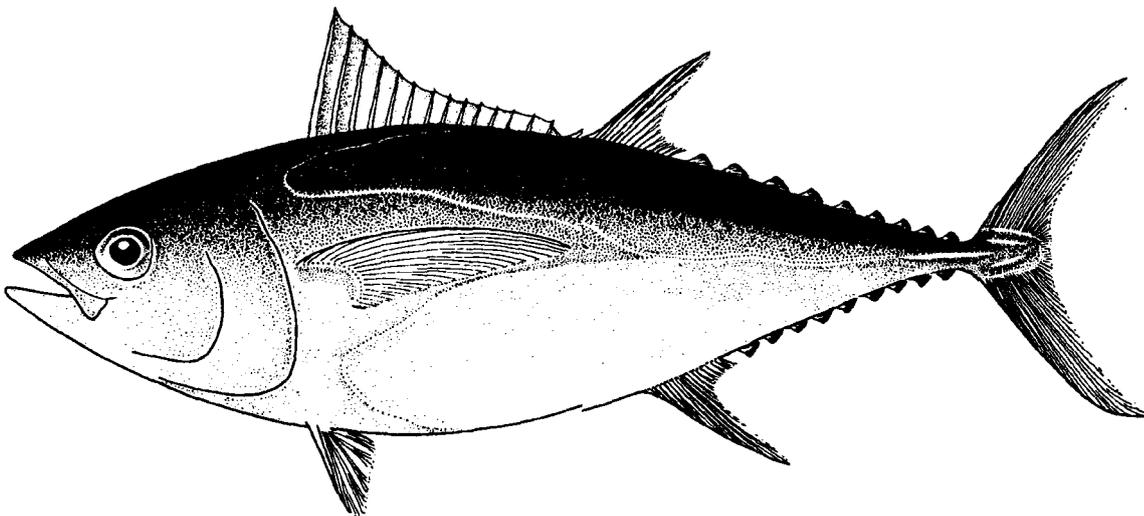




Guam's Small Boat Pelagic Fishery 1995-1999

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July 2000

Introduction

Pelagic fishing vessels based on Guam fall into two broad categories: 1) distant -water purse seiners and longliners that fish primarily outside Guam's EEZ and transship through Guam and 2) small primarily recreational trolling boats that are either towed to boat launch sites or berthed in marinas and fish only local waters, either within Guam's EEZ or occasionally in the adjacent EEZ of the Northern Mariana Islands. This report covers primarily the local small boat pelagic fishery. The data used in this report was collected by offshore creel sampling done by the Division of Aquatic and Wildlife Resources of Guam's Department of Agriculture. Technical assistance was provided by the Honolulu office of the National Marine Fisheries Service.

Fleet Structure

The approximate number of trolling boats in Guam's small boat pelagic fishery steadily increased from 276 boats in 1985 to 466 boats in 1996. This steady increase may have been due to Guam's booming economy during this period. Between 1996 and 1999, the number of boats engaged in trolling did not change significantly. Most of these trolling boats are less than 10 meters in length and are typically owner-operated by persons who earn a living outside of fishing. Most fishermen sell a portion of their catch at one time or another, and it is impossible to make a distinction between recreational, subsistence, and commercial fishers.

A small, but significant, segment of the pelagic fleet consists of marina-berthed charter vessels that are operated primarily by full-time captains and crews. Currently, there are approximately 20 charter boats that engage in trolling, making up less than 10% of the pelagic fishing fleet. Almost all charter fishing vessels depend exclusively on Asian tourists as a source of income.

Pelagic Trolling Trips

Except for rare instances, boats in Guam's pelagic fishery used the troll method. The number of trolling trips steadily increased from 1980, peaking in 1995. This coincided with the increased number of boats entering this fishery and the increase in charter trolling trips. Since 1995, the number of trolling trips decreased due to a significant decrease in the number of charter trips (See Figure 1). Between 1996 and 1999, the number of charter trolling trips decreased 45% due to the significant drop in the number of tourists as a result of the Asian economic crisis. Non-charter trolling trips have remained approximately the same since 1995.

