Lesson Plans: Past Sea Level Data

Objective
The objective of this activity is to feel the changes of sea level in the past.

Materials
Each student or group of students will need the following:

- Graph paper
- Ruler
- Pen and pencil

Important Points to Understand

- In the past the sea level has not always been the same.
- If climate changes caused by human activities do not exist, sea level changes by time is a kind of natural process.

Preparation
Try to explain the information given in the following table, which lists the sea level for the last 250,000 years, as recorded by thorium/uranium dating of coral reefs off Papua New Guinea.

<table>
<thead>
<tr>
<th>Thousand years before present</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meters below present sea level</td>
<td>0</td>
<td>23</td>
<td>119</td>
<td>54</td>
<td>44</td>
<td>72</td>
<td>55</td>
<td>71</td>
<td>22</td>
</tr>
<tr>
<td>Thousand years before present</td>
<td>90</td>
<td>100</td>
<td>110</td>
<td>120</td>
<td>130</td>
<td>140</td>
<td>150</td>
<td>160</td>
<td>170</td>
</tr>
<tr>
<td>Meters below present sea level</td>
<td>59</td>
<td>20</td>
<td>48</td>
<td>27</td>
<td>5</td>
<td>16</td>
<td>123</td>
<td>111</td>
<td>30</td>
</tr>
<tr>
<td>Thousand years before present</td>
<td>180</td>
<td>190</td>
<td>200</td>
<td>210</td>
<td>220</td>
<td>230</td>
<td>240</td>
<td>250</td>
<td>-</td>
</tr>
<tr>
<td>Meters below present sea level</td>
<td>57</td>
<td>87</td>
<td>46</td>
<td>32</td>
<td>7</td>
<td>25</td>
<td>12</td>
<td>32</td>
<td>-</td>
</tr>
</tbody>
</table>

Procedure
1. Plot a time versus sea level graph. Time is on horizontal axis starting from 250,000 years before present and meters below present sea level on the vertical axis down from the horizontal.
2. Remember the time step (10 thousands years) and study the sea level relative to present level.

Questions
1. How does the present-day sea level compare with that of the recent past?
2. What do you think of the present sea level? Is it alarming?