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 1 March 2024, the areas of wetlands and open water surface were determined

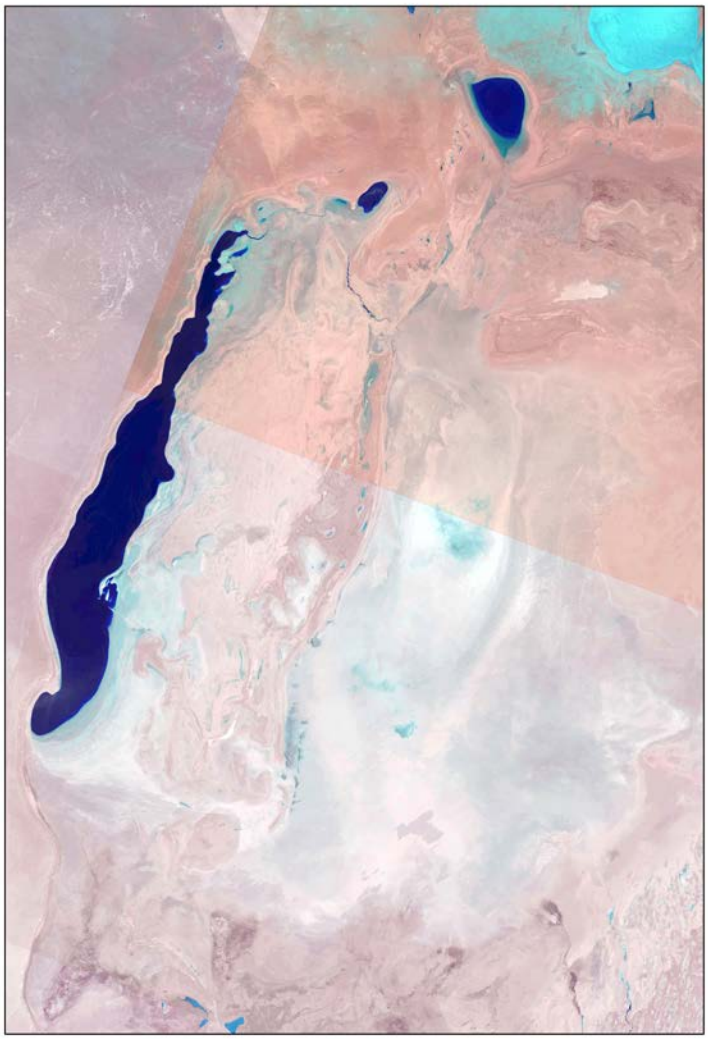

Figure 1 Western and Eastern parts of the Aral Sea Landsat 8-9, 1 March 2024

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
Western part of the Aral Sea, ha			
Wetland	324 587	331 197	302 160
Water surface	200 855	200 819	202 022
Dried ground*	35 908	29 334	57 169
Eastern part of the Aral Sea, ha			
Wetland	1 462 390	1 470 950	1 316 379
Water surface	15	32	46
Dried ground*	34 419	25 842	180 399

* bare soil, dense or rare vegetation

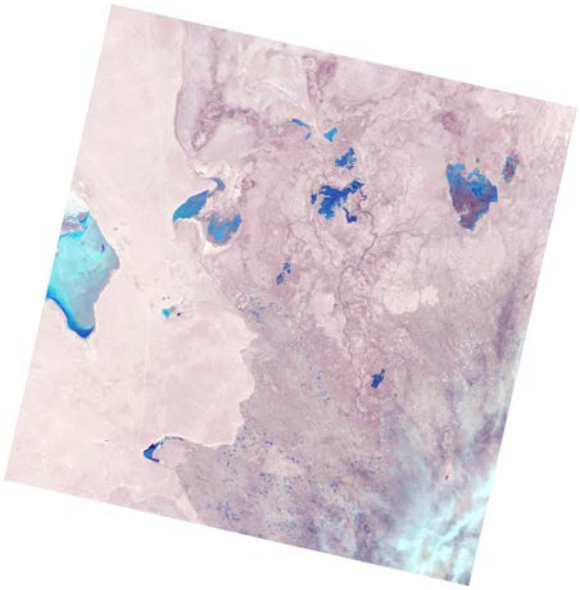

Figure 2. The Aral Region. Landsat 8 and 9, 1 March 2024

Table 2

Areas of wetlands in the Aral Region, ha

Water body	17.10.2023	02.11.2023	01.03.2024
Sudoche	23576.2	33806.8	13257.2
Mejdureche	352.8	2117.5	3095.3
Rybache	41.3	2480.9	1812.1
Muynak	185.6	2537.9	2989.1
Djiltyrbas dam-terminated	1552.	9370.7	16892.4
Djiltyrbas (together with former right and left streams)	5033.8	17307	16697
Dumalak	20.7	342.2	632.6
Makpalkul	22.9	488.3	559.0
Mashan Karadjar	1169.1	3028.9	2595.2
Water surface southward of Muynak	272.5	2949.2	1171.7
Water surface along Kazakhdarya river channel	4.5	93.0	76.3
Zakirkol	1.8	25.8	84.3
Total:	**32234.0**	**74548.6**	**59862.7**

Table 3

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

Water body	17.10.2023	02.11.2023	01.03.2024
Sudoche	4981.0	9686.43	14748.03
Mejdureche	2816.4	9016.56	12208.68
Rybache	0	0.18	1493.82
Muynak	11.8	24.39	1172.88
Djiltyrbas dam-terminated	2326.2	5373.82	15505.2
Djiltyrbas (together with former right and left streams)	382.6	483.75	1164
Dumalak	1.5	0.09	0
Makpalkul	7.4	307.53	3261.42
Mashan Karadjar	490.3	544.77	1519.11
Water surface southward of Muynak	0	0	44.91
Water surface along Kazakhdarya river channel	0.09	1.17	0.09
Zakirkol	0	139.14	740.52
Total:	**11017.71**	**25577.83**	**51858.66**

Table 4

Dried ground area* in the Aral Region, ha

Water body	17.10.2023	02.11.2023	01.03.2024
Sudoche	44139.73	29203.69	44691.7
Mejdureche	34614.65	26649.92	22479.95
Rybache	11451.69	9011.88	8187.03
Muynak	15966.45	13601.7	12001.95
Djiltyrbas dam-terminated	43593.66493	32727.86493	15074.73493
Djiltyrbas (together with former right and left streams)	93534.44	81160.25	81090
Dumalak	16027.77	15707.64	15417.39
Makpalkul	8653.58	7888.13	4863.5
Mashan Karadjar	25541.58	23627.28	23086.65
Water surface southward of Muynak	9332.48	6655.79	8388.38
Water surface along Kazakhdarya river channel	4746.91	4657.27	4675.09
Zakirkol	2789.5	2626.33	1966.45
Total:	**310392.4**	**253517.7**	**241922.8**

* bare soil, dense or rare vegetation

Table 5

Inflow to Inflow to the Aral Region and Aral Sea in 2024, mln.m^3

Month	From Amu Darya River	from canal systems	collector-drainage runoff	Total	Plan	Runoff from North Aral Sea
Янв	30	34	30	**94**	774	0
Фев	22	37	26	**85**	167	0

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