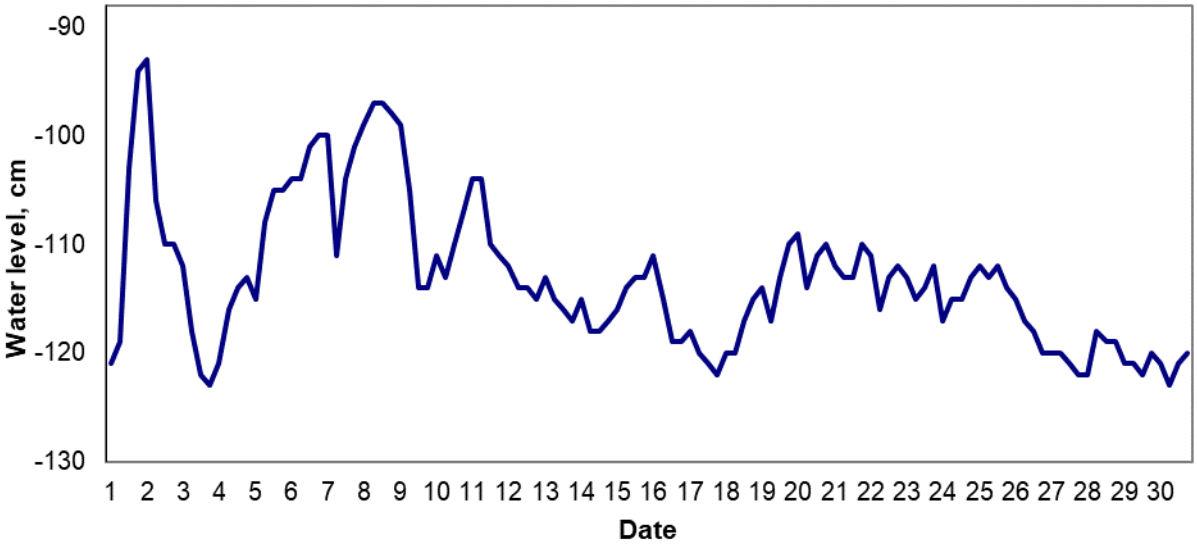
MINISTRY OF ECOLOGY AND NATURAL RESOURCES OF THE REPUBLIC OF KAZAKHSTAN
RSE «KAZHYDROMET»

RESEARCH CENTER

OVERVIEW OF UP SURGE AND DOWN SURGE EVENTS in November 2025

Peshnoy



Date	Level rise, cm	Level fall, cm	Prevailing wind direction, rhumb	Maximum wind speed, m/s
01-02.11	28		WSW	6
09.11		15	SSW	4

- On 01-02 November, a sea level rise by 28 cm was observed from minus 29.21 m BS to minus 28.93 m BS. The wind speed reached 6 m/s, predominantly from the west, southwest;

