

# PIFSC Report on the American Samoa Longline Fishery Year 2013<sup>1</sup>

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During 2013, the American Samoa longline fishery continued to experience very challenging conditions with respect to declining catch of its primary target species, albacore tuna. This was also the case for most other marketable species. However, increasing catches of species, such as mahimahi, wahoo and yellowfin tuna, may indicate the beginning of an adaptation of this fishery to target species that fetch better prices in local fresh fish markets than at the cannery in Pago Pago, where albacore are landed. A summary of the fishery's catch and effort statistics for calendar year 2013, based on date of haul, is provided in Table 1.

Table 1 was derived from all logbook data submitted to the American Samoa Department of Marine and Wildlife Resources, by the February 19, 2014. Although the annual closing date for this report was moved forward slightly this year for a number of reasons, Table 1 reflects what appears to have been 100% of sets made during the year. A total of 3,324 sets in 2013 have been reported from longline vessels through March 10, 2014.

In 2013, the American Samoa longline fleet reported about 80% of the fishing effort reported in 2012. There were only 22 active vessels, 12% less than 2012 (Fig. 1). Only large (>50ft in length) vessels participated in the fishery. These vessels made 3,324 sets and deployed 9,917,249 hooks, which was 21% fewer sets (Fig. 2) and 18.1% less hooks set (Fig. 3), than in 2012. However, there was a more intensive level of effort in terms of hooks per set densities, which increased to 2,983 hooks/set during 2013 (3.7% more than the 2,877 hooks/set registered in 2012). Increasing the number of hooks per set is common in longline fisheries attempting to improve catch per day of operation. Shorter trip lengths (fewer sets per trip), also reported in 2013, may be an adaptation to reduce fuel costs.

With the exception of yellowfin tuna and mahimahi, the number of fish caught decreased for all species, individually and as a whole, in comparison with 2012. A total of 177,627 fish were caught (all species combined), which was 38% less than in 2012. The main target species, albacore tuna, dominated the catch as usual (62% of the total), the 117,555 fish caught in 2013 represents a 34.4% reduction from 179,282 albacore caught in 2012 (Fig. 5). Other species and groups that registered reduced catches during 2013 included: skipjack tuna (77.8% below the 2012 catch), bigeye tuna (down 45.7%), wahoo (12.5%), and billfishes (21.8%). There were increases in the catch of yellowfin tuna (up 30.9%) and mahimahi (up 71.5%). The decrease in shark catch (down by 45.6%) may have represented an effort by the fishery to avoid this un-retained nuisance bycatch in accordance with NMFS policy.

The overall catch per unit of effort (CPUE, number of fish of all species per 1000 hooks) decreased appreciably (24.3%) in 2013, compared with 2012. The 2013 fishery caught an average of just 17.9 fish/1000 hooks, as opposed to 23.7 fish/1000 hooks in the previous year (Fig. 7). CPUE increased for yellowfin, wahoo and mahimahi, each a minor component of the catch, while CPUE for other species decreased. CPUE of albacore, the primary target species, decreased by 20% (Fig. 8) and CPUE for the second most targeted species, skipjack tuna decreased 73%. Other non-targeted species showed decreased CPUE, including bigeye tuna (decreased 33.9%) and billfishes (decreased 3.1%). Shark CPUE also decreased (32.8%, Fig. 10). A few minor species showed increased CPUE, such as wahoo (6%),

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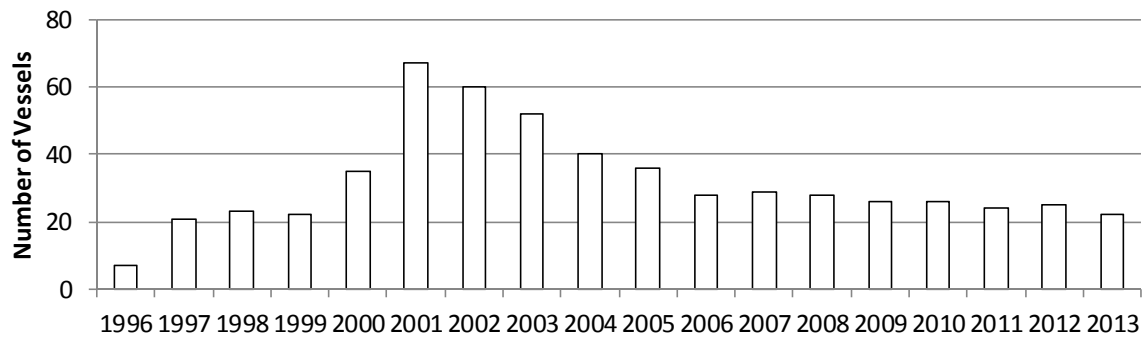
<sup>1</sup> PIFSC Data Report DR-14-006  
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mahimahi (108.3%) and yellowfin tuna (59.5%, Fig. 9) which are increasingly marketed in the local fresh fish market. However, despite the improvements in some minor components of the catch, the outstanding characteristic of the fishery in 2013 was the sustained decline in fishing activity and albacore landings, resulting in a very poor year for the American Samoa longline fishery.

