

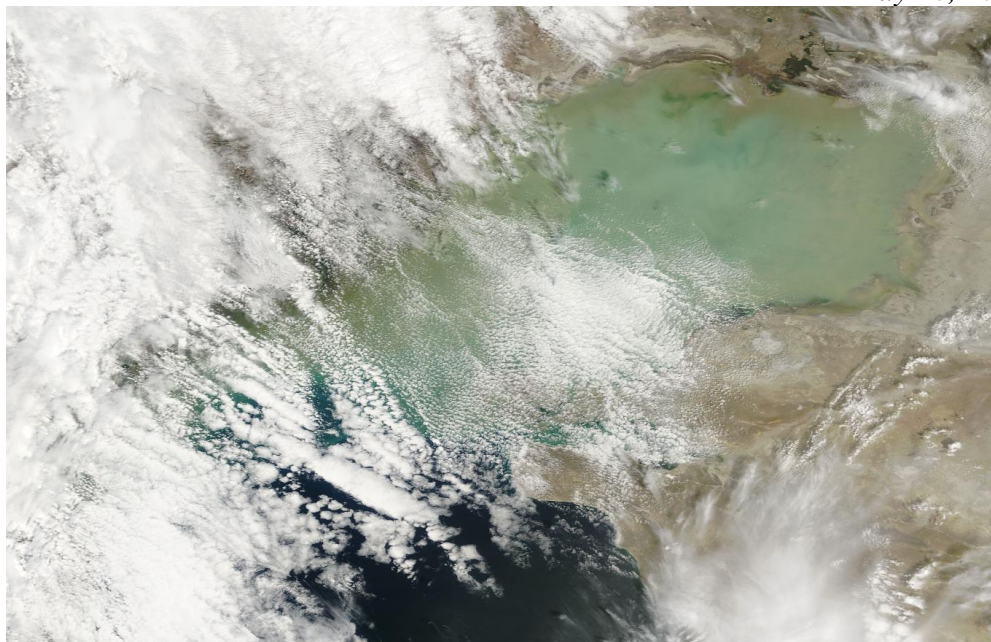


**MINISTRY OF ECOLOGY AND NATURAL RESOURCES OF  
THE REPUBLIC OF KAZAKHSTAN  
RSE «KAZHYDROMET»**

**SCIENTIFIC RESEARCH CENTER**

**CASPIAN SEA WEEKLY BULLETIN №20**

*May 16, 2025, Friday*



*Fig.1 Space image of the Caspian Sea, May 14, 2025 (NASA/GSFC)*

**FORECAST OF LEVEL AND SURGE PHENOMENA IN THE MIDDLE  
PART OF THE CASPIAN SEA ON MAY 15 – 20, 2025**

**SEA LEVEL.**

In the period on May 15 – 20, the sea level is expected to fluctuate around the mark of minus 29.42 m BS. The range of fluctuations in sea level is from minus 28.95 m to minus 29.75 m.

Figure 2 shows a graph of the predicted sea level values at various points in the Middle part of the Caspian Sea.

**SURGE PHENOMENA.**

In the area of Fort-Shevchenko, Kuryk, Aktau, Saura, Kuryk, Fetisovo and Makhachkala, surge events are not expected, sea level fluctuations will not exceed **14 cm**.

