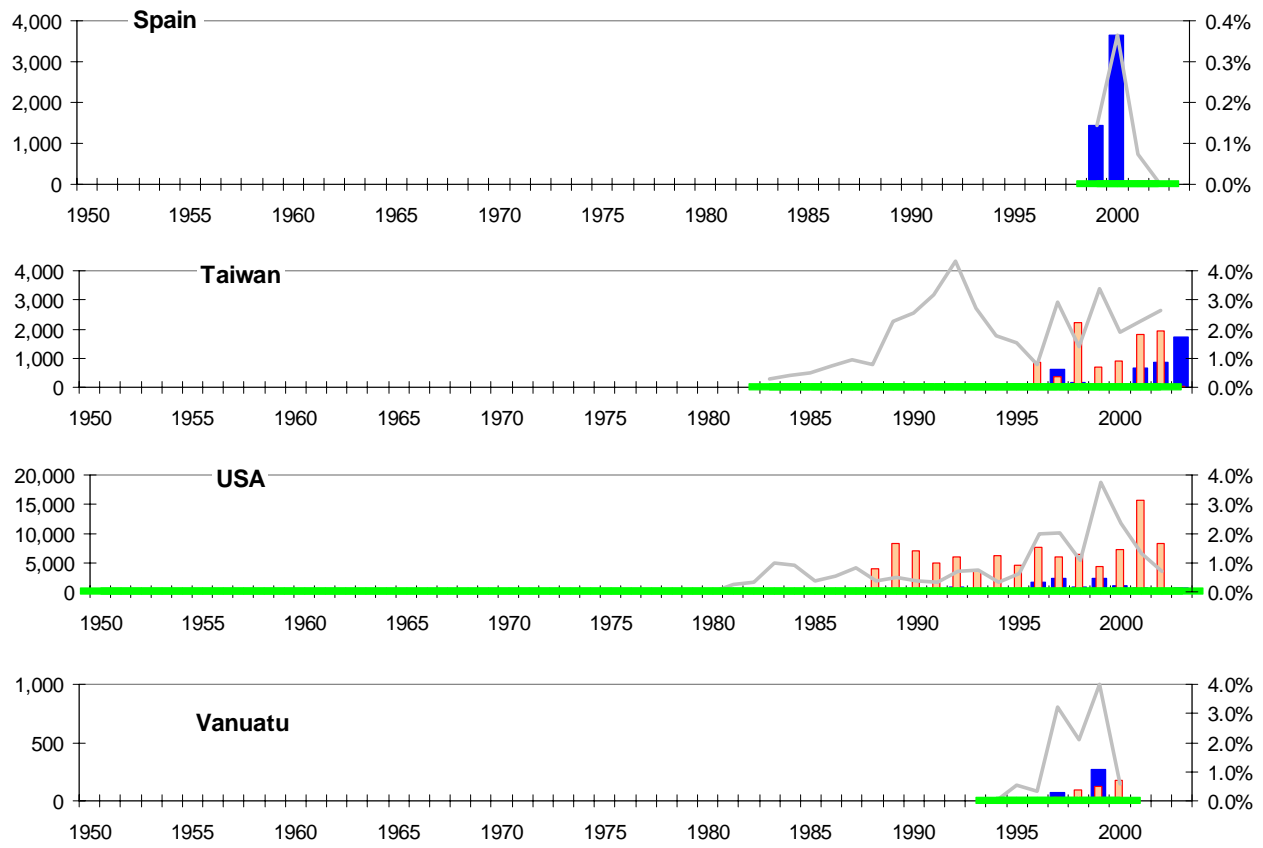


Figure 4. (continued)

APPENDIX 4. WCPO SKIPJACK

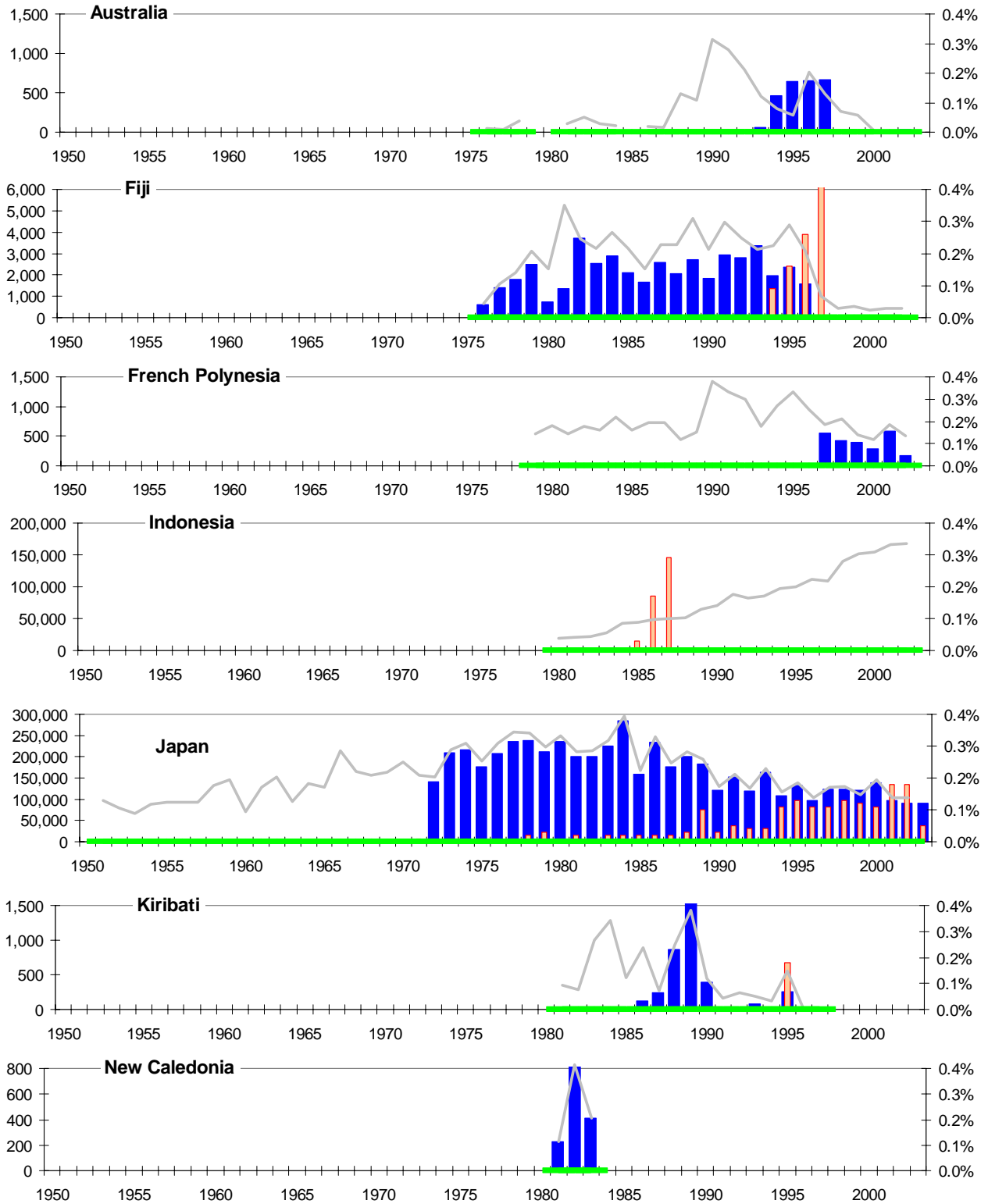


Figure 5. Coverage of SKIPJACK catch and size composition data in the WCPO POLE-AND-LINE FISHERY, by year and fleet

