**Title:** Protecting the high seas from illegal, unregulated, and unreported fishing with overarching management

**Journal:** *Fishes* (MDPI)

**Supplementary Information:**

**Table S1.** *Tukey’s HSD post hoc test results. Subsets were created automatically by IBM SPSS v.25 for groups with similar means.*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tukey HSDa,b,c |   |   |   |   |   |   |   |   |   |
|   | Subset |
| Gear type | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Lines | 2 | 2.19 |   |   |   |   |   |   |   |
| Pots or traps | 12 | 2.42 |   |   |   |   |   |   |   |
| Dredge | 5 | 2.51 |   |   |   |   |   |   |   |
| Unknown by source | 52 |   | 3.23 |   |   |   |   |   |   |
| Small scale trammel net | 7 |   | 3.41 | 3.41 |   |   |   |   |   |
| Mixed gear | 99 |   | 3.43 | 3.43 |   |   |   |   |   |
| Pole and line | 171 |   | 3.44 | 3.44 |   |   |   |   |   |
| Hand lines | 58 |   | 3.71 | 3.71 | 3.71 |   |   |   |   |
| Other | 88 |   |   | 3.73 | 3.73 | 3.73 |   |   |   |
| Gillnet | 125 |   |   | 3.79 | 3.79 | 3.79 |   |   |   |
| Unknown class | 115 |   |   | 3.82 | 3.82 | 3.82 |   |   |   |
| Shrimp trawl | 75 |   |   | 3.90 | 3.90 | 3.90 | 3.90 |   |   |
| Artisanal fishing gear | 33 |   |   |   | 3.99 | 3.99 | 3.99 |   |   |
| Bottom trawl | 224 |   |   |   | 4.02 | 4.02 | 4.02 |   |   |
| Longline | 692 |   |   |   |   | 4.20 | 4.20 | 4.20 |   |
| Pelagic trawl | 130 |   |   |   |   |   | 4.37 | 4.37 | 4.37 |
| Other nets | 22 |   |   |   |   |   |   | 4.52 | 4.52 |
| Purse seine | 528 |   |   |   |   |   |   |   | 4.74 |
| Sig. |   | 0.702 | 0.063 | 0.054 | 0.721 | 0.072 | 0.074 | 0.678 | 0.452 |

*Note: The error term is Mean Square(Error) = 0.160. a. Uses Harmonic Mean Sample Size = 16.198. b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. c. α = 0.05.*

**Table S2.** *The results of the SIMPER Test.*

|  |  |  |  |
| --- | --- | --- | --- |
| Gear type | Country | Contribution | Cumulative |
|  *Artisanal fishing gear* | Philippines | 100.00 | 100.00 |
|  |   |   |   |
|  *Bottom trawl*  | Spain | 28.65 | 28.65 |
|  | Norway | 25.77 | 54.42 |
|  | France | 23.82 | 78.24 |
|  | Japan | 21.76 | 100.00 |
|  |   |   |   |
|  *Dredge* | France | 100.00 | 100.00 |
|  |   |   |   |
|  *Gillnet* | France | 36.54 | 36.54 |
|  | Japan | 32.00 | 68.54 |
|  | Norway | 29.33 | 97.87 |
|  |   |   |   |
|  *Longline* | Japan | 24.94 | 24.94 |
|  | Taiwan | 24.79 | 49.73 |
|  | South Korea | 14.18 | 63.92 |
|  | Indonesia | 10.43 | 74.35 |
|  | Spain | 9.56 | 83.91 |
|  | Ecuador | 7.37 | 91.28 |
|  |   |   |   |
|  *Other* | Indonesia | 69.14 | 69.14 |
|  | Philippines | 14.28 | 83.42 |
|  | Japan | 11.63 | 95.05 |
|  |   |   |   |
|  *Other industrial*  | France | 100.00 | 100.00 |
|  |   |   |   |
|  *Other nets* | Philippines | 100.00 | 100.00 |
|  |   |   |   |
|  *Pelagic trawl* | Norway | 58.46 | 58.46 |
|  | South Korea | 41.54 | 100.00 |
|  |   |   |   |
|  *Pole and line* | Indonesia | 54.54 | 54.54 |
|  | Japan | 43.76 | 98.30 |
|  |   |   |   |
|  *Purse seine* | Spain | 16.22 | 16.22 |
|  | Ecuador | 15.68 | 31.90 |
|  | South Korea | 11.40 | 43.30 |
|  | France | 10.92 | 54.23 |
|  | Philippines | 10.26 | 64.49 |
|  | Japan | 10.10 | 74.59 |
|  | Taiwan | 8.87 | 83.47 |
|  | Mexico | 8.42 | 91.89 |
|  |   |   |   |
|  *Shrimp trawl* | Norway | 62.42 | 62.42 |
|  | Spain | 37.58 | 100.00 |
|  |   |   |   |
|  *Unknown by source* | France | 89.12 | 89.12 |
|  | Spain | 10.88 | 100.00 |
|  |   |   |   |
|  *Unknown class* | Spain | 91.25 | 91.25 |