Appendix 1

American Samoa

CONTENTS

Summary

American Samoa's bottomfish fishery was relatively bigger between 1982 and 1986 than in recent years (Figure 1). This observation reflects a trend in the loss of skilled and full-time commercial fishermen from the fishery, the gradual depletion of newly discovered banks (e.g., 2% Bank), the shift of preference from bottomfishing to trolling and, recently, the diversion of effort by the highliner bottomfish fishermen towards longlining. The December 1992 hurricane contributed to the low 1992 landings (Figure 1) and the lowest number of trips recorded for the period 1982-1997 (Figure 3). A gradual increase in landings and revenues since 1998 converses the associated decrease in prices for the same period. A 290% increase in bottomfish exported from western Samoa contributed to the low market prices last year and again this year.

During 2003, a total of 19 local boats landed an estimated 26,200 pounds of bottomfish in the territory. Revenues for the domestic commercial fishery this year was estimated around $25,000 with all catch being sold locally. The CPUE for 2003 (16.2 lb/hr) was the highest since 1989 and also not less than 50% of the aggregate CPUE for the first 3 years of this fishery. Effort (hours and trips) has been increasing since 1998 as some of the Alias that normally troll and/or longline perform bottomfishing when trolling and longline prices and catches decline. Overall average prices slightly dropped this year but prices for Lehi and Opakapaka increased mainly due to their demand by relatively new restaurants.

Regarding some of the SFA amendments: ***Commercial*** Bottomfish Landings and Revenues statistics for American Samoa is presented in Figure 2. No bottomfish ***Recreational*** trip was recorded this year. **Recreational** fishing is more associated with the pelagic fisheries and usually never occur in this fishery. There was no ***chartered*** bottomfish trip during this year and no **bottomfish by catch was recorded this year (Table 3).** In the *Preliminary Draft of EFH, Amendment for Bottomfish, WPRFMC Feb.1998,* **the approximate MSY estimate for American Samoa** [196 nautical miles 100-fathom isobath] is estimated at 79,000 lbs. per year. Only about 40% was reached this year.

Indicators derived from current data do not dictate immediate management response at this time.

The following selected annual statistics dating back to 1982 provides a brief historical snapshot of American Samoa's bottomfish fishery

Selected Historical Annual Statistics

Year	Total Landings (lb)	CPUE (lb/trip-hr)	Adjusted Revenue	Adjusted Price/Lb.	CPI	Number of Boats
1982	64942	8.5	$202006	$3.25	100.0	27
1983	126327	10.0	$474662	$3.79	100.8	38
1984	94104	10.7	$288766	$3.11	102.7	48
1985	143225	8.1	$242522	$2.37	103.7	47
1986	91533	8.3	$194769	$2.14	107.1	37
1987	31232	11.9	$72375	$2.35	111.8	21
1988	63136	17.3	$149971	$2.48	115.3	32
1989	47646	16.7	$82873	$2.28	120.3	33
1990	14303	9.2	$28492	$2.28	129.6	24
1991	18665	9.1	$39064	$2.21	135.3	23
1992	13374	9.3	$35222	$2.65	140.9	14
1993	17584	7.3	$38535	$2.46	141.1	26
1994	45105	7.7	$96157	$2.31	143.8	25
1995	34945	9.8	$71476	$2.07	147.0	35
1996	38522	14.8	$80620	$2.13	152.5	35
1997	39882	14.7	$94010	$2.46	156.4	37
1998	15884	14.0	$40063	$2.78	158.4	30
1999	19385	12.9	$47395	$2.78	159.9	34
2000	28270	10.2	$58667	$2.24	166.7	38
2001	48862	15.2	$96913	$2.51	168.8	29
2002	41859	7.6	$83325	$2.23	169.2	17
2003	26239	16.2	$25012	$1.99	177.5	19
Averages	48410	11.3	$115586	$2.49		30.4
Std. Dev.	35177	3.2	$105730	$0.42		8.73

Introduction

Bottomfishing utilizing traditional canoes by the indigenous residents of American Samoa has been a subsistence practice since the Samoans settled into the Tutuila, Man'ua and Aunu'u islands. It was not until the early 1970's that the bottomfish fishery developed into a commercial scheme utilizing motorized boats. A government subsidized program, called the Dory Project, was initiated in 1972 to develop the offshore fisheries into a commercial venture, and resulted in an abrupt increase in the fishing fleet and total landings. In 1982, a fisheries development project aimed at exporting high-priced deep-water snappers to Hawaii caused another notable increase in bottomfish landings and revenues. Between 1982 and 1988, the botttomfish fishery comprised as much as 50% (by weight) of the total commercial landings. Beginning in 1988, the nature of American Samoa's fisheries changed dramatically with a shift in importance from bottomfish fishing towards trolling. In the past eight years, the dominant (by weight of fish landed) fishing method has been longlining.

During the early 1980's, fisheries data was collected from the bottomfish fishery by interviewing only commercial vessels. In the current Offshore Creel Survey on Tutuila that started on October 1, 1985, commercial, subsistence and recreational domestic fishing boats landing catch in five designated areas were interviewed and their catch recorded. For two weekdays and one weekend/holiday per week, DMWR technicians normally sampled offshore trips between 0500 and 2100 hours. In the past three years, the sampling period was increased to cover boats that come in earlier or after the normal sampling period. Two DMWR samplers based on Tau and Ofu collect fisheries data from the Manu'a islands fleet.

Boat-based fishing in American Samoa used to be mainly trolling and/or bottomfish. In the past six years, record longline landings were recorded with revenues around the one million-dollar mark. Bigger foreign boats are entering the local fisheries but these are rigged for longlining and more of these are expected to enter the territory's longline fishery. Limited entry options have been initiated to check this increase.

