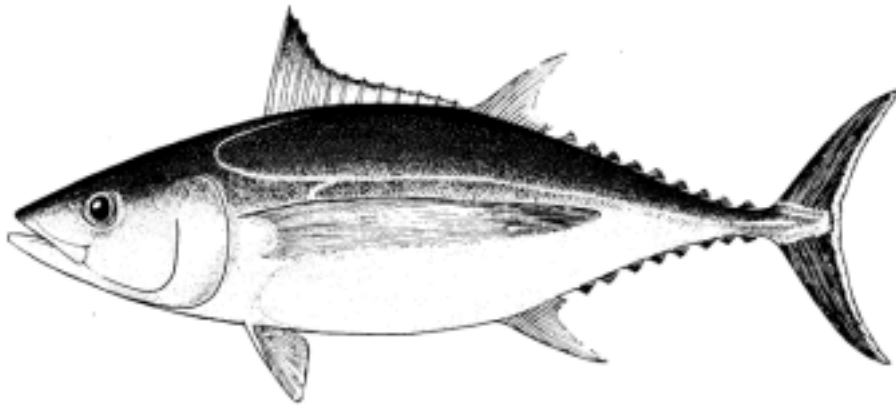




OVERVIEW OF ALBACORE FISHERIES IN THE SOUTH PACIFIC OCEAN – 2002



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1. Introduction

South Pacific albacore are exploited by a variety of longline fleets, by an international troll fleet operating seasonally in the region of the subtropical convergence zone (STCZ) and by a domestic troll fleet in New Zealand coastal waters. Longline fisheries targeting this species in several Pacific island countries have grown significantly in the past five years and now provide an important contribution to their nation's economy.

This paper provides a brief overview of the south Pacific albacore fisheries. Where possible, emphasis is made to catches taken during 2002 with comparison to catches taken in recent years.

2. Catch estimates

Historically, south Pacific albacore catches have generally fallen in the range 25,000–40,000 mt, although a significant peak was attained in 1989 (52,576 mt), when driftnet fishing was in existence. In more recent years, catches have steadily increased annually since the mid-1990s. A record catch (55,701 mt) was attained during 2001, mainly as a result of the significant catch from the longline fishery. The 2002 south Pacific albacore catch of 51,453 mt was the second highest in the post-driftnet period.

Throughout the 1990s, the **longline** catch in the South Pacific has been in the range of 24,000–40,000 mt, while the troll catch, for a season spanning November – April has been in the range 3,000–8,000 mt (Figure 1). The Taiwanese distant-water longline fleet has been the dominant fleet in this fishery for more than two decades, but there have been recent changes in the species and areas targeted by this fleet (more vessels are now targeting bigeye in the eastern equatorial waters of the WCPO), which has resulted in a reduced contribution to the overall albacore catch in recent years (Figure 2). In contrast, the longline albacore catch in several Pacific Island countries continue to increase (Figure 2). Fiji (8,026 mt–2002), Samoa (4,820 mt–2001), French Polynesia (4,557 mt–2002) and American Samoa (3,253 mt–2001) reported individual record catches of albacore during 2001 and 2002. The catch by Pacific-island countries now represents 50% of the total south Pacific albacore longline catch.

Less than 15% of the south Pacific albacore catch is usually taken east of 150°W (Figure 3). The WCPO albacore catch (114,511 mt in 2002) includes north Pacific catches (from the longline, pole-and-line and troll fisheries) and typically contributes around 80–90% of the Pacific catch of albacore.

