

Figure 6. MHI species composition of landings by weight

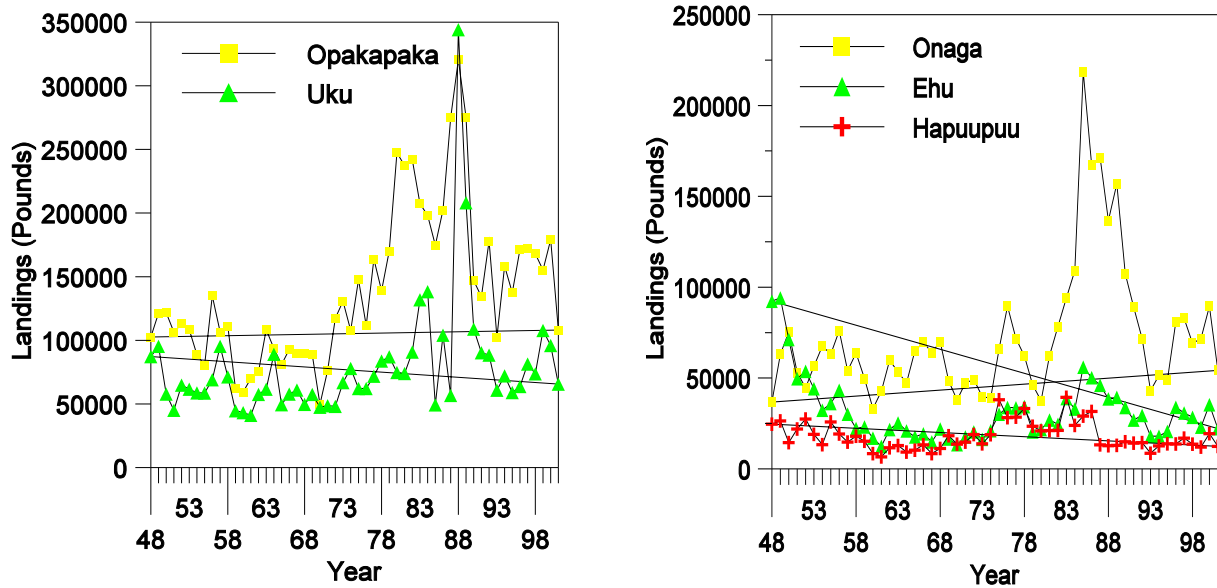


Figure 2

**Interpretation:** Most species show declining trends from the mid- and late-eighties to 1993 then increases to date. The prevailing interannual pattern in landings is episodic versus predictably periodic or constant. 2001 landings for all species are preliminary as they are based on catch reports submitted to date. Data from earlier years is essentially complete. Landings for all species were highest in the mid 1980s.

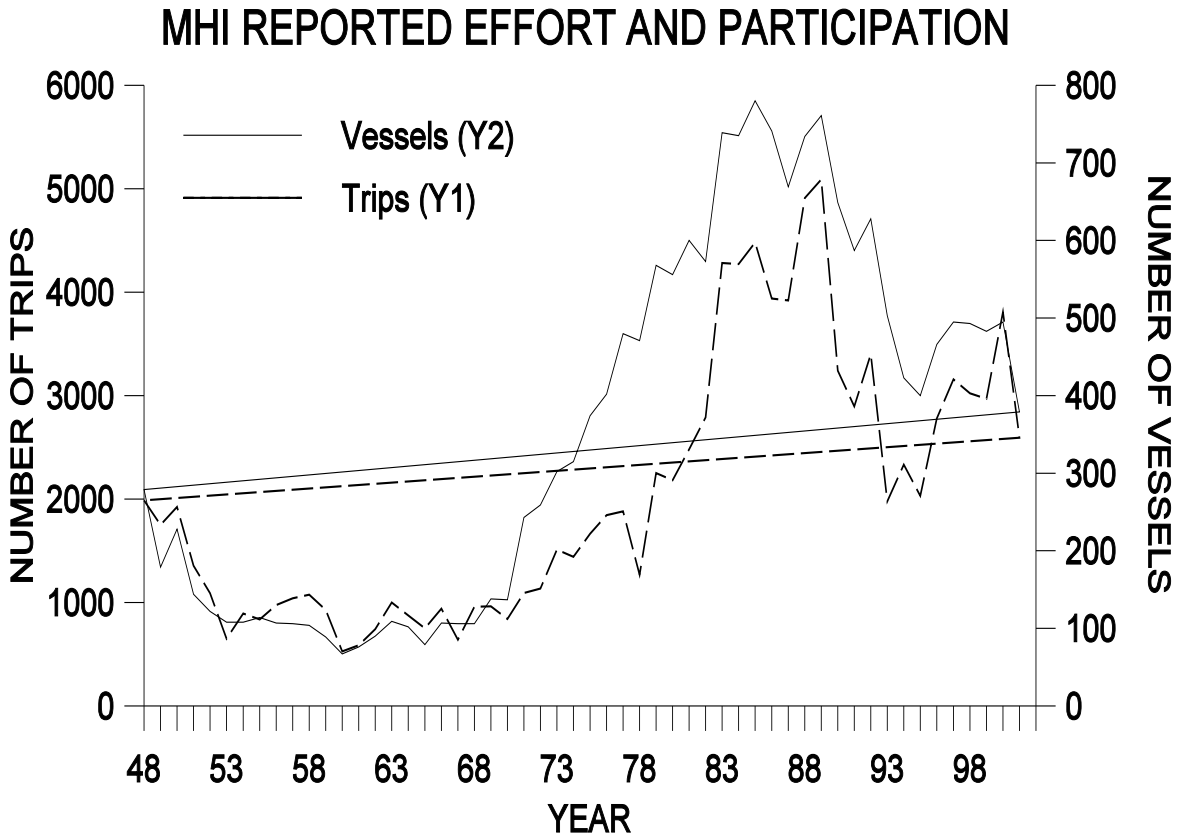
**Source:** Total commercial landings by species are from HDAR commercial catch report data for the MHI with no screening by gear. 2000 values have been updated from last year's report with an essentially complete data set for that year. 2001 values are preliminary estimates of annual landings based on landings reported to date and should increase for all species by an unknown amount.

**Comments:** Landings presented here are commercial reported landings only and do not include any expansion for recreational landings.

