

Supplementary material

Table S1. Summary of information (number and location), lake area changes (average area and standard deviation during 2000±2020). Statistically significant correlations and contributions are annotated with * and ** represents $p < 0.01$ and * represents $p < 0.05$.

Num	Lon	Lat	Rate of change (yr. ⁻¹)			M-K test (Z)	Num	Lon	Lat	Rate of change (yr. ⁻¹)			M-K test (Z)
			Ave ± Std. (km ²)	Rate	R					Ave ± Std. (km ²)	Rate	R	
Class I							D072	114.20	30.23	20.94±6.90	0.97	0.52*	2.11*
A001	118.87	31.47	149.91±22.96	0.18	0.38	1.66*	D073	114.23	30.13	0.59±0.46	0.07	0.12	0.37
A002	116.30	29.06	988.70±309.81	-29.09	-0.50*	-1.64*	D074	114.22	30.03	73.41±11.79	0.90	0.40	2.51**
A003	112.73	29.06	325.70±71.01	-2.89	0.02	0.45	D075	113.98	30.42	0.99±0.32	0.01	0.05	0.33
A004	113.87	29.90	2.42±0.88	0.14	0.38	1.63	D076	114.04	30.39	0.67±0.45	0.05	0.59**	2.64**
Class II							D077	113.83	30.31	8.47±3.84	0.56	0.73**	2.81**
B001	118.57	33.31	1271.87±118.40	-2.99	-0.12	-1.60	D078	113.78	30.16	0.42±0.68	-0.07	-0.08	-0.77
B002	118.40	33.03	5.73±5.16	-0.10	-0.46*	-1.96*	D079	113.94	30.14	0.59±0.72	0.01	-0.01	0.00
B003	118.22	32.91	19.07±8.22	0.50	-0.30	-1.15	D080	114.08	29.94	28.85±4.83	-0.06	0.08	0.57
B004	118.08	32.96	63.10±5.50	0.11	-0.26	-1.00	D081	113.91	29.95	1.33±0.39	0.03	0.49*	2.88**
B005	117.82	32.98	17.95±5.10	0.67	0.38	1.57	D082	113.94	30.54	0.10±0.10	0.01	0.58**	2.55**
B006	117.40	32.91	0.65±0.38	-0.05	-0.34	-1.49	D083	113.67	30.82	4.69±2.47	0.53	0.41	1.27
B007	117.24	32.86	2.49±1.19	-0.02	0.16	0.88	D084	113.51	30.83	3.16±1.04	0.18	0.62**	3.42**
Class III							D085	113.25	30.75	0.36±0.54	0.00	-0.10	-0.20
C001	116.18	35.99	97.94±8.20	0.32	-0.02	-0.12	D086	113.76	29.85	1.12±0.30	0.03	0.52*	2.25*
C002	116.94	34.87	380.73±164.68	5.55	0.04	-1.06	D087	113.33	29.85	239.28±35.67	2.80	0.03	0.21
C003	118.03	34.21	3.86±2.55	0.29	0.51*	2.30*	D088	113.55	29.70	35.66±3.97	-0.15	-0.38	-1.81*
C004	118.18	34.10	221.61±13.93	1.78	0.47*	0.91	D089	113.40	29.66	2.18±0.50	-0.01	-0.04	-0.27
C005	119.13	33.24	32.78±8.31	-0.24	0.68**	-3.47**	D090	113.19	29.44	3.53±0.39	0.05	0.14	-0.03
C006	119.29	33.13	4.20±2.58	0.07	-0.21	-0.12	D091	113.12	29.34	4.39±0.61	-0.02	0.12	0.00
C007	119.28	32.85	563.67±53.46	2.21	0.13	-0.88	D092	112.86	29.67	2.14±0.38	0.02	-0.05	0.12