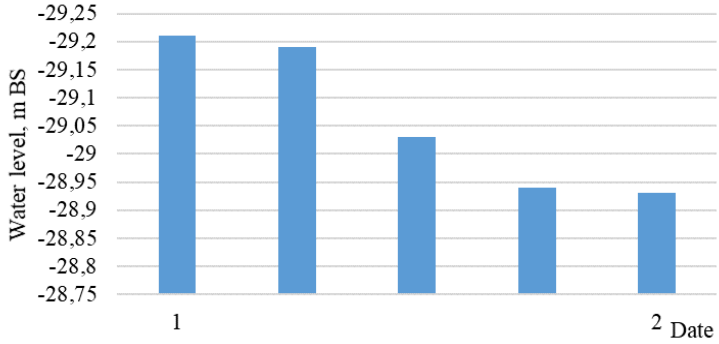
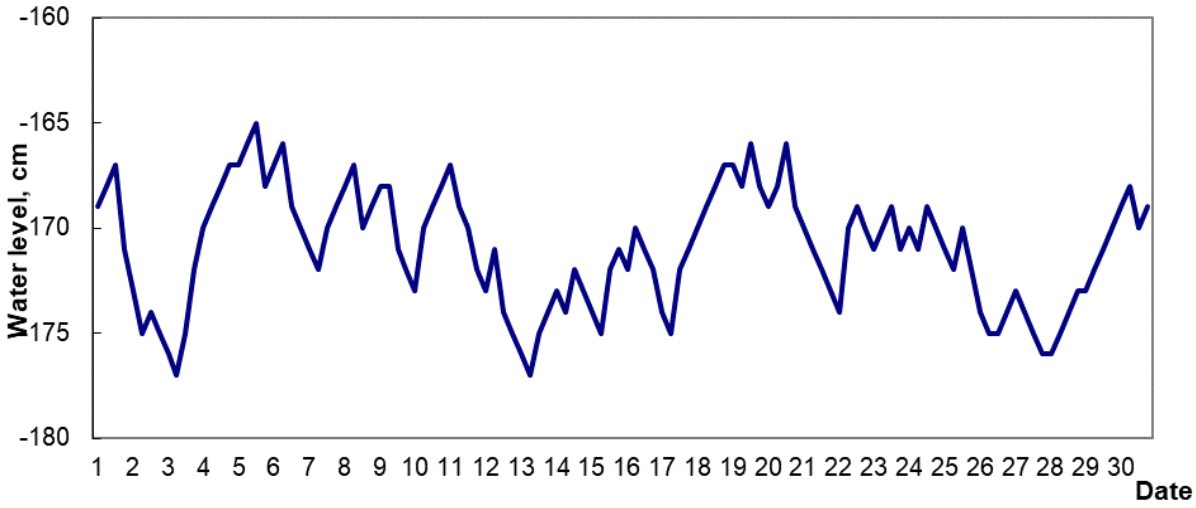


Figure. Graph of sea level changes in Peshnoy on November 01-02, 2025.

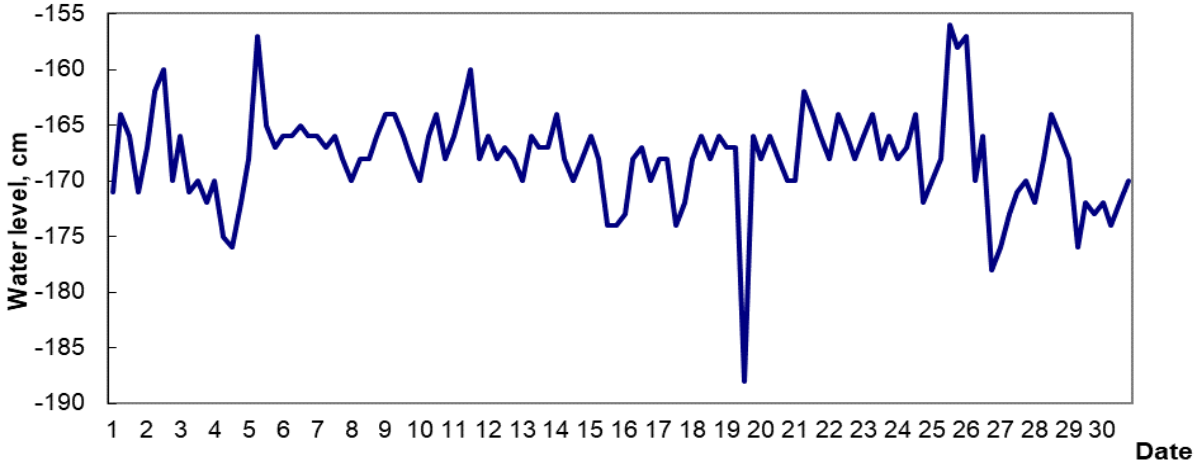
- On 09 November, a sea level fall by 15 cm was observed from minus 28.99 m BS to minus 29.14 m BS. The wind speed reached 4 m/s, predominantly from the south, southwest;

Kulaly, island



The runup and surge phenomena were not recorded. The sea level change during the month fluctuated from minus 29.77 m BS to minus 29.65 m BS.

