# SKATES

## Alaska skate (*Bathyraja parmifera*)

Alaska skate were caught infrequently and in modest numbers in the three westernmost INPFC areas in only 9 out of the 59 survey strata (Tables 67 and 68). No Alaska skate were caught in the Yakutat and Southeastern INPFC areas. CPUEs generally increased with depth to 300 m, but no fish were caught deeper than 300 m. Mean fish weight generally decreased with depth.

## Aleutian skate (*Bathyraja aleutica*)

Aleutian skate were caught in approximately 12% of all survey hauls and in moderate numbers in the three westernmost INPFC areas (Table 69). Besides a small catch in one tow in the Southeastern INPFC area, no catches of Aleutian skates were recorded east of Prince William Sound. The highest mean CPUE was recorded in the Lower Shelikof Gully stratum, which accounted for approximately 53% of the total estimated biomass even though it comprises only 3% of the total survey area (Table 70). Aleutian skate were caught in all depths to 500 m, but the highest CPUEs were recorded in the 101 to 300 m depth range. No fish were caught deeper than 500 m. Mean fish weight generally decreased with depth.

### Bering skate (*Bathyraja interrupta*)

Bering skate were caught in relatively modest numbers in approximately 13% of all survey hauls outside the Shumagin INPFC area, where no catches were recorded (Table 71). The highest CPUEs were recorded in the gullies of the Chirikof and Kodiak INPFC areas (Table 72). Bering skate were caught in all depths to 500 m but the highest CPUEs were generally recorded in the 101 to 300 m depth range. No fish were caught deeper than 500 m.

### Big skate (*Raja binoculata*)

Big skate were caught in relatively modest numbers in approximately 7% of all survey hauls in all five of the INPFC areas (Table 73). The highest CPUEs were recorded in several of the shallowest strata of the survey area in waters less than 100 m (Table 74). Approximately 87% of its estimated biomass was located shallower than 100 m, with all of the remainder in waters between 101 and 200 m deep.

### Longnose skate (*Raja rhina*)

Longnose skate were caught in relatively modest numbers in almost 20% of all survey hauls in all five of the INPFC areas (Table 75). Just over 50% of the estimated biomass was located in the Kodiak INPFC area. Longnose skate were caught in all depths to 500 m, with the highest densities recorded in the 101 to 500 m depth range. The highest CPUEs were recorded in the Yakutat Gullies and Kenai Flats strata (Table 76).

Table 67. -- Number of survey hauls, number of hauls with Alaska skate, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **Shumagin** | 1 - 100 | 133 | 2 | 0.043 | 177 | 0 | 441 | 6.378 |
| | 101 - 200 | 39 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 5 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 2 | 0.027 | 177 | 0 | 441 | 6.378 |
| **Chirikof** | 1 - 100 | 82 | 1 | 0.077 | 201 | 0 | 615 | 16.176 |
| | 101 - 200 | 69 | 8 | 0.176 | 419 | 90 | 748 | 3.167 |
| | 201 - 300 | 26 | 4 | 0.532 | 614 | 0 | 1,255 | 3.929 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 13 | 0.181 | 1,233 | 417 | 2,049 | 4.100 |
| **Kodiak** | 1 - 100 | 97 | 2 | 0.018 | 70 | 0 | 183 | 4.172 |
| | 101 - 200 | 127 | 3 | 0.032 | 139 | 0 | 315 | 3.321 |
| | 201 - 300 | 30 | 2 | 0.153 | 175 | 0 | 644 | 2.668 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 7 | 0.038 | 384 | 0 | 867 | 3.090 |
| **Yakutat** | 1 - 100 | 11 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 33 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 3 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 76 | 0 | --- | --- | --- | --- | --- |
| **Southeastern** | 1 - 100 | 11 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 22 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 11 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 0 | --- | --- | --- | --- | --- |
| **All areas** | 1 - 100 | 334 | 5 | 0.035 | 448 | 0 | 942 | 7.866 |
| | 101 - 200 | 290 | 11 | 0.046 | 558 | 189 | 927 | 3.204 |
| | 201 - 300 | 107 | 6 | 0.219 | 789 | 66 | 1,512 | 3.556 |
| | 301 - 500 | 49 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 24 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 16 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 820 | 22 | 0.056 | 1,795 | 858 | 2,731 | 3.963 |

Table 68. -- Catch per unit of effort by stratum for Alaska skate sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Chirikof | 201 - 300 | Lower Shelikof Gully | 18 | 4 | 0.61 | 614 | 0 | 1,258 |
| Kodiak | 201 - 300 | Upper Shelikof Gully | 4 | 2 | 0.55 | 175 | 0 | 712 |
| Chirikof | 101 - 200 | Shelikof Edge | 27 | 7 | 0.45 | 347 | 50 | 644 |
| Chirikof | 1 - 100 | Semidi Bank | 23 | 1 | 0.28 | 201 | 0 | 616 |
| Kodiak | 101 - 200 | Albatross Gullies | 28 | 3 | 0.18 | 139 | 0 | 315 |
| Chirikof | 101 - 200 | Chirikof Outer Shelf | 25 | 1 | 0.14 | 72 | 0 | 220 |
| Shumagin | 1 - 100 | Fox Islands | 21 | 1 | 0.13 | 110 | 0 | 339 |
| Kodiak | 1 - 100 | Albatross Shallows | 28 | 2 | 0.12 | 70 | 0 | 184 |
| Shumagin | 1 - 100 | Lower Alaska Peninsula | 28 | 1 | 0.10 | 67 | 0 | 206 |