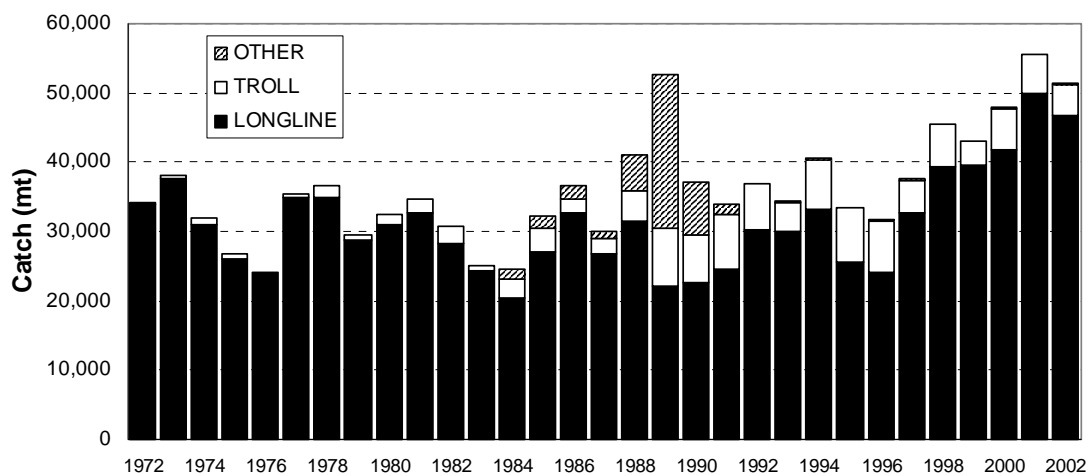


Figure 1. South Pacific albacore catch (mt) by gear ("Other" is primarily catch by the driftnet fishery.)

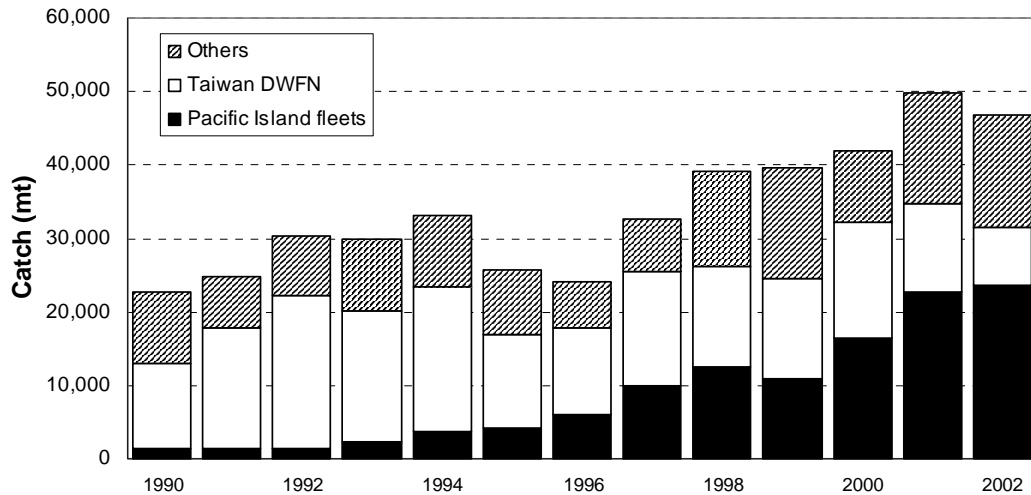


Figure 2. South Pacific albacore longline catch (mt) by fleet category

3. *Distribution of the catch*

The longline catch by DWFN fleets, primarily Taiwan and more recently several mainland Chinese vessels, is widely distributed in the South Pacific (Figure 3), but with catches concentrated in the western part of the region (west of 130°W). Catches by domestic longline fleets in Australia, the Cook Islands, Samoa, French Polynesia, Fiji, New Caledonia, New Zealand, Solomon Islands and Tonga, and the Japanese fleet east of Australia, also contribute significantly to this wide geographical catch distribution. Troll catches are distributed in New Zealand coastal waters, mainly in the South Island (New Zealand domestic fleet), and along the Subtropical Convergent Zone (STCZ) (mainly the US troll fleet).