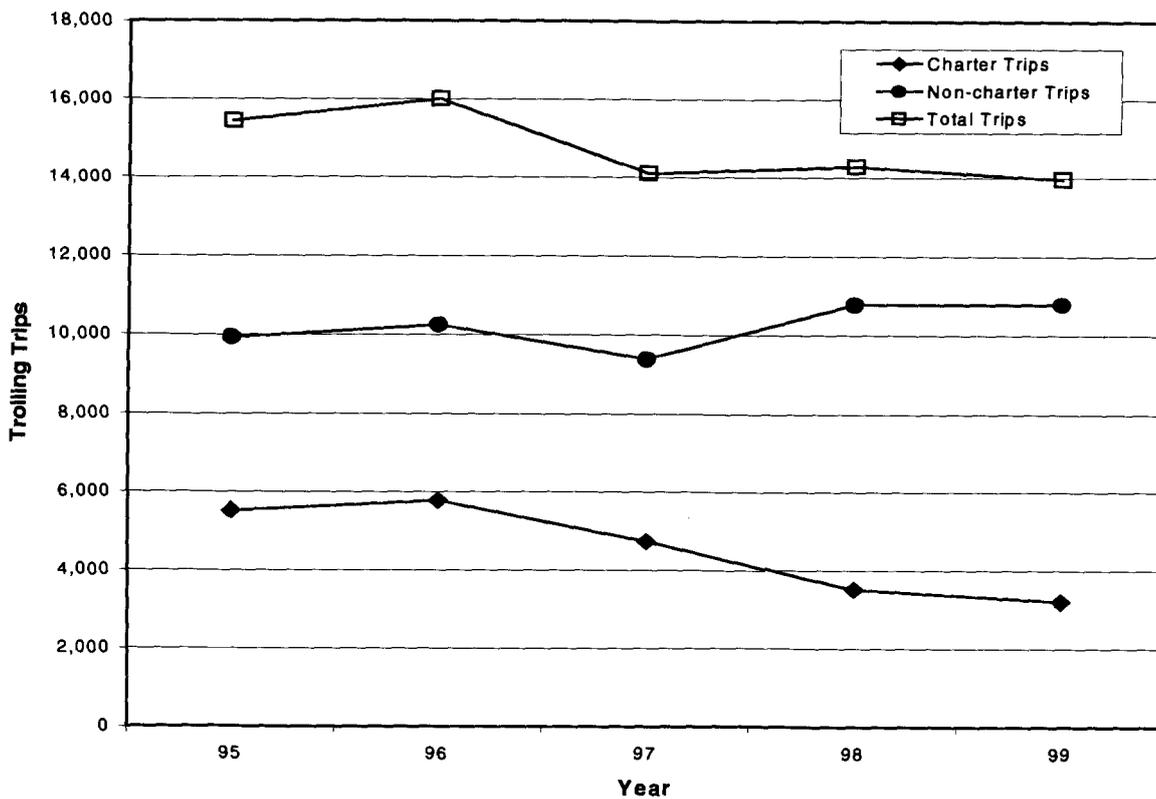


Figure 1: The number of Trolling Trips (See Table 3)

Pelagic Catch

In the early 1980's, the bulk of the pelagic catch consisted primarily of yellowfin and skipjack tuna. Beginning in 1985, non-tuna species began making up the bulk of the pelagic catch due to an interest in targeting blue marlin by charter boats, an increase in mahimahi landings, and a lack of interest in targeting skipjack tuna. Landings increased from approximately 250 metric tons in 1985, peaking in 1996 at 415 metric tons. Since then, the pelagic catch has been decreasing. Landings in 1999 decreased 33% compared with 1996 to 279 metric tons. Landings consist almost entirely of five major species, mahimahi (*Coryphaena hippurus*), wahoo (*Acanthocybium solandri*), skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), and Pacific blue marlin (*Makaira mazara*). With rare exception, these species are caught almost exclusively by the trolling method.

The pelagic fish caught by small boats is either kept for family and friends, or sold, primarily to three major fish vendors, enabling boat owners to recoup the cost of fishing. One major vendor will buy all fish caught by its members and allows members to purchase fuel and ice as payment.

There are wide year to year fluctuations in the landing of the various pelagic species (See Figure 2). Mahimahi and wahoo landings have shown long term extreme fluctuations since 1985, although mahimahi landings has steadily decreased since 1996. Compared with 1998, wahoo landings decreased from 71 metric tons to 39 metric tons in 1999, while mahimahi landings decreased from 115 metric tons to 68 metric tons in 1999. Blue marlin landings steadily increased since 1985 and peaked in 1990 at 90 metric tons due to increase targeting by charter boats during the summer months. However, blue marlin landings have been showing a slight decrease in landings since then. Blue marlin landings decreased 50% between 1997 (40 metric tons) and 1998 (20 metric tons), but increased to 35 metric tons in 1999. During the past five years, charter boats account for a significant portion of blue marlin landings, with 63% being harvested by charter boats in 1996. Yellowfin tuna landings show a general increase in landings since 1987, with 55 metric tons landed in 1999. Skipjack tuna landings increased and peaked at 110 metric tons in 1996, then show steady decrease with 55 metric tons harvested in 1999.

