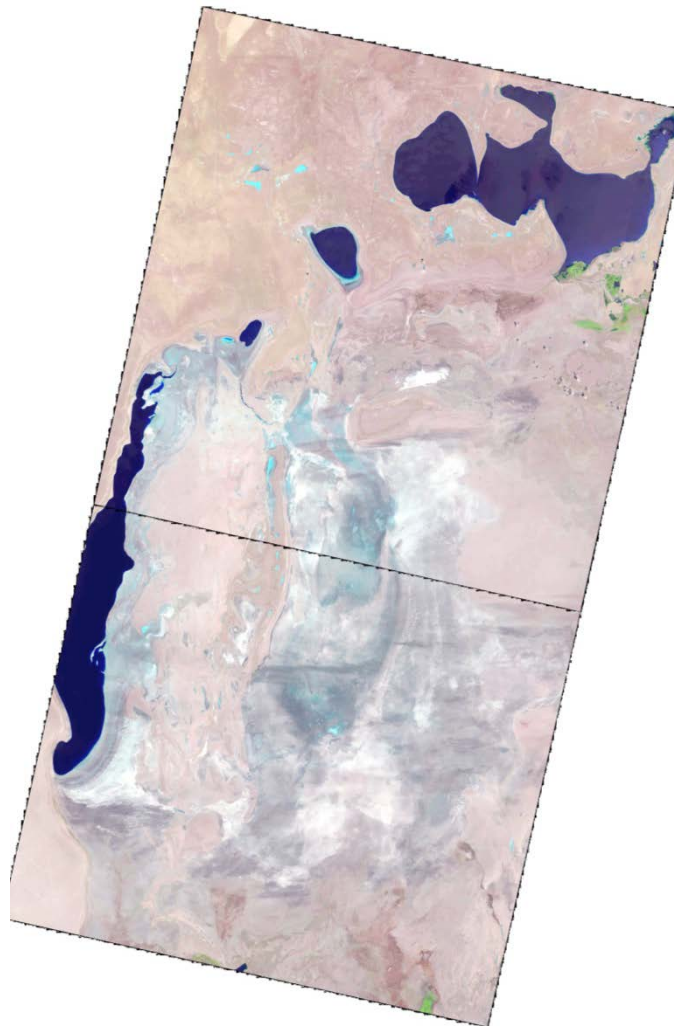


## **Monitoring of changes in the water surface and wetland area of the Aral Sea and the Aral Region**

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 27 June 2023, the areas of wetlands and open water surface were determined

The results show that the land area increases and the water surface decreases, the reason is that in May the inflow was 146 million m<sup>3</sup> less than in April, table 5.



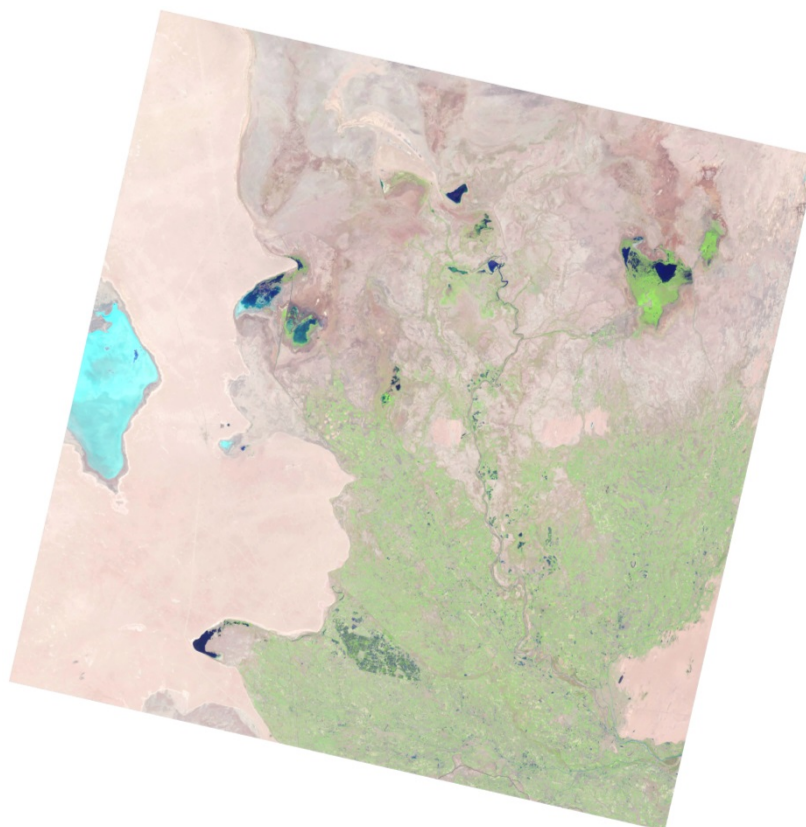
**Figure 1 Western and Eastern parts of the Aral Sea  
Landsat 8-9, 27 June 2023**

**Table 1**

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

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

\* bare soil, dense or rare vegetation



**Figure 2. The Aral Region. Landsat 8 and 9. 27 June 2023**

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

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

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

<b>Water body</b>	<b>18.01.2023</b>	<b>15.03.2023</b>	<b>26.05.2023</b>	<b>27.06.2023</b>
Sudoche	6906.33	7324.56	9473	5393.61
Mejdureche	6538.95	7929.36	1827	855.54
Rybatche	1574.64	2119.68	1871	1292.22
Muynak	2754.54	1300.41	129	37.99
Djiltyrbas dam-terminated	10924.47	6652.89	5300	3746.61
Djiltyrbas (together with former right and left streams)	451.17	162.18	175	14.31
Dumalak	0	0	0	0
Makpalkul	3970.71	2005.47	409	149.31
Mashan Karadjar	1717.74	1351.26	663	206.28
Water surface south- ward of Muynak	62.64	4.86	0	0
Water surface along Kazakhdarya river channel	0.27	0	0	0
Zakirkol	293.31	281.61	22.14	0
<b>Total:</b>	<b>35 194.77</b>	<b>29 132.28</b>	<b>19 869.14</b>	<b>11 695.87</b>

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

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

\*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 <sup>3</sup>					Runoff from North Aral Sea, mln.m <sup>3</sup>
		From Amu Darya River	from canal systems	collector-drainage runoff	Total	Plan	
2023	Jan	92	8	40	<b>140</b>	774	0
	Feb	32	98	45	<b>175</b>	167	0
	Mar	85	50	122	<b>257</b>	185	0
	Apr	38	0	214	<b>252</b>	180	0
	May	35	0	71	<b>106</b>	336	0

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