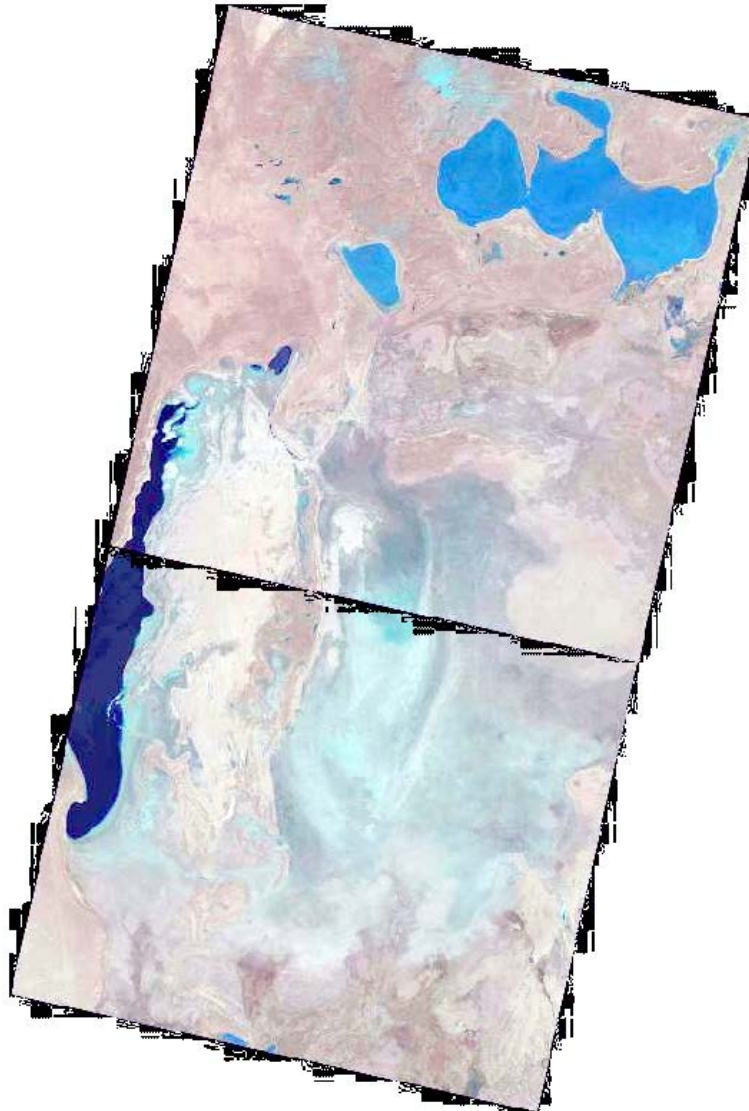


Monitoring of changes in the water surface and wetland area of the Aral Sea and the Aral Region

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 15 March 2023, the areas of wetlands and open water surface were determined



**Figure 1 Western and Eastern parts of the Aral Sea
Landsat 8-9, 15 March 2023**

Table 1

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

	20.09.2022	18.01.2023	15.03.2023
<i>Western part of the Aral Sea, ha</i>			
Wetland	9834	250 244.3	335 725
Water surface	211 891	209 733	213 212
Dried ground*	339 625	101 372.9	12 413
<i>Eastern part of the Aral Sea, ha</i>			
Wetland	6180	1 386 722	1 342 826
Water surface	46,17	364.41	1 128.5
Dried ground *	1 490 671	109 737.8	152 869
	September	December	March
Limit	319	444	185
** Inflow to the Aral Region, Mm ³ /month	145	361	257

