Supplementary Table 3: The full set of models that were fit and evaluated for the technical risk assessment for sharks (Post and Pre-monsoon), rays and hammerheads. Akaike Information Criterion (AIC) and delta AIC (difference between the lowest AIC and AIC score of each model) for each model is given. The best fit model that was selected is indicated in green.

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| --- | --- | --- |
| **Model** | **AIC** | **delta AIC** |
| **Shark Catches: Pre-monsoon** |
| Fishing effort + Depth + Location + Gear + Location\*Gear + Boat ID (random) | 586.190 | 0 |
| Fishing effort + Depth + Location + Gear + Boat ID (random) | 590.077 | 3.887 |
| Fishing effort + Depth + Gear + Boat ID (random) | 632.503 | 46.313 |
| Depth + Gear + Boat ID (random) | 635.765 | 49.574 |
| Fishing effort + Gear + Boat ID (random) | 857.895 | 271.705 |
| Gear + Boat ID (random) | 934.077 | 347.887 |
| Boat ID (random) | 985.931 | 399.741 |
| **Shark Catches: Post-monsoon** |
| Fishing effort + Depth + Location + Gear + Depth\*Gear + Boat ID (random) | 494.339 | 6.360 |
| Fishing effort + Depth + Location + Gear + Boat ID (random) | 493.011 | 5.032 |
| Fishing effort + Depth + Location + Boat ID (random) | 489.362 | 1.383 |
| Depth + Location + Boat ID (random) | 487.979 | 0 |
| Location + Boat ID (random) | 578.399 | 90.420 |
| Depth + Location + Gear + Boat ID (random) | 491.798 | 3.819 |
| Fishing effort + Location + Boat ID (random) | 580.314 | 92.335 |
| Boat ID (random) | 675.675 | 187.696 |
| **Ray Catches** |
| Season + Fishing effort + Depth + Location + Gear + Season\*Gear + Season\*Depth + Boat ID (random) | 1328.093 | 3.509 |
| Season + Fishing effort + Depth + Location + Gear + Season\*Depth + Boat ID (random) | 1327.205 | 2.621 |
| Season + Fishing effort + Depth + Location + Gear + Boat ID (random) | 1326.565 | 1.981 |
| Season + Depth + Location + Gear + Boat ID (random) | 1324.584 | 0 |
| Season + Location + Gear + Boat ID (random) | 1521.945 | 197.36 |
| Location + Gear + Boat ID (random) | 1522.464 | 197.88 |
| Gear + Boat ID (random) | 1738.956 | 414.37 |
| Season + Gear + Boat ID (random) | 1735.971 | 411.39 |
| Boat ID (random) | 1741.858 | 417.27 |
| **Probability of Hammerhead Capture** |
| Season + Fishing effort + Depth + Location + Gear + Season\*Gear + Season\*Depth + Season\*Location + Boat ID (random) | 188.050 | 9.134 |
| Season + Fishing effort + Depth + Location + Gear + Season\*Depth + Season\*Location + Boat ID (random) | 185.060 | 6.144 |
| Season + Fishing effort + Depth + Location + Gear + Season\*Depth +Boat ID (random) | 182.452 | 3.536 |
| Season + Fishing effort + Depth + Location + Gear + Boat ID (random) | 180.913 | 1.997 |
| Season + Depth + Location + Gear + Boat ID (random) | 178.916 | 0 |
| Season + Depth + Gear + Boat ID (random) | 206.563 | 27.646 |
| Season + Gear + Boat ID (random) | 285.261 | 106.345 |
| Gear + Boat ID (random) | 301.714 | 122.798 |
| Season + Location + Gear + Boat ID (random) | 235.223 | 56.307 |
| Boat ID (random) | 354.279 | 175.363 |