The bottomfish fishery of American Samoa was typically commercial overnight bottomfish handlining using skipjack as bait, on 28-30 foot aluminum/plywood Alias. Lower quality bottomfish imported from western Samoa helps satisfy the demand for bottomfish but at the same time result in unattractive prices for local bottomfish fishermen. The adverse effects of three hurricanes that struck American Samoa in 1987, 1990 and 1991 can be seen in some of the trends in the fishery as depicted by the data in this report.

Recent changes in the fishery and improvements in the Offshore Creel Survey necessitates modifications to algorithms used to process the data for this report. Hence the continuous improvements to DMWR's data processing systems by WPacFIN staff.

Recommendations

2002 Recommendation:

1. DMWR biologists should further investigate the low CPUE recorded this year

Status of 2002 Recommendation:

1. DMWR has hired a biologist and is currently investigating the issue at hand.

2003 Recommendation:

1. DMWR should enhance internal development through training for staff in order minimize chances of misidentification.
2. Incorporate market data from Market surveys into the database.
3. Include Import data from Western Samoa into the database for further enhancement of this report.

Table 1. **American Samoa 2003 Estimated Total Bottomfish Landings by Species.**

Interpretation: Changes in species composition of the bottomfish complex reported in the past are due to samplers' varying ability and commitment to the identification of the various bottomfish species. Historical and current data and observations however, do not indicate any major changes in the composition of the bottomfish species landed.

Source: DMWR Offshore Creel

Calculation: Catches are normally weighed by species either at landing sites or during the selling of fish to stores and restaurants. Trips missed by the Creel Survey are accounted for in a separate data collections system – the Commercial Invoice System. This analysis, as in the past, is for the Offshore Creel Survey catch only. Analysis of the bottomfish fishery presented in this report is for the whole bottomfish complex and **not just for the BMUS.**

Species	Pounds
BMUS	
Blue lined snapper	2519
Ehu (squirrelfish snap.)	868
Gindai (flower snap)	115
Gray jobfish	910
Hawaiian opakapaka	743
Lehi (silverjaw)	503
Onaga (longtail snapper)	850
Yellowtail snapper	65
Blacktip grouper	104
Lunartail grouper	6169
Redgill emperor	71
Black Jack	502
BMUS SUBTOTALS	**13419**
OTHER	
Blood snapper	7
Blue lined gindai	63
Humpback snapper	2861
Kusakar's snapper	102
Onespot snapper	29
Pristipomoides/Etelis	453
Rufous snapper	90
Stone's snapper	209
Twinspot/red snapper	152
Yellow opakapaka	288
Groupers (misc)	99
Flagtail grouper	44
Peacock grouper	11
Smalltooth grouper	120
Striped grouper	63
Tomato grouper	303
Emperors (misc)	5782
Bigeye squirrelfish	75
Orangespot emperor	77
Longnose emperor	958
Jacks (misc)	986
Bigeye trevally	30
Whitemouth trevally	18
OTHER SUBTOTALS	**12820**
TOTAL BOTTOMFISH	**26239**

Table 2. American Samoa 2003 Estimated Commercial Landings by Species.

Species	Pounds	Price/Lb.	Value
BMUS			
Blue lined snapper	1917	$1.90	$3639
Ehu (squirrelfish snap.)	391	$2.39	$935
Gindai (flower snap)	55	$1.85	$102
Gray jobfish	442	$2.11	$934
Hawaiian opakapaka	743	$1.76	$1304
Lehi (silverjaw)	296	$2.50	$739
Onaga (longtail snapper)	415	$2.57	$1066
Yellowtail snapper	61	$2.50	$152
Blacktip grouper	39	$2.50	$98
Lunartail grouper	470	$2.08	$976
Redgill emperor	71	$2.21	$158
Black Jack	177	$2.28	$403
BMUS SUBTOTALS	**5077**	**$2.07**	**$10505**
OTHER			
Blood snapper	7	$2.10	$14
Humpback snapper	2475	$1.71	$4234
Onespot snapper	20	$2.50	$50
Pristipomoides/Etelis	443	$3.00	$1329
Rufous snapper	28	$2.50	$71
Yellow opakapaka	224	$3.75	$842
Groupers (misc)	84	$1.25	$106
Flagtail grouper	24	$2.50	$61
Smalltooth grouper	32	$2.50	$80
Striped grouper	19	$2.50	$47
Tomato grouper	134	$2.31	$309
Emperors (misc)	2425	$1.75	$4253
Bigeye squirrelfish	19	$2.39	$46
Orangespot emperor	77	$2.00	$154
Longnose emperor	824	$1.90	$1567
Jacks (misc)	647	$2.08	$1346
OTHER SUBTOTALS	**7482**	**$1.94**	**$14507**
TOTAL BOTTOMFISH	**12559**	**$1.99**	**$25012**

Interpretation: There appears to be no major changes in the prices of individual species in the past eight years. DMWR keeps track of fish prices for imported fish and those missed by the Offshore Creel Survey through a separate data collection system – the Commercial Invoice System. Data from that data processing system reveals that since 1992, the average price of bottomfish imported from western Samoa were lower than locally caught bottomfish. Locally caught bottomfish are of much superior quality than those imported from western Samoa (and previously from Tonga) because of better handling and affordable ice. Local fishermen, therefore, expect comparatively higher prices for their local bottomfish. Unfortunately, there has been a decrease in prices since 1998

Source: DMWR Offshore Creel Survey and Commercial Invoice System

Calculation: During creel surveys, the disposition of the catch is recorded, and if sold, the price is obtained whenever possible. The average prices reported in this table are calculated by dividing the total revenue by the weight sold in pounds for each species.

