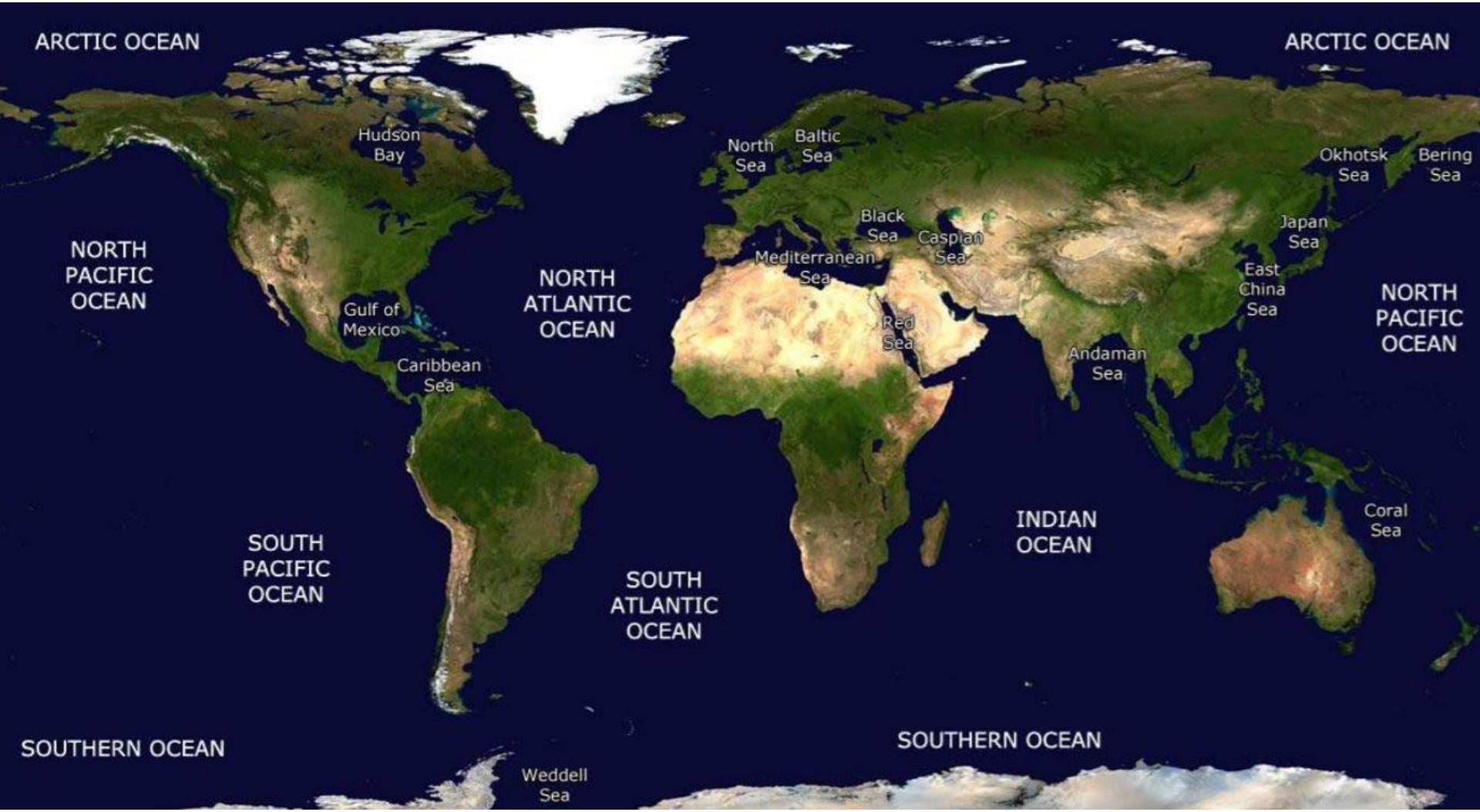
# Marine Fishery Resources of the World

## FRM-311 “Marine Fisheries”

# Marine Fishery Resources

## 1. Ocean & Sea

## 2. Fish Fauna



# Overview of Marine Fishery Resources

- According to FAO, both Atlantic and Pacific oceans are considered fully fished
- Sees Potential in Indian Ocean fisheries
- About 47 to 50% of the stocks are fully exploited.
- An estimate of 25 to 27% are under exploited or moderately exploited.
- Another 15 to 18% are over exploited and have no potential for further increase.
- The remaining 9 to 10% stocks have been depleted.