C008	119.43	32.63	53.97±14.22	1.45	0.47*	2.02*	D093	112.70	29.69	0.24±0.20	0.00	0.05	0.18
C009	119.04	32.80	2.18±2.09	-0.13	0.71**	-4.35**	D094	112.65	29.66	0.40±0.41	0.03	-0.32	-0.88
Class IV							D095	112.46	29.59	1.43±1.56	0.14	-0.10	0.37
D001	120.22	31.20	2226.50±28.61	0.03	-0.20	-0.82	D096	112.64	29.37	13.82±1.01	0.18	0.52*	2.54**
D002	119.82	31.60	140.71±9.09	1.15	0.66**	2.69**	D097	112.51	29.40	0.54±0.56	0.00	0.65**	-2.94**
D003	119.55	31.62	69.91±7.56	0.25	-0.21	-0.66	D098	112.51	29.21	69.97±3.02	0.24	-0.09	0.42
D004	118.91	31.28	22.30±2.31	0.20	0.60**	2.54**	D099	113.06	29.05	0.48±0.32	0.03	0.55**	2.55**
D005	119.06	31.20	0.29±0.47	-0.04	-0.51*	-1.88*	D100	112.28	29.92	3.21±4.95	-0.04	0.61**	-3.21**
D006	118.97	31.11	118.40±15.46	2.59	0.36	1.06	D101	112.30	29.85	0.88±1.26	-0.10	0.79**	-2.85**
D007	118.27	31.25	3.32±0.76	0.03	0.56**	2.33**	D102	112.08	30.07	2.60±0.77	0.01	-0.32	-0.61
D008	117.38	31.18	3.69±3.17	0.43	-0.09	-0.85	D103	111.81	30.11	3.07±0.59	-0.04	-0.42	-2.18*
D009	117.64	31.02	1.93±1.62	0.07	-0.16	-0.94	D104	111.87	29.98	2.23±0.36	0.00	0.30	1.22
D010	117.63	30.93	8.57±0.93	0.16	0.52*	2.42**	D105	111.95	29.84	1.63±0.53	0.05	0.23	0.45
D011	117.67	30.90	5.34±5.01	0.44	0.39	1.42	D106	111.88	29.72	9.99±1.03	0.05	0.18	1.97*
D012	117.77	30.78	1.78±0.84	0.07	0.73**	3.35**	D107	112.03	29.43	13.84±0.61	-0.04	-0.15	-0.06
D013	117.76	30.74	3.15±1.40	0.12	0.83**	4.12**	D108	111.93	29.40	4.70±1.28	0.05	-0.12	0.60
D014	117.38	30.81	26.34±4.28	0.35	0.16	0.94	D109	112.00	29.26	1.05±0.84	0.10	-0.36	-1.56
D015	117.53	30.66	2.16±0.69	0.04	0.52*	2.24*	D110	112.14	29.07	1.37±1.58	-0.01	0.67**	-2.66**
D016	117.38	30.57	0.60±0.17	-0.01	-0.23	-0.49	D111	112.00	29.14	1.37±0.95	0.01	-0.46*	-1.64*
D017	117.08	30.84	75.14±19.77	2.77	0.75**	3.90**	D112	111.90	29.16	1.43±1.11	-0.07	0.79**	-2.97**
D018	117.16	30.64	15.40±2.94	0.27	0.89**	4.26**	D113	111.86	29.07	3.56±1.97	0.10	0.33	0.42
D019	117.11	30.64	4.50±1.01	-0.08	-0.44*	-2.06*	D114	111.73	29.09	4.45±0.93	0.08	0.80**	3.93**
D020	116.91	30.75	0.65±0.64	0.08	0.87**	4.39**	D115	112.68	28.48	0.12±0.14	-0.01	-0.40	-1.77 *
D021	116.87	30.50	0.29±0.67	0.06	0.56**	1.03	D116	112.59	28.55	3.68±0.66	0.08	-0.05	0.18