Table 69. -- Number of survey hauls, number of hauls with Aleutian skate, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **Shumagin** | 1 - 100 | 133 | 8 | 0.266 | 1,098 | 310 | 1,886 | 8.908 |
| | 101 - 200 | 39 | 7 | 1.456 | 2,137 | 0 | 4,339 | 10.268 |
| | 201 - 300 | 17 | 1 | 0.220 | 61 | 0 | 191 | 10.000 |
| | 301 - 500 | 9 | 3 | 0.146 | 37 | 0 | 79 | 0.834 |
| | 501 - 700 | 5 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 19 | 0.511 | 3,333 | 1,084 | 5,582 | 8.730 |
| **Chirikof** | 1 - 100 | 82 | 6 | 0.398 | 1,036 | 205 | 1,866 | 11.792 |
| | 101 - 200 | 69 | 11 | 0.881 | 2,101 | 468 | 3,734 | 9.563 |
| | 201 - 300 | 26 | 17 | 11.714 | 13,525 | 7,646 | 19,405 | 9.257 |
| | 301 - 500 | 10 | 1 | 0.010 | 2 | 0 | 5 | 0.233 |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 35 | 2.449 | 16,663 | 10,549 | 22,778 | 9.385 |
| **Kodiak** | 1 - 100 | 97 | 3 | 0.208 | 803 | 0 | 1,742 | 15.788 |
| | 101 - 200 | 127 | 16 | 0.679 | 2,941 | 1,187 | 4,694 | 9.480 |
| | 201 - 300 | 30 | 5 | 1.198 | 1,376 | 0 | 3,081 | 7.022 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 24 | 0.504 | 5,120 | 2,780 | 7,460 | 9.191 |
| **Yakutat** | 1 - 100 | 11 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 33 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 3 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 76 | 0 | --- | --- | --- | --- | --- |
| **Southeastern** | 1 - 100 | 11 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 22 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 1 | 0.274 | 138 | 0 | 434 | 11.355 |
| | 301 - 500 | 11 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 1 | 0.049 | 138 | 0 | 434 | 11.355 |
| **All areas** | 1 - 100 | 334 | 17 | 0.228 | 2,937 | 1,469 | 4,405 | 11.210 |
| | 101 - 200 | 290 | 34 | 0.587 | 7,178 | 4,101 | 10,255 | 9.727 |
| | 201 - 300 | 107 | 24 | 4.189 | 15,101 | 9,097 | 21,106 | 9.013 |
| | 301 - 500 | 49 | 4 | 0.030 | 39 | 0 | 81 | 0.753 |
| | 501 - 700 | 24 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 16 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 820 | 79 | 0.789 | 25,255 | 18,430 | 32,079 | 9.262 |

Table 70. -- Catch per unit of effort by stratum for Aleutian skate sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Chirikof | 201 - 300 | Lower Shelikof Gully | 18 | 14 | 13.44 | 13,463 | 7,559 | 19,366 |
| Kodiak | 201 - 300 | Upper Shelikof Gully | 4 | 3 | 4.23 | 1,358 | 0 | 3,311 |
| Shumagin | 101 - 200 | West Shumagin Gully | 4 | 2 | 3.56 | 810 | 0 | 2,475 |
| Shumagin | 101 - 200 | Sanak Gully | 7 | 2 | 2.30 | 977 | 0 | 2,972 |
| Chirikof | 101 - 200 | Shelikof Edge | 27 | 7 | 1.77 | 1,367 | 171 | 2,562 |
| Kodiak | 101 - 200 | Albatross Gullies | 28 | 5 | 1.37 | 1,081 | 0 | 2,385 |
| Kodiak | 101 - 200 | Barren Islands | 18 | 4 | 0.94 | 1,028 | 7 | 2,050 |
| Kodiak | 101 - 200 | Kodiak Outer Shelf | 28 | 4 | 0.85 | 428 | 0 | 929 |
| Chirikof | 1 - 100 | Semidi Bank | 23 | 3 | 0.74 | 540 | 0 | 1,161 |
| Shumagin | 1 - 100 | Davidson Bank | 48 | 6 | 0.64 | 872 | 146 | 1,597 |
| Chirikof | 101 - 200 | East Shumagin Gully | 17 | 2 | 0.63 | 698 | 0 | 1,857 |
| Kodiak | 1 - 100 | Albatross Banks | 39 | 3 | 0.52 | 803 | 0 | 1,742 |
| Shumagin | 101 - 200 | Shumagin Outer Shelf | 28 | 3 | 0.43 | 351 | 0 | 751 |
| Chirikof | 201 - 300 | Chirikof Slope | 8 | 3 | 0.41 | 63 | 0 | 194 |
| Southeastern | 201 - 300 | Prince of Wales Slope/Gullies | 14 | 1 | 0.35 | 138 | 0 | 436 |
| Kodiak | 101 - 200 | Portlock Flats | 35 | 2 | 0.32 | 237 | 0 | 575 |
| Chirikof | 1 - 100 | Chirikof Bank | 40 | 2 | 0.28 | 299 | 0 | 726 |
| Chirikof | 1 - 100 | Upper Alaska Peninsula | 19 | 1 | 0.25 | 197 | 0 | 611 |
| Shumagin | 201 - 300 | Shumagin Slope | 17 | 1 | 0.22 | 61 | 0 | 191 |
| Shumagin | 1 - 100 | Fox Islands | 21 | 1 | 0.15 | 128 | 0 | 396 |
| Shumagin | 301 - 500 | Shumagin Slope | 9 | 3 | 0.15 | 37 | 0 | 80 |
| Shumagin | 1 - 100 | Lower Alaska Peninsula | 28 | 1 | 0.14 | 98 | 0 | 300 |
| Kodiak | 101 - 200 | Kenai Flats | 18 | 1 | 0.14 | 166 | 0 | 517 |
| Kodiak | 201 - 300 | Kodiak Slope | 7 | 1 | 0.07 | 12 | 0 | 40 |
| Chirikof | 101 - 200 | Chirikof Outer Shelf | 25 | 2 | 0.07 | 36 | 0 | 108 |
| Kodiak | 201 - 300 | Kenai Gullies | 19 | 1 | 0.01 | 7 | 0 | 20 |
| Chirikof | 301 - 500 | Chirikof Slope | 10 | 1 | 0.01 | 2 | 0 | 5 |

Table 71. -- Number of survey hauls, number of hauls with Bering skate, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **Shumagin** | 1 - 100 | 133 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 39 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 5 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 0 | --- | --- | --- | --- | --- |
| **Chirikof** | 1 - 100 | 82 | 4 | 0.110 | 287 | 0 | 622 | 3.831 |
| | 101 - 200 | 69 | 17 | 0.276 | 658 | 284 | 1,032 | 1.793 |
| | 201 - 300 | 26 | 8 | 0.579 | 668 | 116 | 1,221 | 2.391 |
| | 301 - 500 | 10 | 1 | 0.005 | 1 | 0 | 2 | 0.143 |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 30 | 0.237 | 1,614 | 888 | 2,341 | 2.220 |
| **Kodiak** | 1 - 100 | 97 | 6 | 0.065 | 249 | 0 | 517 | 2.072 |
| | 101 - 200 | 127 | 25 | 0.270 | 1,170 | 629 | 1,711 | 1.757 |
| | 201 - 300 | 30 | 10 | 0.503 | 578 | 169 | 986 | 2.001 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 41 | 0.197 | 1,996 | 1,286 | 2,707 | 1.858 |
| **Yakutat** | 1 - 100 | 11 | 1 | 0.056 | 94 | 0 | 336 | 1.667 |
| | 101 - 200 | 33 | 2 | 0.051 | 150 | 0 | 387 | 1.722 |
| | 201 - 300 | 17 | 1 | 0.029 | 15 | 0 | 49 | 1.651 |
| | 301 - 500 | 9 | 1 | 0.003 | 1 | 0 | 3 | 0.128 |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 3 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 76 | 5 | 0.046 | 260 | 0 | 586 | 1.627 |
| **Southeastern** | 1 - 100 | 11 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 22 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 2 | 0.031 | 16 | 0 | 40 | 0.800 |
| | 301 - 500 | 11 | 2 | 0.189 | 59 | 0 | 183 | 1.318 |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 4 | 0.027 | 75 | 0 | 198 | 1.160 |
| **All areas** | 1 - 100 | 334 | 11 | 0.049 | 630 | 161 | 1,099 | 2.505 |
| | 101 - 200 | 290 | 44 | 0.162 | 1,978 | 1,292 | 2,663 | 1.766 |
| | 201 - 300 | 107 | 21 | 0.354 | 1,277 | 605 | 1,948 | 2.139 |
| | 301 - 500 | 49 | 4 | 0.047 | 61 | 0 | 184 | 1.055 |
| | 501 - 700 | 24 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 16 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 820 | 80 | 0.123 | 3,946 | 2,893 | 4,998 | 1.947 |

