Related Tables to Preliminary Results Of An Evaluation Of The Potential Threat To Sea Otters Posed By The Nearshore Finfish Trap Fishery

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U.S. Geologic Survey

Table 1 - Revised Commercial Finfish Trap Landings (Pounds, Gear Code 21*) for the Morro Bay Complex (Morro Bay and Port San Luis) and Monterey Bay Area (Monterey, Moss Landing, and Santa Cruz) Ports, 1993 – 1999.

<table>
<thead>
<tr>
<th>Year</th>
<th>Morro Bay Complex</th>
<th>Monterey Bay Area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>136</td>
<td>0</td>
<td>136</td>
</tr>
<tr>
<td>1994</td>
<td>14,005</td>
<td>556</td>
<td>14,561</td>
</tr>
<tr>
<td>1995</td>
<td>50,269</td>
<td>538</td>
<td>50,807</td>
</tr>
<tr>
<td>1996</td>
<td>97,856</td>
<td>1,550</td>
<td>99,406</td>
</tr>
<tr>
<td>1997</td>
<td>106,821</td>
<td>7,240</td>
<td>114,061</td>
</tr>
<tr>
<td>1998</td>
<td>81,510</td>
<td>60,377</td>
<td>141,887</td>
</tr>
<tr>
<td>1999</td>
<td>50,520</td>
<td>34,009</td>
<td>84,529</td>
</tr>
</tbody>
</table>

Landing data provided by California Department of Fish and Game
*excluding deep water sable fish and other deep water species that were most likely caught incidentally in traps set for sable fish or were recorded as gear code 21 by mistake.

Table 2 - Otters drowned in other types of traps of various design.

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Gear Type</th>
<th>Shape of Opening</th>
<th>Size of Opening</th>
<th>Depth (ft.)</th>
<th>SEA OTTER</th>
<th>Comment</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug -74</td>
<td>65 mi off Cape Mordinol, AK</td>
<td>Crab trap</td>
<td></td>
<td>264</td>
<td>F</td>
<td>103</td>
<td>30</td>
<td>Terrel C. Newby [The Murrelet]</td>
</tr>
<tr>
<td>Date</td>
<td>Location</td>
<td>Type</td>
<td>Condition</td>
<td>Length</td>
<td>Species</td>
<td>Remarks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
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<td>------</td>
<td>-----------</td>
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<td>---------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov-87</td>
<td>Santa Cruz Is, CA</td>
<td>Lobster trap</td>
<td>Wt on 29 Aug 1987</td>
<td>27</td>
<td>M</td>
<td>Reported by fisherman who had tag #'s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec-87</td>
<td>Monterey Harbor, CA</td>
<td>Experimental trap?</td>
<td>Bloated carcasses floated trap to surface</td>
<td>49</td>
<td>F</td>
<td>CDFG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec-87</td>
<td>Monterey Harbor, CA</td>
<td>Experimental trap?</td>
<td>Trapped w/mother (above)</td>
<td>20</td>
<td>M</td>
<td>CDFG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>w/in 5 mi of Attu Is, AK</td>
<td>Pacific cod trap</td>
<td>Skull in trap lost from 1991 season, recovered in 1992</td>
<td>No data</td>
<td>Rectangular</td>
<td>NMFS Observer Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1991 (?)</td>
<td>5 mi of Pt Santa Cruz, CA</td>
<td>Rock crab trap</td>
<td>SA skeleton recovered June 1992</td>
<td>No data</td>
<td>Rectangular*</td>
<td>CDFG, USFWS, USCG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May-92</td>
<td>w/in 5 mi of Attu Is, AK</td>
<td>Pacific cod trap*</td>
<td>Curvilinear length</td>
<td>125</td>
<td>?</td>
<td>NMFS Observer Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>120</td>
<td>?</td>
<td>&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>64</td>
<td>?</td>
<td>&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This curvilinear length is suspect: this would be
Four additional otters taken in the same area in same gear observed by the same vessels during June -August 1992. Reported to NMFS observers by fishers.