# Major Fisheries of World

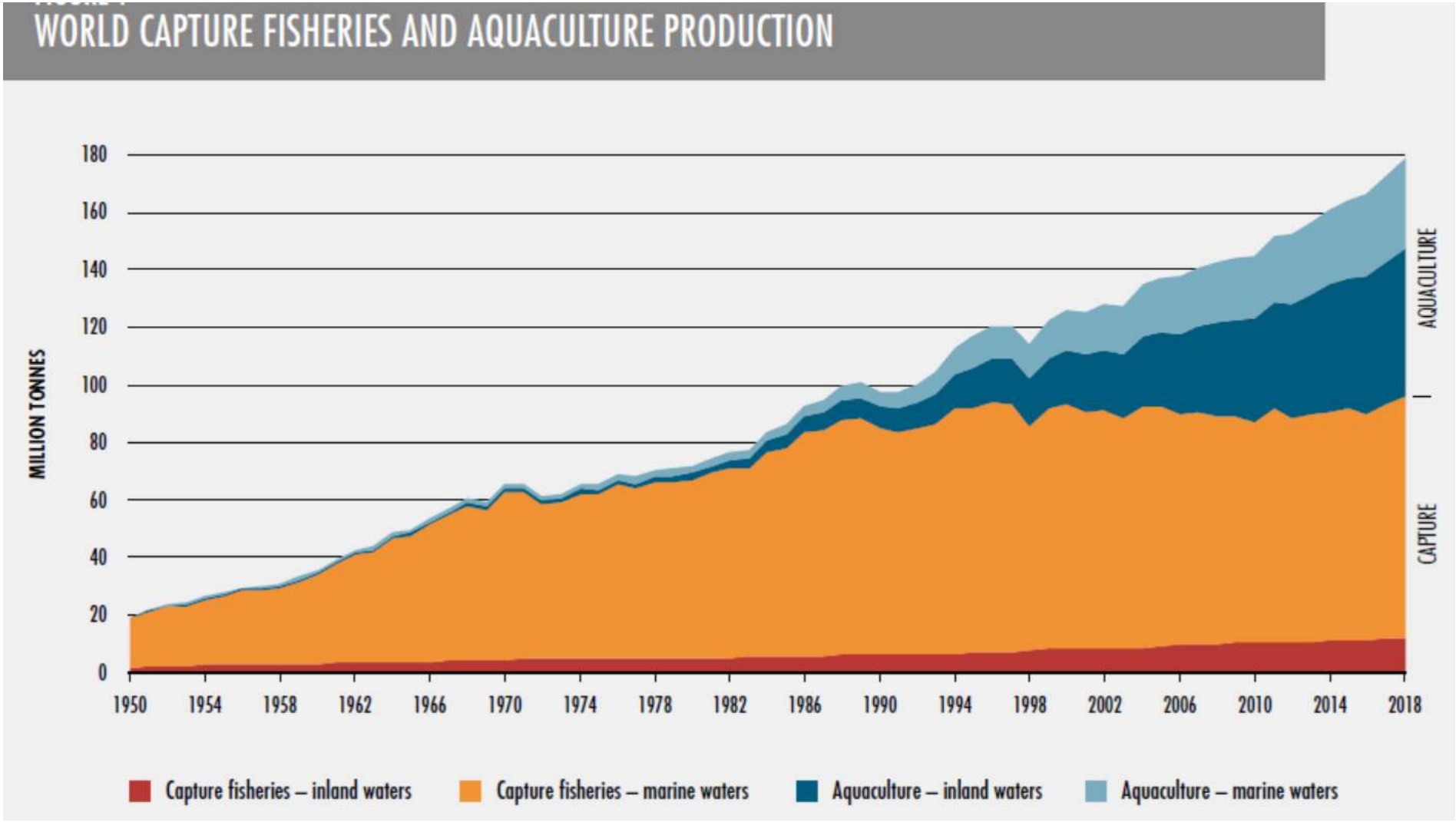
- In general, the major fisheries of the world occur in two main areas, the areas of **wide continental shelf** and **upwelling areas.**

- **The areas of upwelling include Peru, South Africa, North West Africa, California and south west coast of India.**