Table 72. -- Catch per unit of effort by stratum for Bering skate sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Chirikof | 201 - 300 | Lower Shelikof Gully | 18 | 7 | 0.67 | 667 | 112 | 1,222 |
| Kodiak | 201 - 300 | Upper Shelikof Gully | 4 | 2 | 0.62 | 199 | 0 | 578 |
| Kodiak | 201 - 300 | Kenai Gullies | 19 | 8 | 0.57 | 379 | 61 | 697 |
| Kodiak | 101 - 200 | Barren Islands | 18 | 7 | 0.50 | 549 | 110 | 989 |
| Chirikof | 101 - 200 | Shelikof Edge | 27 | 12 | 0.46 | 358 | 149 | 568 |
| Kodiak | 1 - 100 | Kenai Peninsula | 7 | 2 | 0.26 | 138 | 0 | 387 |
| Kodiak | 101 - 200 | Albatross Gullies | 28 | 4 | 0.25 | 195 | 0 | 416 |
| Chirikof | 101 - 200 | East Shumagin Gully | 17 | 3 | 0.24 | 267 | 0 | 579 |
| Kodiak | 101 - 200 | Portlock Flats | 35 | 8 | 0.22 | 164 | 0 | 328 |
| Southeastern | 301 - 500 | Southeastern Deep Gullies | 7 | 1 | 0.22 | 52 | 0 | 179 |
| Kodiak | 101 - 200 | Kenai Flats | 18 | 6 | 0.22 | 262 | 65 | 459 |
| Yakutat | 101 - 200 | Yakataga Shelf | 8 | 1 | 0.19 | 98 | 0 | 330 |
| Chirikof | 1 - 100 | Semidi Bank | 23 | 1 | 0.18 | 133 | 0 | 410 |
| Chirikof | 1 - 100 | Upper Alaska Peninsula | 19 | 2 | 0.16 | 130 | 0 | 331 |
| Yakutat | 1 - 100 | Middleton Shallows | 5 | 1 | 0.14 | 94 | 0 | 355 |
| Southeastern | 301 - 500 | Southeastern Slope | 4 | 1 | 0.09 | 7 | 0 | 30 |
| Kodiak | 1 - 100 | Lower Cook Inlet | 14 | 1 | 0.07 | 73 | 0 | 230 |
| Yakutat | 101 - 200 | Middleton Shelf | 9 | 1 | 0.07 | 52 | 0 | 173 |
| Yakutat | 201 - 300 | Yakutat Slope | 9 | 1 | 0.07 | 15 | 0 | 50 |
| Kodiak | 1 - 100 | Albatross Shallows | 28 | 3 | 0.07 | 38 | 0 | 91 |
| Chirikof | 101 - 200 | Chirikof Outer Shelf | 25 | 2 | 0.07 | 33 | 0 | 80 |
| Southeastern | 201 - 300 | Prince of Wales Slope/Gullies | 14 | 2 | 0.04 | 16 | 0 | 41 |
| Chirikof | 1 - 100 | Chirikof Bank | 40 | 1 | 0.02 | 24 | 0 | 73 |
| Chirikof | 201 - 300 | Chirikof Slope | 8 | 1 | 0.01 | 1 | 0 | 5 |
| Yakutat | 301 - 500 | Yakutat Slope | 7 | 1 | 0.01 | 1 | 0 | 3 |
| Chirikof | 301 - 500 | Chirikof Slope | 10 | 1 | 0.01 | 1 | 0 | 2 |

Table 73. -- Number of survey hauls, number of hauls with big skate, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **Shumagin** | 1 - 100 | 133 | 10 | 1.264 | 5,221 | 132 | 10,310 | 15.680 |
| | 101 - 200 | 39 | 1 | 0.443 | 651 | 0 | 1,983 | 25.742 |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 5 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 11 | 0.900 | 5,872 | 615 | 11,128 | 16.390 |
| **Chirikof** | 1 - 100 | 82 | 14 | 4.051 | 10,547 | 3,389 | 17,705 | 16.405 |
| | 101 - 200 | 69 | 4 | 0.596 | 1,421 | 0 | 3,421 | 7.022 |
| | 201 - 300 | 26 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 18 | 1.759 | 11,968 | 4,635 | 19,301 | 14.160 |
| **Kodiak** | 1 - 100 | 97 | 16 | 2.884 | 11,106 | 1,047 | 21,165 | 13.152 |
| | 101 - 200 | 127 | 2 | 0.041 | 175 | 0 | 543 | 4.993 |
| | 201 - 300 | 30 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 18 | 1.112 | 11,281 | 1,215 | 21,347 | 12.825 |
| **Yakutat** | 1 - 100 | 11 | 4 | 3.348 | 5,579 | 0 | 11,636 | 4.595 |
| | 101 - 200 | 33 | 3 | 0.887 | 2,606 | 0 | 6,898 | 25.703 |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 3 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 76 | 7 | 1.431 | 8,185 | 1,342 | 15,027 | 6.222 |
| **Southeastern** | 1 - 100 | 11 | 3 | 1.761 | 1,153 | 0 | 2,824 | 11.740 |
| | 101 - 200 | 22 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 11 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 3 | 0.411 | 1,153 | 0 | 2,824 | 11.740 |
| **All areas** | 1 - 100 | 334 | 47 | 2.604 | 33,606 | 19,529 | 47,683 | 10.728 |
| | 101 - 200 | 290 | 10 | 0.397 | 4,853 | 134 | 9,571 | 13.325 |
| | 201 - 300 | 107 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 49 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 24 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 16 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 820 | 57 | 1.202 | 38,458 | 23,818 | 53,099 | 11.003 |

