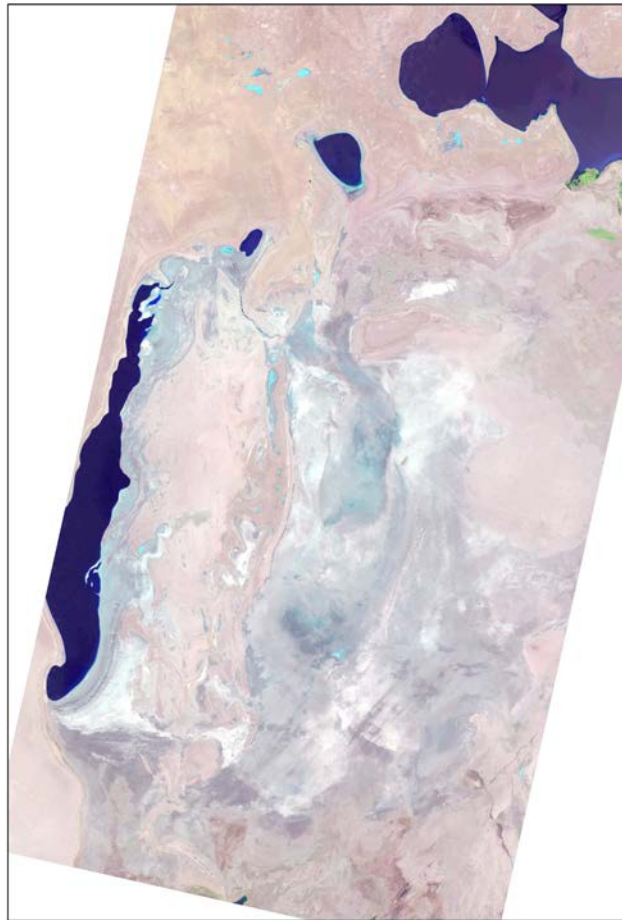


Monitoring of changes in the water surface and wetland area of the Aral Sea and the Aral Region

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 13 July 2023, the areas of wetlands and open water surface were determined

The results show that land area is increasing and water surface is decreasing, except for Mezhdurechensk reservoir, where water surface has increased by 248.94 ha, the reason is that the inflow was more by 56 mln. m³ in June than in May, see the Table 5.



**Figure 1 Western and Eastern parts of the Aral Sea
Landsat 8-9, 13 July 2023**

Table 1

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

	18.01.2023	15.03.2023	26.05.2023	27.06.2023	13.07.2023
<i>Western part of the Aral Sea, ha</i>					
Wetland	250 244.3	335 725	335 540	336 388	271 323
Water surface	209 733	213 212	210 294	206 861	208 318
Dried ground*	101 372.9	12 413	15 516	18 101.2	81 709
<i>Eastern part of the Aral Sea, ha</i>					
Wetland	1 386 722	1 342 826	1 405 970	1 446 824	1 430 500
Water surface	364.41	1 128.5	2 588	699	406
Dried ground*	109 737.8	152 869	88 266	49 190	65 918