MHI Landings by Species

| YEAR | OPA    | ONA   | EHU   | UKU   | HAP   | 1977        | 163813        | 71747        | 33689        | 71915        | 28540        |
|------|--------|-------|-------|-------|-------|-------------|---------------|--------------|--------------|--------------|--------------|
| 1948 | 102651 | 36804 | 92323 | 87235 | 24609 | 1978        | 138931        | 62208        | 34333        | 83798        | 33271        |
| 1949 | 121243 | 62979 | 94097 | 95273 | 26397 | 1979        | 170180        | 46271        | 20339        | 87128        | 23538        |
| 1950 | 121664 | 75398 | 71286 | 57814 | 14514 | 1980        | 247378        | 37489        | 21712        | 74782        | 20962        |
| 1951 | 106423 | 53018 | 49699 | 45065 | 22000 | 1981        | 237254        | 62351        | 26900        | 73921        | 21178        |
| 1952 | 112917 | 44604 | 53716 | 64799 | 27499 | 1982        | 241977        | 78372        | 24542        | 90793        | 21263        |
| 1953 | 108504 | 56506 | 44200 | 61619 | 19009 | 1983        | 207345        | 94082        | 38793        | 131860       | 39447        |
| 1954 | 88641  | 67583 | 32278 | 58767 | 13367 | 1984        | 198260        | 109046       | 33022        | 138313       | 24019        |
| 1955 | 80516  | 63208 | 36017 | 58564 | 25849 | 1985        | 174746        | 218552       | 56039        | 49264        | 29055        |
| 1956 | 134980 | 75986 | 43313 | 69108 | 19224 | 1986        | 202467        | 167112       | 50259        | 104047       | 31626        |
| 1957 | 106656 | 53988 | 30157 | 95267 | 14782 | 1987        | 274929        | 171416       | 46018        | 56753        | 13232        |
| 1958 | 111131 | 63774 | 22309 | 71321 | 18033 | 1988        | 320601        | 136641       | 38547        | 344128       | 12838        |
| 1959 | 62043  | 49745 | 23107 | 44705 | 15294 | 1989        | 275167        | 156952       | 39393        | 208171       | 12954        |
| 1960 | 59405  | 33158 | 16950 | 43186 | 8418  | 1990        | 146861        | 107514       | 33848        | 108840       | 14934        |
| 1961 | 70083  | 42701 | 12370 | 41134 | 6642  | 1991        | 134326        | 88978        | 26902        | 90272        | 14216        |
| 1962 | 75492  | 59788 | 21742 | 57568 | 11663 | 1992        | 178014        | 71715        | 29461        | 88474        | 14454        |
| 1963 | 108505 | 53225 | 25267 | 61601 | 12865 | 1993        | 102514        | 43141        | 17981        | 60910        | 8593         |
| 1964 | 93618  | 47325 | 20914 | 89156 | 9321  | 1994        | 158276        | 51502        | 18000        | 72133        | 12712        |
| 1965 | 81039  | 65040 | 17605 | 49485 | 10297 | 1995        | 137473        | 48948        | 20689        | 59036        | 13819        |
| 1966 | 92815  | 69634 | 19342 | 57849 | 13277 | 1996        | 171428        | 80953        | 33925        | 63792        | 13723        |
| 1967 | 89364  | 64022 | 14899 | 60970 | 8480  | 1997        | 172308        | 82874        | 30778        | 81367        | 16984        |
| 1968 | 89908  | 69922 | 21984 | 49677 | 11287 | 1998        | 167918        | 69077        | 28417        | 73724        | 13610        |
| 1969 | 88621  | 48454 | 16483 | 57542 | 18300 | 1999        | 155300        | 71749        | 23009        | 107826       | 12080        |
| 1970 | 49655  | 37894 | 13364 | 47443 | 13651 | 2000        | 179172        | 89431        | 35368        | 96012        | 19420        |
| 1971 | 76388  | 47250 | 17626 | 48710 | 14746 | <b>2001</b> | <b>108089</b> | <b>54232</b> | <b>22160</b> | <b>65634</b> | <b>12431</b> |
| 1972 | 117367 | 49213 | 20347 | 48077 | 18994 | <b>mean</b> | 139116        | 72182        | 31793        | 79147        | 18084        |
| 1973 | 130785 | 39811 | 16336 | 66875 | 13878 | <b>s.d.</b> | 59843         | 36988        | 17149        | 46389        | 7566         |
| 1974 | 107828 | 38883 | 21015 | 77939 | 18874 |             |               |              |              |              |              |
| 1975 | 147755 | 66029 | 30155 | 62117 | 38140 |             |               |              |              |              |              |
| 1976 | 111520 | 89518 | 33788 | 62165 | 28214 |             |               |              |              |              |              |

Figure 7. MHI reported effort and participation



**Interpretation:** Preliminary 2001 values for effort and participation are based on reports received to date and not expanded for any late reporting. Participation indicated to date suggest a sharp decline in participation and effort from 2000. These values are apt to increase with more complete reporting, but are not apt to reach 2000 levels.

Landings and CPUE for bottomfish trips are tabulated in the following table. These figures differ from those presented in Figure 1 (landings) and Figure 14 (CPUE). Those presented here are screened for bottomfish trips only (as defined below). In Figure 1 landings are for bottomfish species caught on all gears without screening criteria and in Figure 14 data are further screened by area fished and landings of individual fishers to reflect the effective fishing effort required to “standardize” CPUE. Landings in 2001 are below the 2000 values and the long-term average, and the CPUE value is the lowest on record.

**Source:** HDAR commercial catch report data.

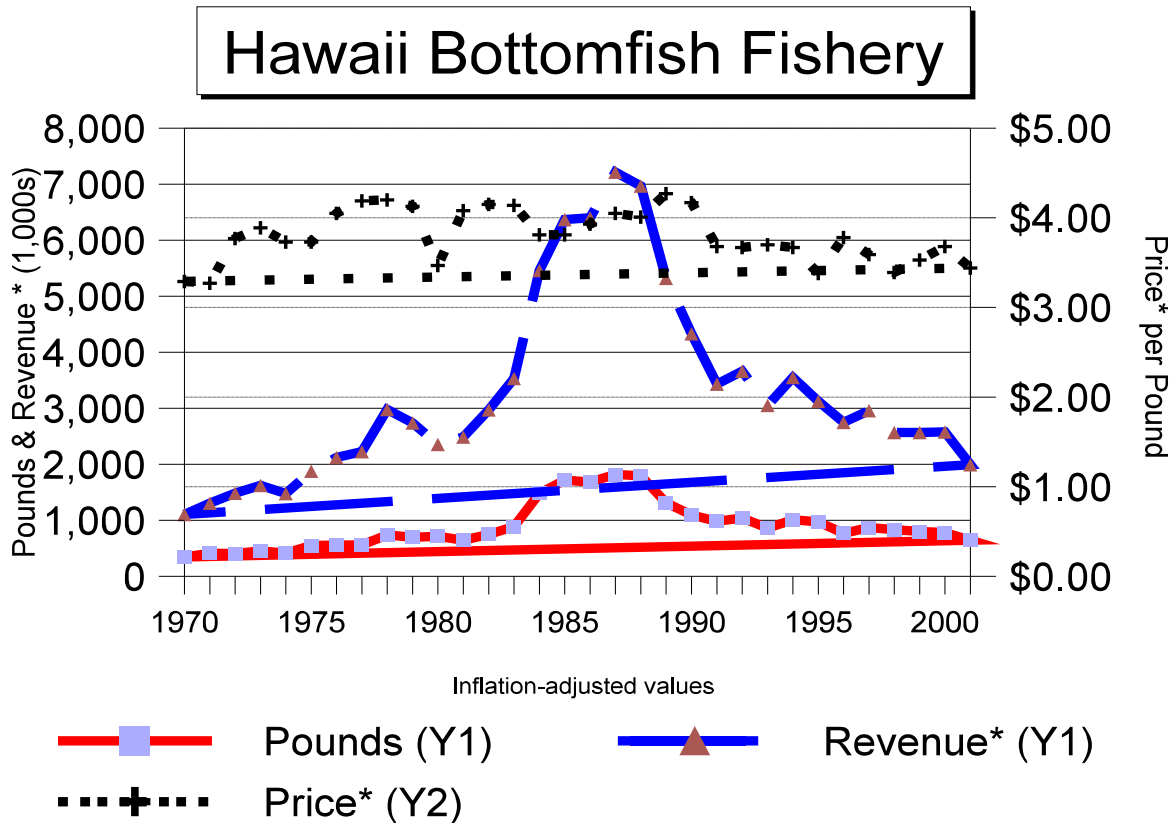
**Calculation & Adjustment:** MHI commercial bottomfish trip and vessel values are obtained

from the HDAR C3 report data. Participation (# of vessels) is presented as the number of unique license numbers reporting bottomfishing trips for a particular year. For 1948-1993 the reported value for participation is based on the State fiscal year (July-June). For 1994-1999 the participation is reported on a calendar year basis. Trips qualify as bottomfish trips if they use bottomfish handline gear and at least 90% of the catch is of BMUS species.

