SHELLFISH INVESTIGATION
INFORMATION REPORT 74-3

HARVEST OF INTERTIDAL, NONFOOD INVERTEBRATES 1972

by
Laimons Osis

Fish Commission of Oregon
Management and Research Division

May 1974
HARVEST OF INTERTIDAL, NONFOOD INVERTEBRATES, 1972

INTRODUCTION

Since 1962 persons desiring to harvest intertidal nonfood invertebrates in permit areas or in excess of personal-use bag limits have been required to obtain a collecting permit from the Fish Commission and report the number of animals collected and areas where taken. This report summarizes collecting activities for 1972.

RESULTS

The Fish Commission issued 267 permits in 1972, a decrease of 6% from 1971. Collecting reports were returned by 93% of the permittees. The reported harvest increased 18% from 131,715 animals in 1971 to 161,354 in 1972 (Tables 1 and 2).

Table 1. Summary of Intertidal, Nonfood Invertebrate Catch Data from the Oregon Coast, 1972.

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational permits</td>
<td>260</td>
<td>97.4</td>
</tr>
<tr>
<td>Commercial permits</td>
<td>7</td>
<td>2.6</td>
</tr>
<tr>
<td>Total</td>
<td>267</td>
<td>100.0</td>
</tr>
<tr>
<td>Number of collecting reports returned</td>
<td>250</td>
<td>93.3</td>
</tr>
<tr>
<td>Number of permits used</td>
<td>190</td>
<td>76.3</td>
</tr>
<tr>
<td>Number of permits unused</td>
<td>60</td>
<td>23.7</td>
</tr>
<tr>
<td>Educational harvest</td>
<td>101,276</td>
<td>62.8</td>
</tr>
<tr>
<td>Commercial harvest</td>
<td>60,078</td>
<td>37.2</td>
</tr>
<tr>
<td>Total</td>
<td>161,354</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Yaquina Head was the most frequently visited permit area although slightly more animals were taken from the Sunset Bay-Cape Arago area. The central coast (Tillamook Bay to Coos Bay) was the most heavily used "open" area for both educational and commercial collectors (Tables 3, 4, and 6). The polychaete tubeworm, Eudistylia, has in the past made up over half of the commercial harvest. With the death of one commercial collector in late 1971, the take of Eudistylia dropped from an estimated 57,500 animals in 1971 to 7,500 in 1972. Amphipods and other miscellaneous species made up 75% of the educational harvest (Table 2).

To get a more accurate indication of collecting trends, a separate analysis was made, eliminating such "annual" species as amphipods or barnacles. This analysis of index species showed that educational collecting decreased 40%, the commercial harvest was unchanged and the combined catch was down 12% from 1971 (Table 5). Large-scale changes in the educational harvest usually reflect the start or completion of a research program.
Table 2. Intertidal Nonfood Invertebrates Collected by Permit Holders Along the Oregon Coast, January 1 to December 31, 1972.