Table 3. American Samoa 2003 Bottomfish Bycatch

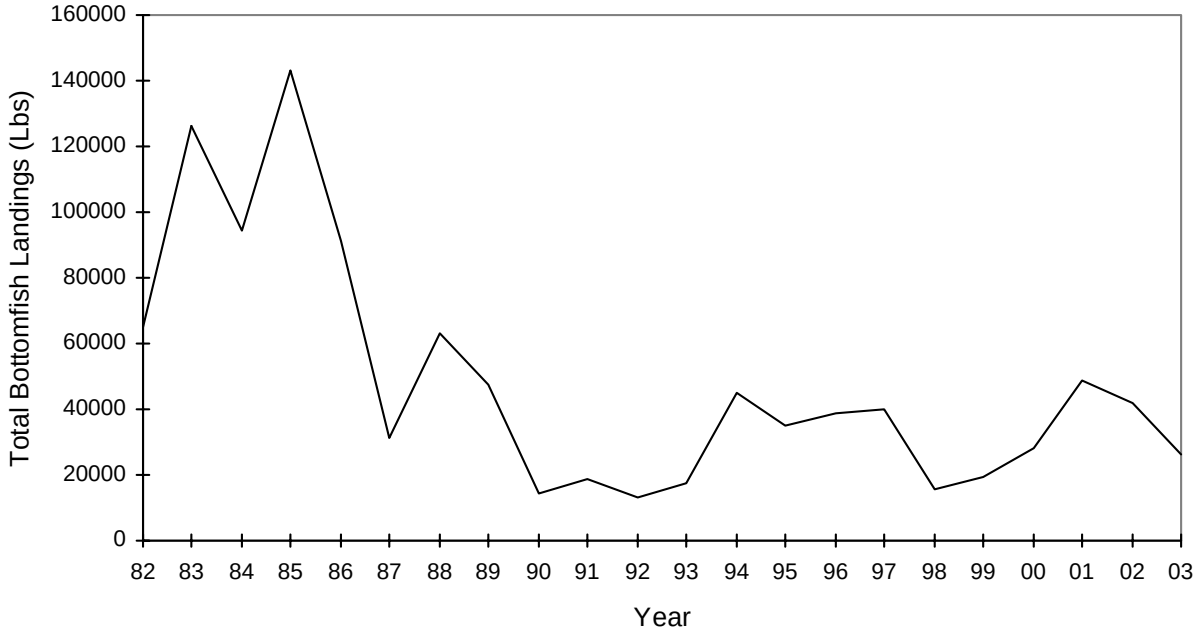
	Bycatch						Interviews		
Species	Alive	Dead Inj	Unk	Total	Catch	%BC	With BC	All	%BC
Other Sharks	0	1	0	1	2	50.00			
All Species (Comparison)					7721	0.013	1	535	0.19

Interpretation: Only one shark was caught as bycatch by bottomfishing representing 50% of the total sharks caught by bottomfishing and 0.013% of the total bottomfishing catch.

Source: DMWR Offshore Creel Survey

Calculation: The Bottomfish Bycatch table is obtained from creel survey interviews. The Bycatch numbers are obtained by counting fish in the interviews for purely bottomfishing trips with a disposition of bycatch. The catch for all species included for comparison is obtained by counting all species of fish caught by purely bottomfishing interviews and the number of interviews is a count of purely bottomfishing interviews

Figure 1. American Samoa Total Bottomfish Landings



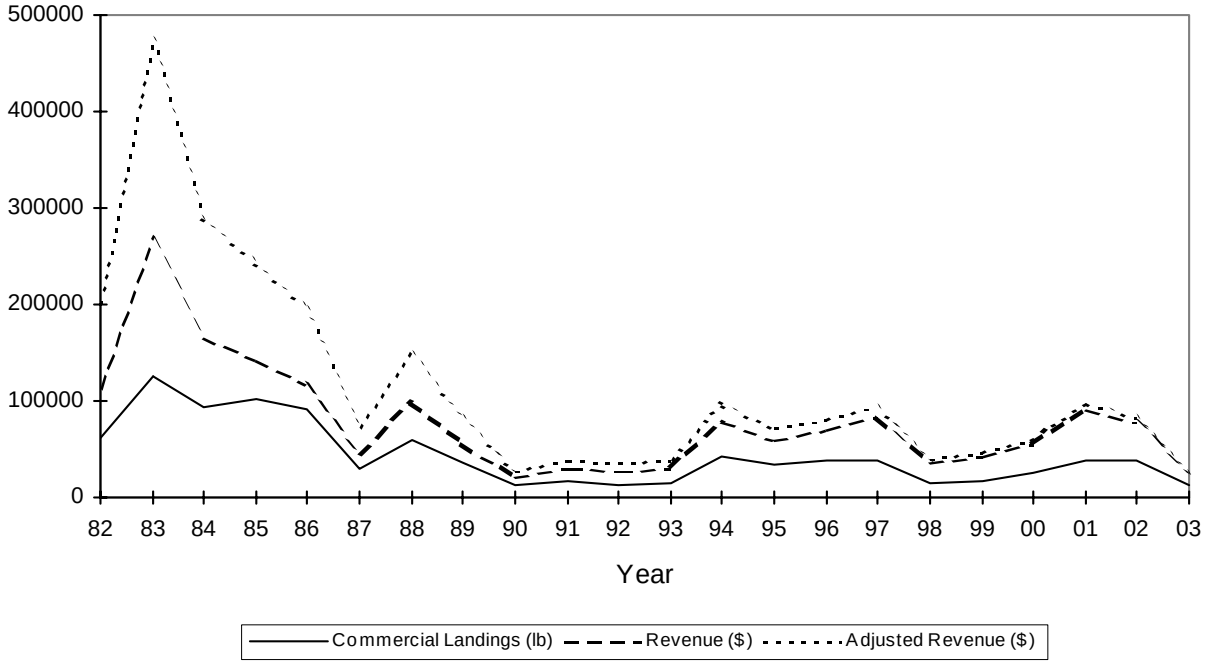
Interpretation: The substantial decline in landings in 1987 and 1990 were partially due to vessel losses caused by two hurricanes. Boat repairs were delayed as fisherman repaired or rebuilt their houses. In terms of total landings, the bottomfish fishery is much smaller in recent years than it was any time between 1982 and 1986, a period when there was a relatively large fleet and fishermen were attracted to the profitable bottomfish export program that exported deep-water snappers to Hawaii. The increase in 1994 was due primarily to improved sampling on Tutuila and increased efforts by the Tutuila highliners. Furthermore, the Manua landings more than tripled due to social/cultural events during the year. The 1998 decline mirror the 33% decrease in the number of boats participating. However, the continuous popularity in the longline fishery and some fishermen exiting the bottomfishery could have contributed to the continuous decrease in landings this year compared to recent years