Fort-Shevchenko



Date	Level rise, cm	Level fall, cm	Prevailing wind direction, rhumb	Maximum wind speed, m/s
04-05.11	19		SE, ESE	11
19.11		21	SE	7
24-25.11	16		SE	6

- On 04-05 November, a sea level rise by 19 cm was observed from minus 29.76 m BS to minus 29.57 m BS. The wind speed reached 11 m/s, predominantly from the southeast, east-southeast;

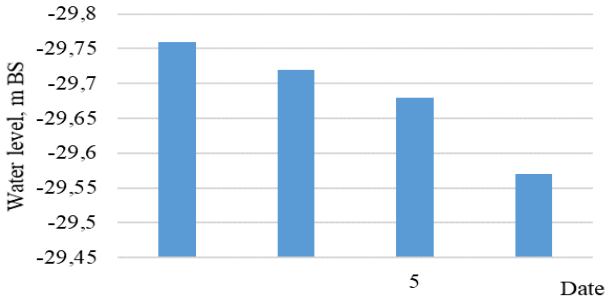


Figure. Graph of sea level changes in Fort-Shevchenko on November 04-05, 2025.

- On 11 November, a sea level fall by 21 cm was observed from minus 28.67 m BS to minus 29.88 m BS. The wind speed reached 7 m/s, predominantly from the northeast;

- On 24-25 November, a sea level rise by 16 cm was observed from minus 29.72 m BS to minus 29.56 m BS. The wind speed reached 6 m/s, predominantly from the southeast;

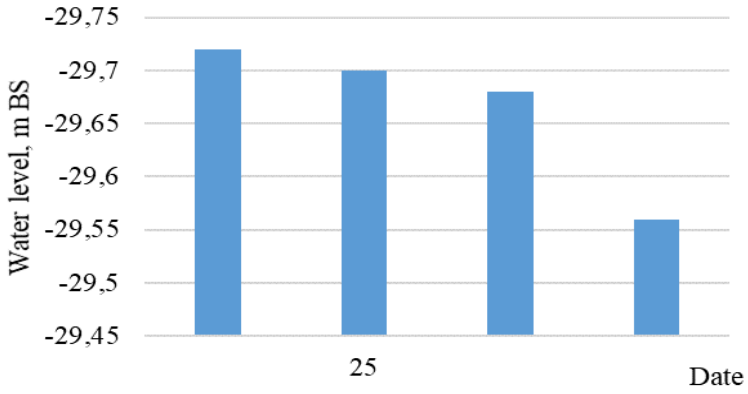
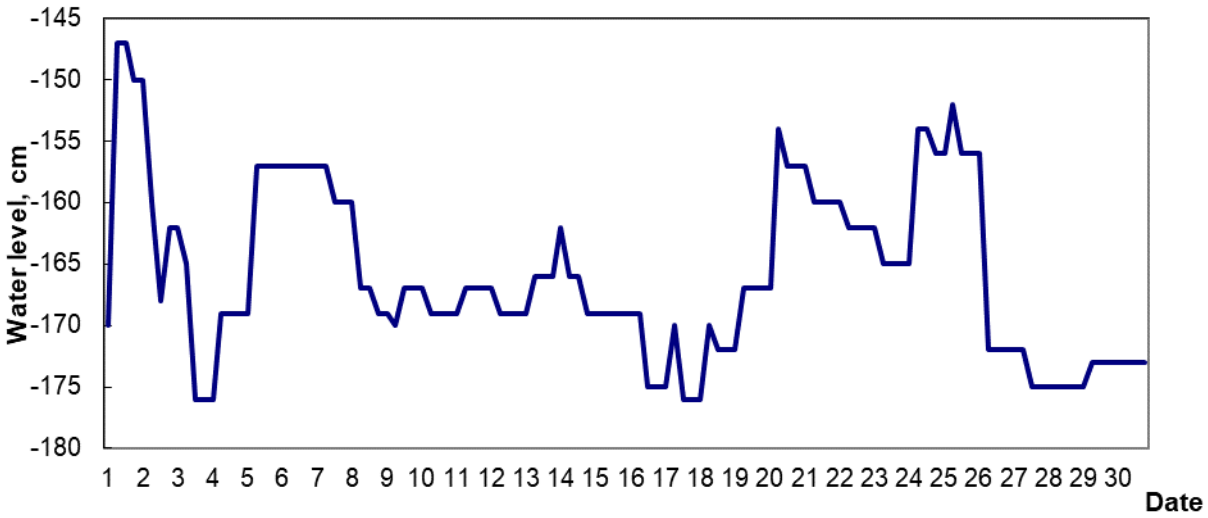


Figure. Graph of sea level changes in Fort-Shevchenko on November 24-25, 2025.