<table>
<thead>
<tr>
<th>Animal Group</th>
<th>Educational Catch</th>
<th>Commercial Catch</th>
<th>Total Catch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Coelenterata</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea anemones</td>
<td>426</td>
<td>&gt;0.1</td>
<td>0</td>
</tr>
<tr>
<td>Annelida</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine worms</td>
<td>9,064</td>
<td>8.9</td>
<td>7,520</td>
</tr>
<tr>
<td>Arthropoda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hermit &amp; porcelain crabs</td>
<td>1,272</td>
<td>1.3</td>
<td>12,100</td>
</tr>
<tr>
<td>Ghost and mud shrimp</td>
<td>2,577</td>
<td>2.5</td>
<td>15,300</td>
</tr>
<tr>
<td>Shore, spider &amp; kelp crabs</td>
<td>817</td>
<td>0.8</td>
<td>2,650</td>
</tr>
<tr>
<td>Mollusca</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chitons</td>
<td>461</td>
<td>0.5</td>
<td>2,814</td>
</tr>
<tr>
<td>Snails, limpets</td>
<td>2,571</td>
<td>2.5</td>
<td>20</td>
</tr>
<tr>
<td>Sea slugs</td>
<td>539</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>Echinodermata</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea stars</td>
<td>1,172</td>
<td>1.2</td>
<td>13,116</td>
</tr>
<tr>
<td>Sea urchins</td>
<td>2,122</td>
<td>2.1</td>
<td>3,849</td>
</tr>
<tr>
<td>Sand dollars</td>
<td>8</td>
<td>&gt;0.1</td>
<td>0</td>
</tr>
<tr>
<td>Brittle stars</td>
<td>38</td>
<td>0.1</td>
<td>0</td>
</tr>
<tr>
<td>Sea cucumbers</td>
<td>156</td>
<td>0.2</td>
<td>109</td>
</tr>
<tr>
<td>Other groups</td>
<td>80,003</td>
<td>79.0</td>
<td>2,600</td>
</tr>
<tr>
<td>Total</td>
<td>101,276</td>
<td>100.0</td>
<td>60,078</td>
</tr>
<tr>
<td>Taxonomic Group</td>
<td>Boiler Bay</td>
<td>Shell Cove (Depoe Bay)</td>
<td>Yaquina Head</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------</td>
<td>------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Coelenterata</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea anemones</td>
<td>26</td>
<td>2</td>
<td>83</td>
</tr>
<tr>
<td><strong>Annelida</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine worms</td>
<td>83</td>
<td>0</td>
<td>106</td>
</tr>
<tr>
<td><strong>Arthropoda</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hermit &amp; porcelain crabs</td>
<td>140</td>
<td>7</td>
<td>354</td>
</tr>
<tr>
<td>Ghost and mud shrimp</td>
<td>1</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Shore, spider &amp; kelp crabs</td>
<td>71</td>
<td>1</td>
<td>238</td>
</tr>
<tr>
<td><strong>Mollusca</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chitons</td>
<td>62</td>
<td>4</td>
<td>136</td>
</tr>
<tr>
<td>Snails, limpets</td>
<td>249</td>
<td>15</td>
<td>809</td>
</tr>
<tr>
<td>Sea slugs</td>
<td>40</td>
<td>0</td>
<td>69</td>
</tr>
<tr>
<td><strong>Echinodermata</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea stars</td>
<td>74</td>
<td>4</td>
<td>275</td>
</tr>
<tr>
<td>Sea urchins</td>
<td>407</td>
<td>22</td>
<td>1,034</td>
</tr>
<tr>
<td>Sand dollars</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Brittle stars</td>
<td>3</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td>Sea cucumbers</td>
<td>13</td>
<td>0</td>
<td>38</td>
</tr>
<tr>
<td><strong>Other groups</strong></td>
<td>108</td>
<td>27</td>
<td>1,136</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,277</td>
<td>82</td>
<td>4,341</td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
<td>1.3</td>
<td>&gt;0.1</td>
<td>4.3</td>
</tr>
</tbody>
</table>

1/ Columbia River to Tillamook Bay.
2/ Tillamook Bay to Coos Bay.
3/ Coos Bay to California Border.
Table 4. Intertidal Nonfood Invertebrates Harvested by Commercial Collectors from the Oregon Coast, by Area and Taxonomic Group, 1972.