**Table 1. Summary of fish catch and nominal fishing effort by American Samoa Longline vessels during calendar year 2013 based on longline logbooks by the annual posting date (February 19, 2014.)**

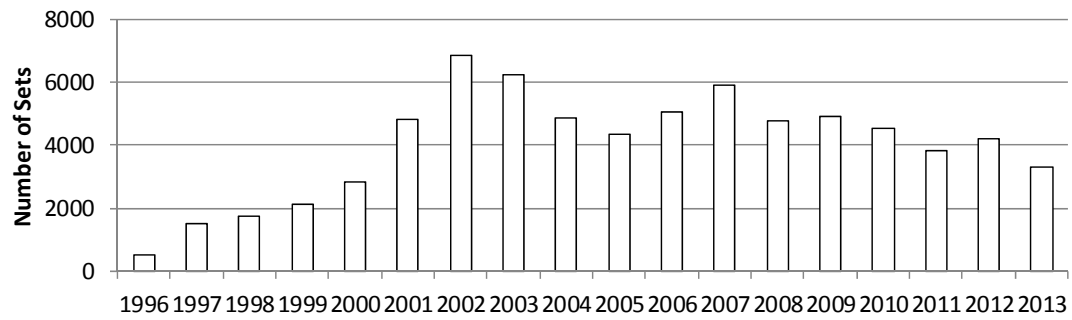
| TRIP INFORMATION         |                        |             |                 |                              |
|--------------------------|------------------------|-------------|-----------------|------------------------------|
|                          | Number of Vessels:     | 22          |                 |                              |
|                          | Number of Trips:       | 96          |                 |                              |
|                          | Number of Sets:        | 3,324       |                 |                              |
|                          | 1000's of Hooks Set:   | 9,917       |                 |                              |
|                          | Number of Light Sticks | 4,211       |                 |                              |
|                          | Used:                  |             |                 |                              |
| CATCH INFORMATION        |                        |             |                 |                              |
| Species                  | Number Caught          | Number Kept | Number Released | Number Caught per 1000 Hooks |
| BILLFISH                 |                        |             |                 |                              |
| Black marlin             | 11                     | 3           | 8               | 0.00                         |
| Blue marlin              | 1,335                  | 493         | 842             | 0.13                         |
| Striped marlin           | 257                    | 108         | 149             | 0.03                         |
| Sailfish                 | 281                    | 49          | 232             | 0.03                         |
| Spearfish                | 867                    | 56          | 811             | 0.09                         |
| Swordfish                | 288                    | 180         | 108             | 0.03                         |
| TOTAL BILLFISH           | 3,039                  | 889         | 2,150           | 0.31                         |
| SHARKS                   |                        |             |                 |                              |
| Blue shark               | 2,159                  | 24          | 2,135           | 0.22                         |
| Shortfin mako shark      | 270                    | 0           | 270             | 0.03                         |
| Thresher shark           | 202                    | 0           | 202             | 0.02                         |
| White tip oceanic shark  | 663                    | 12          | 651             | 0.07                         |
| Sharks (unknown)         | 538                    | 4           | 534             | 0.05                         |
| TOTAL SHARKS             | 3,832                  | 40          | 3,792           | 0.39                         |
| TUNA                     |                        |             |                 |                              |
| Albacore tuna            | 117,555                | 117,220     | 335             | 11.85                        |
| Bigeye tuna              | 4,247                  | 4,121       | 126             | 0.43                         |
| Bluefin tuna             | 21                     | 21          | 0               | 0.00                         |
| Skipjack tuna            | 11,540                 | 11,138      | 402             | 1.16                         |
| Yellowfin tuna           | 19,096                 | 18,864      | 232             | 1.93                         |
| TOTAL TUNA               | 152,459                | 151,364     | 1,095           | 15.37                        |
| OTHER PELAGICS           |                        |             |                 |                              |
| Mahimahi                 | 2,444                  | 1,846       | 598             | 0.25                         |
| Moonfish                 | 372                    | 98          | 274             | 0.04                         |
| Oilfish                  | 6,767                  | 67          | 6,700           | 0.68                         |
| Pomfret                  | 840                    | 73          | 767             | 0.08                         |
| Wahoo                    | 6,950                  | 5,715       | 1,235           | 0.70                         |
| TOTAL OTHER PELAGICS     | 17,373                 | 7,799       | 9,574           | 1.75                         |
| NON-PMUS                 |                        |             |                 |                              |
| Pelagic fishes (unknown) | 924                    | 3           | 921             | 0.09                         |
| TOTAL NON-PMUS           | 924                    | 3           | 921             | 0.09                         |
| TOTAL ALL SPECIES        | 177.627                | 160.095     | 17,532          | 17.91                        |