Table 74. -- Catch per unit of effort by stratum for big skate sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Yakutat | 1 - 100 | Middleton Shallows | 5 | 3 | 7.89 | 5,301 | 0 | 11,794 |
| Kodiak | 1 - 100 | Lower Cook Inlet | 14 | 5 | 7.18 | 7,100 | 0 | 16,762 |
| Chirikof | 1 - 100 | Upper Alaska Peninsula | 19 | 8 | 6.44 | 5,110 | 1,315 | 8,905 |
| Chirikof | 1 - 100 | Chirikof Bank | 40 | 6 | 5.04 | 5,437 | 0 | 11,658 |
| Yakutat | 101 - 200 | Middleton Shelf | 9 | 3 | 3.55 | 2,606 | 0 | 6,982 |
| Shumagin | 1 - 100 | Shumagin Bank | 36 | 5 | 3.25 | 4,028 | 0 | 8,929 |
| Kodiak | 1 - 100 | Albatross Shallows | 28 | 6 | 2.34 | 1,352 | 0 | 2,710 |
| Kodiak | 1 - 100 | Kenai Peninsula | 7 | 1 | 2.30 | 1,212 | 0 | 4,177 |
| Southeastern | 1 - 100 | Southeastern Shallows | 11 | 3 | 1.76 | 1,153 | 0 | 2,844 |
| Chirikof | 101 - 200 | East Shumagin Gully | 17 | 2 | 0.99 | 1,103 | 0 | 3,053 |
| Kodiak | 1 - 100 | Albatross Banks | 39 | 4 | 0.94 | 1,443 | 0 | 3,021 |
| Shumagin | 101 - 200 | Shumagin Outer Shelf | 28 | 1 | 0.80 | 651 | 0 | 1,986 |
| Shumagin | 1 - 100 | Davidson Bank | 48 | 3 | 0.66 | 897 | 0 | 2,371 |
| Shumagin | 1 - 100 | Lower Alaska Peninsula | 28 | 2 | 0.43 | 297 | 0 | 748 |
| Chirikof | 101 - 200 | Chirikof Outer Shelf | 25 | 1 | 0.38 | 191 | 0 | 586 |
| Yakutat | 1 - 100 | Yakutat Shallows | 6 | 1 | 0.28 | 279 | 0 | 995 |
| Chirikof | 101 - 200 | Shelikof Edge | 27 | 1 | 0.16 | 127 | 0 | 387 |
| Kodiak | 101 - 200 | Kenai Flats | 18 | 1 | 0.15 | 175 | 0 | 544 |
| Kodiak | 101 - 200 | Albatross Gullies | 28 | 1 | 0.00 | 0 | 0 | 1 |

Table 75. -- Number of survey hauls, number of hauls with longnose skate, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| . | 1 - 100 | 133 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 39 | 3 | 0.298 | 437 | 0 | 1,043 | 7.154 |
| | 201 - 300 | 17 | 3 | 0.686 | 191 | 0 | 461 | 7.538 |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 5 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 6 | 0.096 | 628 | 0 | 1,302 | 7.267 |
| **Chirikof** | 1 - 100 | 82 | 10 | 1.052 | 2,738 | 822 | 4,654 | 12.584 |
| | 101 - 200 | 69 | 23 | 1.648 | 3,931 | 1,836 | 6,025 | 8.115 |
| | 201 - 300 | 26 | 5 | 1.740 | 2,008 | 0 | 4,284 | 8.833 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 38 | 1.275 | 8,677 | 5,140 | 12,214 | 9.337 |
| **Kodiak** | 1 - 100 | 97 | 16 | 1.000 | 3,852 | 1,625 | 6,079 | 10.503 |
| | 101 - 200 | 127 | 51 | 2.820 | 12,219 | 7,374 | 17,063 | 9.231 |
| | 201 - 300 | 30 | 9 | 1.058 | 1,216 | 302 | 2,129 | 5.339 |
| | 301 - 500 | 10 | 1 | 0.243 | 71 | 0 | 229 | 6.568 |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 77 | 1.710 | 17,357 | 11,998 | 22,716 | 8.998 |
| **Yakutat** | 1 - 100 | 11 | 2 | 0.580 | 967 | 0 | 2,584 | 6.993 |
| | 101 - 200 | 33 | 8 | 1.071 | 3,145 | 0 | 6,702 | 7.970 |
| | 201 - 300 | 17 | 8 | 2.047 | 1,059 | 245 | 1,872 | 8.456 |
| | 301 - 500 | 9 | 4 | 2.723 | 716 | 459 | 972 | 7.025 |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 3 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 76 | 22 | 1.029 | 5,886 | 2,092 | 9,680 | 7.746 |
| **Southeastern** | 1 - 100 | 11 | 1 | 0.055 | 36 | 0 | 115 | 0.688 |
| | 101 - 200 | 22 | 5 | 0.593 | 657 | 54 | 1,260 | 6.334 |
| | 201 - 300 | 17 | 8 | 1.487 | 751 | 94 | 1,408 | 5.602 |
| | 301 - 500 | 11 | 4 | 1.376 | 429 | 2 | 855 | 6.876 |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 18 | 0.668 | 1,873 | 939 | 2,807 | 5.313 |
| **All areas** | 1 - 100 | 334 | 29 | 0.588 | 7,593 | 4,374 | 10,811 | 9.798 |
| | 101 - 200 | 290 | 90 | 1.667 | 20,388 | 14,152 | 26,623 | 8.612 |
| | 201 - 300 | 107 | 33 | 1.450 | 5,225 | 2,578 | 7,872 | 7.063 |
| | 301 - 500 | 49 | 9 | 0.950 | 1,215 | 724 | 1,707 | 6.944 |
| | 501 - 700 | 24 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 16 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 820 | 161 | 1.076 | 34,421 | 27,053 | 41,788 | 8.484 |

