

Monitoring of changes in the water surface and wetland area of the Aral Sea and the Aral Region

SIC specialists are constantly monitoring the state of the Southern Aral Sea and parts of the Greater Aral Sea by using the Landsat 8-9 OLI images. The use of the NDVI index with refined threshold values has been started, which allow recognizing three categories of surfaces: 1) open water surface, 2) wetlands, 3) land. According to the image from 6 June 2024, the areas of wetlands and open water surface were determined



**Figure 1 Southern part of the Aral Sea
Landsat 8-9, 6 June 2024**

Table 1**The area of wetlands, open water surfaces and dried ground*
in the Western and Eastern parts of the Aral Sea**

	17.10.2023	02.11.2023	01.03.2024	18.04.2024	06.06.2024
<i>Western part of the Aral Sea, ha</i>					
Wetland	324 587	331 197	302 160	309 003	319 959
Water surface	200 855	200 819	202 022	199 234	199 079
Dried ground*	35 908	29 334	57 169	53 113	42 312
<i>Eastern part of the Aral Sea, ha</i>					
Wetland	1 462 390	1 470 950	1 316 379	1 461 355	1 432 497
Water surface	15	32	46	15	47
Dried ground*	34 419	25 842	180 399	35 454	64 280

* bare soil, dense or rare vegetation

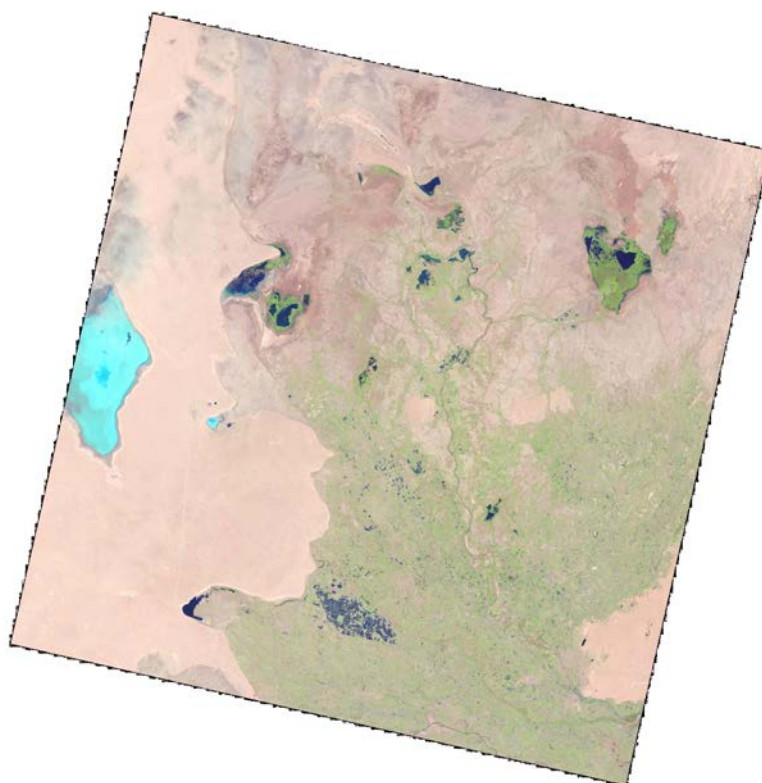
**Figure 2. The Aral Region. Landsat 8 and 9, 6 June 2024**

Table 2**Areas of wetlands in the Aral Region, ha**

Water body	17.10.2023	02.11.2023	01.03.2024	18.04.2024	06.06.2024
Sudoche	23576.2	33806.8	13257.2	16276	7377
Mejdureche	352.8	2117.5	3095.3	1191	534
Rybache	41.3	2480.9	1812.1	241	79
Muynak	185.6	2537.9	2989.1	2136	106
Djiltyrbas dam-terminated	1552	9370.7	16892.4	16353	960
Djiltyrbas (together with former right and left streams)	5033.8	17307	16697	10236	668
Dumalak	20.7	342.2	632.6	37	6
Makpalkul	22.9	488.3	559.0	385	302
Mashan Karadjar	1169.1	3028.9	2595.2	1388	326
Water surface southward of Muynak	272.5	2949.2	1171.7	166	2
Water surface along Kazakhdarya river channel	4.5	93.0	76.3	11	0
Zakirkol	1.8	25.8	84.3	117	56
Total:	32234.0	74548.6	59862.7	48537	10416

Table 3**The area of open water surface in the Aral region, ha**

Water body	17.10.2023	02.11.2023	01.03.2024	18.04.2024	06.06.2024
Sudoche	4981.0	9686.43	14748.03	15293	9521
Mejdureche	2816.4	9016.56	12208.68	7391	2078
Rybatche	0	0.18	1493.82	1996	1735
Muynak	11.8	24.39	1172.88	1382	168
Djiltyrbas dam-terminated	2326.2	5373.82	15505.2	14247	5522
Djiltyrbas (together with former right and left streams)	382.6	483.75	1164	1771	51
Dumalak	1.5	0.09	0	0	0
Makpalkul	7.4	307.53	3261.42	3180	206
Mashan Karadjar	490.3	544.77	1519.11	1150	420
Water surface southward of Muynak	0	0	44.91	0	0
Water surface along Kazakhdarya river channel	0.09	1.17	0.09	0	0
Zakirkol	0	139.14	740.52	534	79
Total:	11017.71	25577.83	51858.66	46944	19780

Table 4**Dried ground area* in the Aral Region, ha**

Water body	17.10.2023	02.11.2023	01.03.2024	18.04.2024	06.06.2024
Sudoche	44139.73	29203.69	44691.7	41128	55799
Mejdureche	34614.65	26649.92	22479.95	29202	35172
Rybatche	11451.69	9011.88	8187.03	9256	9679
Muynak	15966.45	13601.7	12001.95	12646	15890
Djiltyrbas dam-terminated	43593.66	32727.86	15074.73	16872.39	40990.39
Djiltyrbas (together with former right and left streams)	93534.44	81160.25	81090	86944	98232
Dumalak	16027.77	15707.64	15417.39	16013	16044
Makpalkul	8653.58	7888.13	4863.5	5119	8176
Mashan Karadjar	25541.58	23627.28	23086.65	24663	26455
Water surface southward of Muynak	9332.48	6655.79	8388.38	9439	9603
Water surface along Kazakhdarya river channel	4746.91	4657.27	4675.09	4740.5	4751.5
Zakirkol	2789.5	2626.33	1966.45	2140.3	2656.3
Total:	310392.4	253517.7	241922.8	258163	323448

* bare soil, dense or rare vegetation

Table 5**Inflow to Inflow to the Aral Region and Aral Sea in 2024, mln.m³**

Month	From Amu Darya River	from canal systems	collector-drainage runoff	Total	Plan	Runoff from North Aral Sea
January	30	34	30	94	774	0
February	22	37	26	85	167	0
March	19	0	107	126	185	0
April	37	0	219	256	180	0
May	37	0	81	118	336	0

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