# SUPPLEMENTARY MATERIAL

**Appendix 1** Area in 2019 and area-volume change equation of lakes in each region Δ*V*i=ƒ(*S*i)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Region | Lake Name | Longitude | Latitude | Lake basin area (km2) | Lake area in 2019 (km2) | Volume change-area relationshipy=Δ*V*, x=*S* |
| A  | Selin Co | 31.80 | 88.99 | 44838.70 | 2410.24 | y = 0.000012 x2 - 0.0146 x - 13.4924 |
| Nam Co | 30.74 | 90.60 | 10730.50 | 2015.90 | y = -0.000036 x2 + 0.2652 x - 384.0270 |
| Dung Co | 31.71 | 91.16 | 1208.48 | 146.12 | y = 0.000 x3 - 0.000 x2 + 0.069 x - 5.087 |
| Bam Co | 31.27 | 90.58 | 4798.54 | 243.45 | y = 0.0397x - 7.7965 |
| B1  | Wulanwula Lake | 34.80 | 90.48 | 6006.39 | 670.54 | y = 0.00003 x2 - 0.01238 x - 0.10564 |
| Xijir Ulan Lake | 35.22 | 90.28 | 6651.60 | 588.60 | y = 0.00002 x2 - 0.00441 x - 1.50837 |
| Dogaicorng Qangco | 35.32 | 89.24 | 6170.00 | 447.02 | y = 0.00002 x2 + 0.00094 x - 0.96919 |
| Ruola Co | 35.45 | 88.39 | 5069.68 | 238.89 | y = 0.00006 x2 - 0.00968 x + 0.37771 |
| B2  | Tangra yumco | 31.07 | 86.61 | 9022.56 | 863.49 | y = 0.0008 x2 - 1.1623 x + 430.18 |
| Angzi Co | 31.02 | 87.13 | 7125.49 | 471.44 | y = 0.00003 x2 + 0.00192 x - 4.94048 |
| Yibug Caka | 32.94 | 86.71 | 6909.45 | 185.27 | y = 0.0000007 x3 - 0.0002067 x2 + 0.0253969 x - 0.8916210 |
| Dagze Lake | 31.89 | 87.52 | 12838.80 | 335.36 | y = 0.00004 x2 + 0.01220 x - 5.20361 |
| C  | Lumajangdong Co | 34.02 | 81.61 | 8362.82 | 400.47 | y = 0.0000006 x3 - 0.0008406 x2 + 0.4262651 x - 71.0470361 |
| Aksai Chin Lake | 35.20 | 79.87 | 7992.18 | 278.58 | y = 0.0000005 x3 - 0.0004135 x2 + 0.1154876 x - 10.0725966 |
| Bajabuco | 35.03 | 83.13 | 1260.44 | 136.42 | y = 0.0003x2 - 0.0637x + 4.0908 |
| Jieze Caka | 33.95 | 80.90 | 2253.82 | 116.35 | y = 0.00001 x3 - 0.00527 x2 + 0.70143 x - 32.03879 |
| D | Yamdrok Lake | 28.96 | 90.71 | 8003.86 | 546.07 | y = 0.0000006 x3 - 0.0012448 x2 + 0.8859486 x - 212.4360360 |
| Mapang Yum Co | 30.69 | 81.38 | 4402.65 | 415.24 | y = 0.000012 x3 - 0.01579 x2 + 7.1856 x - 1095.4467 |
| Laon Co | 30.69 | 81.38 | 2320.00 | 251.69 | y = 0.0000036 x3 - 0.0036 x2 + 1.2593 x - 145.1661 |
| Paiku Co | 28.89 | 85.59 | 2638.48 | 269.18 | y = 0.000013 x3 - 0.01109 x2 + 3.3578 x - 348.2717 |