**Figure 1. American Samoa Longline Vessels by Year**



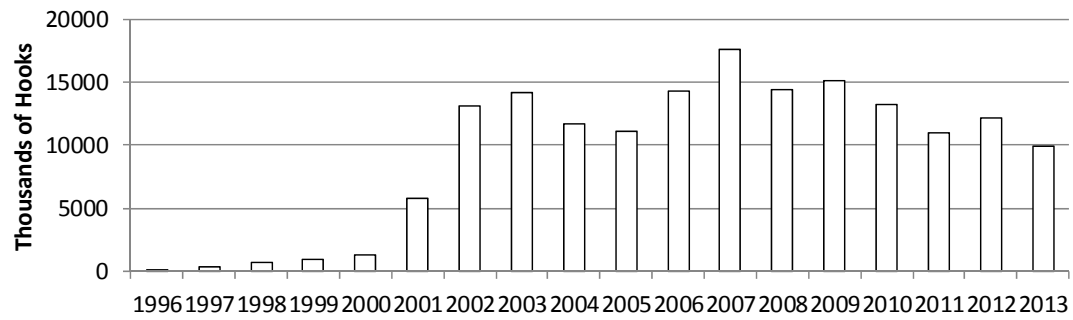
| Year | Boats |
|------|-------|
| 1996 | 7     |
| 1997 | 21    |
| 1998 | 23    |
| 1999 | 22    |
| 2000 | 35    |
| 2001 | 67    |
| 2002 | 60    |
| 2003 | 52    |
| 2004 | 40    |
| 2005 | 36    |
| 2006 | 28    |
| 2007 | 29    |
| 2008 | 28    |
| 2009 | 26    |
| 2010 | 26    |
| 2011 | 24    |
| 2012 | 25    |
| 2013 | 22    |

**Figure 2. Number of Sets by American Samoa Longline Vessels by Year**



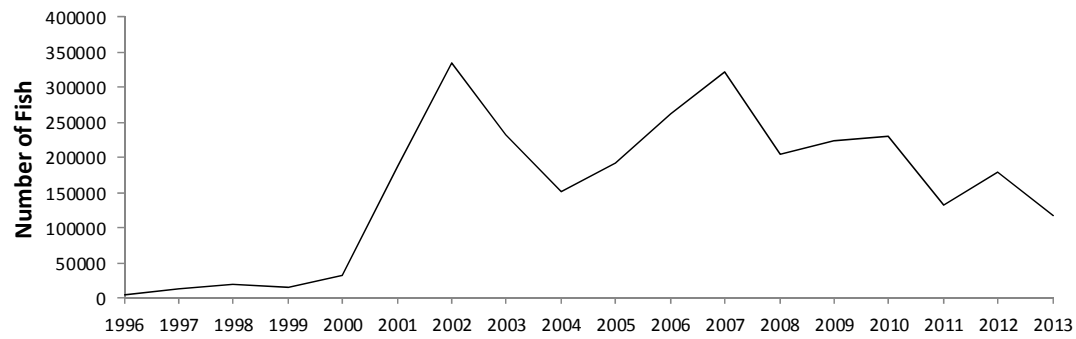
| Year | Sets  |
|------|-------|
| 1996 | 531   |
| 1997 | 1,533 |
| 1998 | 1,762 |
| 1999 | 2,112 |
| 2000 | 2,814 |
| 2001 | 4,801 |
| 2002 | 6,872 |
| 2003 | 6,221 |
| 2004 | 4,853 |
| 2005 | 4,359 |
| 2006 | 5,068 |
| 2007 | 5,921 |
| 2008 | 4,754 |
| 2009 | 4,911 |
| 2010 | 4,537 |
| 2011 | 3,847 |
| 2012 | 4,208 |
| 2013 | 3,324 |

