Seabird and Shark Bycatches in the Pacific Ocean from Taiwanese Observer Data of 2002-2005

Shui-Kai Chang, Ju-Ping Tai & Chih-Hao Shiao
Observer Program was launched on Taiwanese LL in the Pacific Ocean since 2002

Altogether 13 observation trips during 2002-05

- 4 on ALB vessels – in temperate region
- 9 on BET vessels – in tropical region

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Obs</th>
<th>No. Vessel</th>
<th>Total efforts</th>
<th>Fishing days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>1</td>
<td>1</td>
<td>186</td>
<td>65</td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
<td>3</td>
<td>653</td>
<td>183</td>
</tr>
<tr>
<td>2004</td>
<td>2</td>
<td>4</td>
<td>1066</td>
<td>324</td>
</tr>
<tr>
<td>2005</td>
<td>4</td>
<td>5</td>
<td>982</td>
<td>308</td>
</tr>
<tr>
<td>Year</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>2002</td>
<td>2,374</td>
<td>83.36</td>
<td>147</td>
<td>5.16</td>
</tr>
<tr>
<td>2003</td>
<td>11,672</td>
<td>87.44</td>
<td>202</td>
<td>1.51</td>
</tr>
<tr>
<td>2004</td>
<td>12,253</td>
<td>88.11</td>
<td>519</td>
<td>3.73</td>
</tr>
<tr>
<td>2005</td>
<td>15,028</td>
<td>82.02</td>
<td>970</td>
<td>5.29</td>
</tr>
</tbody>
</table>

**Pie Chart**

- ALB
- BET
- YFT
- SWO
- BIL
- SKJ
- OTH
SEABIRDS

- Ranged between 0.00-0.11% to the total catches

<table>
<thead>
<tr>
<th>Year</th>
<th>No.</th>
<th>Catch rate</th>
<th>Year</th>
<th>No.</th>
<th>Catch rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>0</td>
<td>0.000</td>
<td>2002</td>
<td>0</td>
<td>0.000</td>
</tr>
<tr>
<td>2003</td>
<td>15</td>
<td>0.023</td>
<td>2003</td>
<td>1</td>
<td>0.004</td>
</tr>
<tr>
<td>2004</td>
<td>6</td>
<td>0.006</td>
<td>2004</td>
<td>1</td>
<td>0.003</td>
</tr>
<tr>
<td>2005</td>
<td>9</td>
<td>0.009</td>
<td>2005</td>
<td>6</td>
<td>0.016</td>
</tr>
</tbody>
</table>
For 2004-05 when new observer logbook adopted
<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Alive and released</th>
<th>Dead and discarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2003</td>
<td>15</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>2004</td>
<td>6</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2005</td>
<td>9</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>3 (10%)</td>
<td>27 (90%)</td>
</tr>
</tbody>
</table>
**SHARKS**

- Ranged between 2.73-5.20% to the total catches

<table>
<thead>
<tr>
<th>Year</th>
<th>No.</th>
<th>Catch rate</th>
<th>No.</th>
<th>Catch rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>81</td>
<td>0.436</td>
<td>42</td>
<td>0.507</td>
</tr>
<tr>
<td>2003</td>
<td>365</td>
<td>0.559</td>
<td>267</td>
<td>0.987</td>
</tr>
<tr>
<td>2004</td>
<td>733</td>
<td>0.688</td>
<td>391</td>
<td>1.250</td>
</tr>
<tr>
<td>2005</td>
<td>876</td>
<td>0.892</td>
<td>285</td>
<td>0.745</td>
</tr>
</tbody>
</table>

80% from blue shark and 10% from silky shark

shark-fin-ratio varies significantly by species and by the way the shark carcasses are processed
鯊魚遙感分數樣本分布
2004~2006

- > 10
- 5 to 10
- 2 to 5
- < 2
Brief Introduction to the 2006 Workshop on Reduction of Sea Turtle Incidental Catch
60 peoples from industry and government

Topics

(1) World actions to conserve sea turtles
(2) The endangered sea turtles
(3) Results from circle hooks experiments
(4) The usage of de-hooker
(5) Invitation for large scale circle hooks experiments

7 Atlantic LL and 3 Pacific LL enrolled