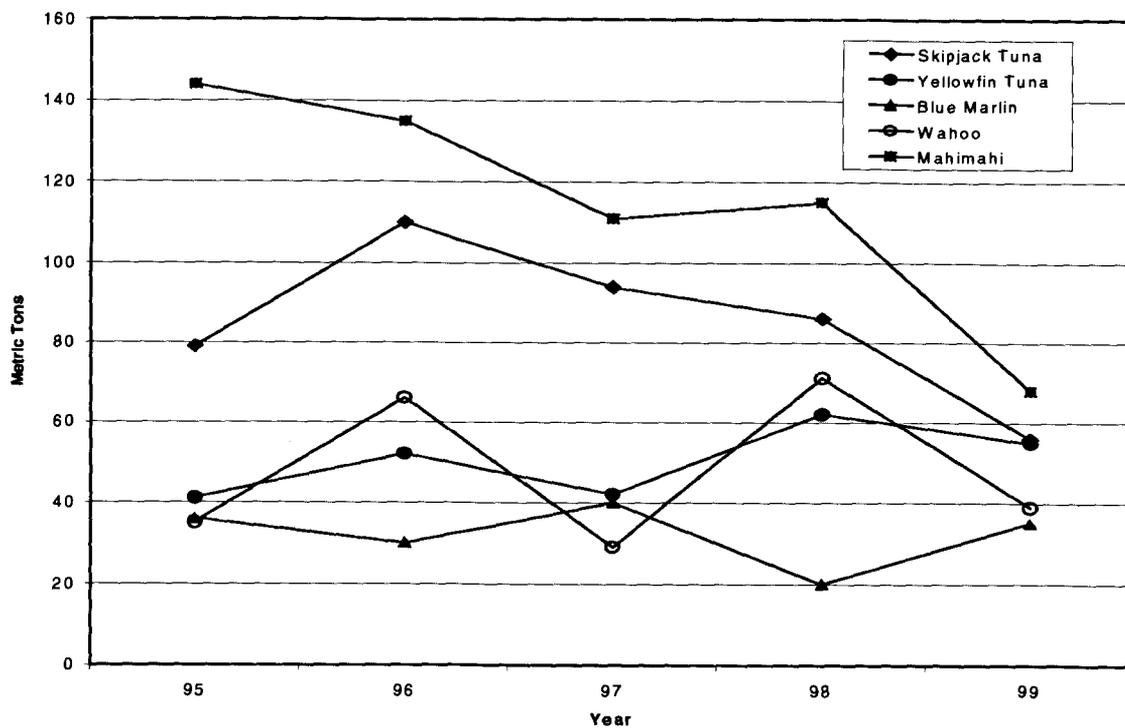


Figure 2: Total harvest of the Five major pelagic species (metric tons). See Table 1.

Catch Rate

The overall catch rate for pelagic fish show long term wide fluctuations since 1985. This is probably due to the high variability in the year to year abundance and availability of the stocks. Since it is not possible to allocate species-specific effort, effort used to target other species can result in artificially high or low catch rates for a given species.

The total catch rate for all pelagic species show a general increase since 1985, but has been showing a general decrease between 1995 and 1999 (See Figure 3). Mahimahi show wide fluctuations in CPUE since 1985, but has been showing a steady decrease between 1995 (2.51 kg/hr) and 1999 (1.25 kg/hr). Wahoo catch rates, too, show wide fluctuations in CPUE since 1985, and show slight overall increase in CPUE. The catch rate for wahoo decreased between 1998 (1.20 kg/hr) and 1999 (0.72 kg/hr) in 1999. Skipjack tuna show a general increase in CPUE since 1985, peaking in 1994 (approximately 1.8 kg/hr). Since 1996, however, the catch rate has been decreasing to 1.02 kg/hr in 1999. Yellowfin tuna show a slight overall increase in CPUE since 1985, with 1.01 kg/hr in 1999. Blue marlin CPUE steady increased from 1985, peaked in 1990 (approximately 1 kg/hr), then show a general decreased since then to 0.65 kg/hr in 1999.