Total number of otters taken in trap gear summarized above: 18

Converted Tanner crab trap

*Based on photos and illustrations of trap gear with dimensions

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monterey to Pt. Sur</td>
<td>4</td>
<td>14</td>
<td>1173</td>
<td>24</td>
<td>0.86</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pt. Sur to Pt. Buchon</td>
<td>9</td>
<td>28</td>
<td>451</td>
<td>182^</td>
<td>0.5</td>
<td>0.68</td>
<td>1#</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
<td><strong>42</strong></td>
<td><strong>1624</strong></td>
<td><strong>206</strong></td>
<td><strong>0.8</strong></td>
<td><strong>0.18</strong></td>
<td><strong>1</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

^ all were observed prior to legislation prohibiting fishing overnight

# unidentified bird observed on 5 January 1997, near Pt. Piedras Blancas

* 1226 were observed from June to November 1999; 398 were observed from August 1995 to November 1998, between Pt. Sur and Pt. Buchon

*Table 3 - Finfish Trap Fishery Observations*

Table 4 - Results of experiment in which ten sea otters were exposed to a commercial finfish trap in a controlled setting at Monterey Bay Aquarium. Inner trap funnel openings were 5.5 inches in diameter.
<table>
<thead>
<tr>
<th>Otter No.</th>
<th>Date Tested</th>
<th>Sex</th>
<th>Wt. (lb)</th>
<th>Estimated Age</th>
<th>No. Hours Since Last Feeding</th>
<th>Estimated Stranding Age (wks)</th>
<th>Days in Captivity</th>
<th>Time Exposed to Trap (min.)</th>
<th>Attempted to Enter Trap (min.)</th>
<th>No. Times Attempted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Thelma)</td>
<td>13-Jan-99</td>
<td>F</td>
<td>37.6</td>
<td>9.5</td>
<td>12</td>
<td>2</td>
<td>270</td>
<td>60</td>
<td>yes</td>
<td>31*</td>
</tr>
<tr>
<td>2a# (Eddie)</td>
<td>13-Jan-99</td>
<td>M</td>
<td>42</td>
<td>12</td>
<td>13</td>
<td>13</td>
<td>282</td>
<td>40</td>
<td>yes</td>
<td>73</td>
</tr>
<tr>
<td>2b# (Eddie)</td>
<td>13-Jan-99</td>
<td>M</td>
<td>42</td>
<td>12</td>
<td>14</td>
<td>13</td>
<td>282</td>
<td>35</td>
<td>yes</td>
<td>26</td>
</tr>
<tr>
<td>3 (Quinn)</td>
<td>9-Feb-99</td>
<td>M</td>
<td>23.8</td>
<td>6</td>
<td>3.5</td>
<td>12</td>
<td>71</td>
<td>112</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>4 (Hunter)</td>
<td>9-Mar-99</td>
<td>M</td>
<td>42.4</td>
<td>13</td>
<td>12</td>
<td>1</td>
<td>388</td>
<td>66</td>
<td>yes</td>
<td>55</td>
</tr>
<tr>
<td>5 (Bud)</td>
<td>24-Mar-99</td>
<td>M</td>
<td>26.5</td>
<td>6</td>
<td>11</td>
<td>5</td>
<td>138</td>
<td>64</td>
<td>yes</td>
<td>20</td>
</tr>
<tr>
<td>6 (Pippin)</td>
<td>25-Jun-99</td>
<td>F</td>
<td>15.5</td>
<td>5.5</td>
<td>9.5</td>
<td>13</td>
<td>72</td>
<td>37</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>7 (Doc)</td>
<td>25-Jun-99</td>
<td>M</td>
<td>26.5</td>
<td>4.5</td>
<td>10</td>
<td>1</td>
<td>127</td>
<td>60</td>
<td>yes</td>
<td>5</td>
</tr>
<tr>
<td>8 (Emalin)</td>
<td>13-Oct-99</td>
<td>F</td>
<td>24.3</td>
<td>6.5</td>
<td>12</td>
<td>24</td>
<td>25</td>
<td>60</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>9 (Maria)</td>
<td>13-Oct-99</td>
<td>F</td>
<td>18.2</td>
<td>4.5</td>
<td>13</td>
<td>12</td>
<td>53</td>
<td>60</td>
<td>yes</td>
<td>3^</td>
</tr>
<tr>
<td>10 (Loretta)</td>
<td>13-Oct-99</td>
<td>F</td>
<td>40.7</td>
<td>adult</td>
<td>adult</td>
<td>adult</td>
<td>11</td>
<td>60</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

* Due to safety concerns, this first otter was exposed to a trap w/out
Otter no. 2 was exposed first to a trap w/ one funnel for 40 min. (a), then for 35 min. to a trap w/ both funnels (b).

This sea otter entered the trap completely all three times and apparently could not escape on two occasions.