| Yr | #Ves | #Trip | Tot.Lbs | Lbs/Trip |
|----|------|-------|---------|----------|
| 48 | 207  | 1987  | 323858  | 162.99   |
| 49 | 196  | 1751  | 338406  | 193.26   |
| 50 | 164  | 1924  | 302137  | 157.04   |
| 51 | 126  | 1355  | 282271  | 208.32   |
| 52 | 110  | 1091  | 232235  | 212.86   |
| 53 | 106  | 650   | 123867  | 190.56   |
| 54 | 103  | 894   | 233557  | 261.25   |
| 55 | 108  | 836   | 197757  | 236.55   |
| 56 | 106  | 975   | 257183  | 263.78   |
| 57 | 102  | 1041  | 239485  | 230.05   |
| 58 | 96   | 1075  | 238138  | 221.52   |
| 59 | 76   | 929   | 213322  | 229.63   |
| 60 | 69   | 527   | 148339  | 281.48   |
| 61 | 65   | 586   | 171768  | 293.12   |
| 62 | 98   | 742   | 219203  | 295.42   |
| 63 | 110  | 1001  | 290690  | 290.40   |
| 64 | 87   | 876   | 297039  | 339.09   |
| 65 | 85   | 750   | 237624  | 316.83   |
| 66 | 97   | 940   | 274293  | 291.80   |
| 67 | 99   | 641   | 236588  | 369.09   |
| 68 | 116  | 959   | 252305  | 263.09   |
| 69 | 130  | 964   | 232754  | 241.45   |
| 70 | 219  | 841   | 169792  | 201.89   |
| 71 | 198  | 1093  | 173001  | 158.28   |
| 72 | 185  | 1135  | 194967  | 171.78   |
| 73 | 238  | 1511  | 246341  | 163.03   |
| 74 | 241  | 1442  | 218750  | 151.70   |
| 75 | 295  | 1664  | 322986  | 194.10   |

| Yr          | #Ves       | #Trip       | Tot.Lbs       | Lbs/Trip     |
|-------------|------------|-------------|---------------|--------------|
| 76          | 306        | 1845        | 301071        | 163.18       |
| 77          | 377        | 1881        | 323991        | 172.24       |
| 78          | 414        | 1268        | 272620        | 215.00       |
| 79          | 423        | 2251        | 316132        | 140.44       |
| 80          | 461        | 2181        | 372369        | 170.73       |
| 81          | 430        | 2481        | 392205        | 158.08       |
| 82          | 526        | 2790        | 432259        | 154.93       |
| 83          | 541        | 4283        | 484603        | 113.15       |
| 84          | 558        | 4272        | 428608        | 100.33       |
| 85          | 583        | 4481        | 476457        | 106.33       |
| 86          | 538        | 3939        | 476745        | 121.03       |
| 87          | 535        | 3920        | 475313        | 121.25       |
| 88          | 572        | 4911        | 687379        | 139.97       |
| 89          | 537        | 5091        | 634691        | 124.67       |
| 90          | 501        | 3242        | 338401        | 104.38       |
| 91          | 469        | 2895        | 285046        | 98.46        |
| 92          | 407        | 3401        | 329024        | 96.74        |
| 93          | 403        | 1977        | 199023        | 100.67       |
| 94          | 423        | 2333        | 226436        | 97.06        |
| 95          | 400        | 2031        | 194828        | 95.93        |
| 96          | 466        | 2780        | 253887        | 91.33        |
| 97          | 495        | 3158        | 288107        | 91.23        |
| 98          | 493        | 3023        | 268607        | 88.85        |
| 99          | 483        | 2970        | 261148        | 87.92        |
| 2000        | 495        | 3810        | 310817        | 81.58        |
| <b>2001</b> | <b>379</b> | <b>2593</b> | <b>191027</b> | <b>73.67</b> |
| mean        | 297        | 2037        | 294249        | 179.62       |
| s.d.        | 180        | 1254        | 112271        | 75.93        |

Figure 8. Hawaii bottomfish landings, revenues, prices, 1970 - present. (\* Inflation-adjusted)



**Interpretation\*:** After twenty years of growth, Hawaii bottomfish landings and *real* (inflation-adjusted) revenue peaked in 1987 and have declined by 50% and 60%, respectively, in the almost fifteen years since then. Much of this decline has been caused by reductions in fishing participation (vessels and trips) due to limited entry and to a weak market for fresh bottomfish in the 1990s.

There is no particular pattern for inflation-adjusted ex-vessel bottomfish prices. Previous economic research (mid-1980s) showed a strong inverse relationship between monthly and weekly price and landings, but this relationship appears weaker in the 1990s, perhaps due to increased imports of bottomfish from Pacific island nations. On an annual basis, this relationship is not seen at all. Changes in area and species composition may also be changing the aggregate price (discussed later in the report).

Of particular importance in interpreting bottomfish price trends, which strongly influence the economic performance of bottomfish vessels, is the increasing presence of imported bottomfish (snappers) in the Hawaii market. According to U.S. Customs data for the Port of Honolulu,

575,000 pounds of snapper were imported in CY 2000 worth \$1.7 million (\$2.96 per pound). This amounts to roughly two thirds of domestic supply and thus a significant factor in ex-vessel prices. Tonga and Australia were the largest sources of fresh snapper, with Fiji and New Zealand also being major sources.

\*Note: Interpretation of this figure has not been updated for 2001 data. The interpretation will be updated in the 2002 annual report.

**Data:** "Landings" refer to Pounds Caught (vs. Pounds Sold). Revenue is ex-vessel.

Hawaii Division of Aquatic Resources (HDAR) commercial catch reports are used for all the main Hawaiian Islands (MHI) landings and revenue; HDAR reports are also used for Northwestern Hawaiian Islands (NWHI) landings from 1970-83 although there may be problems of under-reporting during the latter part of that period<sup>1</sup>. NMFS estimates from shoreside monitoring are used for NWHI landings from 1984 - 1990. Data from 1991 - 1997 use a combination of HDAR figures and NMFS adjustments, while data for 1998 - present are solely from HDAR data.

HDAR MHI data for calendar year 2000 are preliminary, representing approximately 85% of anticipated reports for all gears, all species. NWHI data are considered complete due to a fast-track system which includes NMFS shoreside monitoring.

Revenue\* represents nominal revenue adjusted for inflation by the Honolulu Consumer Price Index (HCPI), '983-84 baseline; revenue\* and prices\* are adjusted to the current year.

**Data source:** Data imported from HTOT00x.xls (4/12/01)

**Note: Main Hawaiian Islands data for 2000 are preliminary in this report.**

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<sup>1</sup> The likelihood of that under-reporting is shown by the "jump" in NWHI landings when the Western Pacific Regional Fishery Management Council (and subsequently in 1987 NMFS) shoreside monitoring program began in 1984, with 38,000 pounds reported landed by the State in 1983 and 661,000 pounds reported landed by the Council in 1984. NWHI reported NWHI landings to HDAR in 1984 were 224,000 pounds.

Hawaii bottomfish landings, revenue, and price, 1970 - present. (\* Inflation-adjusted.)