Table 76. -- Catch per unit of effort by stratum for longnose skate sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Yakutat | 301 - 500 | Yakutat Gullies | 2 | 2 | 5.00 | 553 | 257 | 849 |
| Kodiak | 101 - 200 | Kenai Flats | 18 | 11 | 4.18 | 5,046 | 1,044 | 9,047 |
| Kodiak | 101 - 200 | Barren Islands | 18 | 8 | 2.92 | 3,206 | 993 | 5,420 |
| Yakutat | 201 - 300 | Yakutat Slope | 9 | 4 | 2.79 | 593 | 0 | 1,306 |
| Kodiak | 1 - 100 | Kenai Peninsula | 7 | 3 | 2.79 | 1,467 | 0 | 3,376 |
| Yakutat | 101 - 200 | Middleton Shelf | 9 | 2 | 2.54 | 1,862 | 0 | 5,448 |
| Kodiak | 101 - 200 | Albatross Gullies | 28 | 8 | 2.53 | 2,001 | 202 | 3,800 |
| Chirikof | 101 - 200 | Shelikof Edge | 27 | 11 | 2.53 | 1,956 | 142 | 3,770 |
| Southeastern | 201 - 300 | Baranof-Chichagof Slope | 3 | 2 | 2.45 | 275 | 0 | 1,287 |
| Kodiak | 1 - 100 | Albatross Shallows | 28 | 6 | 2.29 | 1,321 | 228 | 2,414 |
| Kodiak | 1 - 100 | Northern Kodiak Shallows | 9 | 4 | 2.25 | 494 | 0 | 1,074 |
| Chirikof | 201 - 300 | Lower Shelikof Gully | 18 | 5 | 2.01 | 2,008 | 0 | 4,293 |
| Kodiak | 101 - 200 | Portlock Flats | 35 | 18 | 1.90 | 1,393 | 744 | 2,042 |
| Southeastern | 301 - 500 | Southeastern Deep Gullies | 7 | 4 | 1.83 | 429 | 0 | 870 |
| Kodiak | 201 - 300 | Kenai Gullies | 19 | 9 | 1.83 | 1,216 | 299 | 2,133 |
| Chirikof | 1 - 100 | Upper Alaska Peninsula | 19 | 3 | 1.68 | 1,336 | 0 | 2,994 |
| Yakutat | 201 - 300 | Yakutat Gullies | 8 | 4 | 1.53 | 465 | 0 | 1,004 |
| Chirikof | 101 - 200 | East Shumagin Gully | 17 | 7 | 1.31 | 1,459 | 447 | 2,472 |
| Chirikof | 1 - 100 | Semidi Bank | 23 | 5 | 1.25 | 911 | 142 | 1,681 |
| Southeastern | 201 - 300 | Prince of Wales Slope/Gullies | 14 | 6 | 1.21 | 476 | 59 | 892 |
| Yakutat | 101 - 200 | Yakutat Flats | 8 | 4 | 1.16 | 1,052 | 8 | 2,095 |
| Kodiak | 101 - 200 | Kodiak Outer Shelf | 28 | 6 | 1.14 | 573 | 65 | 1,080 |
| Yakutat | 301 - 500 | Yakutat Slope | 7 | 2 | 1.07 | 162 | 0 | 428 |
| Chirikof | 101 - 200 | Chirikof Outer Shelf | 25 | 5 | 1.03 | 515 | 0 | 1,051 |
| Yakutat | 1 - 100 | Yakutat Shallows | 6 | 2 | 0.97 | 967 | 0 | 2,666 |
| Shumagin | 101 - 200 | Sanak Gully | 7 | 2 | 0.88 | 373 | 0 | 998 |
| Southeastern | 101 - 200 | Baranof-Chichagof Shelf | 8 | 2 | 0.79 | 333 | 0 | 865 |
| Shumagin | 201 - 300 | Shumagin Slope | 17 | 3 | 0.69 | 191 | 0 | 462 |
| Southeastern | 101 - 200 | Prince of Wales Shelf | 14 | 3 | 0.47 | 324 | 0 | 713 |
| Chirikof | 1 - 100 | Chirikof Bank | 40 | 2 | 0.45 | 490 | 0 | 1,197 |
| Kodiak | 1 - 100 | Albatross Banks | 39 | 3 | 0.37 | 570 | 0 | 1,238 |
| Yakutat | 101 - 200 | Fairweather Shelf | 8 | 1 | 0.29 | 227 | 0 | 763 |
| Kodiak | 301 - 500 | Kodiak Slope | 10 | 1 | 0.24 | 71 | 0 | 231 |
| Shumagin | 101 - 200 | Shumagin Outer Shelf | 28 | 1 | 0.08 | 63 | 0 | 193 |
| Southeastern | 1 - 100 | Southeastern Shallows | 11 | 1 | 0.06 | 36 | 0 | 116 |
| Yakutat | 101 - 200 | Yakataga Shelf | 8 | 1 | 0.01 | 5 | 0 | 16 |

# MISCELLANEOUS SPECIES

## Capelin (*Mallotus villosus*)

Capelin were caught in modest numbers in approximately 24% of hauls less than 100 m deep and in about 8% of hauls in the 101 to 300 m depth range. No capelin were caught deeper than 300 m (Table 77). The highest CPUEs were recorded in the Albatross Shallows and Albatross Banks strata, which accounted for approximately 61% of its estimated biomass even though these strata comprise less than 7% of the survey area (Table 78). Mean fish weight generally increased with depth.

## Eulachon (*Thaleichthys pacificus*)

Eulachon were caught in moderate numbers in approximately 31% of hauls less than 300 m deep and in about 9% of hauls deeper than 300 m. No catches were recorded in the 700 to 1,000 m depth range (Table 79). The biomass was primarily confined to the Chirikof and Kodiak INPFC areas, which accounted for approximately 80% of its biomass estimate. The highest CPUEs were recorded in the Shelikof Edge, the Lower Shelikof Gully, and East Shumagin Gully strata, which accounted for approximately 51% of the biomass estimate even though these strata comprise only about 9% of the survey area (Table 80).

## Pacific hake (*Merluccius productus*)

Pacific hake were predominantly caught in the Yakutat and Southeastern INPFC areas, which accounted for about 97% of the estimated biomass (Table 81). Single small catches were recorded in the Shumagin and Chirikof INPFC areas and 10 tows in the Kodiak INPFC area contained Pacific hake. The highest CPUEs were recorded in the Slope and Gully strata of the Southeastern and Yakutat INPC areas (Table 82). Ninety-eight percent of the biomass was estimated to be in the 101 to 500 m depth range. No fish were caught deeper than 700 m.

Table 77. -- Number of survey hauls, number of hauls with capelin, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **Shumagin** | 1 - 100 | 133 | 26 | 0.007 | 28 | 9 | 47 | 0.004 |
| | 101 - 200 | 39 | 1 | 0.000 | 0 | 0 | 1 | 0.018 |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 5 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 27 | 0.005 | 29 | 10 | 48 | 0.004 |
| **Chirikof** | 1 - 100 | 82 | 25 | 0.048 | 125 | 0 | 269 | 0.001 |
| | 101 - 200 | 69 | 5 | 0.002 | 4 | 0 | 8 | 0.007 |
| | 201 - 300 | 26 | 2 | 0.001 | 1 | 0 | 2 | 0.015 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 32 | 0.019 | 129 | 0 | 273 | 0.001 |
| **Kodiak** | 1 - 100 | 97 | 20 | 0.126 | 487 | 0 | 1,126 | 0.006 |
| | 101 - 200 | 127 | 9 | 0.002 | 7 | 0 | 15 | 0.007 |
| | 201 - 300 | 30 | 2 | 0.006 | 7 | 0 | 21 | 0.012 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 31 | 0.049 | 502 | 0 | 1,140 | 0.006 |
| **Yakutat** | 1 - 100 | 11 | 8 | 0.059 | 99 | 0 | 262 | 0.006 |
| | 101 - 200 | 33 | 10 | 0.009 | 26 | 0 | 63 | 0.011 |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 3 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 76 | 18 | 0.022 | 124 | 0 | 287 | 0.007 |
| **Southeastern** | 1 - 100 | 11 | 1 | 0.001 | 1 | 0 | 3 | 0.003 |
| | 101 - 200 | 22 | 1 | 0.000 | 0 | 0 | 1 | 0.017 |
| | 201 - 300 | 17 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 11 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 2 | 0.000 | 1 | 0 | 3 | 0.005 |
| **All areas** | 1 - 100 | 334 | 80 | 0.057 | 739 | 71 | 1,408 | 0.004 |
| | 101 - 200 | 290 | 26 | 0.003 | 37 | 0 | 75 | 0.009 |
| | 201 - 300 | 107 | 4 | 0.002 | 8 | 0 | 22 | 0.012 |
| | 301 - 500 | 49 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 24 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 16 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 820 | 110 | 0.025 | 785 | 115 | 1,454 | 0.004 |