# Total World Fish Production

| | 1986–1995 | 1996–2005 | 2006–2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| | Average per year | | | | | |
| | *(million tonnes, live weight)* | | | | | |
| **Production** | | | | | | |
| Capture | | | | | | |
| Inland | 6.4 | 8.3 | 10.6 | 11.4 | 11.9 | 12.0 |
| Marine | 80.5 | 83.0 | 79.3 | 78.3 | 81.2 | 84.4 |
| **Total capture** | **86.9** | **91.4** | **89.8** | **89.6** | **93.1** | **96.4** |
| Aquaculture | | | | | | |
| Inland | 8.6 | 19.8 | 36.8 | 48.0 | 49.6 | 51.3 |
| Marine | 6.3 | 14.4 | 22.8 | 28.5 | 30.0 | 30.8 |
| **Total aquaculture** | **14.9** | **34.2** | **59.7** | **76.5** | **79.5** | **82.1** |
| **Total world fisheries and aquaculture** | **101.8** | **125.6** | **149.5** | **166.1** | **172.7** | **178.5** |
| **Utilization**[2] | | | | | | |
| Human consumption | 71.8 | 98.5 | 129.2 | 148.2 | 152.9 | 156.4 |
| Non-food uses | 29.9 | 27.1 | 20.3 | 17.9 | 19.7 | 22.2 |
| Population (*billions*)[3] | 5.4 | 6.2 | 7.0 | 7.5 | 7.5 | 7.6 |
| Per capita apparent consumption (*kg*) | 13.4 | 15.9 | 18.4 | 19.9 | 20.3 | 20.5 |

# World marine capture fisheries production



# Marine capture Production: In 2018

## MARINE CAPTURE PRODUCTION: MAJOR PRODUCING COUNTRIES AND TERRITORIES

| Country or territory | Production (average per year) | | | Production | | | | Percentage of total, 2018 |
|---|---|---|---|---|---|---|---|---|
| | 1980s | 1990s | 2000s | 2015 | 2016 | 2017 | 2018 | |
| | (million tonnes, live weight) | | | | | | | |
| China | 3.82 | 9.96 | 12.43 | 14.39 | 13.78 | 13.19 | 12.68 | 15 |
| Peru (total) | 4.14 | 8.10 | 8.07 | 4.79 | 3.77 | 4.13 | 7.15 | 8 |
| *Peru (excluding anchoveta)* | *2.50* | *2.54* | *0.95* | *1.02* | *0.92* | *0.83* | *0.96* | – |
| Indonesia | 1.74 | 3.03 | 4.37 | 6.22 | 6.11 | 6.31 | 6.71 | 8 |
| Russian Federation | 1.51 | 4.72 | 3.20 | 4.17 | 4.47 | 4.59 | 4.84 | 6 |
| United States of America | 4.53 | 5.15 | 4.75 | 5.02 | 4.88 | 5.02 | 4.72 | 6 |
| India | 1.69 | 2.60 | 2.95 | 3.50 | 3.71 | 3.94 | 3.62 | 4 |
| Viet Nam | 0.53 | 0.94 | 1.72 | 2.71 | 2.93 | 3.15 | 3.19 | 4 |
| Japan | 10.59 | 6.72 | 4.41 | 3.37 | 3.17 | 3.18 | 3.10 | 4 |
| Norway | 2.21 | 2.43 | 2.52 | 2.29 | 2.03 | 2.38 | 2.49 | 3 |
| Chile (total) | 4.52 | 5.95 | 4.02 | 1.79 | 1.50 | 1.92 | 2.12 | 3 |
| *Chile (excluding anchoveta)* | *4.00* | *4.45* | *2.75* | *1.25* | *1.16* | *1.29* | *1.27* | – |

# Top Marine Capture Producer (2018)

- In 2018, the top 7 producers were responsible for over 50 percent of the total marine captures.

1. **China (15 percent)**
2. **Peru (8 percent)**
3. **Indonesia (8 percent)**
4. **the Russian Federation (6 percent)**
5. **the United States of America (6 percent)**
6. **India (4 percent)**
7. **Viet Nam (4 percent)**