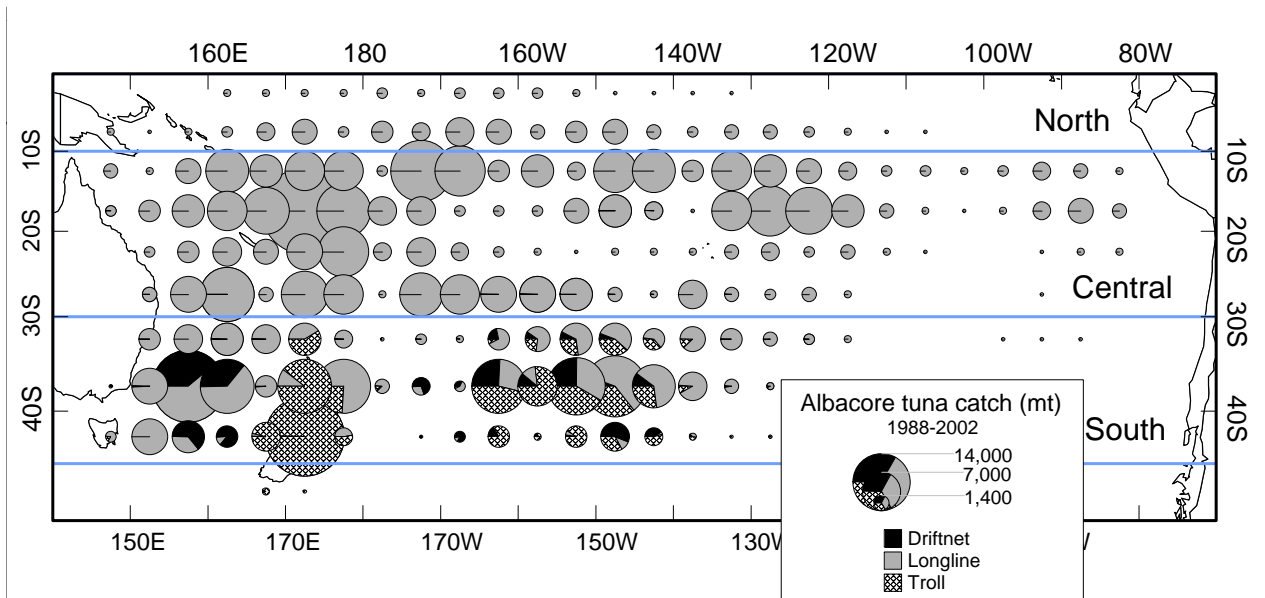


Figure 3. Distribution of south Pacific Albacore catch 1988–2002. The three-region spatial stratification used in stock assessment for the south Pacific is shown.

4. Catch per unit of effort

The key fishery indicators for south Pacific albacore are the nominal longline catch per unit effort (CPUE) and troll CPUE. For the longline fishery, data from the Taiwanese distant-water fleet (Figure 4) are generally used as this fleet has consistently targeted albacore over a long period of time. Longline CPUE (numbers of fish) is typically highest in the higher latitudes (STCZ and 30–50°S), moderate in the tropics and subtropics (10–30°S) and low near the equator (0–10°S). For each of the two main latitudinal areas (i.e. Central and South), longline CPUE has increased in the 1990s after a low point in 1989–1990. Since 1999, nominal CPUE has been relatively stable in the central area, and progressively increasing in the southern area. The drop in CPUE in the northern area during recent years is probably related to the significant increase in effort targeting bigeye (and yellowfin) in the waters north and east of French Polynesia.

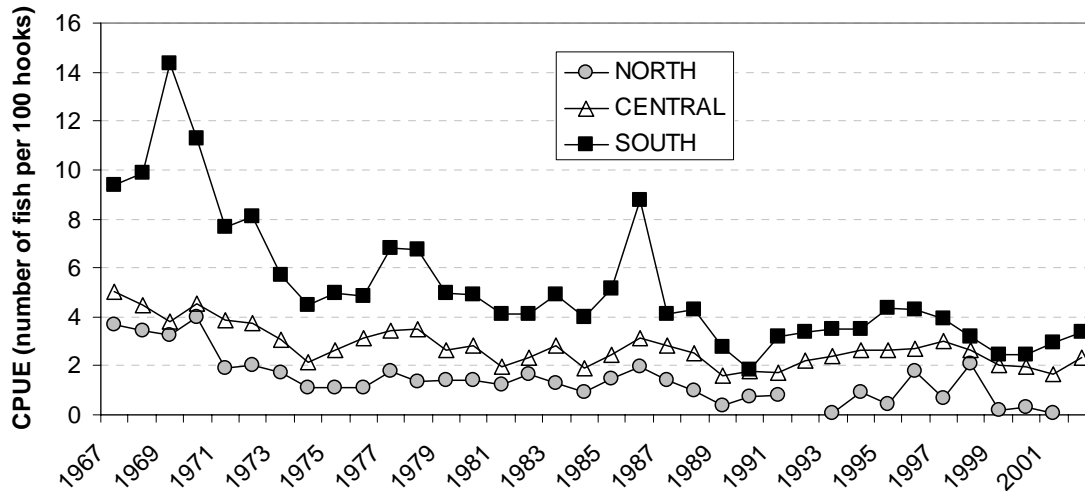


Figure 4. Nominal South Pacific albacore tuna CPUE (number/100 hooks) for Taiwanese distant-water longliners (2002 data are provisional). South = 30°–50°S, central = 10°–30°S, north = 0°–10°S.