* bare soil, dense or rare vegetation

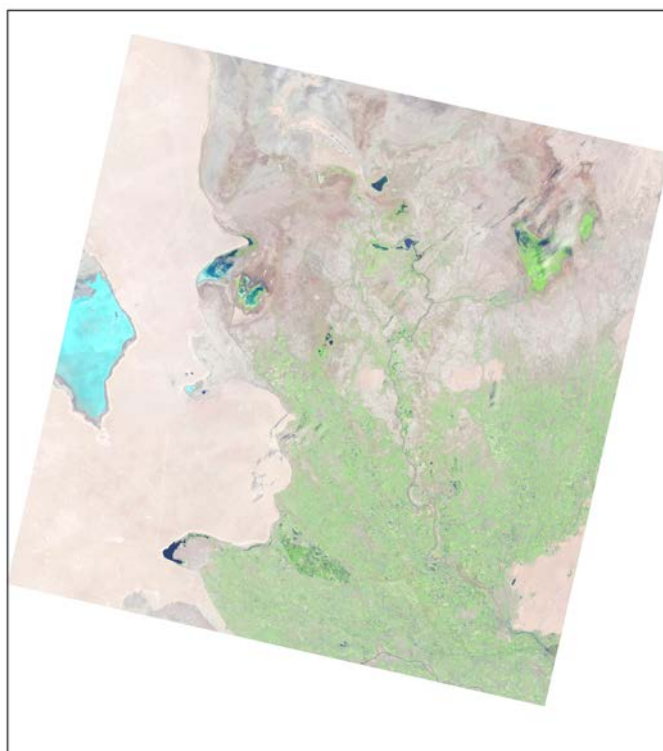


Figure 2. The Aral Region. Landsat 8 and 9. 13 July 2023

Table 2

Water body	18.01.2023	15.03.2023	26.05.2023	27.06.2023	13.07.2023
Sudoche	22 244.4	21213.18	21413	22414.68	23579.01
Mejdureche	4 443.03	6117.48	2249	1629.36	1320.21
Rybatche	1 143.72	1711.26	805	974.61	1043.73
Muynak	753.48	2277.09	310	220.59	188.19
Djiltyrbas dam-terminated	8270.01	17639.1	3606	2024.55	2024.37
Djiltyrbas (together with former right and left streams)	22669.29	30863.79	23991	13947.57	15009.66
Dumalak	1365.66	2446.83	1184	840.69	740.7
Makpalkul	650.7	2466.63	778	238.95	141.66
Mashan Karadjar	2288.43	4158.36	2638	1595.43	1256.4
Water surface southward of Muynak	524.43	1116.18	823	609.48	594.45
Water surface along Kazakhdarya river channel	355.77	589.23	172	163.44	84.15
Zakirkol	47.34	151.02	21.06	3.09	2.34
<i>Total:</i>	64 756.26	90 750.15	57 990.06	44 662.44	45 984.87

Table 3

Площади открытой водной поверхности Приаралья, га

Water body	18.01.2023	15.03.2023	26.05.2023	27.06.2023	13.07.2023
Sudoche	6906.33	7324.56	9473	5393.61	3101.49
Mejdureche	6538.95	7929.36	1827	855.54	1104.48
Rybache	1574.64	2119.68	1871	1292.22	531
Muynak	2754.54	1300.41	129	37.99	16.38
Djilyrbas dam-terminated	10924.47	6652.89	5300	3746.61	890.82
Djilyrbas (together with former right and left streams)	451.17	162.18	175	14.31	10.71
Dumalak	0	0	0	0	0.54
Makpalkul	3970.71	2005.47	409	149.31	60.93
Mashan Karadjar	1717.74	1351.26	663	206.28	160.83
Water surface southward of Muynak	62.64	4.86	0	0	0
Water surface along Kazakhdarya river channel	0.27	0	0	0	0
Zakirkol	293.31	281.61	22.14	0	0
Total:	35 194.77	29 132.28	19 869.14	11 695.87	5 877.18

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

Water body	18.01.2023	15.03.2023	26.05.2023	27.06.2023	13.07.2023
Sudoche	43546.27	44159.26	41811	44888.71	46016.5
Mejdureche	26802.02	23737.16	33708	35299.1	35359.31
Rybache	8774.64	7662.06	8817	9226.17	9918.27
Muynak	12655.98	12586.5	15725	15905.42	15959.43
Djiltyrbas dam-terminated	28277.91493	23180.40493	38566.39493	41701.23493	44557.20493
Djiltyrbas (together with former right and left streams)	75830.54	67925.03	74785	84989.12	83930.63
Dumalak	14684.34	13603.17	14866	15209.31	15308.76
Makpalkul	4062.59	4211.9	7497	8295.74	8481.41
Mashan Karadjar	23194.83	21691.38	23900	25399.29	25783.77
Water surface southward of Muynak	9017.93	8483.96	8782	8995.52	9010.55
Water surface along Kazakhdarya river channel	4395.46	4162.27	4579.5	4588.06	4667.35
Zakirkol	2450.65	2358.67	2748.1	2788.21	2788.96
Total:	253 693.16	233 761.7	275 784.9	297 285.8	301 782.1

* bare soil, dense or rare vegetation

Table 5**Inflow to Inflow to the Aral Region and Aral Sea**

Year	Month	Inflow to Inflow to the Aral Region and Aral Sea, mln.m ³					Runoff from North Aral Sea, mln.m ³
		From Amu Darya River	from canal systems	collector-drainage runoff	Total	Plan	
2023	Jan	92	8	40	140	774	0
	Feb	32	98	45	175	167	0
	Mar	85	50	122	257	185	0
	Apr	38	0	214	252	180	0
	May	35	0	71	106	336	0
	June	71	0	91	162	391	0

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