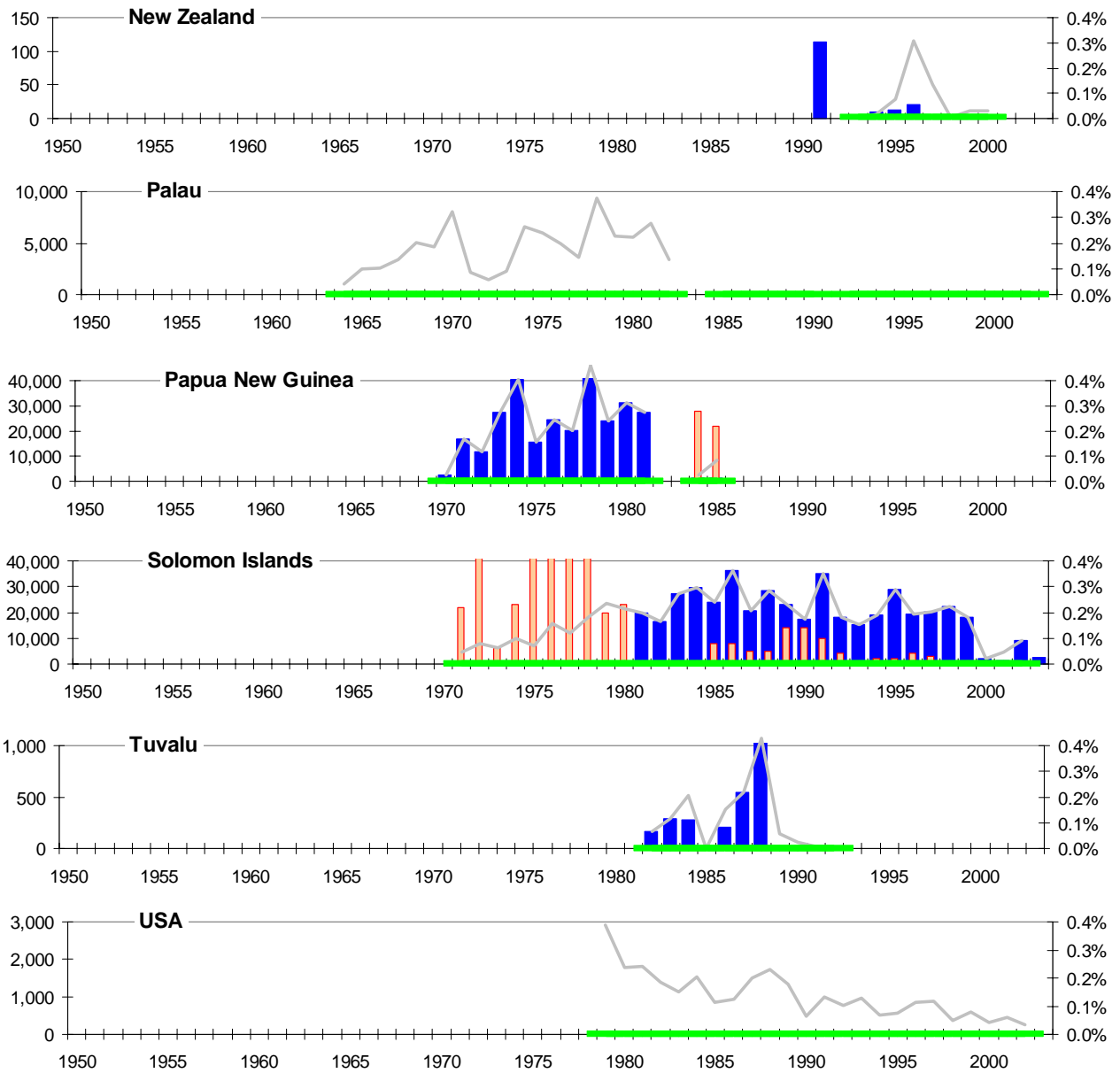


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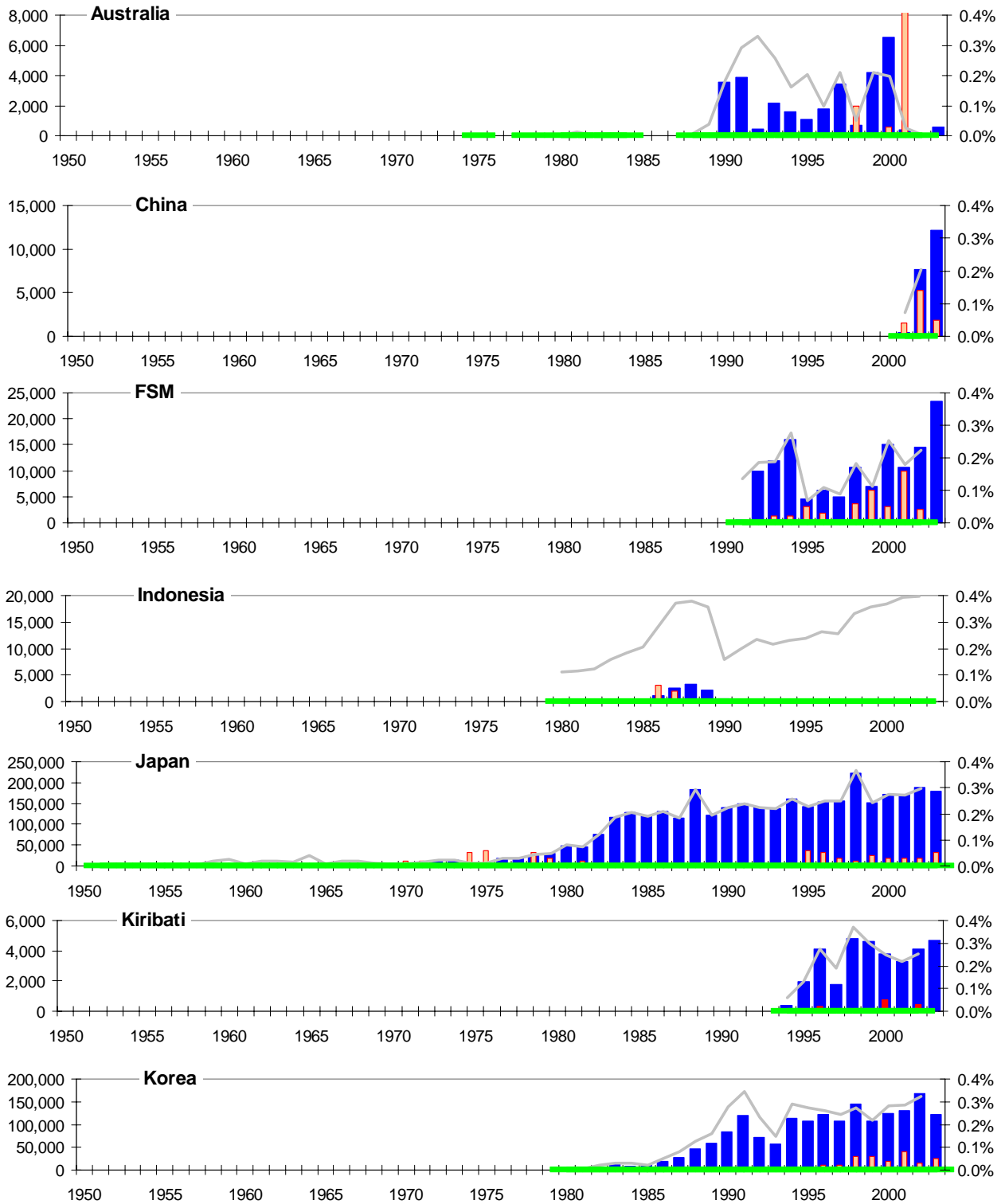


Figure 6. Coverage of SKIPJACK catch and size composition data in the WCPO PURSE SEINE FISHERY, by year and fleet