Source: DMWR Offshore Creel Survey Database

Calculation: Bottomfish landings for 1982-84 were calculated by adjusting the sampled Tutuila data by the calculated annual percent coverage of the fleet, and then adding the similarly adjusted Manu'a landings. The landings from 1986 to Present were calculated by expanding the Offsfore Creel Survey Data for Tutuila for the species listed in Table 1. The sampled Manu'a landings were adjusted by adjusting for the monthly perecent coverage of the fleet and added to the Tutuila data. Since the Offshore Creel Survey started in October 1, 1985, The first nine month of the 1985 landings were calculated as it was in 1982-84 and the last three months of the 1985 landings were calculated as it is now.

Year	Landings(lb)
1982	64942
1983	126327
1984	94104
1985	143225
1986	91533
1987	31232
1988	63136
1989	47646
1990	14303
1991	18665
1992	13374
1993	17584
1994	45105
1995	34945
1996	38522
1997	39882
1998	15884
1999	19385
2000	28270
2001	48862
2002	41859
2003	26239
Average	48410
Std. Dev.	35177

Figure 2. American Samoa Estimated Commercial Bottomfish Landings



Interpretation: Commercial landings mirror the total fishery's low catches in recent years compared to the robust 1982-1986 period. Relative to total landings, commercial landings decreased even more substantially in 1989, because the percent of the catch sold by bottomfish fishermen dropped from an average of about 97% in 1982-88 to 78% in 1989. The peak in 1983 portrays the high prices of deep-water snappers exported to Hawaii, while the trough in 1987 can be attributed to effects of the 1987 hurricane. The December 1991 hurricane contributed largely to the decreased landings and subsequently a decrease in revenues in 1992. Unfavorable weather continued through May 1992 hindering commercial bottomfish trips. Increased efforts in 1994 produced a notable increase in revenues and no major changes in commercial landings have been recorded since

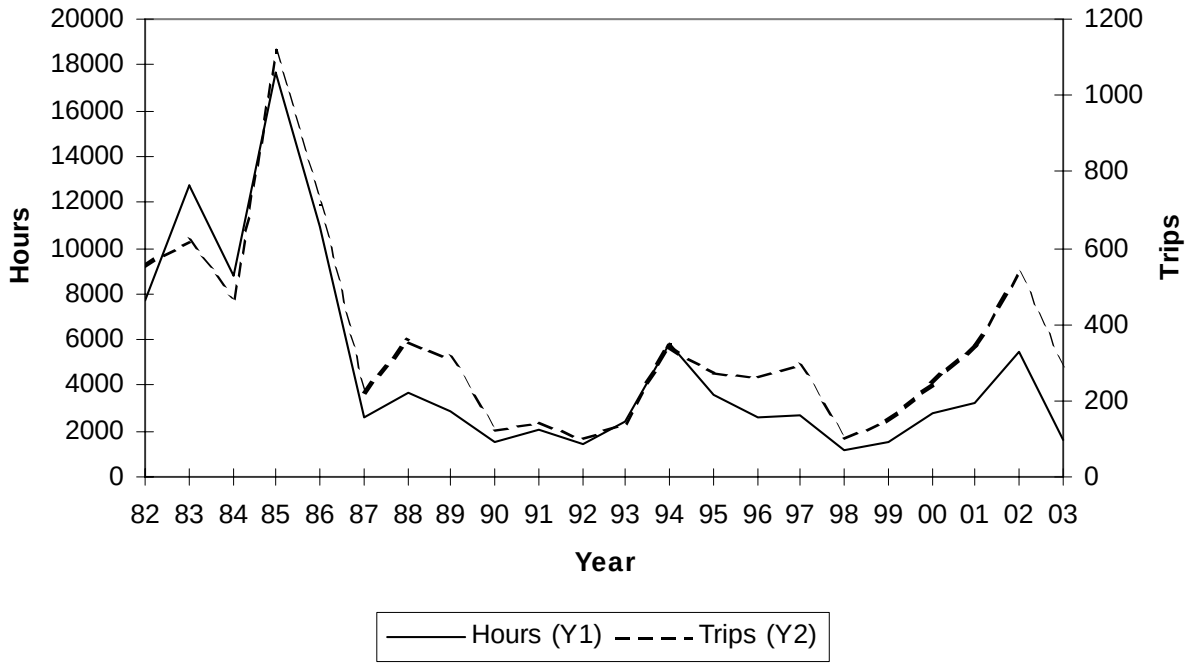
Year	Commercial Landings (lb)	Revenues	CPI Adj.	Adjusted Revenue
1982	62016	$113678	1.777	$202006
1983	125167	$269083	1.764	$474662
1984	92841	$166917	1.730	$288766
1985	102670	$141495	1.714	$242522
1986	90775	$117331	1.660	$194769
1987	30740	$45519	1.590	$72375
1988	60388	$97258	1.542	$149971
1989	36330	$56033	1.479	$82873
1990	12535	$20752	1.373	$28492
1991	17736	$29729	1.314	$39064
1992	13322	$27932	1.261	$35222
1993	15657	$30584	1.260	$38535
1994	41552	$77797	1.236	$96157
1995	34487	$59120	1.209	$71476
1996	37911	$69202	1.165	$80620
1997	38357	$82683	1.137	$94010
1998	14405	$35707	1.122	$40063
1999	17070	$42621	1.112	$47395
2000	26211	$54983	1.067	$58667
2001	38647	$92035	1.053	$96913
2002	37390	$79281	1.051	$83325
2003	12559	$25012	1.000	$25012
Average	43580	$78852		$115586
Std. Dev.	31620	$56632		$105730

