How many brown bears on the Kenai Peninsula?

428 (353-539) brown bear estimated (all ages) on 11,700 km² sample frame of which 10,200 km² is available habitat

- 42 bears per 1,000 km²
- 582 bears on the KP (469-719)
- 183 independent females
- 206 dependent young

Population management of Kenai brown bears

Human-caused mortality of Kenai brown bears

2012 spring drawing changed to general registration hunt

USFWS
Population management of Kenai brown bears

Human-caused mortality of Kenai brown bears

Sex and age distribution of 184 brown bears killed in 2012-2014

<table>
<thead>
<tr>
<th>SEX</th>
<th>AGE</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>ADULT</td>
<td>8</td>
<td>12</td>
<td>26</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>SUBADULT</td>
<td>9</td>
<td>19</td>
<td>24</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>YEARLING</td>
<td>9</td>
<td>3</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>FEMALE</td>
<td>ADULT</td>
<td>13</td>
<td>23</td>
<td>6</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>SUBADULT</td>
<td>8</td>
<td>15</td>
<td>12</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>YEARLING</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>ALL AGES</td>
<td>44</td>
<td>71</td>
<td>69</td>
<td>184</td>
</tr>
</tbody>
</table>

Sex and age distribution of 184 brown bears killed in 2012-2014

2014 HCM cap = 70 HCM or ≤ 17 adult females

Population demographics used in VORTEX

- Based on data 1995-2014
- Polygynous system with 100% of adult males breeding
- Reproductive age = 8 years
- Maximum breeding age = 26 years
- 50% males, 50% females
- Adult females breeding = 34%
- Initial population of 582
- Assumes telemeasured population of adult females is representative of peninsula-wide population
- Assumes stable age distribution, no density-dependent mortality

2012-14 actual HCMs

<table>
<thead>
<tr>
<th>2012-14 actual HCMs (n = 184)</th>
</tr>
</thead>
<tbody>
<tr>
<td>r = -0.022, SD(r) = 0.060, N = 184</td>
</tr>
</tbody>
</table>

Instead, modeling suggests the actual 2012-14 human-caused mortality of 184 bears has depressed the Kenai brown bear population by 18% from 2010 through 2014.

2012-14 actual HCMs plus current 2015 HCM cap

<table>
<thead>
<tr>
<th>2012-14 actual HCMs plus current 2015 HCM cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>r = -0.049, SD(r) = 0.094, N = 441</td>
</tr>
</tbody>
</table>

Modeling suggests the actual 2012-14 HCM plus the cap of 70 total HCM (of which 17 are adult females) during 2015 would depress the Kenai brown bear population by 24% from 2013 through 2015.
Modeling suggests the Kenai brown bear population would decline to 361 bears (a 38% decrease from 2010).

If the current caps of 70 total HCMs (of which 17 are adult females) continues from 2015 through 2020, the Kenai brown bear population would decline to 361 bears (a 38% decrease from 2010).

If the caps are reduced to 30 total HCMs (of which 8 are adult females) starting in 2015, the Kenai brown bear population will stabilize at the 2014 level (~460), but still be 17% less than it was in 2010.

If the caps are reduced to 40 total HCMs (of which 8 are adult females) starting in 2015, the Kenai brown bear population will stabilize at the 2014 level (~460), but still be 17% less than it was in 2010.

Summary

Kenai brown bear population was estimated at 582 in 2010, increased to 590 in 2011 but is now at 478, 18% less than it was in 2010.

Modeling suggests caps of 40 bears and 8 adult females are necessary to prevent further decline of the estimated Kenai brown bear population at the end of 2014.

Modeling suggests caps of 30 bears and 5 adult females would allow the population to grow gradually almost to its 2010 level by 2020.