**Figure 3. Number of Hooks Set by the American Samoa Longline Fleet by Year**



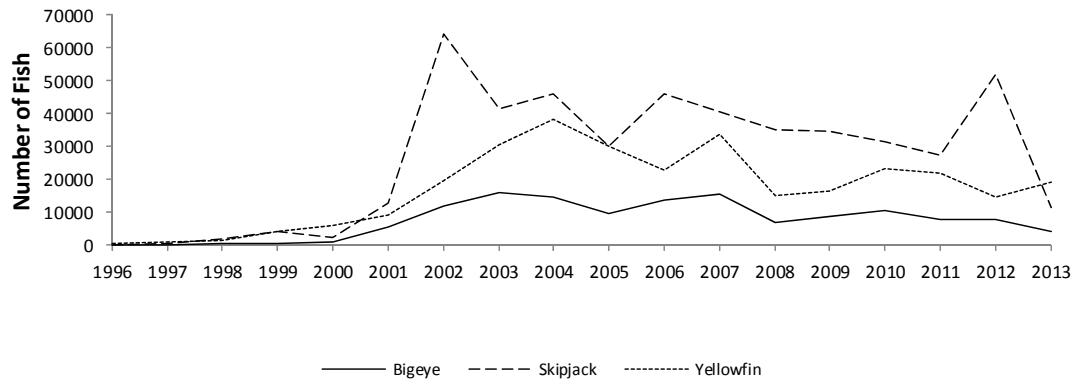
| Year | Thousands of Hooks |
|------|--------------------|
| 1996 | 100                |
| 1997 | 420                |
| 1998 | 773                |
| 1999 | 916                |
| 2000 | 1,335              |
| 2001 | 5,795              |
| 2002 | 13,096             |
| 2003 | 14,165             |
| 2004 | 11,742             |
| 2005 | 11,129             |
| 2006 | 14,261             |
| 2007 | 17,556             |
| 2008 | 14,444             |
| 2009 | 15,077             |
| 2010 | 13,184             |
| 2011 | 10,966             |
| 2012 | 12,109             |
| 2013 | 9,917              |

**Figure 4. American Samoa Longline Albacore Catch by Year**



| Year | Catch   |
|------|---------|
| 1996 | 4,028   |
| 1997 | 13,077  |
| 1998 | 19,760  |
| 1999 | 15,654  |
| 2000 | 32,218  |
| 2001 | 187,141 |
| 2002 | 333,595 |
| 2003 | 232,439 |
| 2004 | 151,338 |
| 2005 | 192,637 |
| 2006 | 263,091 |
| 2007 | 321,890 |
| 2008 | 205,447 |
| 2009 | 223,099 |
| 2010 | 229,617 |
| 2011 | 132,506 |
| 2012 | 179,282 |
| 2013 | 117,555 |

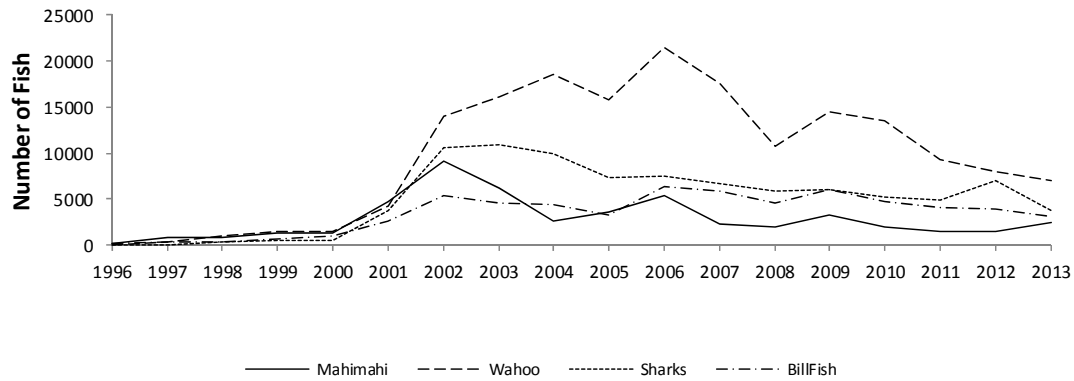
**Figure 5. American Samoa Longline Tuna Catch by Year**