** bare soil, dense or rare vegetation

**Source BWO Amu Darya

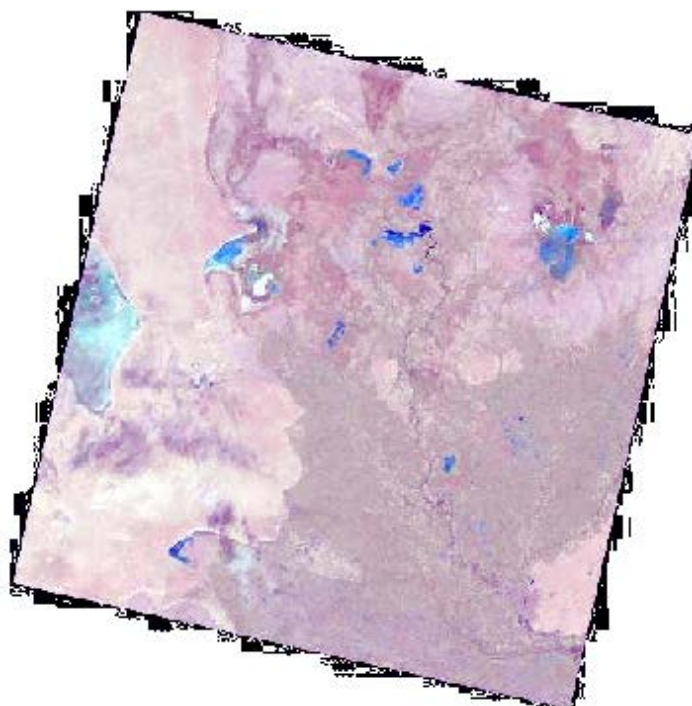


Figure 2. The Aral Region. Landsat 8 and 9.

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

Water body	06.10.2022	18.01.2023	15.03.2023
Sudoche	20858.4	22244.4	21213.18
Mejdureche	2100	4443.03	6117.48
Rybaché	1275.39	1143.72	1711.26
Muynak	729	753.48	2277.09
Djilyrbas dam-terminated	5516.46	8270.01	17639.1
Djilyrbas (together with former right and left streams)	12242.25	22669.29	30863.79
Dumalak	481	1365.66	2446.83
Makpalkul	168.21	650.7	2466.63
Mashan Karadjár	1207.35	2288.43	4158.36
Water surface southward of Muynak	475	524.43	1116.18
Water surface along Kazakhdyarya river channel	96.3	355.77	589.23
Zakirkol	19.08	47.34	151.02
Total:	45 168.44	64 756.26	90 750.15

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

Water body	06.10.2022	18.01.2023	15.03.2023
Sudoche	4325.49	6906.33	7324.56
Mejdureche	1528	6538.95	7929.36
Rybaché	0.18	1574.64	2119.68
Muynak	5.31	2754.54	1300.41
Djilyrbas dam-terminated	213.3	10924.47	6652.89
Djilyrbas (together with former right and left streams)	15.3	451.17	162.18
Dumalak	0	0	0
Makpalkul	0	3970.71	2005.47
Mashan Karadjár	210.2	1717.74	1351.26
Water surface southward of Muynak	0	62.64	4.86
Water surface along Kazakhdyarya river channel	0	0.27	0
Zakirkol	0	293.31	281.61
Total:	6 297.78	35 194.77	29 132.28

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

Water body	06.10.2022	18.01.2023	15.03.2023
Sudoche	47513.11	43546.27	44159.26
Mejdureche	34156	26802.02	23737.16
Rybache	10217.43	8774.64	7662.06
Muynak	15429.69	12655.98	12586.5
Djiltyrbas dam-terminated	41742.63493	28277.91493	23180.40493
Djiltyrbas (together with former right and left streams)	86693.45	75830.54	67925.03
Dumalak	15569	14684.34	13603.17
Makpalkul	8515.79	4062.59	4211.9
Mashan Karadjar	25783.45	23194.83	21691.38
Water surface southward of Muynak	9130	9017.93	8483.96
Water surface along Kazakhdarya river channel	4655.2	4395.46	4162.27
Zakirkol	2772.22	2450.65	2358.67
Total:	302 177.9	253 693.16	233 761.7

*bare soil, dense or rare vegetation

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