Table 78. -- Catch per unit of effort by stratum for capelin sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Kodiak | 1 - 100 | Albatross Shallows | 28 | 4 | 0.27 | 154 | 0 | 451 |
| Kodiak | 1 - 100 | Albatross Banks | 39 | 11 | 0.21 | 326 | 0 | 898 |
| Chirikof | 1 - 100 | Chirikof Bank | 40 | 19 | 0.11 | 114 | 0 | 259 |
| Yakutat | 1 - 100 | Yakutat Shallows | 6 | 4 | 0.08 | 80 | 0 | 249 |
| Yakutat | 1 - 100 | Middleton Shallows | 5 | 4 | 0.03 | 19 | 0 | 46 |
| Kodiak | 1 - 100 | Northern Kodiak Shallows | 9 | 2 | 0.03 | 6 | 0 | 17 |
| Yakutat | 101 - 200 | Yakutat Flats | 8 | 4 | 0.02 | 21 | 0 | 59 |
| Kodiak | 201 - 300 | Upper Shelikof Gully | 4 | 2 | 0.02 | 7 | 0 | 23 |
| Shumagin | 1 - 100 | Lower Alaska Peninsula | 28 | 12 | 0.02 | 10 | 0 | 21 |
| Shumagin | 1 - 100 | Shumagin Bank | 36 | 8 | 0.01 | 17 | 1 | 33 |
| Chirikof | 1 - 100 | Upper Alaska Peninsula | 19 | 4 | 0.01 | 11 | 0 | 26 |
| Kodiak | 101 - 200 | Portlock Flats | 35 | 2 | 0.01 | 4 | 0 | 11 |
| Yakutat | 101 - 200 | Yakataga Shelf | 8 | 3 | 0.01 | 3 | 0 | 7 |
| Kodiak | 101 - 200 | Kenai Flats | 18 | 4 | 0.00 | 3 | 0 | 7 |
| Chirikof | 101 - 200 | East Shumagin Gully | 17 | 3 | 0.00 | 2 | 0 | 6 |
| Kodiak | 1 - 100 | Lower Cook Inlet | 14 | 2 | 0.00 | 2 | 0 | 5 |
| Yakutat | 101 - 200 | Middleton Shelf | 9 | 2 | 0.00 | 1 | 0 | 4 |
| Chirikof | 101 - 200 | Shelikof Edge | 27 | 2 | 0.00 | 1 | 0 | 4 |
| Chirikof | 201 - 300 | Lower Shelikof Gully | 18 | 2 | 0.00 | 1 | 0 | 2 |
| Yakutat | 101 - 200 | Fairweather Shelf | 8 | 1 | 0.00 | 1 | 0 | 3 |
| Shumagin | 1 - 100 | Davidson Bank | 48 | 5 | 0.00 | 1 | 0 | 2 |
| Southeastern | 1 - 100 | Southeastern Shallows | 11 | 1 | 0.00 | 1 | 0 | 3 |
| Kodiak | 1 - 100 | Kenai Peninsula | 7 | 1 | 0.00 | 1 | 0 | 2 |
| Kodiak | 101 - 200 | Albatross Gullies | 28 | 3 | 0.00 | 1 | 0 | 1 |
| Shumagin | 101 - 200 | Sanak Gully | 7 | 1 | 0.00 | 0 | 0 | 2 |
| Southeastern | 101 - 200 | Baranof-Chichagof Shelf | 8 | 1 | 0.00 | 0 | 0 | 1 |
| Shumagin | 1 - 100 | Fox Islands | 21 | 1 | 0.00 | 0 | 0 | 1 |
| Chirikof | 1 - 100 | Semidi Bank | 23 | 2 | 0.00 | 0 | 0 | 0 |

Table 79. -- Number of survey hauls, number of hauls with eulachon, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **Shumagin** | 1 - 100 | 133 | 16 | 0.009 | 38 | 5 | 71 | 0.038 |
| | 101 - 200 | 39 | 5 | 0.736 | 1,081 | 0 | 2,658 | 0.026 |
| | 201 - 300 | 17 | 1 | 0.001 | 0 | 0 | 1 | 0.040 |
| | 301 - 500 | 9 | 2 | 0.011 | 3 | 0 | 7 | 0.027 |
| | 501 - 700 | 5 | 1 | 0.023 | 5 | 0 | 16 | 0.023 |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 25 | 0.173 | 1,126 | 0 | 2,705 | 0.026 |
| **Chirikof** | 1 - 100 | 82 | 19 | 0.152 | 395 | 0 | 1,074 | 0.031 |
| | 101 - 200 | 69 | 25 | 6.968 | 16,618 | 1,105 | 32,130 | 0.019 |
| | 201 - 300 | 26 | 19 | 8.632 | 9,967 | 182 | 19,751 | 0.023 |
| | 301 - 500 | 10 | 1 | 0.001 | 0 | 0 | 1 | 0.027 |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 64 | 3.965 | 26,980 | 9,093 | 44,866 | 0.021 |
| **Kodiak** | 1 - 100 | 97 | 20 | 0.161 | 621 | 0 | 1,505 | 0.034 |
| | 101 - 200 | 127 | 50 | 2.047 | 8,870 | 4,953 | 12,787 | 0.026 |
| | 201 - 300 | 30 | 19 | 4.103 | 4,714 | 2,382 | 7,046 | 0.030 |
| | 301 - 500 | 10 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 89 | 1.400 | 14,205 | 9,651 | 18,759 | 0.028 |
| **Yakutat** | 1 - 100 | 11 | 7 | 1.418 | 2,363 | 0 | 6,813 | 0.034 |
| | 101 - 200 | 33 | 31 | 2.234 | 6,564 | 4,336 | 8,792 | 0.029 |
| | 201 - 300 | 17 | 10 | 0.278 | 144 | 0 | 347 | 0.030 |
| | 301 - 500 | 9 | 3 | 0.017 | 4 | 0 | 16 | 0.052 |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 3 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 76 | 51 | 1.587 | 9,074 | 4,380 | 13,769 | 0.030 |
| **Southeastern** | 1 - 100 | 11 | 2 | 0.528 | 346 | 0 | 921 | 0.032 |
| | 101 - 200 | 22 | 2 | 0.021 | 23 | 0 | 62 | 0.047 |
| | 201 - 300 | 17 | 3 | 0.083 | 42 | 0 | 117 | 0.041 |
| | 301 - 500 | 11 | 1 | 0.002 | 1 | 0 | 3 | 0.029 |
| | 501 - 700 | 3 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 8 | 0.147 | 411 | 0 | 993 | 0.033 |
| **All areas** | 1 - 100 | 334 | 64 | 0.292 | 3,763 | 0 | 8,247 | 0.033 |
| | 101 - 200 | 290 | 113 | 2.710 | 33,155 | 17,069 | 49,240 | 0.022 |
| | 201 - 300 | 107 | 52 | 4.124 | 14,866 | 4,842 | 24,890 | 0.025 |
| | 301 - 500 | 49 | 7 | 0.006 | 8 | 0 | 16 | 0.037 |
| | 501 - 700 | 24 | 1 | 0.006 | 5 | 0 | 16 | 0.023 |
| | 701 - 1000 | 16 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 820 | 237 | 1.619 | 51,796 | 32,811 | 70,782 | 0.024 |