| Year | Bigeye | Skipjack | Yellowfin |
|------|--------|----------|-----------|
| 1996 | 132    | 6        | 645       |
| 1997 | 154    | 428      | 945       |
| 1998 | 324    | 2,039    | 1,367     |
| 1999 | 538    | 4,384    | 4,374     |
| 2000 | 947    | 2,463    | 6,061     |
| 2001 | 5,351  | 13,026   | 9,391     |
| 2002 | 11,749 | 64,400   | 19,499    |
| 2003 | 16,131 | 41,522   | 30,421    |
| 2004 | 14,762 | 45,901   | 38,142    |
| 2005 | 9,763  | 30,177   | 30,073    |
| 2006 | 13,512 | 45,855   | 22,624    |
| 2007 | 15,533 | 40,405   | 33,901    |
| 2008 | 7,059  | 35,170   | 14,996    |
| 2009 | 8,743  | 34,534   | 16,541    |
| 2010 | 10,512 | 31,484   | 23,105    |
| 2011 | 7,674  | 27,412   | 21,895    |
| 2012 | 7,826  | 51,994   | 14,591    |
| 2013 | 4,247  | 11,540   | 19,096    |

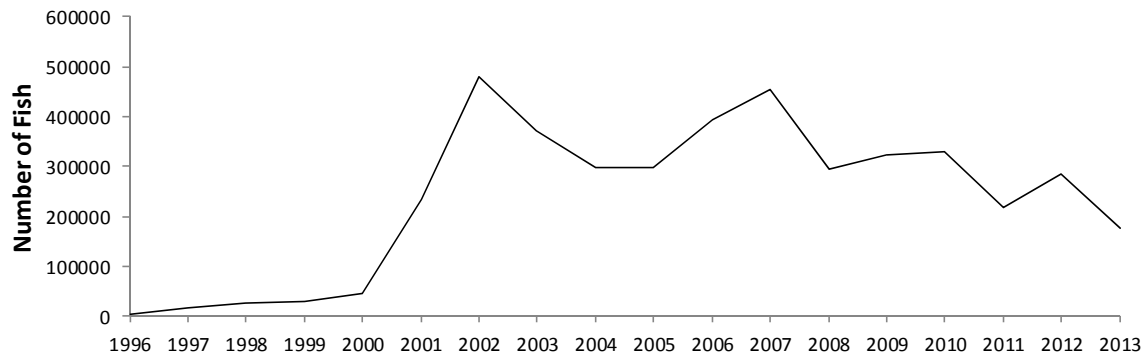


**Figure 6. American Samoa Longline Catch of Miscellaneous Pelagic Fish by Year**



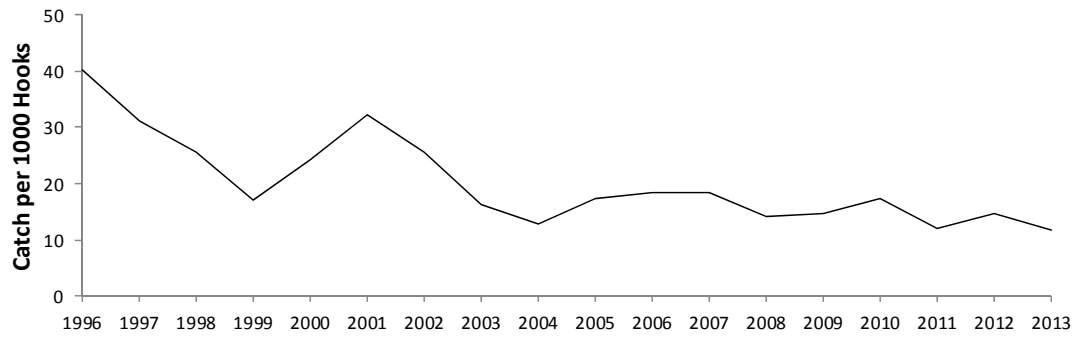
| Year | Mahimahi | Wahoo  | Sharks | Billfish |
|------|----------|--------|--------|----------|
| 1996 | 227      | 82     | 65     | 158      |
| 1997 | 843      | 347    | 96     | 372      |
| 1998 | 892      | 1,061  | 409    | 405      |
| 1999 | 1,313    | 1,539  | 510    | 641      |
| 2000 | 1,325    | 1,463  | 497    | 997      |
| 2001 | 4,813    | 4,208  | 3,690  | 2,594    |