Pacific Island countries now contribute 50% of the total south Pacific albacore catch. These fleets catch significant quantities of albacore while also targeting yellowfin and bigeye tuna, probably accounting for some of the variation in CPUE among these fleets (Figure 5). Most fleets tended to have higher catch rates in the years when they were becoming established (e.g. New Caledonian and Tongan during the early 1990s, and the Samoa and American Samoa in the mid-late 1990s). In more recent years, there appears to be some degree of convergence in catch rates amongst the French Polynesia, New Caledonia, Tonga and Fiji fleets. The CPUE trends for American Samoa and Samoa fleets are similar to each other but distinct to CPUEs for the other fleets in most years where data are available, suggesting some degree of spatial variation in the availability of albacore to the longline gear throughout the area fished by these fleets. A comprehensive review of the trends in albacore catch rates is provided in WP ALB-5.

The troll fishery CPUE for the New Zealand domestic fleet tended to increase during the 1980s, but has been relatively stable during the 1990s (Figure 6). CPUE for the US fleet operating in the STCZ is generally higher, but more variable, indicating possibly a greater impact of environmental variation on the ability of this fleet to locate and catch albacore. There has been some convergence in the CPUE of these fleets in recent years.

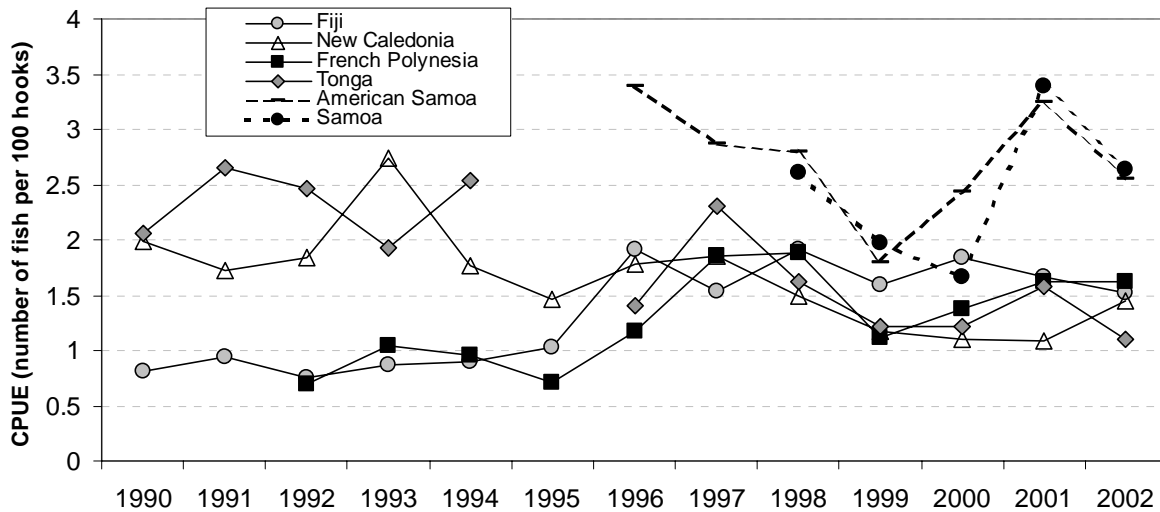


Figure 5. Nominal albacore CPUE (number/100 hooks) by Pacific Islands longline fleets