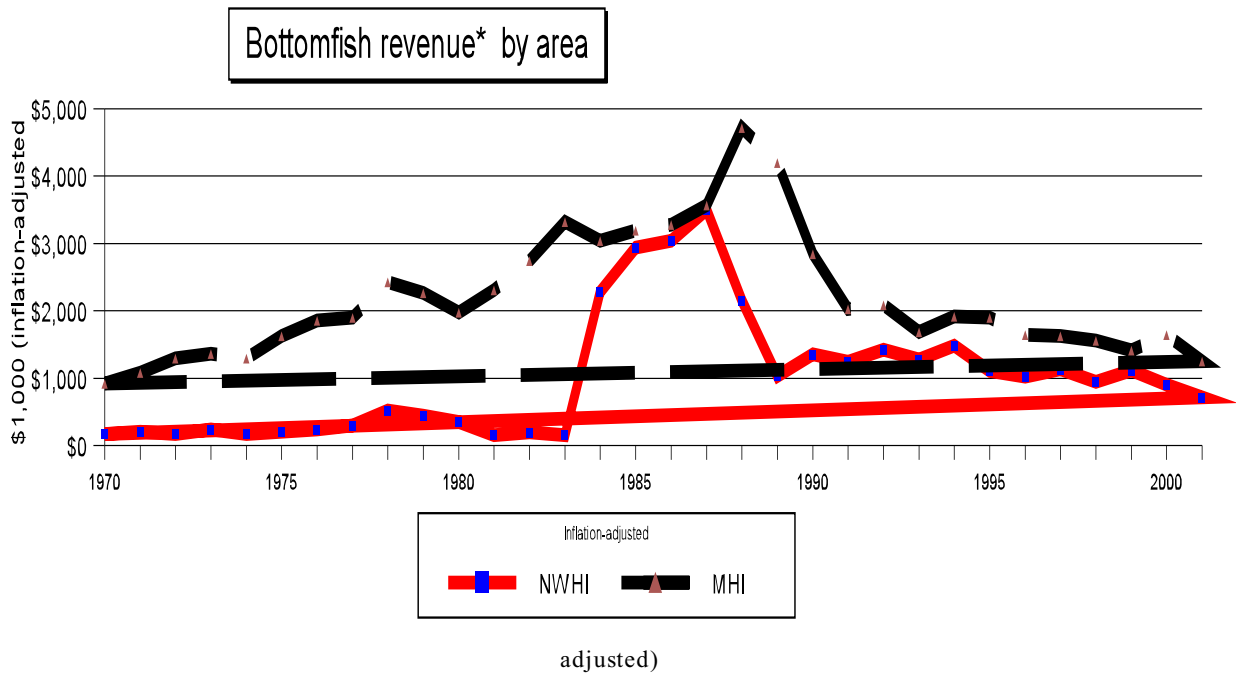
|                       | Pounds Caught<br>All Areas<br>(1,000s) | Revenue<br>All Areas<br>(\$1,000) | Revenue*<br>(Inflation-<br>adjusted) | Price <sup>2</sup><br>Per Pound Sold | Price *<br>(Inflation-<br>adjusted) | HCPI   |
|-----------------------|--|-----------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|--------|
| 1970                  | 344                                    | \$253                             | \$1,104                              | \$0.76                               | \$3.29                              | 40.9   |
| 1971                  | 410                                    | \$312                             | \$1,307                              | \$0.78                               | \$3.27                              | 42.6   |
| 1972                  | 407                                    | \$366                             | \$1,484                              | \$0.93                               | \$3.77                              | 44.0   |
| 1973                  | 454                                    | \$418                             | \$1,625                              | \$1.00                               | \$3.89                              | 45.9   |
| 1974                  | 413                                    | \$421                             | \$1,478                              | \$1.06                               | \$3.73                              | 50.8   |
| 1975                  | 549                                    | \$584                             | \$1,877                              | \$1.16                               | \$3.73                              | 55.5   |
| 1976                  | 558                                    | \$693                             | \$2,121                              | \$1.33                               | \$4.05                              | 58.3   |
| 1977                  | 562                                    | \$764                             | \$2,227                              | \$1.44                               | \$4.19                              | 61.2   |
| 1978                  | 740                                    | \$1,100                           | \$2,978                              | \$1.55                               | \$4.20                              | 65.9   |
| 1979                  | 698                                    | \$1,123                           | \$2,737                              | \$1.69                               | \$4.13                              | 73.2   |
| 1980                  | 713                                    | \$1,082                           | \$2,357                              | \$1.59                               | \$3.47                              | 81.9   |
| 1981                  | 643                                    | \$1,262                           | \$2,488                              | \$2.07                               | \$4.08                              | 90.5   |
| 1982                  | 750                                    | \$1,600                           | \$2,973                              | \$2.23                               | \$4.15                              | 96.0   |
| 1983                  | 887                                    | \$1,976                           | \$3,532                              | \$2.31                               | \$4.14                              | 99.8   |
| 1984                  | 1,481                                  | \$3,192                           | \$5,460                              | \$2.23                               | \$3.81                              | 104.3  |
| 1985                  | 1,717                                  | \$3,853                           | \$6,370                              | \$2.31                               | \$3.81                              | 107.9  |
| 1986                  | 1,682                                  | \$3,958                           | \$6,402                              | \$2.43                               | \$3.93                              | 110.3  |
| 1987                  | 1,819                                  | \$4,687                           | \$7,215                              | \$2.63                               | \$4.05                              | 115.9  |
| 1988                  | 1,794                                  | \$4,796                           | \$6,967                              | \$2.76                               | \$4.01                              | 122.8  |
| 1989                  | 1,314                                  | \$3,867                           | \$5,319                              | \$3.10                               | \$4.27                              | 129.7  |
| 1990                  | 1,094                                  | \$3,371                           | \$4,330                              | \$3.24                               | \$4.17                              | 138.9  |
| 1991                  | 984                                    | \$2,864                           | \$3,431                              | \$3.07                               | \$3.68                              | 148.9  |
| 1992                  | 1,043                                  | \$3,199                           | \$3,661                              | \$3.21                               | \$3.67                              | 155.9  |
| 1993                  | 862                                    | \$2,749                           | \$3,052                              | \$3.33                               | \$3.70                              | 160.7  |
| 1994                  | 1,011                                  | \$3,277                           | \$3,550                              | \$3.39                               | \$3.67                              | 164.7  |
| 1995                  | 972                                    | \$2,949                           | \$3,124                              | \$3.19                               | \$3.38                              | 168.4  |
| 1996                  | 768                                    | \$2,636                           | \$2,750                              | \$3.62                               | \$3.78                              | 171.0  |
| 1997                  | 872                                    | \$2,855                           | \$2,958                              | \$3.47                               | \$3.59                              | 172.2  |
| 1998                  | 834                                    | \$2,470                           | \$2,568                              | \$3.26                               | \$3.39                              | 171.6  |
| 1999                  | 801                                    | \$2,496                           | \$2,568                              | \$3.43                               | \$3.53                              | 173.4  |
| 2000                  | 781                                    | \$2,550                           | \$2,580                              | \$3.64                               | \$3.68                              | 176.3  |
| 2001p                 | 643                                    | \$1,993                           | \$1,993                              | \$3.44                               | \$3.44                              | 178.4  |
| Average               | 894                                    | \$2,179                           | \$3,268                              | \$2.36                               | \$3.80                              | 111.81 |
| Standard<br>Deviation | 411                                    | \$1,337                           | \$1,644                              | \$0.95                               | \$0.28                              | 47.60  |

<sup>2</sup>

Price calculated on Pounds Sold (not shown), not Pounds Caught.



Figure 9. Hawaii bottomfish landings, revenue\*, and price\* by source, 1970 - present. (\*Inflation



**Interpretation\*:** Inflation-adjusted revenue from main Hawaiian Islands bottomfish grew steadily through the 1970s and 1980s as both *real* prices and total landings increased substantially. Beginning in 1988, total landings began to decline, falling almost 60% in the subsequent decade, while inflation-adjusted prices have been variable, showing no particular trend although remaining substantially above the long-term average. NWHI bottomfish landings also grew dramatically in the mid-1980s and then tailed off, stabilizing in the 1990s at a level below the main Hawaiian Islands. Inflation-adjusted revenue is only 25% that in 1987 (the peak).

These changes in total landings are related to both catch rates and participation. More interpretation can be gleaned from discussion in detailed tables and figures in this report.

\*Note: Interpretation of this figure has not been updated for 2001 data. The interpretation will be updated in the 2002 annual report.

**Data:** Hawaii Division of Aquatic Resources (HDAR) commercial catch reports are used for all the main Hawaiian Islands (MHI) landings and revenue; HDAR reports are also used for Northwestern Hawaiian Islands (NWHI) landings from 1970-83. NMFS estimates from shoreside monitoring are used for NWHI landings from 1984-96. HDAR landings are again used for NWHI landings from 1997 to present.

Revenue\* represents nominal revenue adjusted for inflation by the Honolulu Consumer Price Index (HCPI); revenue\* and prices\* are adjusted to the current year.