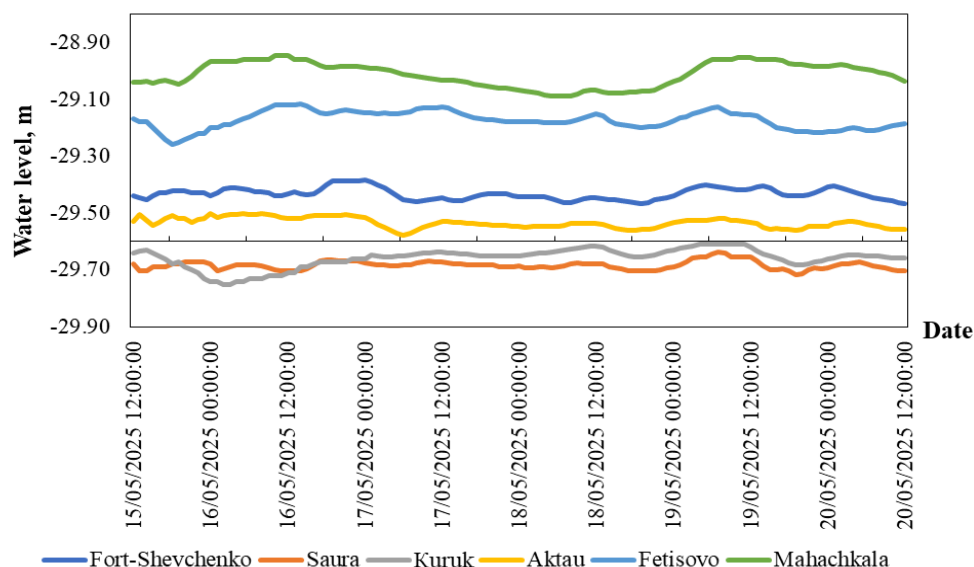


Fig .2 Forecast of sea level in the points of the Middle Caspian

## FORECAST OF LEVEL AND SURGE PHENOMENA IN THE NORTHERN PART OF THE CASPIAN SEA ON MAY 15 – 20, 2025

### SEA LEVEL.

In the period the sea level is expected to fluctuate around the mark of minus 28.92 m BS. The range of fluctuations in sea level is from minus 28.32 m to minus 29.52 m.

Figure 3 shows a graph of the predicted sea level values at various points in the Northern part of the Caspian Sea.

### SURGERY PHENOMENA.

In the area of Kulaly, Peshnoy, Tyuleni and Zhanbay surge events are **not expected**, sea level fluctuations will **not exceed 14 cm**.