Saura



Date	Level rise, cm	Level fall, cm	Prevailing wind direction, rhumb	Maximum wind speed, m/s
01.11	23		SE, SSE	5
02.11		18	NW	9
26.11		16	N, NE	4

- On 01 November, a sea level rise by 23 cm was observed from minus 29.70 m BS to minus 29.47 m BS. The wind speed reached 5 m/s, predominantly from the southeast, south southeast;

- On 02 November, a sea level fall by 18 cm was observed from minus 29.50 m BS to minus 29.68 m BS. The wind speed reached 9 m/s, predominantly from the northwest;

- On 26 November, a sea level fall by 16 cm was observed from minus 29.56 m BS to minus 29.72 m BS. The wind speed reached 4 m/s, predominantly from the north northeast;

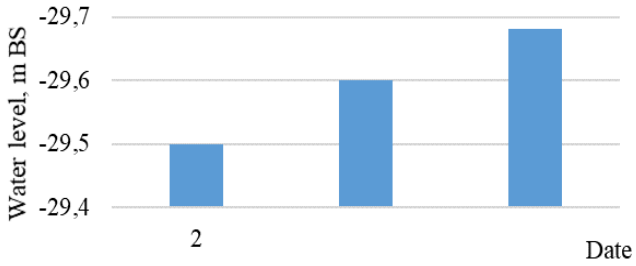
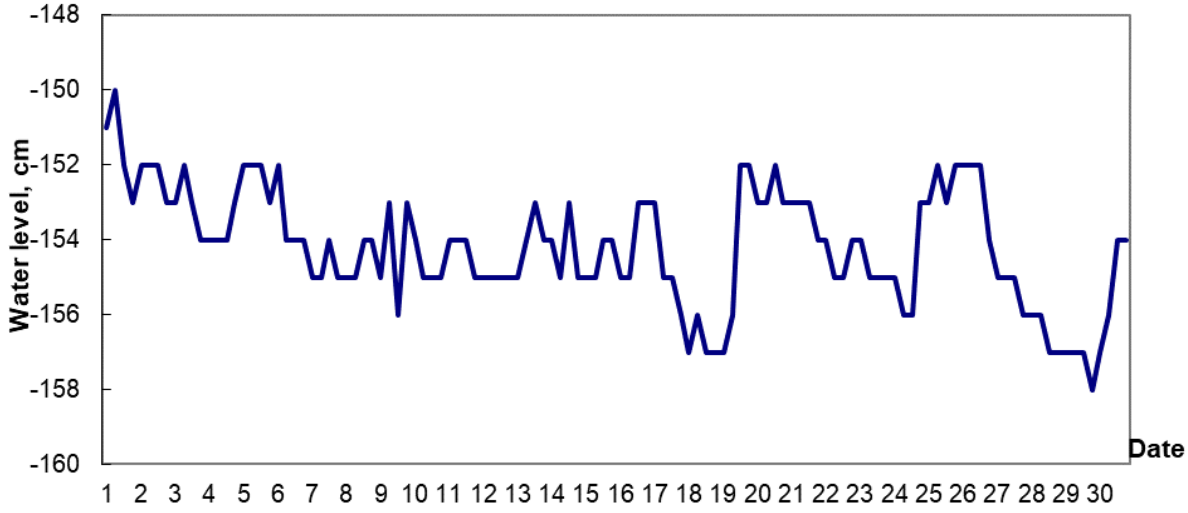