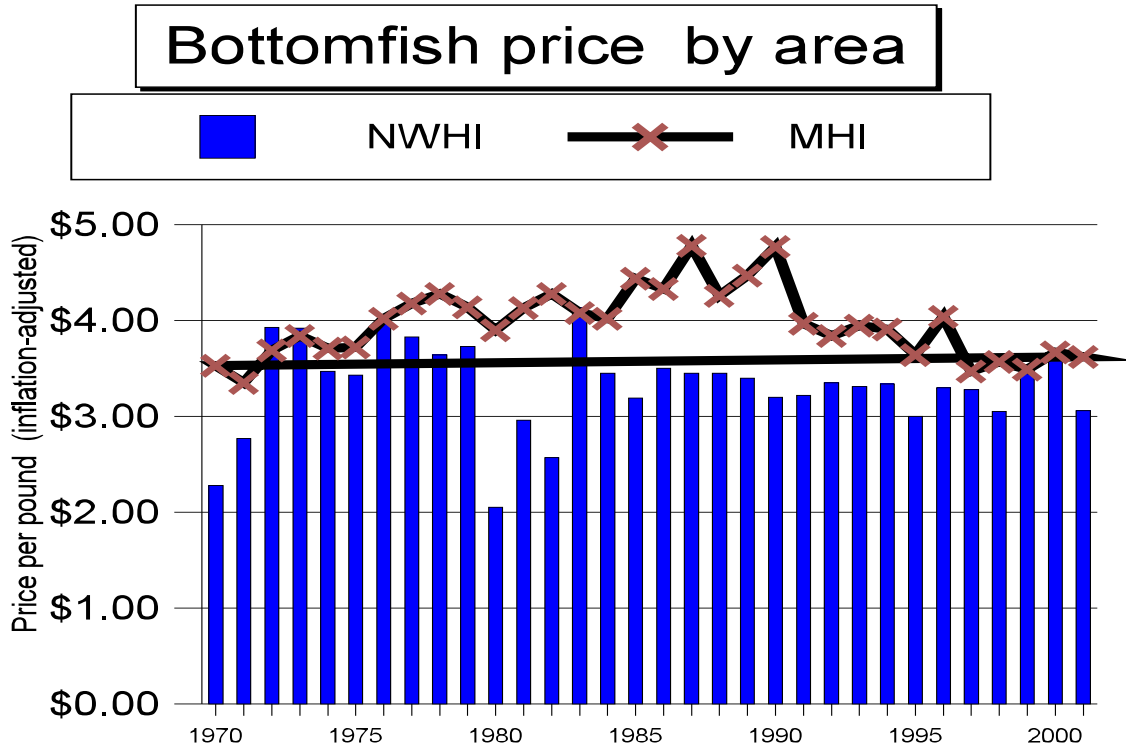
**Data source:** Data imported from HTOT00x.xls ( 4/12/01)

Hawaii bottomfish landings, revenue, and price by source, 1970 - present.  
 (\* Inflation-adjusted.)

|                               | NWHI<br>Pounds<br>Caught | NWHI<br>Revenue | NWHI<br>Revenue*         | NWHI<br>Aggregate | NWHI<br>Aggregate<br>Price * | HCPI         |
|-------------------------------|--------------------------|-----------------|--------------------------|-------------------|------------------------------|--------------|
|                               | Nominal Values           |                 | (Inflation-<br>adjusted) | Nominal Price     | (Inflation-<br>adjusted)     |              |
| 1970                          | 74                       | \$39            | \$170                    | \$0.53            | \$2.31                       | 40.9         |
| 1971                          | 75                       | \$50            | \$209                    | \$0.67            | \$2.81                       | 42.6         |
| 1972                          | 43                       | \$42            | \$170                    | \$0.98            | \$3.97                       | 44.0         |
| 1973                          | 62                       | \$63            | \$245                    | \$1.02            | \$3.96                       | 45.9         |
| 1974                          | 49                       | \$49            | \$172                    | \$1.00            | \$3.51                       | 50.8         |
| 1975                          | 59                       | \$64            | \$206                    | \$1.08            | \$3.47                       | 55.5         |
| 1976                          | 59                       | \$78            | \$239                    | \$1.32            | \$4.04                       | 58.3         |
| 1977                          | 83                       | \$104           | \$303                    | \$1.33            | \$3.88                       | 61.2         |
| 1978                          | 143                      | \$194           | \$525                    | \$1.36            | \$3.68                       | 65.9         |
| 1979                          | 118                      | \$183           | \$446                    | \$1.55            | \$3.78                       | 73.2         |
| 1980                          | 172                      | \$163           | \$355                    | \$0.95            | \$2.07                       | 81.9         |
| 1981                          | 52                       | \$79            | \$156                    | \$1.52            | \$3.00                       | 90.5         |
| 1982                          | 77                       | \$108           | \$201                    | \$1.40            | \$2.60                       | 96.0         |
| 1983                          | 38                       | \$89            | \$159                    | \$2.34            | \$4.18                       | 99.8         |
| 1984                          | 661                      | \$1,350         | \$2,309                  | \$2.04            | \$3.49                       | 104.3        |
| 1985                          | 922                      | \$1,800         | \$2,976                  | \$1.95            | \$3.22                       | 107.9        |
| 1986                          | 869                      | \$1,900         | \$3,073                  | \$2.19            | \$3.54                       | 110.3        |
| 1987                          | 1015                     | \$2,300         | \$3,540                  | \$2.27            | \$3.49                       | 115.9        |
| 1988                          | 625                      | \$1,500         | \$2,179                  | \$2.40            | \$3.49                       | 122.8        |
| 1989                          | 303                      | \$756           | \$1,040                  | \$2.50            | \$3.44                       | 129.7        |
| 1990                          | 423                      | \$1,066         | \$1,369                  | \$2.52            | \$3.24                       | 138.9        |
| 1991                          | 387                      | \$1,053         | \$1,262                  | \$2.72            | \$3.26                       | 148.9        |
| 1992                          | 424                      | \$1,255         | \$1,436                  | \$2.96            | \$3.39                       | 155.9        |
| 1993                          | 385                      | \$1,164         | \$1,292                  | \$3.02            | \$3.35                       | 160.7        |
| 1994                          | 443                      | \$1,382         | \$1,497                  | \$3.12            | \$3.38                       | 164.7        |
| 1995                          | 369                      | \$1,060         | \$1,123                  | \$2.87            | \$3.04                       | 168.4        |
| 1996                          | 309                      | \$989           | \$1,032                  | \$3.20            | \$3.34                       | 171.0        |
| 1997                          | 346                      | \$1,106         | \$1,146                  | \$3.20            | \$3.32                       | 172.2        |
| 1998                          | 329                      | \$924           | \$961                    | \$2.97            | \$3.09                       | 171.6        |
| 1999                          | 341                      | \$1,102         | \$1,134                  | \$3.42            | \$3.52                       | 173.4        |
| 2000                          | 270                      | \$902           | \$913                    | \$3.68            | \$3.72                       | 176.3        |
| <b>2001p</b>                  | <b>251</b>               | <b>\$725</b>    | <b>\$725</b>             | <b>\$3.10</b>     | <b>\$3.10</b>                | <b>178.4</b> |
| <b>Average</b>                | <b>306</b>               | <b>\$739</b>    | \$1,018                  | \$2.10            | \$3.37                       | 111.8        |
| <b>Standard<br/>Deviation</b> | 265                      | \$645           | \$911                    | \$0.90            | \$0.46                       | 47.60        |