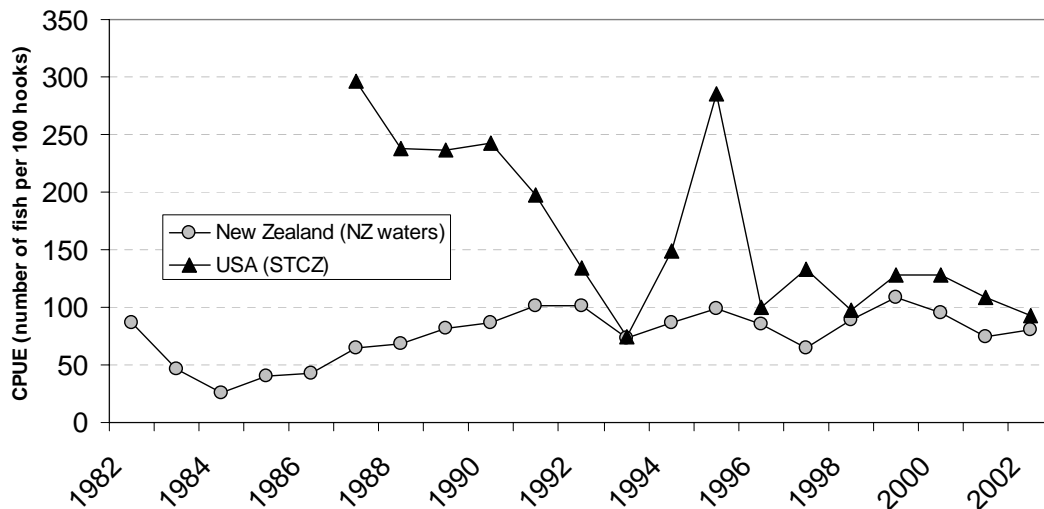
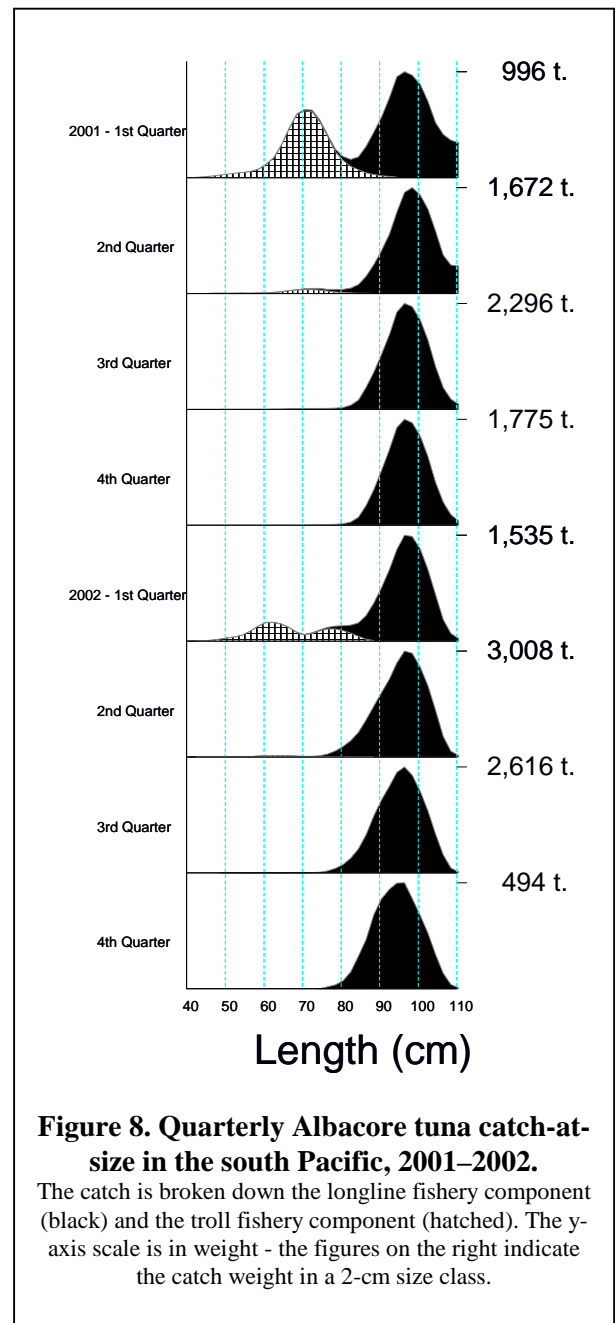
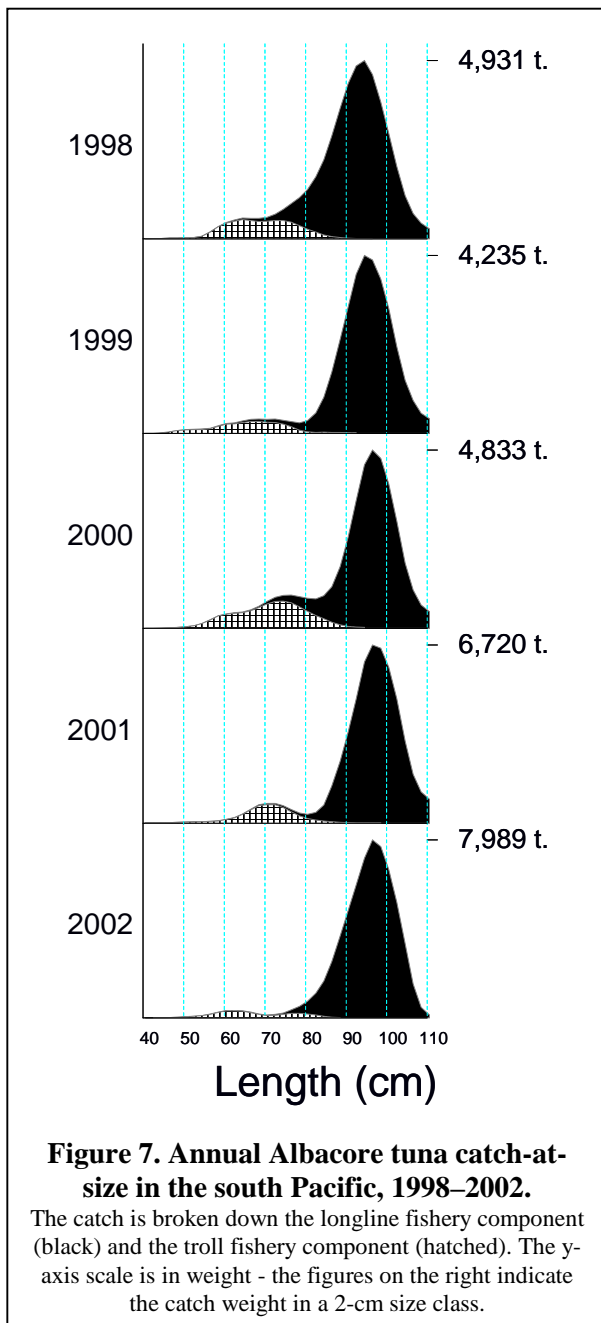