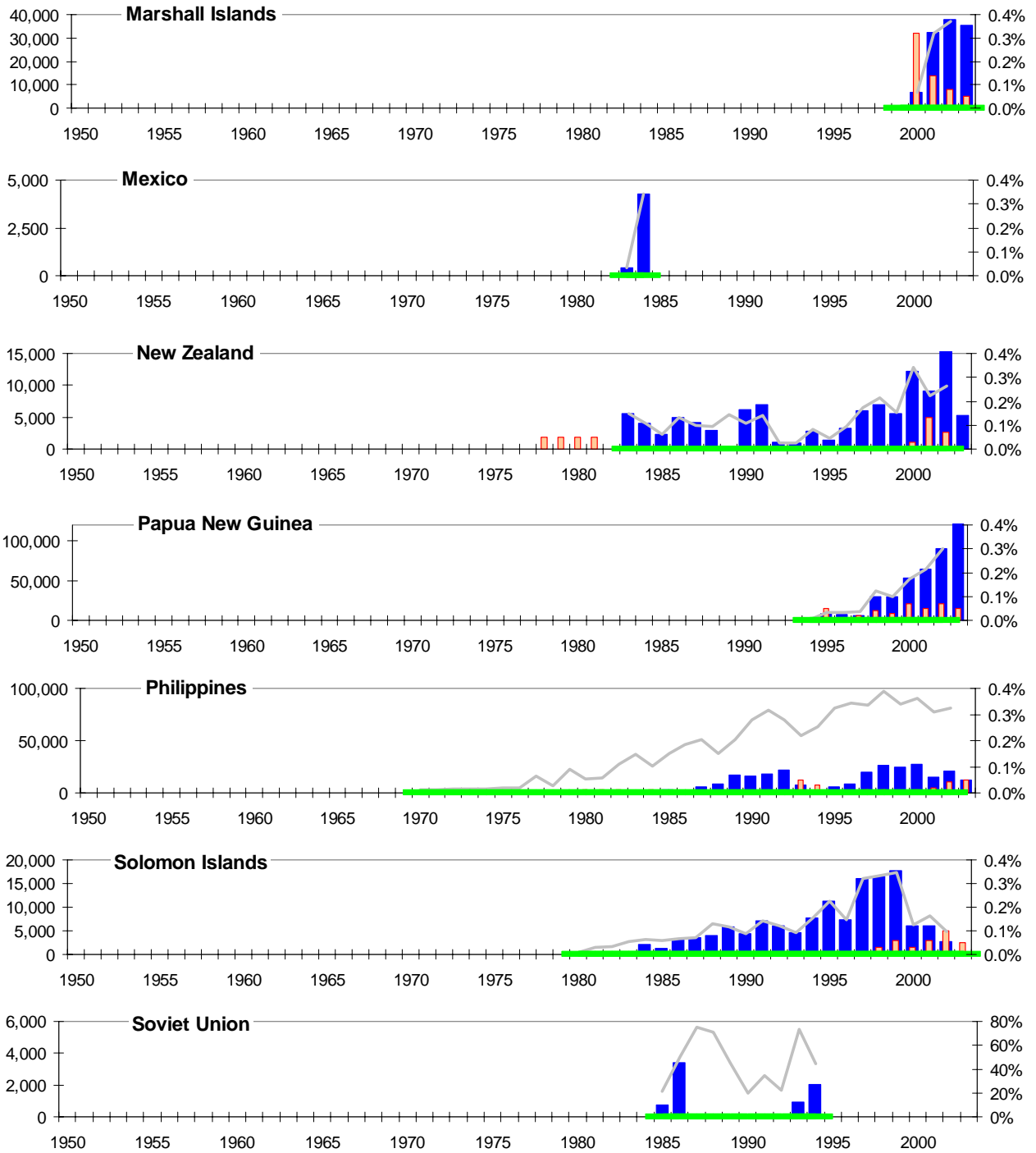


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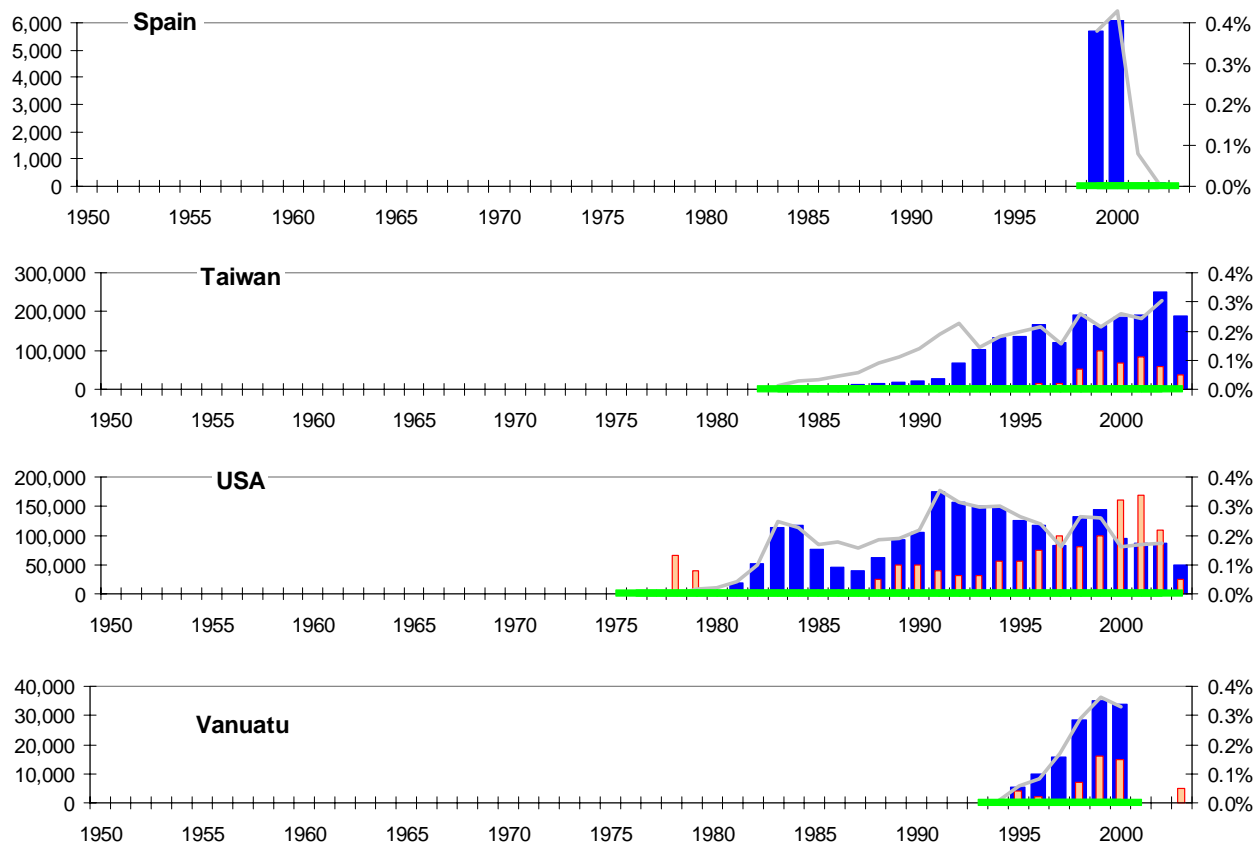


Figure 6. (continued)