then. The observed increase in bottomfish participation is reflected in the continuous increase in landings (and consequently increases in revenues) since 1998. However a dramatic drop in commercial landings this year could have been due to a more subsistence driven fishery rather than a commercial fishery.

Source: DMWR Offshore Creel Survey Database

Calculation: A relatively complex set of algorithms are used to estimate the commercial landings from estimates of total landings created by the creel survey data expansion system. In short the percent sold by species and by fishing method is calculated annually and multiplied by the estimated total landings by that method for that year. For 1982-85 sampling was conducted on the commercial fleet only (which included nearly all of the fishing boats), whereas since the 1985 creel sampling has covered all boats (commercial and recreational). Analysis of creel data for 1986-87 indicates that over 98% of the landed bottomfish was being sold. Therefore is it believed to be valid to compare commercial data for years prior to 1986 to creel survey totals for years since 1986.

Figure 3. American Samoa Estimated Bottomfish Hours and Trips



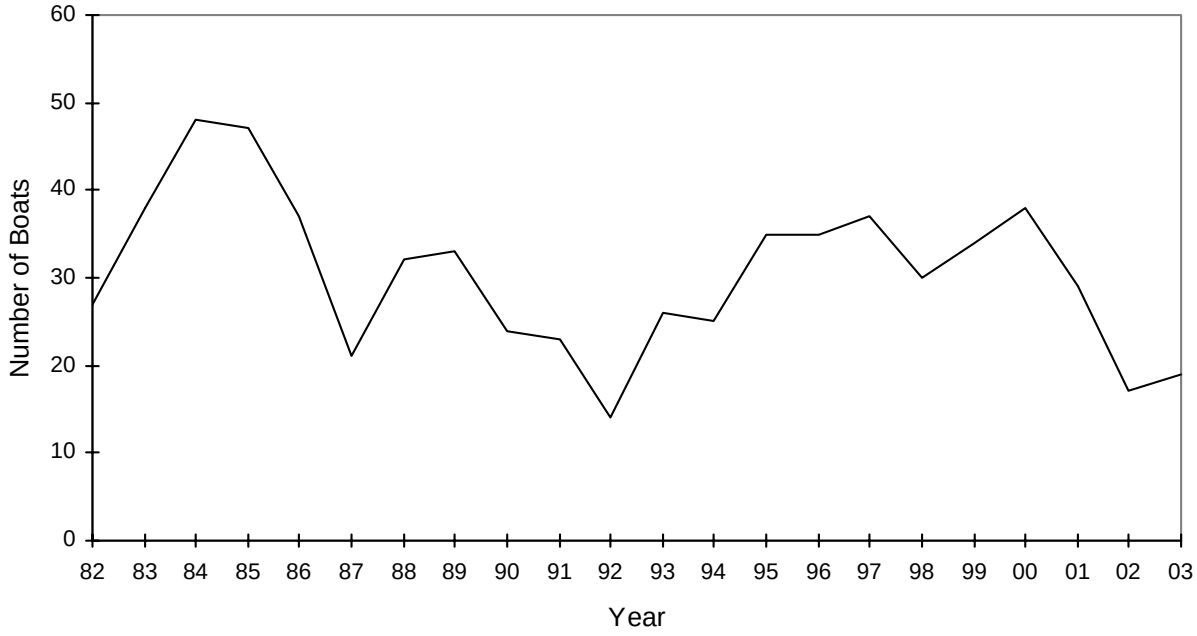
Interpretation: The sharp decline in the bottomfish landings since 1986, noted in Fig.1 is mirrored in this figure by a sharp decline in the level of effort expended in that fishery. Rather than indicating a problem with the resource , this decline depicts an actual trend of commercial boat owners and fishermen seeking other more lucrative and stable lines of work. The 1994-1996 estimated efforts were greater than those for the 1990-93 period due to the highliners increased efforts, with some boat owners employing teams (usually 2-3 fishermen) in continuous shifts during good weather. In 1997 and 1998 the number of boats participating in this fishery dropped significantly (see Figure 4) resulting in the notable declines in the number of trips and hours fished that period. The 1999 increase in effort can be attributed to some Alias that normally longline and troll, doing occasional bottomfishing. In 2003 fishermen did not spend half the time they spent last year nor did they make half as many trips as they did in 2002. This would have been a contribution to the decrease in catch landings and commercial landings from the previous year.