# Major Marine Capture Species (Finfish)

| Species item | Production 2004–2013 (average per year) | Production 2015 | 2016 | 2017 | 2018 | Percentage of total, 2018 |
|---|---|---|---|---|---|---|
| | | (thousand tonnes, live weight) | | | | |
| **Finfish** | | | | | | |
| Anchoveta, *Engraulis ringens* | 7 276 | 4 310 | 3 192 | 3 923 | 7 045 | 10 |
| Alaska pollock, *Gadus chalcogrammus* | 2 897 | 3 373 | 3 476 | 3 489 | 3 397 | 5 |
| Skipjack tuna, *Katsuwonus pelamis* | 2 494 | 2 822 | 2 862 | 2 785 | 3 161 | 4 |
| Atlantic herring, *Clupea harengus* | 2 162 | 1 512 | 1 640 | 1 816 | 1 820 | 3 |
| Blue whiting, *Micromesistius poutassou* | 1 182 | 1 414 | 1 190 | 1 559 | 1 712 | 2 |
| European pilchard, *Sardina pilchardus* | 1 084 | 1 176 | 1 279 | 1 437 | 1 608 | 2 |
| Pacific chub mackerel, *Scomber japonicus* | 1 483 | 1 457 | 1 565 | 1 514 | 1 557 | 2 |
| Yellowfin tuna, *Thunnus albacares* | 1 239 | 1 377 | 1 479 | 1 513 | 1 458 | 2 |
| Scads nei,[1] *Decapterus* spp. | 1 199 | 1 041 | 1 046 | 1 186 | 1 336 | 2 |
| Atlantic cod, *Gadus morhua* | 948 | 1 304 | 1 329 | 1 308 | 1 218 | 2 |

# Major Marine Capture Species (Crustacean)

| Species item | Production 2004–2013 (average per year) | Production 2015 | 2016 | 2017 | 2018 | Percentage of total, 2018 |
|---|---|---|---|---|---|---|
| | | *(thousand tonnes, live weight)* | | | | |
| **Crustaceans** | | | | | | |
| Natantian decapods nei, Natantia | 784 | 825 | 879 | 975 | 850 | 14 |
| Gazami crab, *Portunus trituberculatus* | 383 | 561 | 523 | 513 | 493 | 8 |
| Akiami paste shrimp, *Acetes japonicus* | 585 | 544 | 486 | 453 | 439 | 7 |
| Antarctic krill, *Euphausia superba* | 156 | 251 | 274 | 252 | 322 | 5 |
| Marine crabs nei, Brachyura | 265 | 360 | 343 | 343 | 314 | 5 |
| Blue swimming crab, *Portunus pelagicus* | 175 | 237 | 259 | 302 | 298 | 5 |
| Argentine red shrimp, *Pleoticus muelleri* | 57 | 144 | 179 | 244 | 256 | 4 |
| Southern rough shrimp, *Trachypenaeus curvirostris* | 314 | 368 | 314 | 286 | 248 | 4 |
| Others | 2 735 | 2 819 | 2 722 | 2 659 | 2 776 | 46 |
| **Crustaceans total** | **5 454** | **6 109** | **5 979** | **6 027** | **5 997** | **100** |

# Major Marine Capture Species (Mollusc)

| Species item | Production 2004–2013 (average per year) | Production 2015 | 2016 | 2017 | 2018 | Percentage of total, 2018 |
|---|---|---|---|---|---|---|
| | | *(thousand tonnes, live weight)* | | | | |
| **Molluscs** | | | | | | |
| Jumbo flying squid, *Dosidicus gigas* | 823 | 1 004 | 747 | 763 | 892 | 15 |
| Marine molluscs nei, Mollusca | 802 | 759 | 674 | 648 | 664 | 11 |
| Various squids nei, Loliginidae, Ommastrephidae | 641 | 693 | 629 | 655 | 570 | 10 |
| Common squids nei, *Loligo* spp. | 248 | 358 | 319 | 311 | 369 | 6 |
| Cuttlefish, bobtail squids nei, Sepiidae, Sepiolidae | 301 | 405 | 379 | 395 | 348 | 6 |
| Cephalopods nei, Cephalopoda | 382 | 388 | 394 | 433 | 322 | 5 |
| Yesso scallop, *Patinopecten yessoensis* | 309 | 243 | 224 | 247 | 316 | 5 |
| Others | 3 110 | 3 279 | 2 361 | 2 560 | 2 478 | 42 |
| **Molluscs total** | **6 616** | **7 129** | **5 728** | **6 012** | **5 959** | **100** |

# World Marine Fishing Areas

**FAO divided the total marine fishing areas of the world into 19 parts out of 15 are major marine fishing areas and 4 are minor fishing areas for statistical purposes.**