|                       | MHI<br>Pounds<br>Caught | MHI<br>Revenue | MHI<br>Revenue*<br>(Inflation-adjusted) | MHI<br>Aggregate<br>Price | MHI<br>Aggregate<br>Price *<br>(Inflation -<br>adjusted) | HCPI         |
|-----------------------|-------------------------|----------------|---|---------------------------|--|--------------|
| 1970                  | 270                     | \$214          | \$933                                   | \$0.82                    | \$3.58   | 40.9         |
| 1971                  | 335                     | \$262          | \$1,097                                 | \$0.81                    | \$3.39   | 42.6         |
| 1972                  | 364                     | \$324          | \$1,314                                 | \$0.92                    | \$3.73   | 44.0         |
| 1973                  | 392                     | \$355          | \$1,380                                 | \$1.00                    | \$3.89   | 45.9         |
| 1974                  | 364                     | \$372          | \$1,306                                 | \$1.07                    | \$3.76   | 50.8         |
| 1975                  | 485                     | \$513          | \$1,649                                 | \$1.17                    | \$3.76   | 55.5         |
| 1976                  | 499                     | \$615          | \$1,882                                 | \$1.33                    | \$4.07   | 58.3         |
| 1977                  | 479                     | \$660          | \$1,924                                 | \$1.45                    | \$4.23   | 61.2         |
| 1978                  | 597                     | \$906          | \$2,453                                 | \$1.60                    | \$4.33   | 65.9         |
| 1979                  | 580                     | \$940          | \$2,291                                 | \$1.72                    | \$4.19   | 73.2         |
| 1980                  | 541                     | \$919          | \$2,002                                 | \$1.81                    | \$3.94   | 81.9         |
| 1981                  | 591                     | \$1,183        | \$2,332                                 | \$2.12                    | \$4.18   | 90.5         |
| 1982                  | 673                     | \$1,492        | \$2,773                                 | \$2.33                    | \$4.33   | 96.0         |
| 1983                  | 847                     | \$1,882        | \$3,364                                 | \$2.31                    | \$4.13   | 99.8         |
| 1984                  | 803                     | \$1,797        | \$3,074                                 | \$2.38                    | \$4.07   | 104.3        |
| 1985                  | 765                     | \$1,954        | \$3,231                                 | \$2.72                    | \$4.50   | 107.9        |
| 1986                  | 811                     | \$2,052        | \$3,319                                 | \$2.71                    | \$4.38   | 110.3        |
| 1987                  | 785                     | \$2,345        | \$3,610                                 | \$3.14                    | \$4.83   | 115.9        |
| 1988                  | 1,166                   | \$3,288        | \$4,777                                 | \$2.97                    | \$4.31   | 122.8        |
| 1989                  | 1,007                   | \$3,090        | \$4,250                                 | \$3.29                    | \$4.53   | 129.7        |
| 1990                  | 651                     | \$2,242        | \$2,880                                 | \$3.76                    | \$4.83   | 138.9        |
| 1991                  | 562                     | \$1,713        | \$2,052                                 | \$3.35                    | \$4.01   | 148.9        |
| 1992                  | 588                     | \$1,842        | \$2,108                                 | \$3.40                    | \$3.89   | 155.9        |
| 1993                  | 462                     | \$1,535        | \$1,704                                 | \$3.60                    | \$4.00   | 160.7        |
| 1994                  | 536                     | \$1,793        | \$1,942                                 | \$3.65                    | \$3.95   | 164.7        |
| 1995                  | 570                     | \$1,818        | \$1,926                                 | \$3.48                    | \$3.69   | 168.4        |
| 1996                  | 442                     | \$1,593        | \$1,662                                 | \$3.92                    | \$4.09   | 171.0        |
| 1997                  | 519                     | \$1,589        | \$1,646                                 | \$3.39                    | \$3.51   | 172.2        |
| 1998                  | 496                     | \$1,517        | \$1,577                                 | \$3.47                    | \$3.61   | 171.6        |
| 1999                  | 460                     | \$1,393        | \$1,433                                 | \$3.43                    | \$3.53   | 173.4        |
| 2000                  | 509                     | \$1,641        | \$1,661                                 | \$3.67                    | \$3.71   | 176.3        |
| <b>2001p</b>          | <b>391</b>              | <b>\$1,266</b> | <b>\$1,266</b>                          | <b>\$3.66</b>             | <b>\$3.66</b>  | <b>178.4</b> |
| Average               | 588                     | \$1,407        | \$2,263                                 | \$2.44                    | \$4.04   | 107.4        |
| Standard<br>Deviation | 197                     | \$787          | \$924                                   | \$1.02                    | \$0.36   | 45.95        |

Figure 10. Hawaii bottomfish ex-vessel prices\* by source, 1987 - present.  
 (\* Inflation-adjusted.)

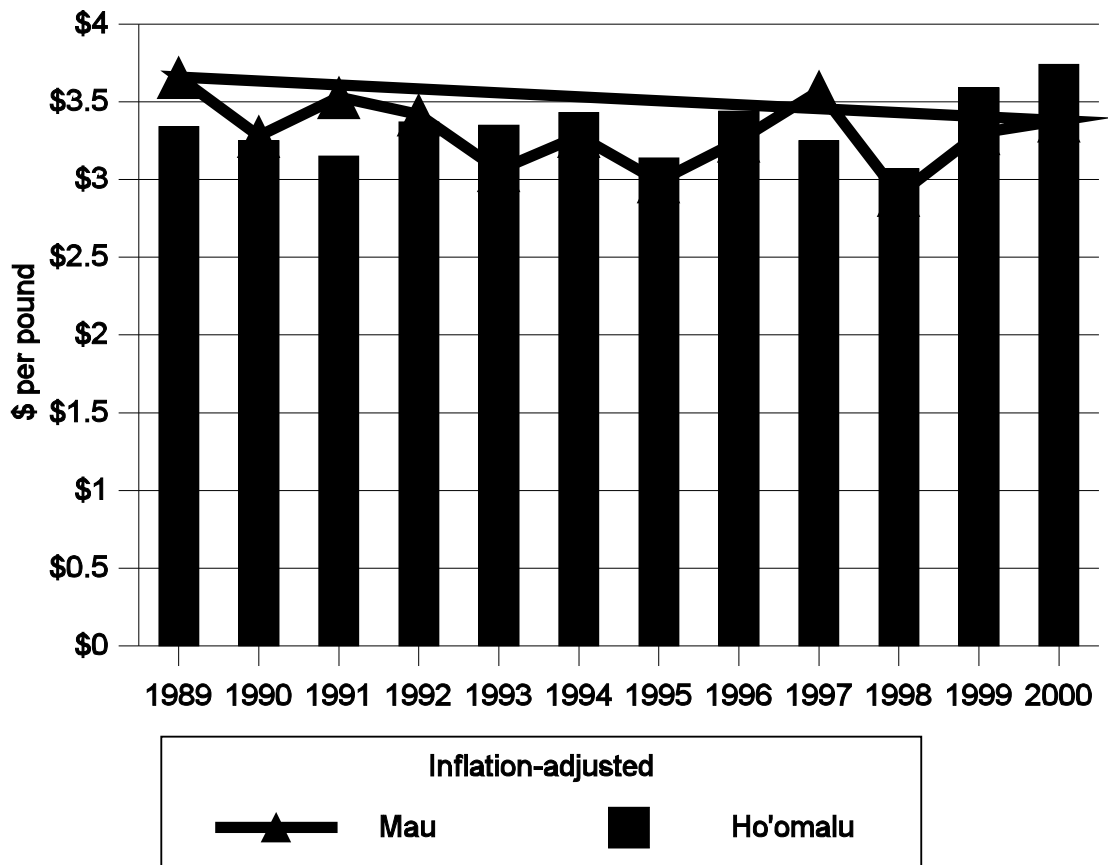


**Interpretation\*:** Historically, bottomfish caught in the main Hawaiian Islands have tended to have higher aggregate prices, reflecting both species composition and greater freshness. However, in the late 1990s, the prices converged. This might have reflected a relative lowering of the MHI bottomfish prices, perhaps reflecting the softness of the upscale part of the Hawaii market. Onaga and opakapaka comprise the largest valued landings in each area for most years (ignoring the highly fluctuating landings of uku); NWHI ex-vessel prices were \$4.35 and \$4.40 per pound respectively in CY 2000 while MHI were \$5.93 and \$ 4.46, respectively. However, the NWHI landings are comprised of a higher percentage of these higher priced species compared to the MHI, so the difference in price for individual species by area is ironed out by the different species compositions between the two areas.