APPENDIX 5. WCPO YELLOWFIN

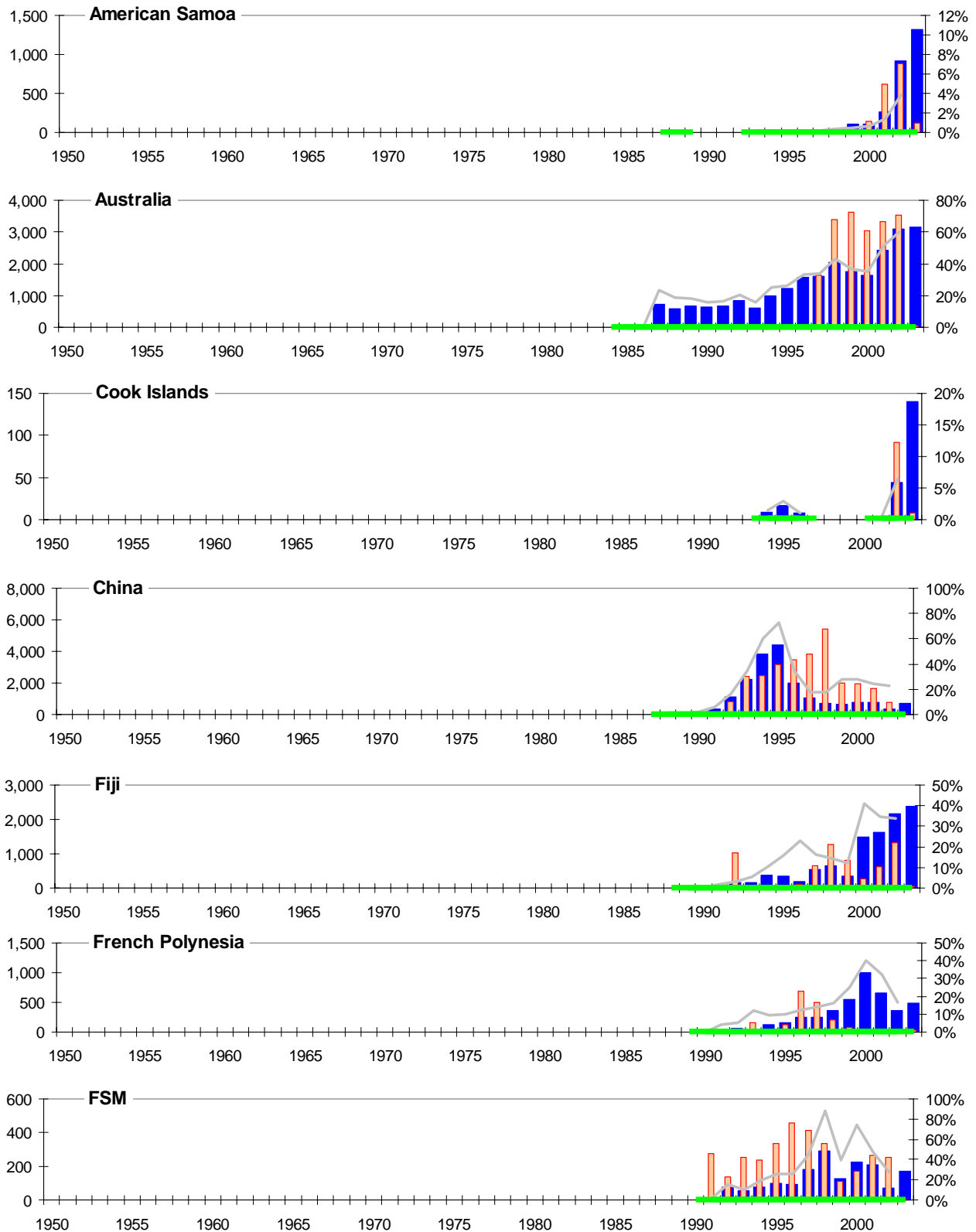


Figure 7. Coverage of YELLOWFIN catch and size composition data in the WCPO LONGLINE FISHERY, by year and fleet

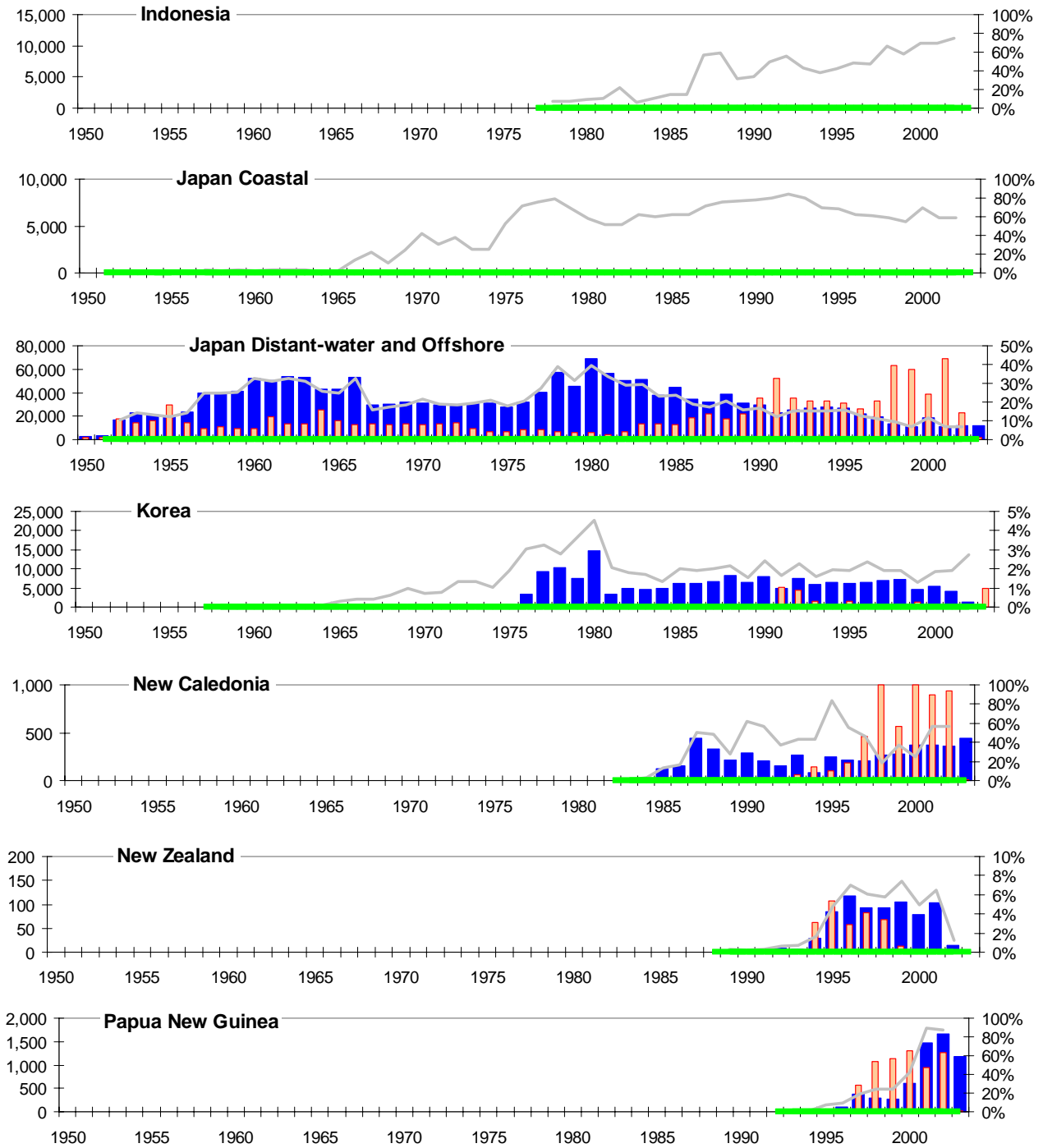


Figure 7. (continued)