# World Marine Fishing Areas

- Fishing area 21, 27, 31, 34, 37, 41 and 47 comes under Altantic Ocean and Medeterrian
- Fishing Area 51 and 57 comes under Indian Ocean
- Fishing Area 61, 67, 71, 77, 81 and 87 comes under Pacific Ocean
- Fishing Area: 18, 48, 58 and 88 comes under Artic and Antartic Ocean

# World Marine Fishing Areas

- **Temperate areas (areas 21, 27, 37, 41, 61, 67 and 81)**
- **Tropical areas (areas 31, 51, 57 and 71)**
- **Upwelling areas (areas 34, 47, 77 and 87)**
- **Arctic and Antarctic areas (areas 18, 48, 58 and 88).**

# Capture (Fishing area wise)

## CAPTURE PRODUCTION: FAO MAJOR FISHING AREAS

| Fishing area code | Fishing area name | Production (average per year) | | | Production | | | | Percentage share |
|---|---|---|---|---|---|---|---|---|---|
| | | 1980s | 1990s | 2000s | 2015 | 2016 | 2017 | 2018 | |
| | | (million tonnes, live weight) | | | | | | | |
| **Marine water captures** | | | | | | | | | |
| 21 | Atlantic, Northwest | 2.91 | 2.33 | 2.22 | 1.85 | 1.82 | 1.75 | 1.68 | 7 |
| 27 | Atlantic, Northeast | 10.44 | 10.39 | 9.81 | 9.14 | 8.32 | 9.33 | 9.32 | 41 |
| 31 | Atlantic, Western Central | 2.01 | 1.83 | 1.55 | 1.40 | 1.54 | 1.45 | 1.49 | 7 |
| 34 | Atlantic, Eastern Central | 3.20 | 3.56 | 3.76 | 4.45 | 4.88 | 5.41 | 5.50 | 24 |
| 37 | Mediterranean and Black Sea | 1.84 | 1.50 | 1.54 | 1.33 | 1.26 | 1.36 | 1.31 | 6 |
| 41 | Atlantic, Southwest | 1.78 | 2.25 | 2.15 | 2.44 | 1.58 | 1.84 | 1.79 | 8 |
| 47 | Altantic, Southeast | 2.32 | 1.56 | 1.54 | 1.68 | 1.70 | 1.68 | 1.55 | 7 |
| | ***Atlantic Ocean and Mediterranean total*** | ***24.50*** | ***23.41*** | ***22.57*** | ***22.29*** | ***21.09*** | ***22.82*** | ***22.64*** | ***100*** |
| 51 | Indian Ocean, Western | 2.38 | 3.68 | 4.24 | 4.72 | 5.03 | 5.45 | 5.51 | 45 |
| 57 | Indian Ocean, Eastern | 2.67 | 4.13 | 5.48 | 6.35 | 6.41 | 6.92 | 6.77 | 55 |
| | ***Indian Ocean total*** | ***5.05*** | ***7.81*** | ***9.72*** | ***11.07*** | ***11.44*** | ***12.37*** | ***12.28*** | ***100*** |
| 61 | Pacific, Northwest | 20.95 | 21.80 | 19.97 | 21.09 | 20.94 | 20.24 | 20.06 | 41 |
| 67 | Pacific, Northeast | 2.74 | 2.98 | 2.79 | 3.17 | 3.11 | 3.38 | 3.09 | 6 |
| 71 | Pacific, Western Central | 5.94 | 8.51 | 10.78 | 12.74 | 12.99 | 12.73 | 13.54 | 28 |
| 77 | Pacific, Eastern Central | 1.62 | 1.44 | 1.81 | 1.66 | 1.64 | 1.75 | 1.75 | 4 |
| 81 | Pacific, Southwest | 0.57 | 0.82 | 0.69 | 0.55 | 0.47 | 0.47 | 0.45 | 1 |
| 87 | Pacific, Southeast | 10.23 | 14.90 | 13.10 | 7.70 | 6.30 | 7.19 | 10.27 | 21 |
| | ***Pacific Ocean total*** | ***42.06*** | ***50.45*** | ***49.14*** | ***46.91*** | ***45.46*** | ***45.76*** | ***49.16*** | ***100*** |
| ***18, 48, 58, 88*** | ***Arctic and Antarctic areas total*** | ***0.48*** | ***0.19*** | ***0.14*** | ***0.24*** | ***0.28*** | ***0.26*** | ***0.33*** | ***100*** |
| **Marine waters total** | | **72.10** | **81.86** | **81.56** | **80.51** | **78.27** | **81.21** | **84.41** | |