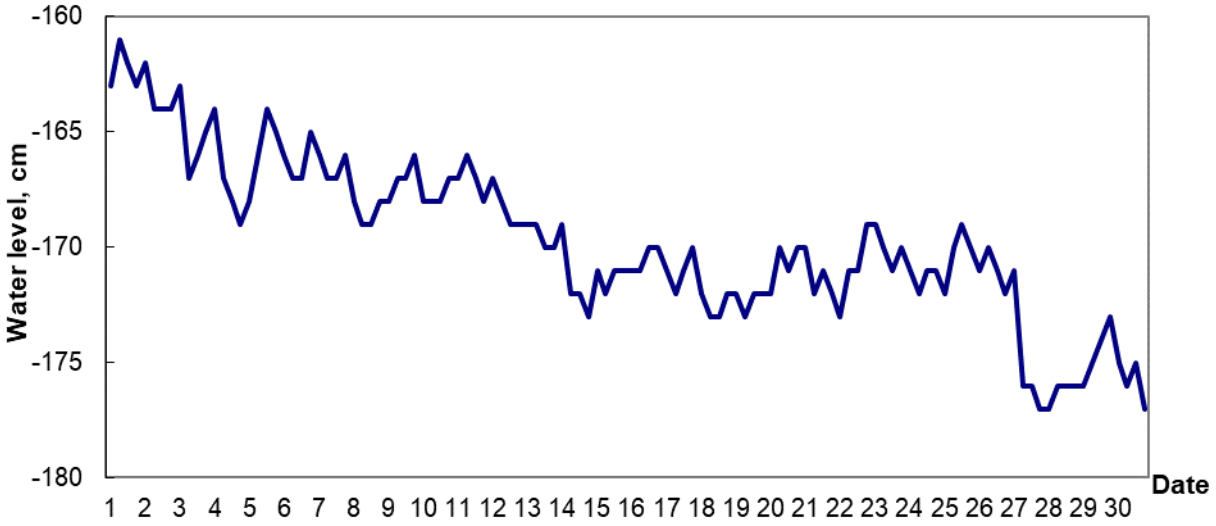
Figure. Graph of sea level changes in Saura on November 02, 2025.

Peschany



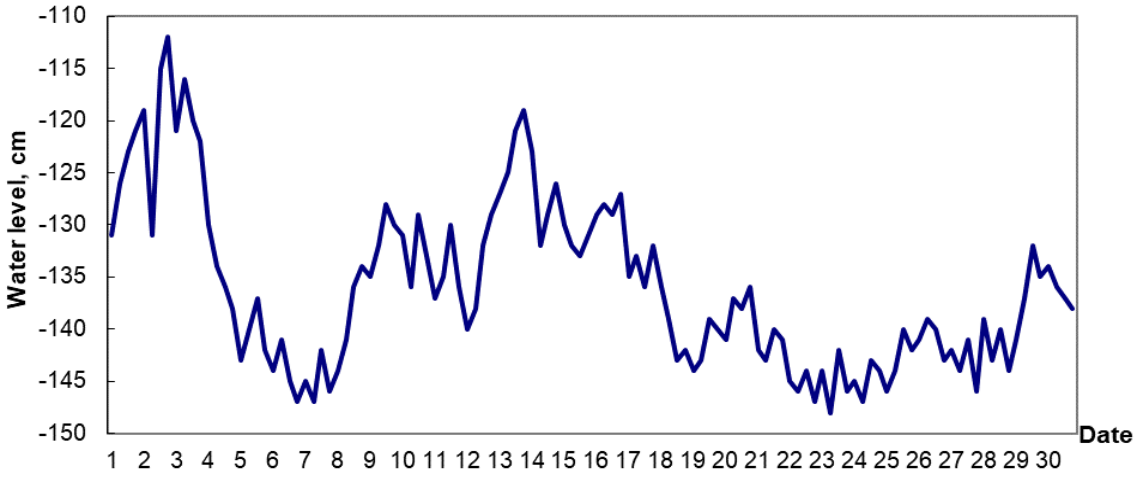
The runup and surge level fluctuations did not exceed 8 cm. The sea level change during the month varied from minus 29.58 m BS to minus 29.50 m BS.