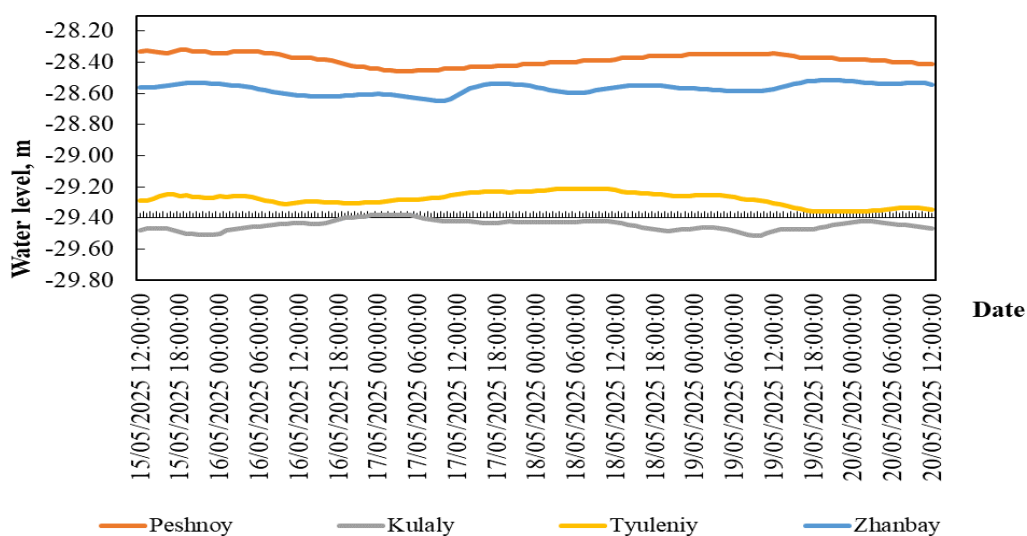


Fig .3 Forecast of sea level in the points of the Middle Caspian

## FORECAST VALUES OF SEA LEVEL FLUCTUATIONS AT VARIOUS POINTS OF THE KAZAKHSTANI COAST

| Point name           | Maximum                        |                        | Minimum                        |                        | Average                        |
|----------------------|--------------------------------|------------------------|--------------------------------|------------------------|--------------------------------|
|                      | Level,<br>sm<br>(m BS)         | date, time,<br>GMT*    | Level,<br>sm<br>(m BS)         | date, time,<br>GMT*    | Level,<br>sm<br>(m BS)         |
| <b>Middle Part</b>   |                                |                        |                                |                        |                                |
| Fort-Shevchenko      | <b>-138</b><br><b>(-29,38)</b> | 17/05/2025<br>00:00:00 | <b>-147</b><br><b>(-29,47)</b> | 20/05/2025<br>12:00:00 | <b>-143</b><br><b>(-29,43)</b> |
| Saura                | <b>-164</b><br><b>(-29,64)</b> | 19/05/2025<br>07:00:00 | <b>-172</b><br><b>(-29,72)</b> | 19/05/2025<br>19:00:00 | <b>-168</b><br><b>(-29,68)</b> |
| Kuryk                | <b>-161</b><br><b>(-29,61)</b> | 19/05/2025<br>04:00:00 | <b>-175</b><br><b>(-29,75)</b> | 16/05/2025<br>02:00:00 | <b>-166</b><br><b>(-29,66)</b> |
| Aktau                | <b>-150</b><br><b>(-29,50)</b> | 16/05/2025<br>00:00:00 | <b>-158</b><br><b>(-29,58)</b> | 17/05/2025<br>06:00:00 | <b>-153</b><br><b>(-29,53)</b> |
| Fetisovo             | <b>-112</b><br><b>(-29,12)</b> | 16/05/2025<br>14:00:00 | <b>-126</b><br><b>(-29,26)</b> | 15/05/2025<br>18:00:00 | <b>-117</b><br><b>(-29,17)</b> |
| Makhachkala          | <b>-95</b><br><b>(-28,95)</b>  | 16/05/2025<br>10:00:00 | <b>-109</b><br><b>(-29,09)</b> | 18/05/2025<br>05:00:00 | <b>-101</b><br><b>(-29,01)</b> |
| <b>Northern Part</b> |                                |                        |                                |                        |                                |
| Peshnoy              | <b>-32</b><br><b>(-28,32)</b>  | 15/05/2025<br>18:00:00 | <b>-46</b><br><b>(-28,46)</b>  | 17/05/2025<br>03:00:00 | <b>-38</b><br><b>(-28,38)</b>  |
| Kulaly               | <b>-138</b><br><b>(-29,38)</b> | 16/05/2025<br>23:00:00 | <b>-152</b><br><b>(-29,52)</b> | 19/05/2025<br>09:00:00 | <b>-145</b><br><b>(-29,45)</b> |
| Tyuleniy             | <b>-122</b><br><b>(-29,22)</b> | 18/05/2025<br>03:00:00 | <b>-136</b><br><b>(-29,36)</b> | 19/05/2025<br>18:00:00 | <b>-128</b><br><b>(-29,28)</b> |
| Zhanbay              | <b>-52</b><br><b>(-28,52)</b>  | 19/05/2025<br>20:00:00 | <b>-65</b><br><b>(-28,65)</b>  | 17/05/2025<br>09:00:00 | <b>-57</b><br><b>(-28,57)</b>  |

GMT\* - Greenwich Mean Time

### **REVIEW** **CASPIAN SEA WATER STAGE FROM MAY 08 – 14, 2025**

In the northern part of the Caspian Sea, according to operational data from marine stations of Kazhydromet: Peshnoy, Kulaly island and Roshydromet (isl. Tyuleniy), the average sea level corresponded to minus 28.88 m, the maximum minus 28.24 m, the minimum minus 29.53 m.

According to the operational data of the sea stations of Kazhydromet: Fort-Shevchenko, Aktau, Fetisovo and Roshydromet (Makhachkala), the average value of the level of the Caspian Sea, in its deep part, corresponded to minus 29.28 m, the maximum minus 28.87 m, the minimum minus 29.52 m.

## CRITERIA OF DANGER OF THE STORM SURGES IN THE NORTHEAST COAST

|            | Rise/Fall,<br>cm | Characteristic*** | Consequences   |
|------------|------------------|-------------------|--|
| Up surge   | 50               | Critical          | Flooded coast area to 5 km   |
|            | 65               | Danger            | Flooding and flooding of dams and buildings up to 10 km                      |
|            | 110              | Especially danger | Flooding of the coast for more than 10 km, destruction of dams and buildings |
| Down surge | -50              | Critical          | worsening navigation conditions for small ships                              |
|            | -65              | Danger            | Worsening of navigation conditions for small and medium-sized ships          |
|            | -100             | Especially danger | Ships would be aground   |

*\* The calculated characteristics were obtained using the hydrodynamic module of the MIKE 21 Flow Model, adapted in RSE "Kazgidromet" to the conditions of the Caspian Sea. Data of sea level measurements and pressure field numerical forecasting for 24 –120 hours were used in computation.*

*\*\* At definition of characteristic marks local conditions were considered.*

*\*\*\* Critical – 50 % frequency, danger – 25 % frequency, especially danger– 2 % frequency. The calculation was carried out for the period 1940-2020 according to the data of Peshnoy station.*

*BS – Baltic System*

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The bulletin was compiled by the Department of Hydrometeorological Research of the Caspian Sea

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*When using materials of the bulletin the link to RSE "Kazhydromet" is obligatory*