D022	117.21	30.43	0.71±0.86	0.01	0.48*	2.84**	D117	112.35	28.72	0.68±0.27	0.04	0.22	0.85
D023	117.07	30.38	44.40±7.07	0.17	0.47*	1.94*	D118	112.03	28.82	0.34±0.42	0.00	0.35	1.27
D024	116.60	30.42	0.57±0.20	-0.02	0.03	0.03	D119	120.69	31.65	2.41±0.95	-0.04	0.66**	-2.90**
D025	116.71	30.28	39.03±7.16	0.40	0.51*	2.36**	D120	120.74	31.59	10.57±1.94	-0.10	0.77**	-3.11**
D026	116.93	30.14	1.69±0.48	-0.07	0.57**	-2.76**	D121	120.76	31.43	77.66±8.67	-0.41	-0.03	-0.57
D027	116.44	30.17	94.45±8.22	0.71	0.75**	3.32**	D122	120.86	31.41	2.87±0.79	0.02	0.32	0.51
D028	116.60	30.17	0.96±0.30	-0.02	0.24	0.67	D123	120.57	31.52	1.70±0.59	0.04	0.09	1.03
D029	116.73	30.01	15.69±1.37	0.07	0.50*	2.14*	D124	120.57	31.48	4.15±1.08	-0.02	-0.25	-1.39
D030	116.38	30.02	155.45±48.99	5.94	0.49*	2.33**	D125	120.70	31.31	3.24±1.01	-0.01	0.46*	2.00*
D031	116.13	29.96	199.88±33.40	3.02	0.62**	2.57**	D126	120.70	31.27	4.99±1.56	0.00	0.58**	1.09
D032	116.34	29.80	2.43±0.34	-0.04	-0.22	-0.70	D127	120.82	31.21	33.31±3.89	-0.05	0.21	-0.03

D033	115.81	29.97	19.32±1.00	-0.01	-0.13	-0.64	D128	120.93	31.20	1.48±0.65	-0.01	-0.54*	-1.79*
D034	115.93	29.68	9.04±0.70	0.02	0.29	1.09	D129	120.82	31.13	2.94±1.11	0.06	0.28	1.60
D035	115.84	29.69	27.88±1.87	0.27	0.35	0.88	D130	120.96	31.12	48.81±1.65	0.08	-0.11	-0.51
D036	115.68	29.78	20.35±4.09	0.36	0.26	1.33	D131	120.90	31.14	1.65±0.71	0.06	0.42	2.24*
D037	115.59	29.91	9.43±0.75	0.00	0.13	0.21	D132	120.88	31.07	8.61±0.55	0.04	-0.37	-2.06*
D038	115.43	30.11	5.67±0.96	0.00	-0.20	-0.24	D133	120.82	31.05	0.14±0.20	0.00	-0.35	-1.45
D039	115.39	29.82	8.68±0.69	0.00	0.15	0.39	D134	120.80	31.01	2.32±0.92	0.08	0.20	0.91
D040	115.33	29.87	29.79±3.13	0.29	0.56**	2.54**	D135	120.51	30.97	2.29±1.18	0.13	0.75**	3.27**
D041	115.28	29.92	1.01±0.27	-0.02	0.06	0.40	D136	120.55	30.93	4.86±0.53	0.06	0.22	0.64
D042	115.18	29.84	1.47±0.50	0.03	0.59**	2.48**	D137	119.80	31.37	7.12±1.56	0.09	-0.11	-0.73
D043	115.09	29.85	1.14±0.33	0.03	0.44*	2.27*	D138	112.54	30.45	0.57±0.46	0.00	-0.35	-1.84*
D044	115.25	30.05	2.19±2.00	0.19	-0.42	-1.94*	D139	112.39	30.43	73.91±10.74	1.92	0.58**	2.51**
D045	115.09	30.10	34.96±5.41	0.44	0.63**	2.81**	D140	116.06	28.70	6.53±1.28	0.00	-0.17	-0.30
D046	115.16	30.26	2.88±0.73	0.17	0.65**	2.67**	D141	117.21	30.74	1.03±0.65	-0.02	0.15	0.33