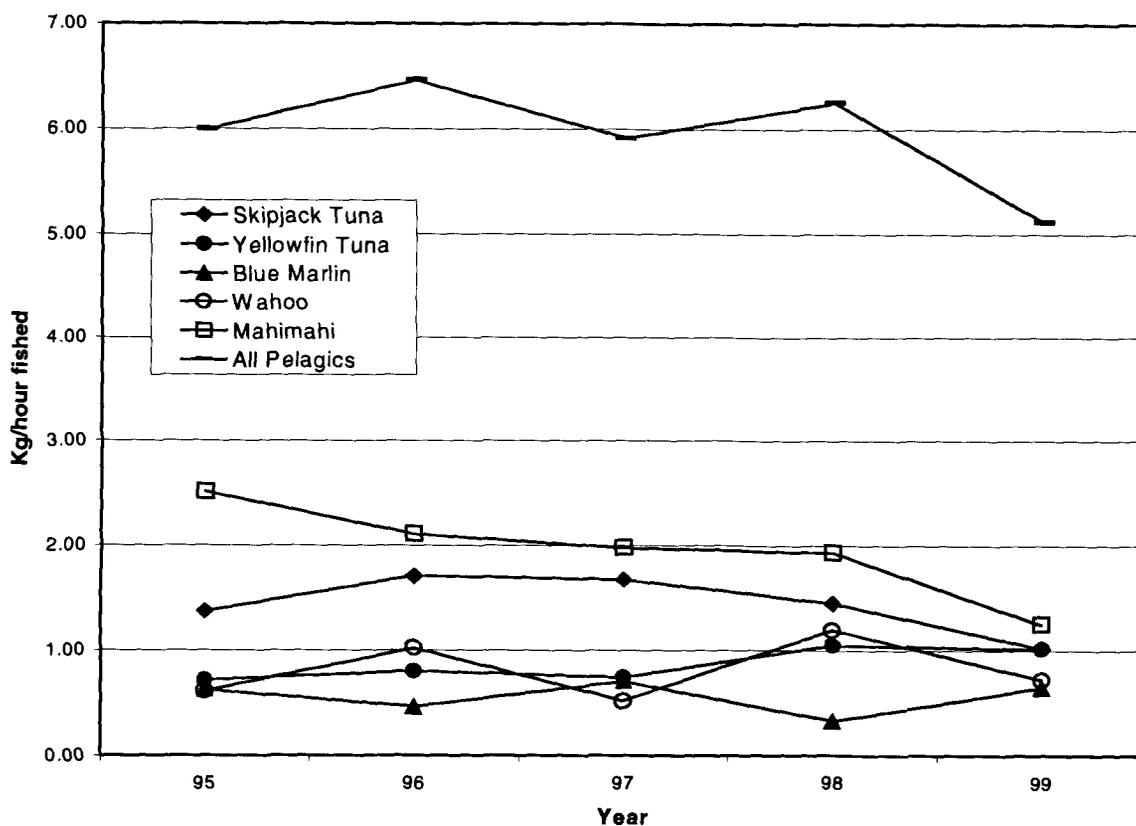


Figure 3: Catch Rate for Total Pelagics and the Five major Pelagic Species (See Table 2)

Foreign Longline Transshipment

Annual landings from a primarily foreign longline fishing fleet have ranged up to 15,278 metric tons in 1990 since transshipment began on Guam in the late 1980's. These vessels fish primarily outside of Guam's EEZ and tranship their fish from Guam. The majority of longline vessels are either Taiwanese and Japanese longline vessels, with up to 90% of their catch being bigeye and yellowfin tuna. The remaining catch consists of various marlin species and other pelagic fish.

Beginning in 1995, transshipment landings began decreasing due to climatic changes that negatively affected migrating pelagic fish stocks to the region. An increase both 1998 and 1999 longline landings could reflect a reversal of those climatic changes.

Most of this fish brought in by foreign longliners is transshipped out of Guam. However, a percentage of fish classified as "rejected" fish is either kept on Guam for storage for later shipment to canneries, sold on Guam, given out, or destroyed. In 1996, the Department of Commerce estimated that approximated 5% of the "rejected" fish entered

the local market. Current regulations allow for this fish to enter the local market, but only as value-added or processed fish.