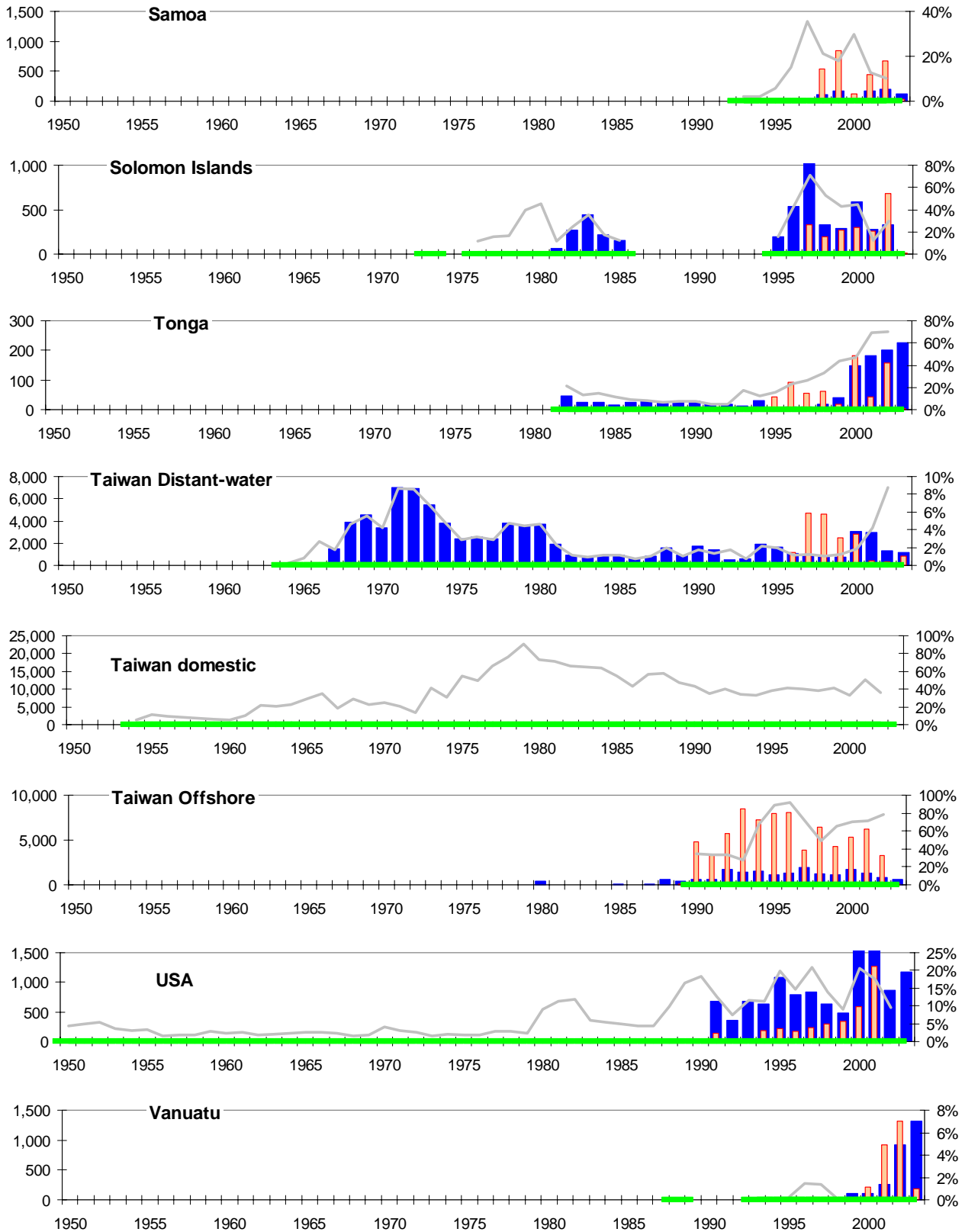


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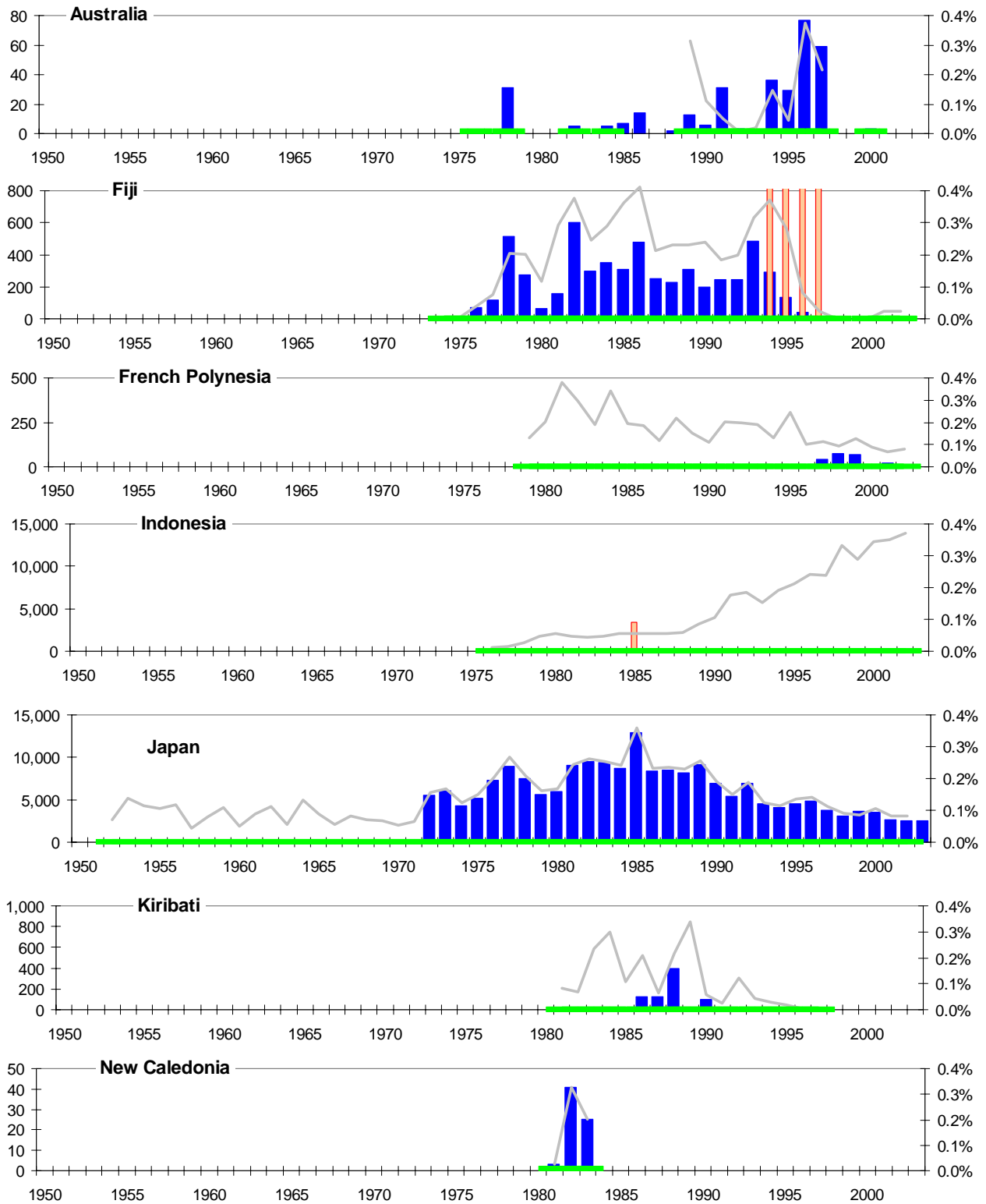


Figure 8. Coverage of YELLOWFIN catch and size composition data in the WCPO POLE-AND-LINE FISHERY, by year and fleet