Source: DMWR Offshore Creel Survey Database

Year	Hours	Trips
1982	7671	548
1983	12695	621
1984	8796	468
1985	17682	1116
1986	10983	717
1987	2632	220
1988	3654	353
1989	2854	314
1990	1548	122
1991	2041	145
1992	1433	101
1993	2402	141
1994	5873	342
1995	3551	275
1996	2608	265
1997	2713	290
1998	1134	100
1999	1506	144
2000	2775	244
2001	3205	342
2002	5493	534
2003	1625	291
Average	4767	350
Std. Dev.	4206	237

Calculation: The annual estimated hours spent bottomfishing is calculated by dividing the annual total bottomfish catch by the average CPUE (pounds per hour) from trips doing only bottomfish fishing. The annual estimated number of trips is calculated by dividing the estimated annual hours by the average length of a bottomfish fishing trip. The average length of a bottomfish fishing trip (not shown) is calculated by using only trips which exclusively bottomfished and for which the trip length was recorded. The total hours fished from those trips is then divided by the number of trips. Recorded hours are trip hours.

Figure 4. American Samoa Annual Estimated Number of Boats Landing Bottomfish



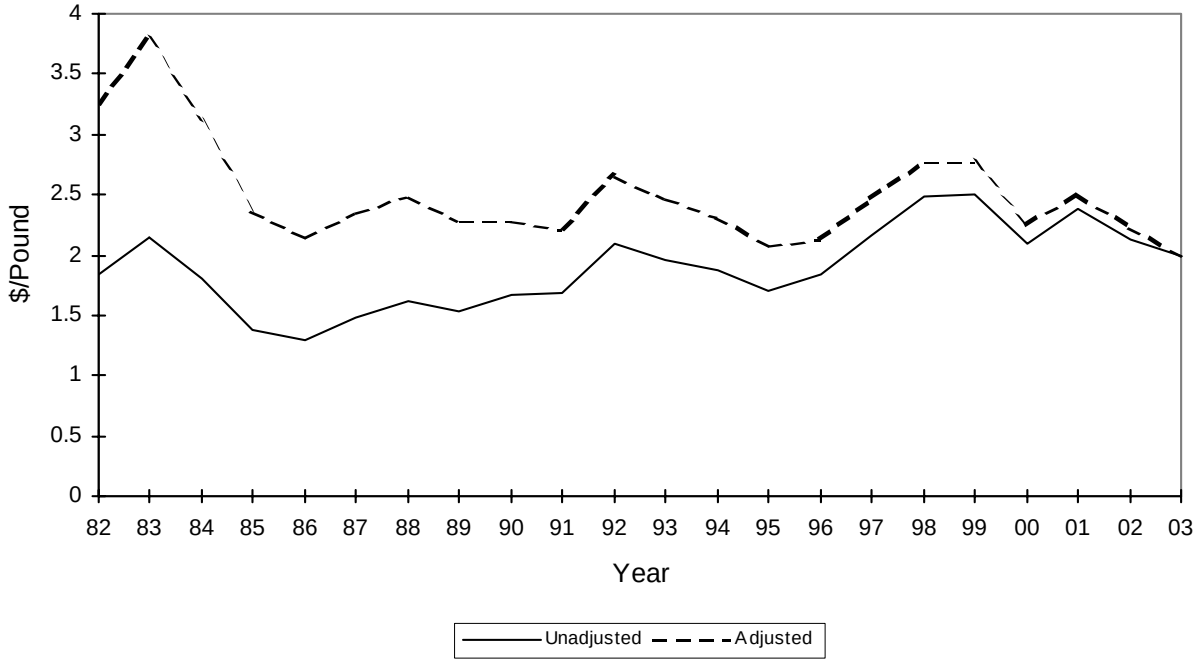
Interpretation: The decline in the fishery since 1985-86 is reflected by a decline in the number of boats participating in it. The 1987 hurricane caused the loss of the whole Manu'a fleet, plus some of the Tutuila fleet. Several Boats that contributed to the 1989 bottomfish annual landings did not land any bottomfish in 1990, due to much needed boat repairs and their participation in non-bottomfish chartered trips. About 90% of the domestic fishing fleet was affected by the December 1991 hurricane, hence the slight decline in 1992. The increase in 1993 is due mainly to the re-entry to this fishery of a few boats after repairs, trips by two 14-foot vessels that didn't bottomfish in 1992, and the entry of one new Alia into the sampling area. A few new Alias were bought from western Samoa and entered the fishery in 1995-1996. The continued increase in the number of bottomfish Alias electing to longline, attracted by the relatively higher revenues obtained mainly from albacore sold to the canneries, is reflected in the significant drop in the number of boats bottomfishing in 1998. This continuous drop continues in 2000 until about 2002, however for 2003 there was one more boat added to the fishery.

Source: DMWR Offshore Creel Survey database

Calculation: The annual estimate of the number of boats in the bottomfish fishery is obtained from the data base by counting the unique boats sampled during the year which landed any bottomfish species regardless of fishing method.