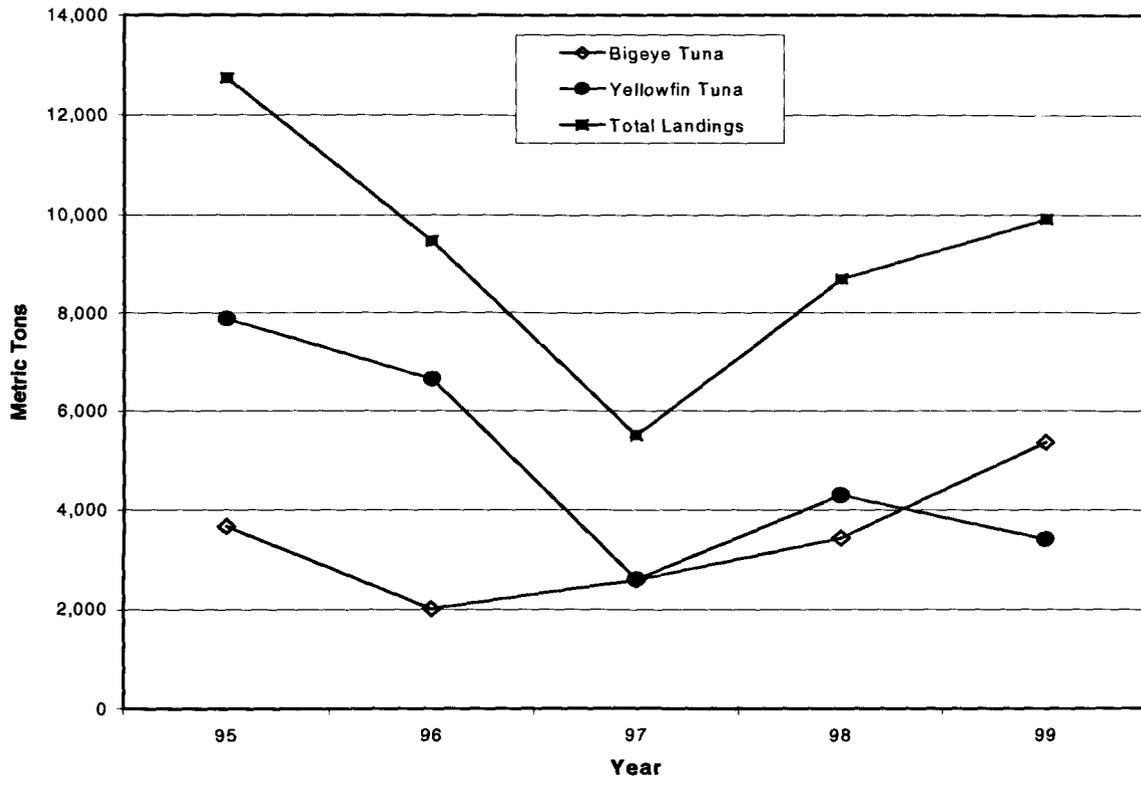


Figure 4: Annual Guam longline landings from foreign longliners (See Table 4)

Tables Used for Figures

Table 1: Landings of Five Major Pelagic Species

	95	96	97	98	99
Skipjack Tuna	79	110	94	86	56
Yellowfin Tuna	41	52	42	62	55
Blue Marlin	36	30	40	20	35
Wahoo	35	66	29	71	39
Mahimahi	144	135	111	115	68
Total Pelagic	343	415	331	371	279

Table 2: Catch per Unit Effort (kg/hr fished)

	95	96	97	98	99
Skipjack Tuna	1.33	1.71	1.67	1.45	1.02
Yellowfin Tuna	.72	.80	.75	1.05	1.01
Blue Marlin	.63	.47	.71	.33	.65
Wahoo	.61	1.02	.52	1.20	.72
Mahimahi	2.51	2.11	1.98	1.93	1.25
All pelagic	5.99	6.46	5.91	6.25	5.12

Table 3: Number of Trolling Trips

	95	96	97	98	99
Charter Boats	5,514	5,772	4,732	3,510	3,193
Non-charter boats	9,920	10,236	9,369	10,770	10,772
All Boats	15,434	16,007	14,101	14,280	13,965

Table 4: Annual Landings from Foreign Longliners

	95	96	97	98	99
Bigeye Tuna	3,658	4,289	2,587	3,430	5,360
Yellowfin Tuna	7,872	6,653	2,600	4,289	3,404
Total Longline Landings	12,733	9,460	5,503	8,686	9,902