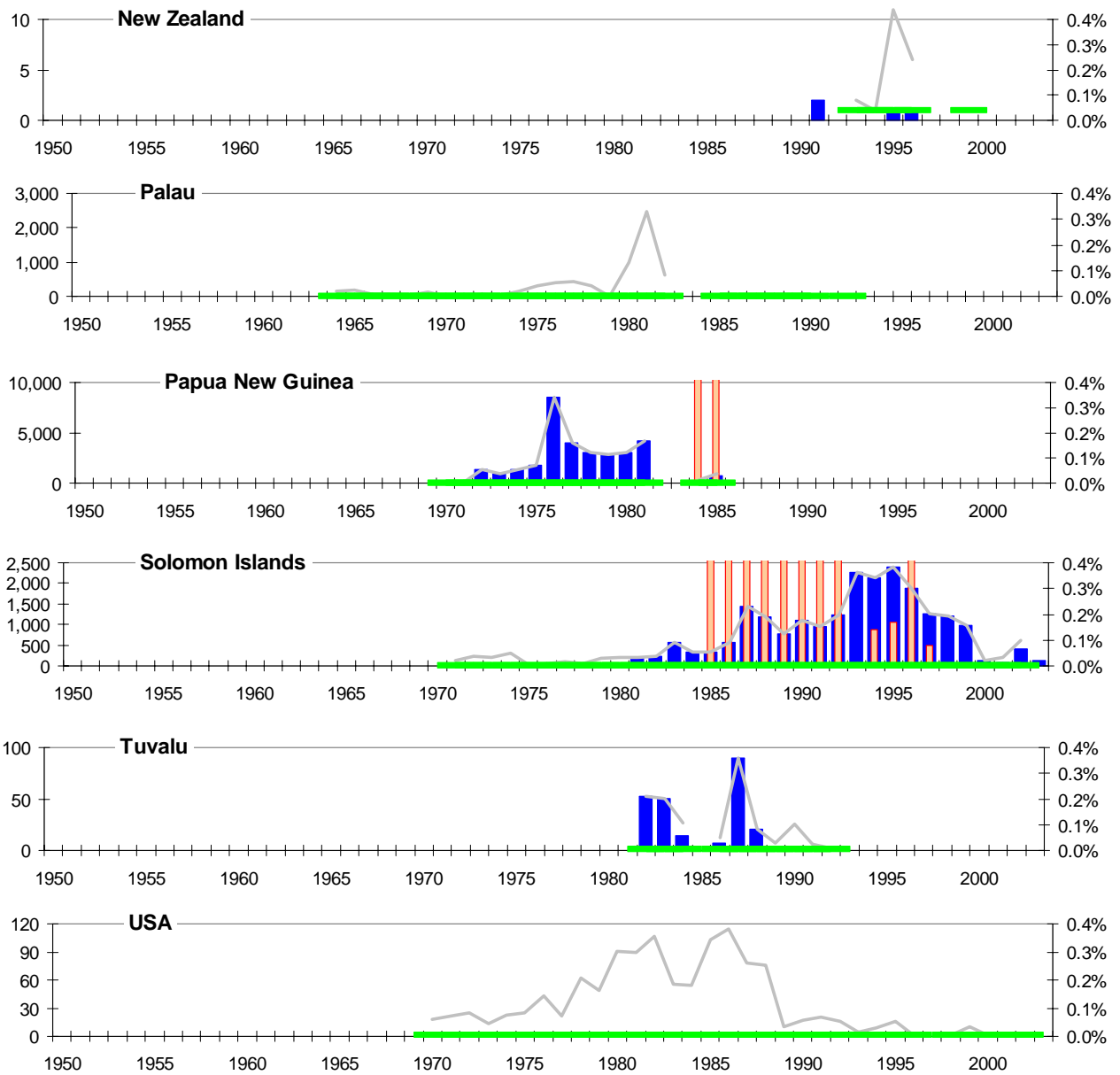


Figure 8. (continued)

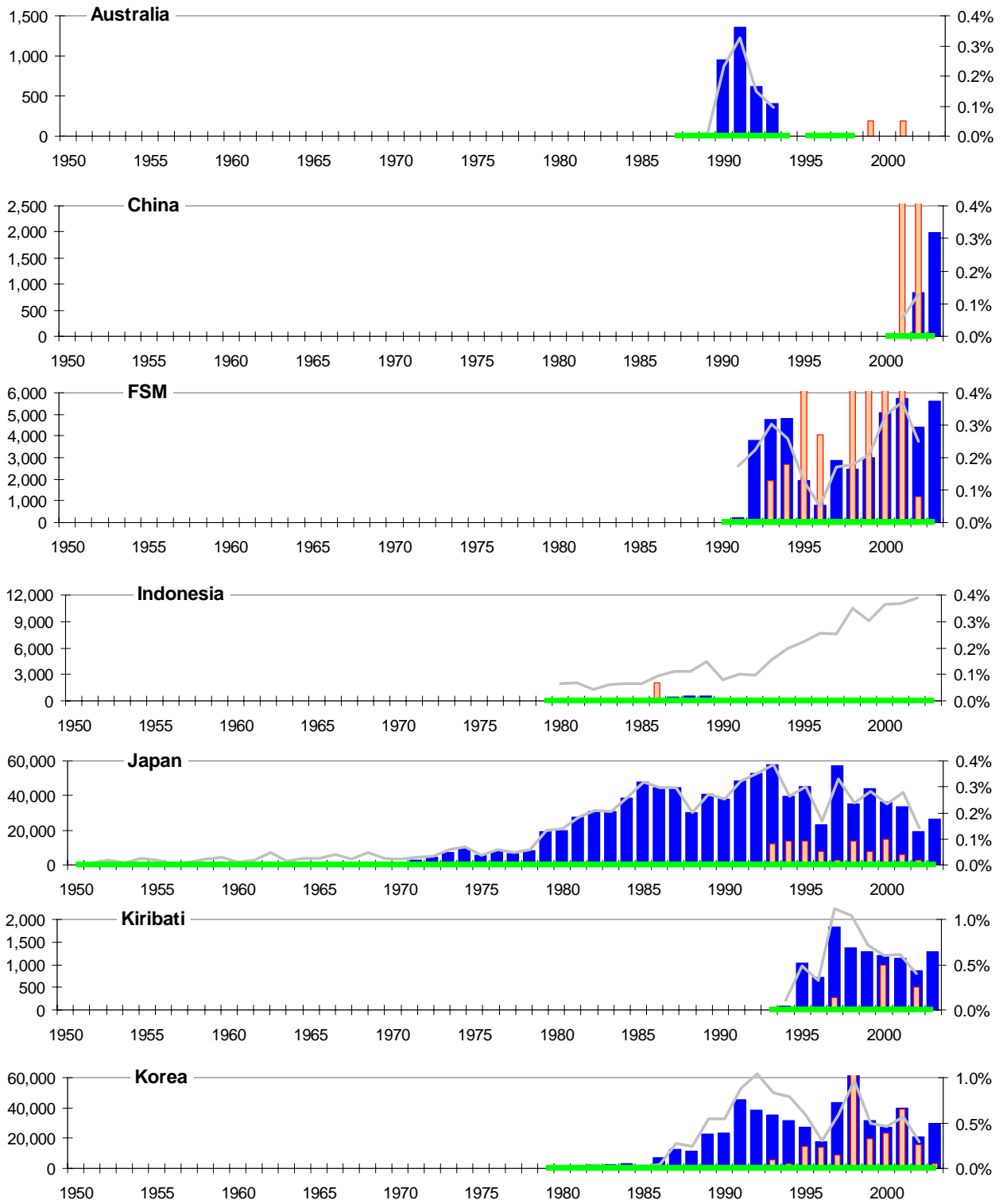


Figure 9. Coverage of YELLOWFIN catch and size composition data in the WCPO PURSE SEINE FISHERY, by year and fleet