Table 80. -- Catch per unit of effort by stratum for eulachon sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Chirikof | 101 - 200 | Shelikof Edge | 27 | 19 | 11.08 | 8,569 | 1,964 | 15,174 |
| Chirikof | 201 - 300 | Lower Shelikof Gully | 18 | 18 | 9.95 | 9,966 | 140 | 19,792 |
| Chirikof | 101 - 200 | East Shumagin Gully | 17 | 6 | 7.25 | 8,049 | 0 | 22,208 |
| Kodiak | 101 - 200 | Portlock Flats | 35 | 17 | 5.01 | 3,677 | 844 | 6,510 |
| Kodiak | 201 - 300 | Upper Shelikof Gully | 4 | 4 | 5.01 | 1,606 | 0 | 3,524 |
| Shumagin | 101 - 200 | West Shumagin Gully | 4 | 3 | 4.69 | 1,068 | 0 | 2,876 |
| Kodiak | 201 - 300 | Kenai Gullies | 19 | 15 | 4.67 | 3,108 | 1,139 | 5,076 |
| Yakutat | 1 - 100 | Middleton Shallows | 5 | 3 | 2.89 | 1,938 | 0 | 6,700 |
| Yakutat | 101 - 200 | Middleton Shelf | 9 | 9 | 2.67 | 1,963 | 687 | 3,239 |
| Yakutat | 101 - 200 | Yakutat Flats | 8 | 8 | 2.25 | 2,036 | 1,101 | 2,970 |
| Kodiak | 101 - 200 | Barren Islands | 18 | 7 | 2.25 | 2,467 | 197 | 4,738 |
| Yakutat | 101 - 200 | Fairweather Shelf | 8 | 6 | 2.17 | 1,674 | 0 | 3,522 |
| Kodiak | 101 - 200 | Kenai Flats | 18 | 14 | 1.84 | 2,221 | 645 | 3,797 |
| Yakutat | 101 - 200 | Yakataga Shelf | 8 | 8 | 1.69 | 891 | 276 | 1,507 |
| Kodiak | 1 - 100 | Albatross Shallows | 28 | 6 | 0.77 | 441 | 0 | 1,316 |
| Kodiak | 101 - 200 | Albatross Gullies | 28 | 11 | 0.64 | 505 | 0 | 1,203 |
| Southeastern | 1 - 100 | Southeastern Shallows | 11 | 2 | 0.53 | 346 | 0 | 929 |
| Chirikof | 1 - 100 | Upper Alaska Peninsula | 19 | 9 | 0.46 | 368 | 0 | 1,049 |
| Yakutat | 201 - 300 | Yakutat Gullies | 8 | 6 | 0.43 | 130 | 0 | 336 |
| Yakutat | 1 - 100 | Yakutat Shallows | 6 | 4 | 0.43 | 425 | 0 | 1,020 |
| Kodiak | 1 - 100 | Kenai Peninsula | 7 | 5 | 0.26 | 134 | 0 | 317 |
| Southeastern | 201 - 300 | Prince of Wales Slope/Gullies | 14 | 3 | 0.11 | 42 | 0 | 118 |
| Yakutat | 201 - 300 | Yakutat Slope | 9 | 4 | 0.06 | 14 | 0 | 42 |
| Kodiak | 1 - 100 | Lower Cook Inlet | 14 | 6 | 0.04 | 38 | 7 | 69 |
| Yakutat | 301 - 500 | Yakutat Gullies | 2 | 2 | 0.03 | 4 | 0 | 38 |
| Southeastern | 101 - 200 | Prince of Wales Shelf | 14 | 2 | 0.03 | 23 | 0 | 62 |
| Kodiak | 1 - 100 | Northern Kodiak Shallows | 9 | 2 | 0.03 | 7 | 0 | 20 |
| Shumagin | 1 - 100 | Lower Alaska Peninsula | 28 | 9 | 0.03 | 22 | 1 | 42 |
| Shumagin | 101 - 200 | Sanak Gully | 7 | 2 | 0.03 | 13 | 0 | 42 |
| Chirikof | 1 - 100 | Chirikof Bank | 40 | 9 | 0.03 | 27 | 0 | 54 |
| Shumagin | 501 - 700 | Shumagin Slope | 5 | 1 | 0.02 | 5 | 0 | 17 |
| Shumagin | 1 - 100 | Shumagin Bank | 36 | 7 | 0.01 | 17 | 0 | 43 |
| Shumagin | 301 - 500 | Shumagin Slope | 9 | 2 | 0.01 | 3 | 0 | 7 |
| Yakutat | 301 - 500 | Yakutat Slope | 7 | 1 | 0.00 | 1 | 0 | 2 |
| Southeastern | 301 - 500 | Southeastern Deep Gullies | 7 | 1 | 0.00 | 1 | 0 | 3 |
| Chirikof | 1 - 100 | Semidi Bank | 23 | 1 | 0.00 | 1 | 0 | 2 |
| Shumagin | 201 - 300 | Shumagin Slope | 17 | 1 | 0.00 | 0 | 0 | 1 |
| Chirikof | 301 - 500 | Chirikof Slope | 10 | 1 | 0.00 | 0 | 0 | 1 |
| Chirikof | 201 - 300 | Chirikof Slope | 8 | 1 | 0.00 | 0 | 0 | 1 |
| Kodiak | 1 - 100 | Albatross Banks | 39 | 1 | 0.00 | 1 | 0 | 2 |
| Kodiak | 101 - 200 | Kodiak Outer Shelf | 28 | 1 | 0.00 | 0 | 0 | 1 |