Year	Boats
1982	27
1983	38
1984	48
1985	47
1986	37
1987	21
1988	32
1989	33
1990	24
1991	23
1992	14
1993	26
1994	25
1995	35
1996	35
1997	37
1998	30
1999	34
2000	38
2001	29
2002	17
2003	19
Average	30
Std. Dev.	9

Figure 5. American Samoa Average Price of Bottomfish

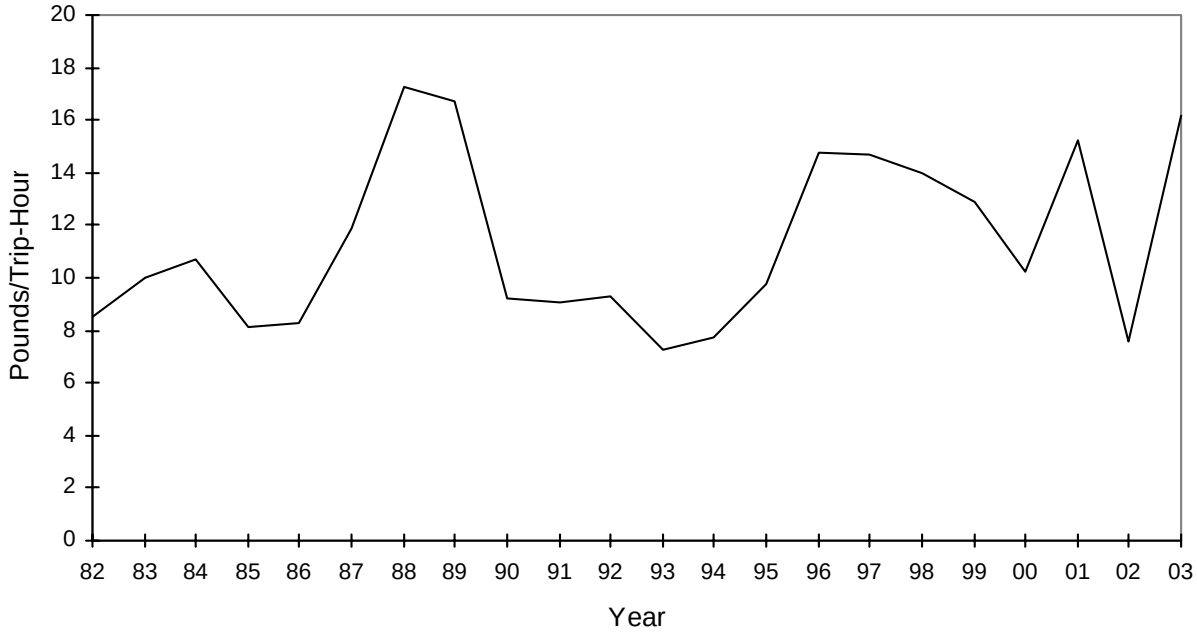


Interpretation: Prices were generally higher between 1982 and 1984 during the exportation of high-priced deepwater snappers to Hawaii. After this period, inflation-adjusted local prices have generally been stable. Prices of locally caught bottomfish are generally higher than imported fish, and could have been even higher had the local markets not been flooded by imported fish, which are usually of lower quality. The only imported bottomfish in 1994 were from western Samoa and these were sold at an average price of $1.67/lb. Imported bottomfish (mainly from western Samoa) have always helped in meeting the demand for bottomfish. The increase in average price in 1998 is attributed mainly to the increase in demand for fresh bottomfish by a few new restaurants. Since 1999 there has been a general increase (16% in 1999 and 290% this year) in pounds of fish (miscellaneous bottomfish and pelagics) imported from Western Samoa and may contribute (increase supply) to last year's price drop. A relatively unchanged price/lb was recorded for this year.
Source: DMWR Offshore Creel Survey database

Calculation: The average price of all bottomfish species combined is calculated by dividing total bottomfish revenue by total sold weight. The inflation-adjusted price is calculated by multiplying the unadjusted annual average price by the annual calculated consumer price index (CPI) for American Samoa using the current year as base.

Year	Unadjusted Price/Lb	Adjusted Price/Lb
1982	$1.83	$3.25
1983	$2.15	$3.79
1984	$1.80	$3.11
1985	$1.38	$2.37
1986	$1.29	$2.14
1987	$1.48	$2.35
1988	$1.61	$2.48
1989	$1.54	$2.28
1990	$1.66	$2.28
1991	$1.68	$2.21
1992	$2.10	$2.65
1993	$1.95	$2.46
1994	$1.87	$2.31
1995	$1.71	$2.07
1996	$1.83	$2.13
1997	$2.16	$2.46
1998	$2.48	$2.78
1999	$2.50	$2.78
2000	$2.10	$2.24
2001	$2.38	$2.51
2002	$2.12	$2.23
2003	$1.99	$1.99
Average	$1.89	$2.49
Std. Dev.	$0.33	$0.42