\*Note: Interpretation of this figure has not been updated for 2001 data. The interpretation will be updated in the 2002 annual report.

**Data:** See Figure 9.

Figure 11. Hawaii Bottomfish (BMUS) Ex-vessel Prices\* by NWHI zone, 1989 - present (\* Inflation-adjusted).



**Interpretation\*:** Mau and Ho’omalau zone aggregate bottomfish prices (not accounting for differences in species composition) have been roughly the same in aggregate over time but diverged rather substantially in recent years, with the Ho’omalau receiving the highest aggregate prices. In inflation-adjusted terms, Mau zone prices have not changed substantial over the past ten years but Ho’omalau zone aggregate prices are 15 - 20% higher than in the late 1980s and early 1990s. On an individual species basis, Mau zone prices exceed those for the Ho’omalau zone, which might be expected since there is a shorter running time from the Mau zone to markets on Oahu and Kauai. Onaga and opakapaka are respectively \$5.82 and \$4.31 per pound, ex-vessel, from the Mau zone, while from the Ho’omalau zone the prices are \$4.31 and \$4.36.

\*Note: Interpretation of this figure has not been updated for 2001 data. The interpretation will be updated in the 2002 annual report.

Hawaii Bottomfish Ex-vessel Prices\* by NWHI zone, 1989 - present.  
 (\*Inflation-adjusted to current year base)

| Year               | Nominal Price per Pound |               | Inflation-adjusted Price |               |              |
|--------------------|-------------------------|---------------|--------------------------|---------------|--------------|
|                    | Mau                     | Ho'omalua     | Mau                      | Ho'omalua     | HCPI         |
| 1989               | \$2.64                  | \$2.41        | \$3.63                   | \$3.31        | 129.70       |
| 1990               | \$2.53                  | \$2.51        | \$3.25                   | \$3.22        | 138.90       |
| 1991               | \$2.92                  | \$2.61        | \$3.50                   | \$3.13        | 148.90       |
| 1992               | \$2.96                  | \$2.92        | \$3.39                   | \$3.34        | 155.90       |
| 1993               | \$2.73                  | \$2.99        | \$3.03                   | \$3.32        | 160.70       |
| 1994               | \$3.00                  | \$3.14        | \$3.25                   | \$3.40        | 164.70       |
| 1995               | \$2.80                  | \$2.94        | \$2.97                   | \$3.11        | 168.40       |
| 1996               | \$3.09                  | \$3.27        | \$3.22                   | \$3.41        | 171.00       |
| 1997               | \$3.42                  | \$3.11        | \$3.54                   | \$3.22        | 172.20       |
| 1998               | \$2.77                  | \$2.93        | \$2.88                   | \$3.05        | 171.6        |
| 1999               | \$3.18                  | \$3.46        | \$3.27                   | \$3.56        | 173.4        |
| 2000               | \$3.38                  | \$3.74        | \$3.42                   | \$3.78        | 176.3        |
| <b>2001p</b>       | <b>\$2.79</b>           | <b>\$3.15</b> | <b>\$2.79</b>            | <b>\$3.15</b> | <b>178.4</b> |
| Average            | \$2.94                  | \$3.01        | \$3.24                   | \$3.31        | 162.32       |
| Standard Deviation | \$0.27                  | \$0.37        | \$0.26                   | \$0.20        | <b>15.04</b> |

**Data:** NWHI prices are compiled from NMFS market monitoring landings. Inflation-adjusted values are to current year base HCPI (Honolulu Consumer Price Index).

**Data source:** nwhi2000.xls (4/9/01)

Hawaii bottomfish species landings and prices, all areas combined, 2000 & 2001.<sup>3</sup>

|                                   | 2000    |           | 2001    |           |
|-----------------------------------|---------|-----------|---------|-----------|
|                                   | Pounds  | Revenue   | Pounds  | Revenue   |
| Butaguchi                         | 38,380  | 60,715    | 31,228  | 49,224    |
| Ehu                               | 43,057  | 155,538   | 37,503  | 126,843   |
| Hapuupuu                          | 41,430  | 141,534   | 37,437  | 133,846   |
| Onaga                             | 169,306 | 812,297   | 128,414 | 569,700   |
| Opakapaka                         | 206,767 | 857,340   | 156,416 | 653,372   |
| Uku                               | 122,990 | 298,457   | 117,280 | 266,732   |
| Ulua                              | 6,698   | 7,985     | 7,862   | 10,198    |
| Other BMUS                        | 117,592 | 156,144   | 92,963  | 124,466   |
| Other Bottomfish                  | 35,158  | 60,445    | 33,518  | 59,056    |
| Total Bottomfish                  | 781,378 | 2,550,455 | 642,621 | 1,993,437 |
| Average Ex-vessel Price per Pound |         |           |         |           |
|                                   | 2000    |           | 2001    |           |
| Butaguchi                         | \$1.82  |           | \$1.73  |           |
| Ehu                               | \$3.89  |           | \$3.69  |           |
| Hapuupuu                          | \$3.60  |           | \$3.78  |           |
| Onaga                             | \$5.05  |           | \$4.67  |           |
| Opakapaka                         | \$4.43  |           | \$4.41  |           |
| Uku                               | \$2.58  |           | \$2.43  |           |
| Ulua                              | \$1.41  |           | \$1.48  |           |
| Other BMUS                        | \$1.86  |           | \$1.82  |           |
| Other Bottomfish                  | \$2.22  |           | \$2.20  |           |
| Total Bottomfish                  | \$3.64  |           | \$3.43  |           |

**Interpretation\*:** Species prices show the significance of species composition in aggregate statistics since prices vary from \$5.05 per pound, ex-vessel, for onaga to \$1.88 for “other” BMUS (bottomfish management unit species). The generally higher species prices in 2000

<sup>3</sup> Small differences may exist between species totals and area totals due to rounding.

probably reflect the improved economic climate in Hawaii, increasing the demand for fresh seafood.

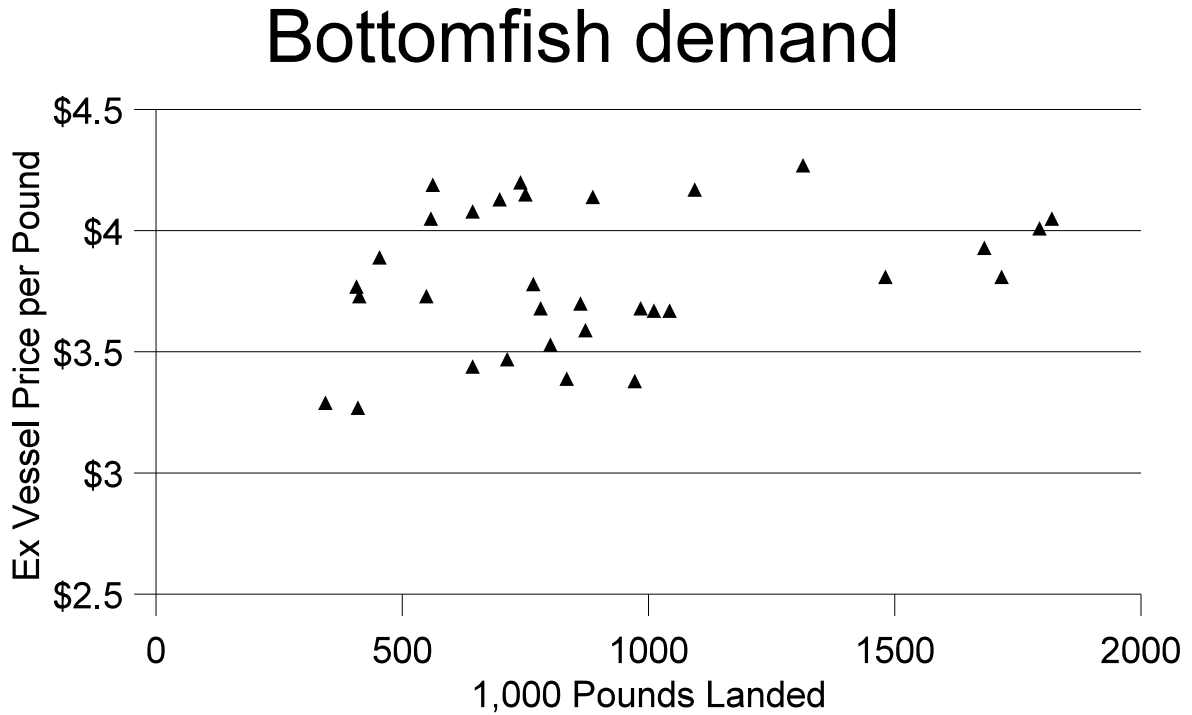
\*Note: Interpretation of this figure has not been updated for 2001 data. The interpretation will be updated in the 2002 annual report.