| 2002 | 9,181    | 13,948 | 10,539 | 5,394    |
| 2003 | 6,265    | 16,051 | 10,968 | 4,543    |
| 2004 | 2,557    | 18,514 | 9,956  | 4,449    |
| 2005 | 3,623    | 15,796 | 7,331  | 3,269    |
| 2006 | 5,309    | 21,426 | 7,521  | 6,300    |
| 2007 | 2,249    | 17,568 | 6,720  | 5,796    |
| 2008 | 1,938    | 10,720 | 5,853  | 4,519    |
| 2009 | 3,245    | 14,519 | 5,968  | 6,086    |
| 2010 | 1,955    | 13,586 | 5,159  | 4,796    |
| 2011 | 1,412    | 9,334  | 4,939  | 4,027    |
| 2012 | 1,425    | 7,943  | 7,042  | 3,886    |
| 2013 | 2,444    | 6,950  | 3,832  | 3,039    |

**Figure 7. American Samoa Longline Total Catch per 1000 Hooks by Year**



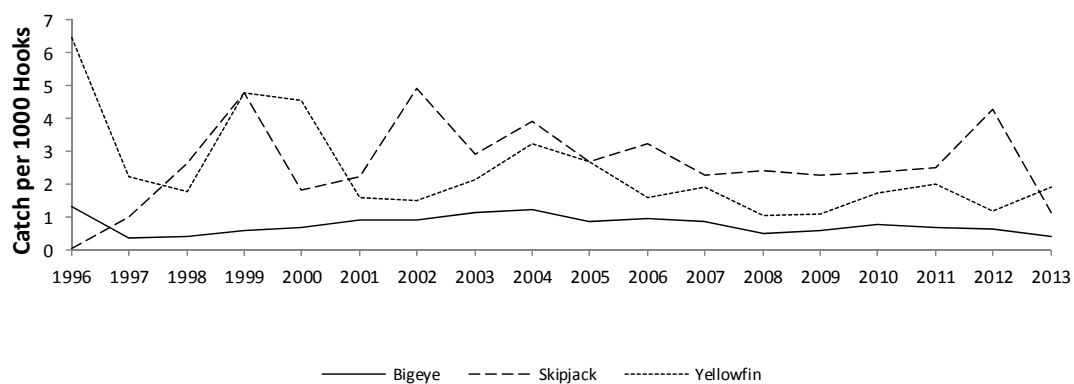
| Year | Catch per 1000 Hooks |
|------|----------------------|
| 1996 | 53.59                |
| 1997 | 38.96                |
| 1998 | 34.21                |
| 1999 | 32.24                |
| 2000 | 34.75                |
| 2001 | 40.11                |
| 2002 | 36.61                |
| 2003 | 26.15                |
| 2004 | 25.23                |
| 2005 | 26.73                |
| 2006 | 27.62                |
| 2007 | 25.94                |
| 2008 | 20.29                |
| 2009 | 21.42                |
| 2010 | 25.04                |
| 2011 | 19.81                |
| 2012 | 23.65                |
| 2013 | 17.91                |