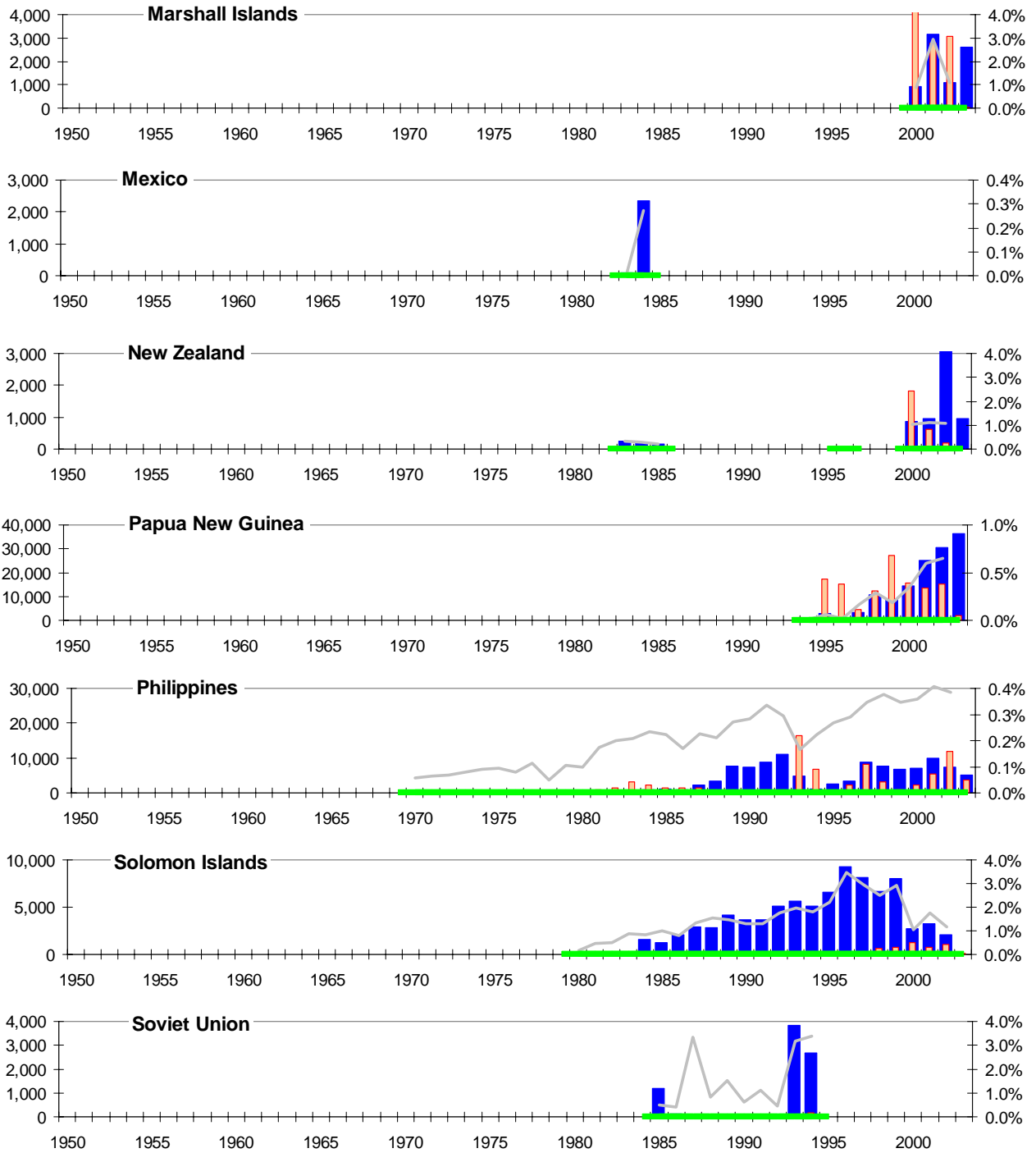


Figure 9. (continued)

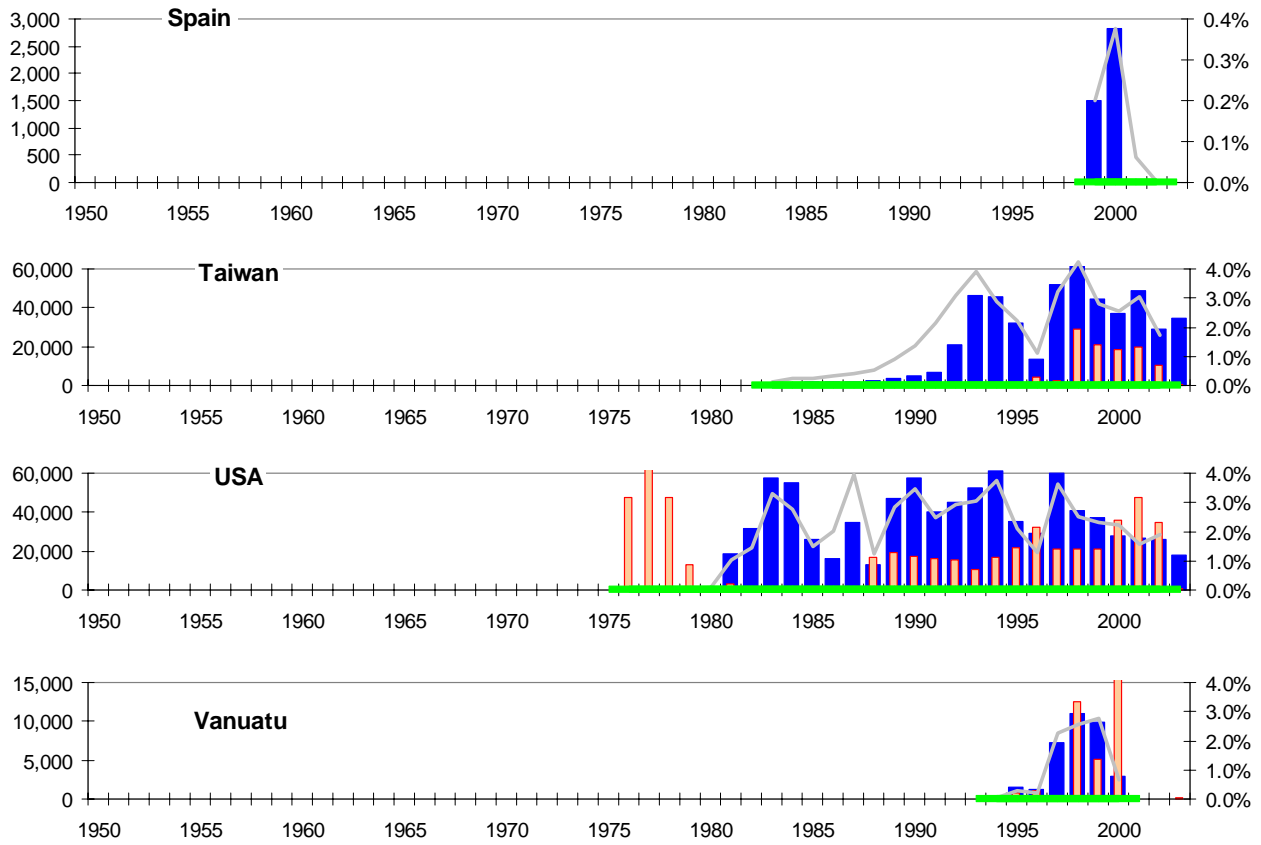


Figure 9. (continued)

APPENDIX 6. INDONESIA AND PHILIPPINES DOMESTIC FISHERIES

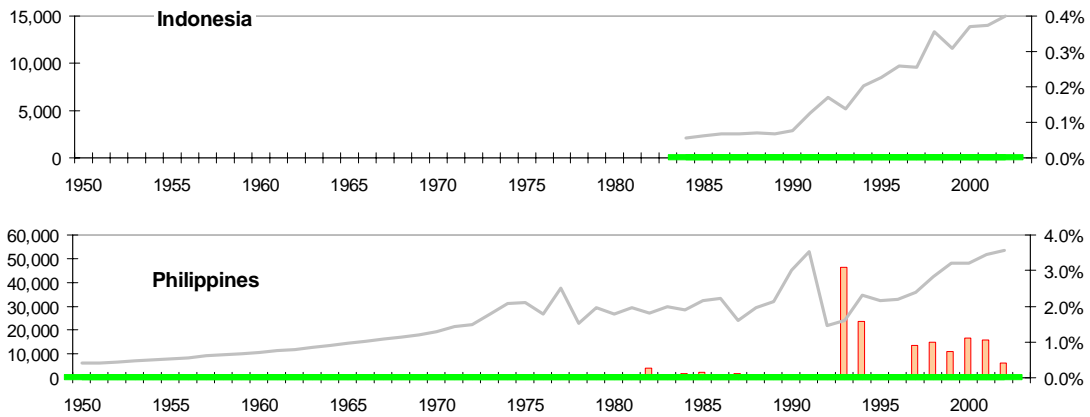


Figure 10. Coverage of YELLOWFIN catch and size composition data in the WCPO HANDLINE FISHERY, by year and fleet

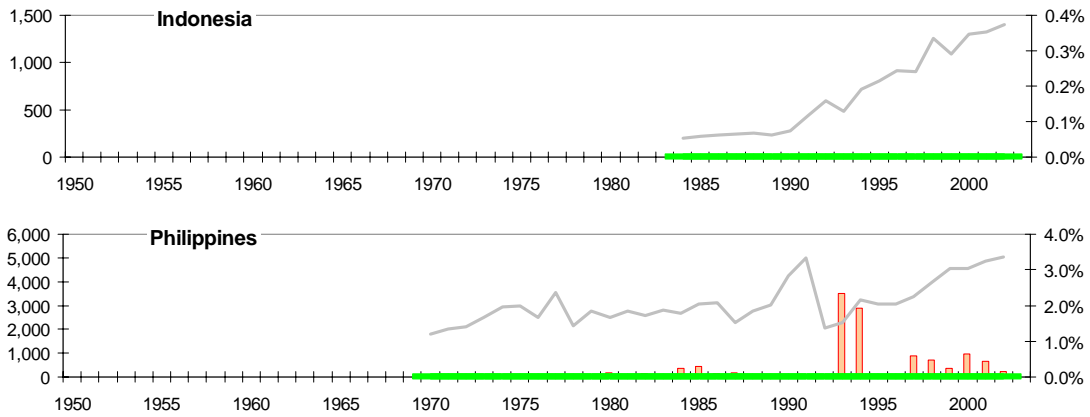


Figure 11. Coverage of BIGEYE catch and size composition data in the WCPO HANDLINE FISHERY, by year and fleet