<table>
<thead>
<tr>
<th>Taxonomic Group</th>
<th>North Coast</th>
<th>Central Coast</th>
<th>South Coast</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coelenterata</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea anemones</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Annelida</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine worms</td>
<td>0</td>
<td>7,520</td>
<td>0</td>
<td>7,520</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Arthropoda</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hermit and porcelain crabs</td>
<td>1,000</td>
<td>11,050</td>
<td>50</td>
<td>12,100</td>
<td>20.1</td>
</tr>
<tr>
<td>Ghost and mud shrimp</td>
<td>15,300</td>
<td>0</td>
<td>0</td>
<td>15,300</td>
<td>25.5</td>
</tr>
<tr>
<td>Shore, spider &amp; kelp crabs</td>
<td>0</td>
<td>2,650</td>
<td>0</td>
<td>2,650</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>Hollusca</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chitons</td>
<td>1,000</td>
<td>1,035</td>
<td>779</td>
<td>2,814</td>
<td>4.7</td>
</tr>
<tr>
<td>Snails, limpets</td>
<td>0</td>
<td>20</td>
<td>0</td>
<td>20</td>
<td>&gt;0.1</td>
</tr>
<tr>
<td>Sea slugs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Echinodermata</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sea stars</td>
<td>3,000</td>
<td>10,085</td>
<td>31</td>
<td>13,116</td>
<td>21.8</td>
</tr>
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<td>Sea urchins</td>
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<td>2,430</td>
<td>1,419</td>
<td>3,849</td>
<td>6.4</td>
</tr>
<tr>
<td>Sand dollars</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Brittle stars</td>
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<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Sea cucumbers</td>
<td>0</td>
<td>0</td>
<td>109</td>
<td>109</td>
<td>0.2</td>
</tr>
<tr>
<td>Other groups</td>
<td>0</td>
<td>2,600</td>
<td>0</td>
<td>2,600</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20,300</td>
<td>37,390</td>
<td>2,388</td>
<td>60,078</td>
<td></td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
<td>33.8</td>
<td>62.2</td>
<td>4.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 5. Selected Groups of Intertidal Nonfood Invertebrates Harvested by Permit Holders Along the Oregon Coast, 1972.

<table>
<thead>
<tr>
<th>Animal Group</th>
<th>Educational Catch</th>
<th>Commercial Catch</th>
<th>Total Catch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
<td>% Change from 1971</td>
</tr>
<tr>
<td>Coelenterata</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea anemones</td>
<td>426</td>
<td>4.4</td>
<td>-19.5</td>
</tr>
<tr>
<td>Arthropoda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hermit and porcelain crabs</td>
<td>1,272</td>
<td>13.2</td>
<td>-15.1</td>
</tr>
<tr>
<td>Shore, spider and kelp crabs</td>
<td>817</td>
<td>8.5</td>
<td>-61.2</td>
</tr>
<tr>
<td>Mollusca</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chitons</td>
<td>461</td>
<td>4.8</td>
<td>+15.8</td>
</tr>
<tr>
<td>Snails, limpets</td>
<td>2,571</td>
<td>26.7</td>
<td>-47.2</td>
</tr>
<tr>
<td>Sea slugs</td>
<td>539</td>
<td>5.6</td>
<td>+44.1</td>
</tr>
<tr>
<td>Echinodermata</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea stars</td>
<td>1,172</td>
<td>12.2</td>
<td>-29.4</td>
</tr>
<tr>
<td>Sea urchins</td>
<td>2,122</td>
<td>22.0</td>
<td>-50.7</td>
</tr>
<tr>
<td>Brittle stars</td>
<td>88</td>
<td>0.9</td>
<td>-29.0</td>
</tr>
<tr>
<td>Sea cucumbers</td>
<td>156</td>
<td>1.6</td>
<td>+21.9</td>
</tr>
<tr>
<td>Total</td>
<td>9,624</td>
<td>-39.8</td>
<td></td>
</tr>
</tbody>
</table>
Table 6. Summary of Collecting Intensity by Area, Oregon Coast, 1972.

<table>
<thead>
<tr>
<th>Location</th>
<th>Permittees collecting in area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yaquina Head</td>
<td>78</td>
<td>32.1</td>
</tr>
<tr>
<td>Sunset Bay-Cape Arago</td>
<td>55</td>
<td>22.5</td>
</tr>
<tr>
<td>Boiler Bay</td>
<td>31</td>
<td>12.7</td>
</tr>
<tr>
<td>Neptune State Park</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Shell Cove (Depoe Bay)</td>
<td>4</td>
<td>1.6</td>
</tr>
<tr>
<td>Harris Beach Permit Area</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Central Coast(^1)/</td>
<td>42</td>
<td>17.2</td>
</tr>
<tr>
<td>North Coast(^2)/</td>
<td>15</td>
<td>6.1</td>
</tr>
<tr>
<td>South Coast(^3)/</td>
<td>9</td>
<td>3.7</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>100.0</td>
</tr>
</tbody>
</table>

\(^1\)/ Central Coast: Tillamook Bay to Coos Bay

\(^2\)/ North Coast: Columbia River to Tillamook Bay

\(^3\)/ South Coast: Coos Bay to California Border