D047	115.03	30.30	0.67±0.46	-0.06	-0.42	-0.82	D142	116.19	28.60	0.17±0.16	-0.02	-0.42	-0.79
D048	114.99	30.27	1.19±0.42	-0.07	-0.63**	-2.85**	D143	117.53	31.57	741.29±5.47	0.18	-0.33	-1.24
D049	115.05	30.21	1.28±0.57	-0.08	-0.76**	-3.76**	D144	114.18	30.66	0.14±0.15	0.01	0.85**	3.96**
D050	115.07	30.42	0.39±0.25	0.00	-0.05	-0.46	Class V						
D051	114.94	30.47	0.60±0.37	0.01	0.02	0.67	E001	117.94	33.26	7.61±2.16	-0.22	-0.73**	-3.42**
D052	114.79	30.31	10.21±1.61	0.15	0.05	0.33	E002	117.81	33.21	15.58±1.67	0.17	0.02	-0.12
D053	114.70	30.65	22.47±9.53	0.60	-0.20	-0.33	E003	117.67	33.14	6.44±4.04	0.07	0.49*	1.66*
D054	114.72	30.46	5.08±0.85	0.09	0.44*	2.85**	E004	117.14	33.06	0.60±0.63	0.00	-0.29	-0.33
D055	114.72	30.25	24.88±3.14	0.28	0.55**	2.54**	E005	117.18	32.63	16.47±5.02	0.07	-0.36	-1.48
D056	114.50	30.81	10.60±3.02	0.36	0.26	1.42	E006	116.59	32.72	3.43±1.70	-0.05	-0.41	-2.78**
D057	114.48	30.57	1.95±0.60	-0.05	-0.46*	-1.67*	E007	116.60	32.60	17.60±8.28	0.17	-0.68**	-3.23**
D058	114.40	30.56	15.89±1.68	-0.11	-0.51*	-2.75**	E008	116.88	32.41	91.80±13.17	0.47	-0.32	-1.54
D059	114.36	30.49	2.65±0.43	-0.03	-0.25	0.00	E009	116.68	32.29	26.27±3.02	-0.06	-0.05	-0.94
D060	114.64	30.47	0.88±0.37	-0.04	-0.49*	-1.94*	E010	116.26	32.57	4.58±1.19	0.04	-0.16	-0.45
D061	114.63	30.41	1.49±0.67	0.05	0.34	1.63	E011	116.36	32.26	79.79±6.70	0.34	-0.11	-0.15
D062	114.58	30.39	5.26±1.84	0.08	0.02	0.91	E012	116.20	32.32	47.12±17.57	-0.68	-0.40	-1.78*
D063	114.51	30.23	176.57±31.60	2.22	0.39	1.96*	Class VI						
D064	114.36	30.42	20.84±2.33	0.21	0.24	0.21	F001	119.82	33.08	1.64±2.01	-0.02	-0.63**	-4.27**
D065	114.28	30.44	1.64±0.77	0.10	0.61**	2.81**	F002	119.81	33.15	11.82±6.11	-0.51	-0.77**	-3.41**
D066	114.24	30.43	0.04±0.14	0.00	-0.31	-1.80*	F003	112.62	31.14	5.45±1.90	0.32	0.74**	3.33**
D067	114.28	30.74	4.66±1.18	0.27	0.60**	3.13**	F004	118.00	30.36	17.93±2.80	0.06	0.25	1.67*
D068	114.17	30.80	2.89±1.52	0.25	0.68**	3.49**	F005	116.75	31.29	12.35±2.02	0.15	0.37	1.42
D069	114.07	30.86	14.32±1.28	0.06	-0.05	-0.67	F006	116.18	30.51	5.39±1.79	0.11	0.40	1.60
D070	114.01	30.88	3.16±0.69	0.05	0.46*	2.51**	F007	115.78	30.51	0.14±0.15	0.00	0.14	0.44
D071	114.08	30.52	6.37±1.26	0.01	-0.12	0.36	F008	115.28	29.28	97.18±16.91	-0.27	0.20	0.75