Figure 6. Nominal South Pacific albacore CPUE (number/day) for the New Zealand troll fleet (operating in NZ coastal waters) and the USA troll fleet (operating east of 180° along the STCZ)

5. *Size of fish caught*

Size composition data of South Pacific albacore are derived primarily from port sampling. Annual albacore catch-at-size graphs for south Pacific albacore fisheries for 1998–2002 are shown in Figure 7 and quarterly albacore catch-at-size graphs for south Pacific albacore fisheries for 2001–2002 are shown in Figure 8. Albacore from the troll fishery were measured from the catch of US troll vessels fishing in the sub-tropic convergent zone (STCZ) east of New Zealand waters. The troll fishery usually operates during the summer (January – March) and typically lands albacore between 45 and 80 cm FL. In the first quarters of some years (e.g. 2000), the troll catch can account for a significant proportion of the total south Pacific albacore catch (Figure 8).

Longline caught albacore are measured in various ports in the SPC region (e.g. American Samoa, Cook Islands, Fiji, French Polynesia, New Caledonia, Samoa and Tonga). Usually a single multiple-age class length mode is evident throughout the year. There is some evidence of overlap in the size composition of fish taken in both fisheries during the first quarters of 2001 and 2002 (Figure 8).



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- Lawson, T. A. (2003) Estimates of annual catches of target species in the western and central Pacific Ocean. Working Paper **SWG-2**. Sixteenth Meeting of the Standing Committee on Tuna and Billfish. Mooloolaba, Qld., Australia. 9th-16th July 2003.