Figure 6. American Samoa Annual Bottomfish CPUE



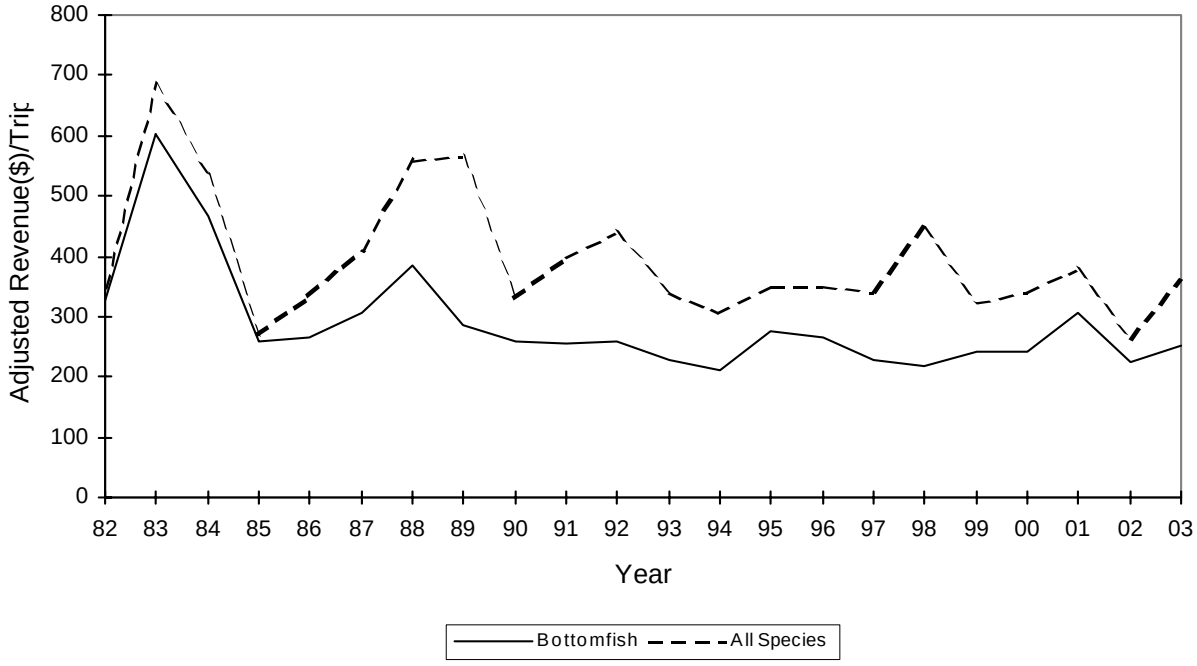
Interpretation: The initial increased CPUE in 1983 and 1984 occurred during the intense fishing of some new fishing grounds for deepwater snappers for export to Hawaii. A relatively high number of boats and local fishermen participated in the fishery during this period. The decline in 1985 and 1986 might be expected following the ardent harvesting of the limited fishing grounds. Reasons for the CPUE peak in 1988-89 are unknown. The decline in CPUE from 1989 to 1991 can be partially attributed to a combination of some new inexperienced fishermen entering the fishery and the exit of experienced and full-time commercial fishermen. CPUE has essentially remained stable during 1990-1992, increased for a few years and was relatively stable in 1996-1998. Bottomfishing techniques and gear have generally remained the same in the past years with the Alias being the highliners since the early 1970's. The 1996 high CPUE estimates (and most probably the 1988-89 CPUE increase) can be attributed mainly to improved sampling and may also be related to favorable environmental conditions. The past five year's CPUE was not less than 50% of the average aggregate CPUE for the first three years of available data and this years CPUE is the highest since 1990

Source: DMWR Offshore Creel Survey database

Calculation: CPUE is calculated using only trips in which only the bottomfish method was used and trip hours were recorded. The average is calculated by using each CPUE from each trip as an observation and dividing by the number of trips.

Year	CPUE
1982	8.50
1983	10.00
1984	10.70
1985	8.10
1986	8.30
1987	11.90
1988	17.30
1989	16.70
1990	9.20
1991	9.10
1992	9.30
1993	7.30
1994	7.70
1995	9.80
1996	14.80
1997	14.70
1998	14.00
1999	12.90
2000	10.20
2001	15.20
2002	7.60
2003	16.20
Average	11.34
Std. Dev.	3.21

Figure 7. American Samoa Average Inflation-Adjusted Revenue Per Trip Landing Bottomfish.



Interpretation:. There have been no notable changes in revenues since 1990. The distance between these two lines reflects the relative importance of bottomfish species in the total catch whenever any bottomfish are landed. The prominent importance of bottomfish between 1982 and 1985 occurred during the targeting of deepwater snappers (mainly ***Etelis*** and ***Prisitipomoides***) for export to Hawaii. Bottomfish fishing was also the more profitable method of fishing during that period. The relative importance of bottomfish has generally been declining since 1985 as most of the full-time commercial fishermen quit this fishery with the

Year	Bottomfish Unadjusted	Bottomfish Adjusted	All Species Unadjusted	All Species Adjusted
1982	$185	$328	$196	$348
1983	$341	$602	$388	$685
1984	$269	$465	$309	$534
1985	$151	$259	$157	$269
1986	$159	$265	$202	$335
1987	$192	$305	$257	$409
1988	$249	$384	$362	$558
1989	$193	$285	$382	$564
1990	$188	$258	$241	$331
1991	$194	$256	$304	$400
1992	$206	$260	$348	$439
1993	$181	$229	$271	$341
1994	$170	$210	$247	$305
1995	$230	$277	$290	$351
1996	$229	$267	$301	$351
1997	$201	$229	$299	$340
1998	$193	$217	$397	$445
1999	$218	$242	$291	$323
2000	$228	$243	$318	$339
2001	$293	$308	$360	$379
2002	$214	$225	$250	$263
2003	$253	$253	$357	$357
Average	$215	$289	$297	$394
Std. Dev.	$44	$89	$64	$103

remaining opting for trolling and lately, longlining. The supply of locally caught bottomfish has been supplemented by bottomfish imported from western Samoa.

These values are higher in this year's report than they were in previous year's reports because the trips included are only those that sold their catch commercially to be more consistent with the revenue/trip values from other islands which are based on sales receipt data.

Source: DMWR Offshore Creel Survey database

Calculation: The average revenue per trip for all species is calculated by summing the revenues of all sales for any trip which landed any bottomfish species and sold all or part of their catch commercially, and dividing by the number of such trips. The average bottomfish revenue per trip is calculated from those same trips by summing the sales of only bottomfish species and dividing by the number of trips that sold their catch. Figure 7 plots the inflation-adjusted bottomfish and all species revenue per trip for the period 1982-2003.