Aktau



The runup and surge level fluctuations did not exceed 16 cm. The sea level change during the month varied from minus 29.77 m BS to minus 29.61 m BS.

Fetisovo



Date	Level rise, cm	Level fall, cm	Prevailing wind direction, rhumb	Maximum wind speed, m/s
02.11	19		NW	7
03-05.11		27	E	9
12-13.11	21		W	3

- On 02 November, a sea level rise by 19 cm was observed from minus 29.31 m BS to minus 29.12 m BS. The wind speed reached 7 m/s, predominantly from the northwest;

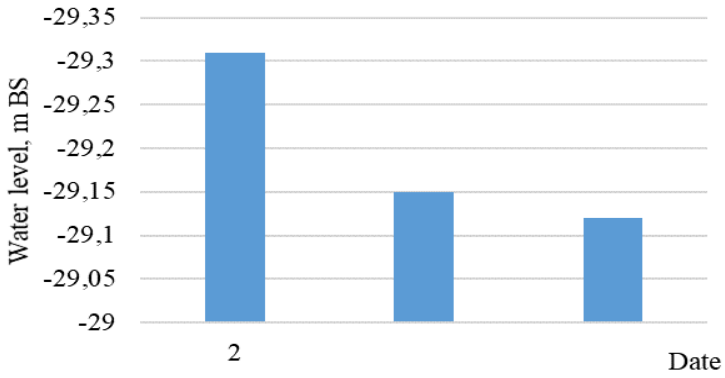


Figure. Graph of sea level changes in Fetisovo on November 02, 2025.

- On 03-05 November, a sea level fall by 27 cm was observed from minus 29.16 m BS to minus 29.43 m BS. The wind speed reached 9 m/s, predominantly from the east;

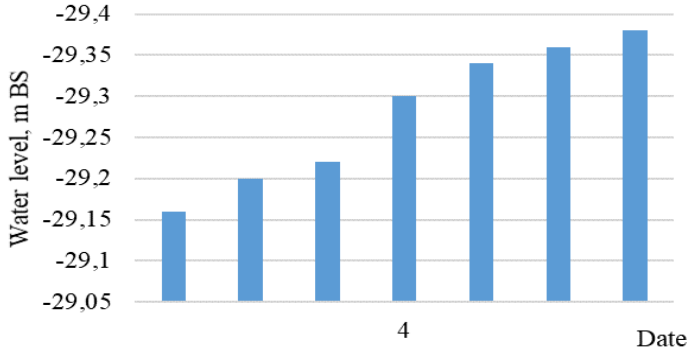


Figure. Graph of sea level changes in Fetisovo on November 03-05, 2025.

- On 12-13 November, a sea level rise by 21 cm was observed from minus 29.40 m BS to minus 29.19 m BS. The wind speed reached 3 m/s, predominantly from the west;

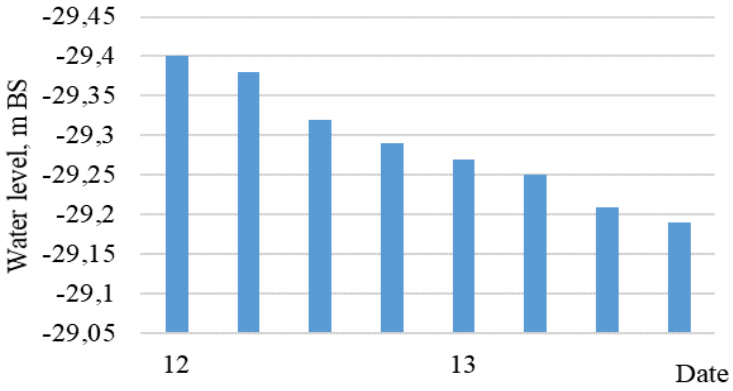


Figure. Graph of sea level changes in Fetisovo on November 12-13, 2025.

Note:
Analysis of the Zhanbay upsurge and downsurge events was not performed due to the receipt of hydrometeorological data with gaps.

STORM SURGE HAZARD CRITERIA FOR THE NORTHEASTERN COASTLINE

	Rise/Fall, 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 "Kazhydromet" 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

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

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