

Supplementary Information

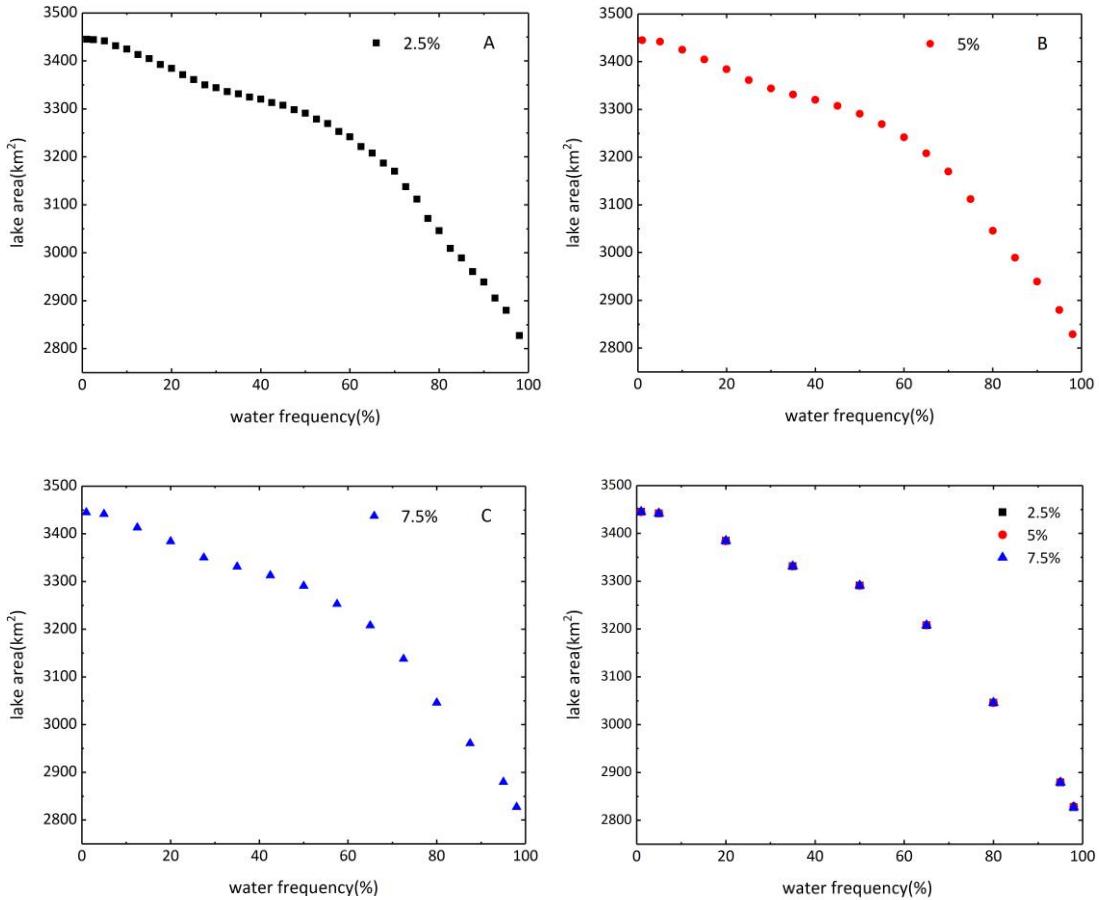


Figure SI. Area-frequency correspondence table graded at intervals of 2.5% (a), 5% (b), 7.5% (c) and a summary of the three levels.

Table SI. Relative error of estimated area and actual area under 2.5%, 5% and 7.5 intervals in North Aral Sea.

Grading	Area (2.5%)	Area (5%)	Area (7.5%)	Relative Error 2.5%&5%	Relative Error 7.5%&5%
98%	2827.17	2828.80	2827.17	-0.0578%	-0.0570%
95%	2878.98	2879.98	2878.98	-0.0340%	-0.0340%
80%	3045.88	3045.89	3045.88	-0.0002%	-0.0002%
65%	3207.94	3207.94	3207.94	-0.0001%	-0.0001%
50%	3290.98	3290.98	3290.98	-0.0001%	-0.0001%
35%	3331.17	3331.18	3331.17	-0.0002%	-0.0002%
20%	3384.38	3384.38	3384.38	-0.0001%	-0.0001%
5%	3441.73	3441.73	3441.73	-0.0002%	-0.0002%
1%	3444.92	3444.93	3444.92	-0.0001%	-0.0001%

Table SI. The specific year and month of the monthly lake area data via estimating with the lookup table.

The figure consists of five panels, each representing a different lake and showing monthly water level data from 1984 to 2018. The panels are arranged horizontally. Each panel has a title at the top and a grid below it. The grids have 12 columns labeled 1 through 12, representing the months. The rows represent the years from 1984 to 2018. Pink squares in the grid indicate data availability, while white squares indicate missing data.