**Figure 8. American Samoa Longline Albacore Catch per 1000 Hooks by Year**



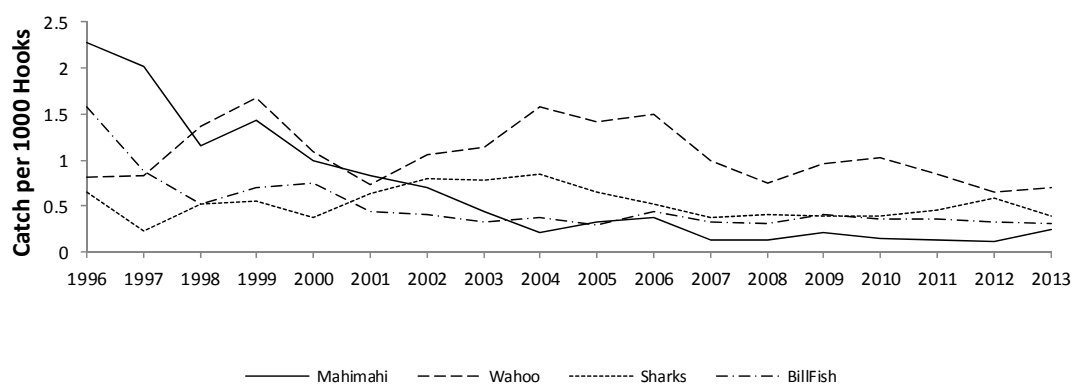
| Year | Catch per 1000 Hooks |
|------|----------------------|
| 1996 | 40.28                |
| 1997 | 31.16                |
| 1998 | 25.55                |
| 1999 | 17.09                |
| 2000 | 24.14                |
| 2001 | 32.29                |
| 2002 | 25.47                |
| 2003 | 16.41                |
| 2004 | 12.89                |
| 2005 | 17.31                |
| 2006 | 18.45                |
| 2007 | 18.34                |
| 2008 | 14.22                |
| 2009 | 14.80                |
| 2010 | 17.42                |
| 2011 | 12.08                |
| 2012 | 14.81                |
| 2013 | 11.85                |

**Figure 9. American Samoa Longline Tuna Catch per 1000 Hooks by Year**



| Year | Bigeye | Skipjack | Yellowfin |
|------|--------|----------|-----------|
| 1996 | 1.32   | 0.06     | 6.45      |
| 1997 | 0.37   | 1.02     | 2.25      |
| 1998 | 0.42   | 2.64     | 1.77      |
| 1999 | 0.59   | 4.79     | 4.77      |
| 2000 | 0.71   | 1.85     | 4.54      |
| 2001 | 0.92   | 2.25     | 1.62      |
| 2002 | 0.90   | 4.92     | 1.49      |
| 2003 | 1.14   | 2.93     | 2.15      |
| 2004 | 1.26   | 3.91     | 3.25      |
| 2005 | 0.88   | 2.71     | 2.70      |
| 2006 | 0.95   | 3.22     | 1.59      |
| 2007 | 0.88   | 2.30     | 1.93      |
| 2008 | 0.49   | 2.43     | 1.04      |
| 2009 | 0.58   | 2.29     | 1.10      |
| 2010 | 0.80   | 2.39     | 1.75      |
| 2011 | 0.70   | 2.50     | 2         |
| 2012 | 0.65   | 4.29     | 1.21      |
| 2013 | 0.43   | 1.16     | 1.93      |

**Figure 10. American Samoa Longline Catch of Other Pelagic Fish per 1000 Hooks by Year**



| Year | Mahimahi | Wahoo | Sharks | Billfish |
|------|----------|-------|--------|----------|
| 1996 | 2.27     | 0.82  | 0.65   | 1.58     |
| 1997 | 2.01     | 0.83  | 0.23   | 0.89     |
| 1998 | 1.15     | 1.37  | 0.53   | 0.52     |
| 1999 | 1.43     | 1.68  | 0.56   | 0.70     |
| 2000 | 0.99     | 1.10  | 0.37   | 0.75     |
| 2001 | 0.83     | 0.73  | 0.64   | 0.45     |
| 2002 | 0.70     | 1.07  | 0.80   | 0.41     |
| 2003 | 0.44     | 1.13  | 0.77   | 0.32     |
| 2004 | 0.22     | 1.58  | 0.85   | 0.38     |
| 2005 | 0.33     | 1.42  | 0.66   | 0.29     |
| 2006 | 0.37     | 1.50  | 0.53   | 0.44     |
| 2007 | 0.13     | 1     | 0.38   | 0.33     |
| 2008 | 0.13     | 0.74  | 0.41   | 0.31     |
| 2009 | 0.22     | 0.96  | 0.40   | 0.40     |
| 2010 | 0.15     | 1.03  | 0.39   | 0.36     |
| 2011 | 0.13     | 0.85  | 0.45   | 0.37     |
| 2012 | 0.12     | 0.66  | 0.58   | 0.32     |
| 2013 | 0.25     | 0.70  | 0.39   | 0.31     |