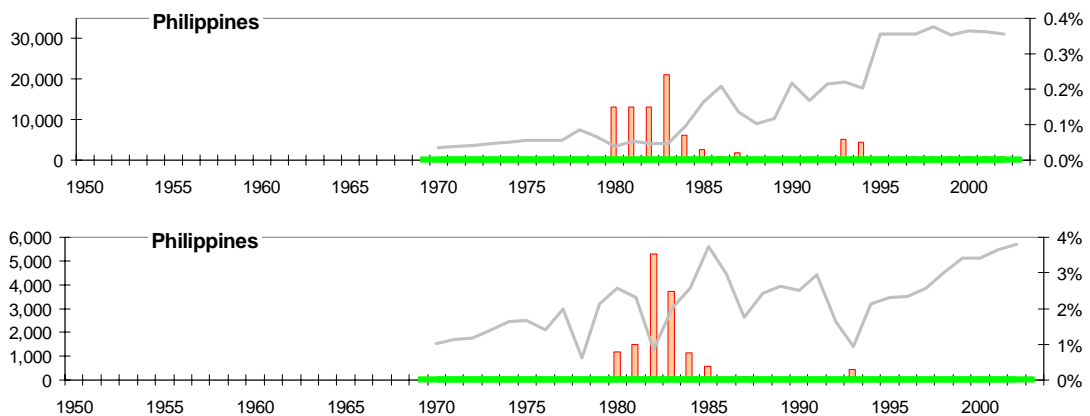


Figure 12. Coverage of SKIPJACK and YELLOWFIN catch and size composition data in the PHILIPPINES RINGNET FISHERY, by year

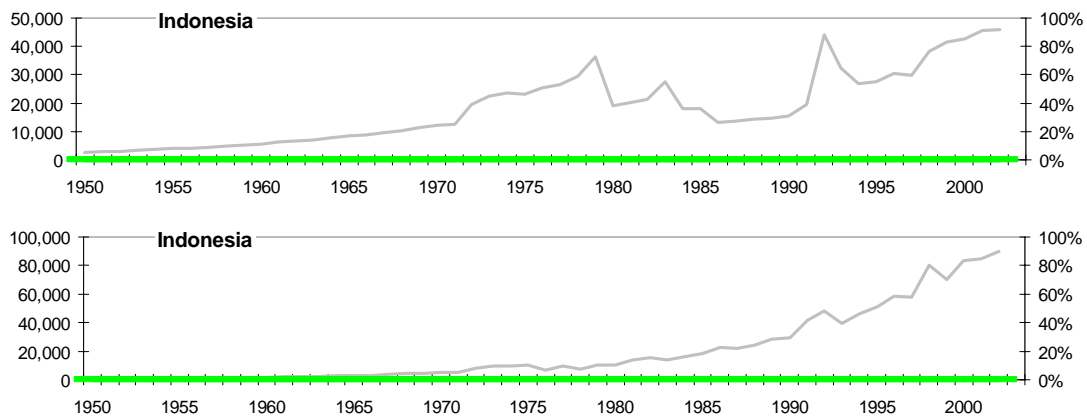


Figure 13. Coverage of SKIPJACK and YELLOWFIN catch and size composition data in the INDONESIAN “UNCLASSIFIED” FISHERY

APPENDIX 7. SUMMARY BY GEAR, 1999–2002

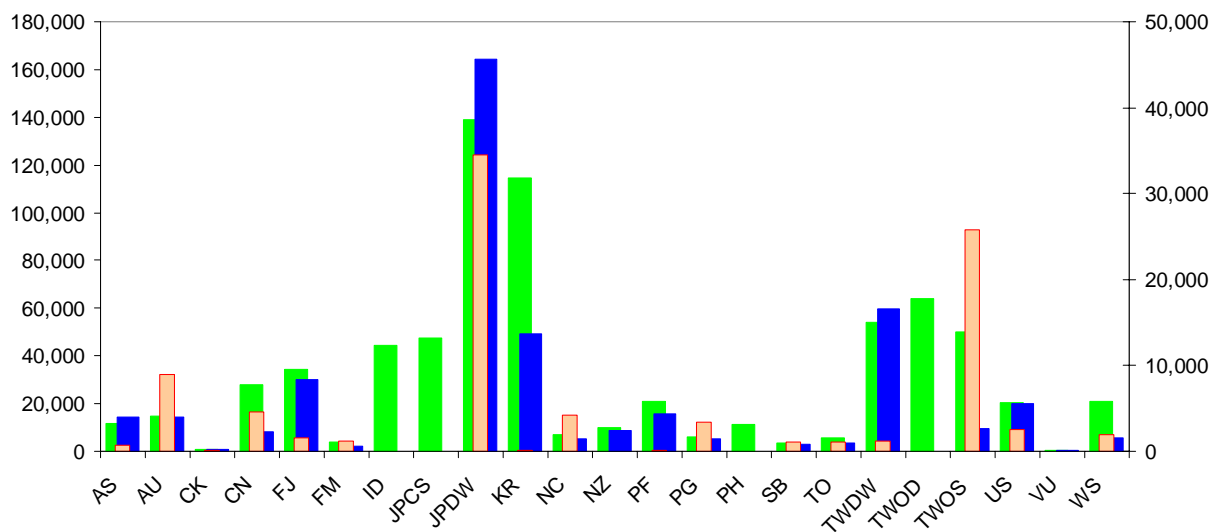


Figure 14. Coverage of target catch and size composition data in the WCPO LONGLINE FISHERY, 1999–2002

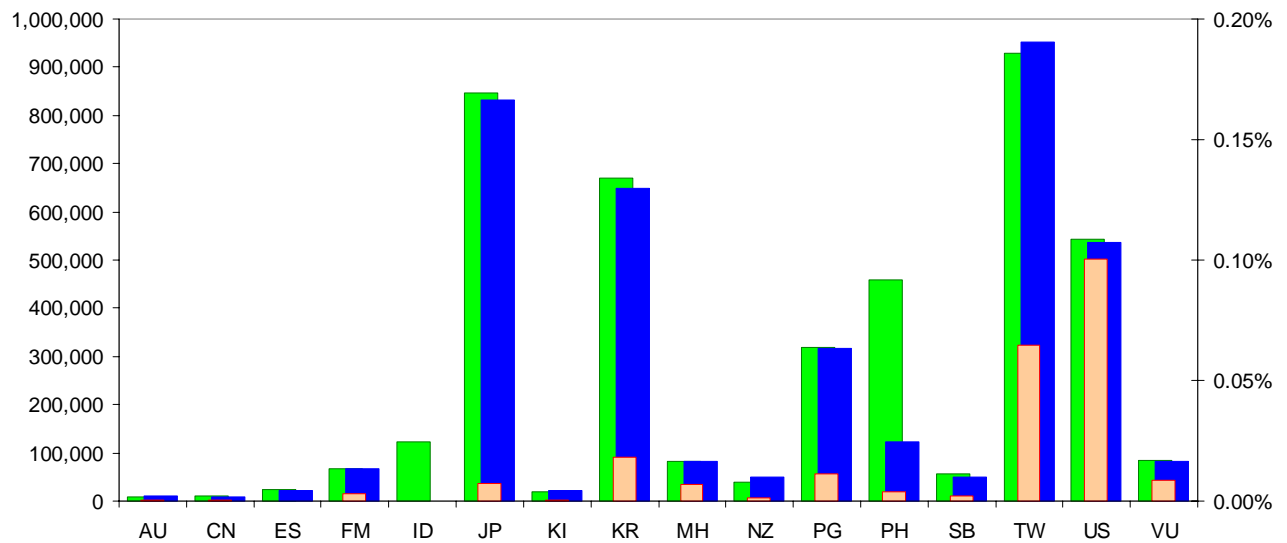


Figure 15. Coverage of target catch and size composition data in the WCPO PURSE SEINE FISHERY, 1999–2002

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