Table 81. -- Number of survey hauls, number of hauls with Pacific hake, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

| INPFC area | Depth (m) | Number of hauls | Hauls with catch | Mean CPUE (kg/ha) | Estimated biomass (t) | Lower 95% biomass CI (t) | Upper 95% biomass CI (t) | Mean weight (kg) |
|---|---|---|---|---|---|---|---|---|
| **Shumagin** | 1 - 100 | 133 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 39 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 17 | 1 | 0.039 | 11 | 0 | 34 | 1.444 |
| | 301 - 500 | 9 | 0 | --- | --- | --- | --- | --- |
| | 501 - 700 | 5 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 205 | 1 | 0.002 | 11 | 0 | 34 | 1.444 |
| **Chirikof** | 1 - 100 | 82 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 69 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 26 | 0 | --- | --- | --- | --- | --- |
| | 301 - 500 | 10 | 1 | 0.022 | 4 | 0 | 12 | 0.688 |
| | 501 - 700 | 7 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 5 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 199 | 1 | 0.001 | 4 | 0 | 12 | 0.688 |
| **Kodiak** | 1 - 100 | 97 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 127 | 0 | --- | --- | --- | --- | --- |
| | 201 - 300 | 30 | 5 | 0.162 | 186 | 0 | 391 | 0.888 |
| | 301 - 500 | 10 | 5 | 2.059 | 600 | 0 | 1,301 | 0.850 |
| | 501 - 700 | 6 | 0 | --- | --- | --- | --- | --- |
| | 701 - 1000 | 4 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 274 | 10 | 0.077 | 785 | 86 | 1,485 | 0.859 |
| **Yakutat** | 1 - 100 | 11 | 0 | --- | --- | --- | --- | --- |
| | 101 - 200 | 33 | 1 | 0.024 | 70 | 0 | 233 | 1.291 |
| | 201 - 300 | 17 | 8 | 10.339 | 5,346 | 0 | 11,036 | 0.828 |
| | 301 - 500 | 9 | 9 | 3.317 | 872 | 0 | 1,780 | 0.810 |
| | 501 - 700 | 3 | 3 | 0.287 | 42 | 10 | 75 | 0.864 |
| | 701 - 1000 | 3 | 1 | 0.069 | 13 | 0 | 54 | 0.657 |
| | **All depths** | 76 | 22 | 1.109 | 6,343 | 592 | 12,093 | 0.828 |
| **Southeastern** | 1 - 100 | 11 | 2 | 0.604 | 396 | 0 | 1,228 | 0.270 |
| | 101 - 200 | 22 | 9 | 2.987 | 3,311 | 0 | 6,801 | 0.801 |
| | 201 - 300 | 17 | 11 | 13.781 | 6,963 | 2,217 | 11,708 | 0.775 |
| | 301 - 500 | 11 | 11 | 28.866 | 8,998 | 3,270 | 14,725 | 0.825 |
| | 501 - 700 | 3 | 2 | 0.312 | 32 | 0 | 101 | 0.889 |
| | 701 - 1000 | 2 | 0 | --- | --- | --- | --- | --- |
| | **All depths** | 66 | 35 | 7.025 | 19,699 | 12,285 | 27,113 | 0.772 |
| **All areas** | 1 - 100 | 334 | 2 | 0.031 | 396 | 0 | 1,228 | 0.270 |
| | 101 - 200 | 290 | 10 | 0.276 | 3,381 | 0 | 6,875 | 0.808 |
| | 201 - 300 | 107 | 25 | 3.469 | 12,505 | 5,432 | 19,577 | 0.799 |
| | 301 - 500 | 49 | 26 | 8.187 | 10,472 | 4,771 | 16,173 | 0.825 |
| | 501 - 700 | 24 | 5 | 0.091 | 75 | 13 | 136 | 0.875 |
| | 701 - 1000 | 16 | 1 | 0.011 | 13 | 0 | 54 | 0.657 |
| | **All depths** | 820 | 69 | 0.839 | 26,841 | 17,614 | 36,069 | 0.787 |

Table 82. -- Catch per unit of effort by stratum for Pacific hake sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

| INPFC area | Depth range | Stratum name | Number of hauls | Hauls with catch | CPUE (kg/ha) | Biomass (t) | Lower CI biomass | Upper CI biomass |
|---|---|---|---|---|---|---|---|---|
| Southeastern | 201 - 300 | Baranof-Chichagof Slope | 3 | 3 | 37.90 | 4,265 | 0 | 11,904 |
| Southeastern | 301 - 500 | Southeastern Deep Gullies | 7 | 7 | 32.26 | 7,562 | 1,947 | 13,177 |
| Southeastern | 301 - 500 | Southeastern Slope | 4 | 4 | 18.57 | 1,435 | 0 | 3,899 |
| Yakutat | 201 - 300 | Yakutat Slope | 9 | 3 | 10.99 | 2,339 | 0 | 6,829 |
| Yakutat | 201 - 300 | Yakutat Gullies | 8 | 5 | 9.88 | 3,007 | 0 | 7,327 |
| Southeastern | 201 - 300 | Prince of Wales Slope/Gullies | 14 | 8 | 6.87 | 2,698 | 55 | 5,340 |
| Yakutat | 301 - 500 | Yakutat Slope | 7 | 7 | 4.95 | 752 | 0 | 1,689 |
| Southeastern | 101 - 200 | Baranof-Chichagof Shelf | 8 | 6 | 4.39 | 1,844 | 0 | 3,933 |
| Southeastern | 101 - 200 | Prince of Wales Shelf | 14 | 3 | 2.13 | 1,467 | 0 | 4,536 |
| Kodiak | 301 - 500 | Kodiak Slope | 10 | 5 | 2.06 | 600 | 0 | 1,312 |
| Yakutat | 301 - 500 | Yakutat Gullies | 2 | 2 | 1.08 | 119 | 0 | 526 |
| Southeastern | 1 - 100 | Southeastern Shallows | 11 | 2 | 0.60 | 396 | 0 | 1,239 |
| Southeastern | 501 - 700 | Southeastern Slope | 3 | 2 | 0.31 | 32 | 0 | 125 |
| Yakutat | 501 - 700 | Yakutat Slope | 3 | 3 | 0.29 | 42 | 0 | 86 |
| Kodiak | 201 - 300 | Kenai Gullies | 19 | 4 | 0.25 | 167 | 0 | 370 |
| Yakutat | 101 - 200 | Yakataga Shelf | 8 | 1 | 0.13 | 70 | 0 | 237 |
| Kodiak | 201 - 300 | Kodiak Slope | 7 | 1 | 0.11 | 19 | 0 | 64 |
| Yakutat | 701 - 1000 | Yakutat Slope | 3 | 1 | 0.07 | 13 | 0 | 69 |
| Shumagin | 201 - 300 | Shumagin Slope | 17 | 1 | 0.04 | 11 | 0 | 34 |
| Chirikof | 301 - 500 | Chirikof Slope | 10 | 1 | 0.02 | 4 | 0 | 12 |