**Data & Data Sources:** Hawaii Division of Aquatic Resources (HDAR) commercial catch reports are used for all the main Hawaiian Islands (MHI) landings and revenue; HDAR reports are also used for Northwestern Hawaiian Islands (NWHI) landings from 1970-83. NMFS estimates from shoreside monitoring are used for NWHI landings from 1984-96. HDAR landings are again used for NWHI landings beginning in 1997.

Data imported from: B8700xN.xls (4/12/01)



Figure 12. Hawaii bottomfish demand (annual, inflation-adjusted ex-vessel price\* and total domestic landings, 1970 - present.)

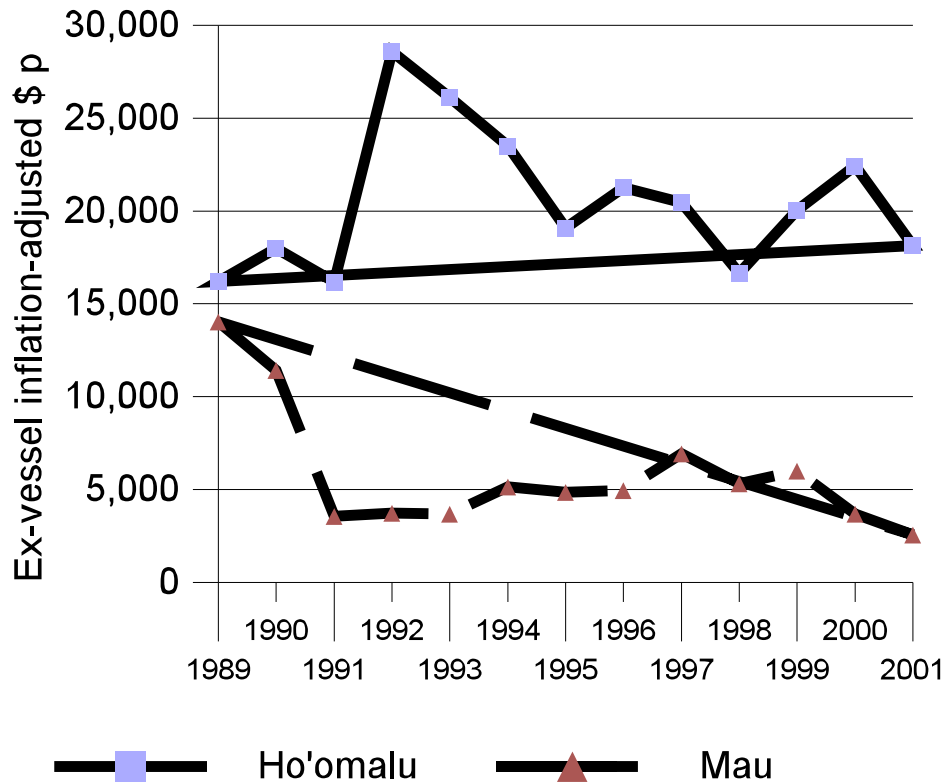


**Interpretation\*:** Economic research in the mid-1980s showed a considerable (negative) relationship between weekly bottomfish landings and ex-vessel price. However this relationship is not shown for the annual data. As shown by this and the earlier figure, despite a considerable decrease in total landings since 1987, inflation-adjusted ex-vessel price has been quite stable over the past 30 years. The impact of imports may be significant since it now supplies about 40% of the local market.

\*Note: Interpretation of this figure has not been updated for 2001 data. The interpretation will be updated in the 2002 annual report.

**Data:** See Figure 9.

Figure 13. NWHI bottomfish inflation-adjusted revenue\* per trip by zone, 1989 - present.



**Interpretation\*:** The two trends in inflation-adjusted revenue per trip show the distinct difference between Ho’omalau and Mau zone operations. When the limited entry provisions began to take effect in the Ho’omalau zone in 1989-91, revenue rose dramatically but has subsequently declined to slightly more than its average for the period. Revenue (inflation-adjusted) in the Mau zone initially fell (as the limited entry vessels could no longer fish in the Mau zone, only smaller boats remained in the Mau zone). After that initial drop, however, revenue per trip in the Mau zone rose for several years, but has subsequently declined again. Increasingly participation in the Mau zone is on a part-time basis and by vessels that do not specialize in bottomfish fishing. Additional trip revenue, in some cases a substantial proportion, comes from non-bottomfish landings outside the bottomfish grounds of the NWHI.

\*Note: Interpretation of this figure has not been updated for 2001 data. The interpretation will be updated in the 2002 annual report.

NWHI bottomfish inflation-adjusted fleet-wide revenue\* and revenue\* per trip by zone, 1989 - present.

| Year               | Ho'omalū Zone               |           |                   | Mau Zone                    |           |                   |
|--------------------|-----------------------------|-----------|-------------------|-----------------------------|-----------|-------------------|
|                    | Fleet-wide Revenue* \$1,000 | Trips     | Revenue* per Trip | Fleet-wide Revenue* \$1,000 | Trips     | Revenue* per Trip |
| 1989               | 454                         | 28        | 16,214            | 309                         | 22        | 14,045            |
| 1990               | 450                         | 25        | 18,000            | 629                         | 55        | 11,436            |
| 1991               | 761                         | 47        | 16,191            | 300                         | 84        | 3,571             |
| 1992               | 1,058                       | 37        | 28,595            | 206                         | 55        | 3,745             |
| 1993               | 888                         | 34        | 26,118            | 266                         | 72        | 3,694             |
| 1994               | 964                         | 41        | 23,512            | 509                         | 99        | 5,141             |
| 1995               | 630                         | 33        | 19,091            | 471                         | 97        | 4,856             |
| 1996               | 553                         | 26        | 21,269            | 402                         | 81        | 4,963             |
| 1997               | 777                         | 38        | 20,447            | 368                         | 53        | 6,943             |
| 1998               | 832                         | 50        | 16,640            | 208                         | 39        | 5,333             |
| 1999               | 962                         | 48        | 20,042            | 180                         | 30        | 6,000             |
| 2000               | 718                         | 32        | 22,438            | 162                         | 44        | 3,682             |
| <b>2001p</b>       | <b>744</b>                  | <b>41</b> | <b>18,146</b>     | <b>141</b>                  | <b>55</b> | <b>2,564</b>      |
| Average            | 753                         | 37        | 20,516            | 319                         | 60        | 5,844             |
| Standard Deviation | 192.3                       | 8.3       | 3,833.1           | 149.6                       | 24.5      | 3,315.4           |

**Data:** Data are compiled from NMFS shoreside market monitoring for 1984-95 and then combined with HDAR data for 1996 and 1997. Since 1998, data is compiled from HDAR figures. Revenue is adjusted for inflation to the current base year by the Honolulu consumer price index.

**Data Source:** Imported from B8700xN.xls (4/16/01)