

# A Study on Dynamic Changes of Desertification in Northern China Based on Long-time series MODIS Data and Google Earth Engine

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## S1. Tables S1-S2

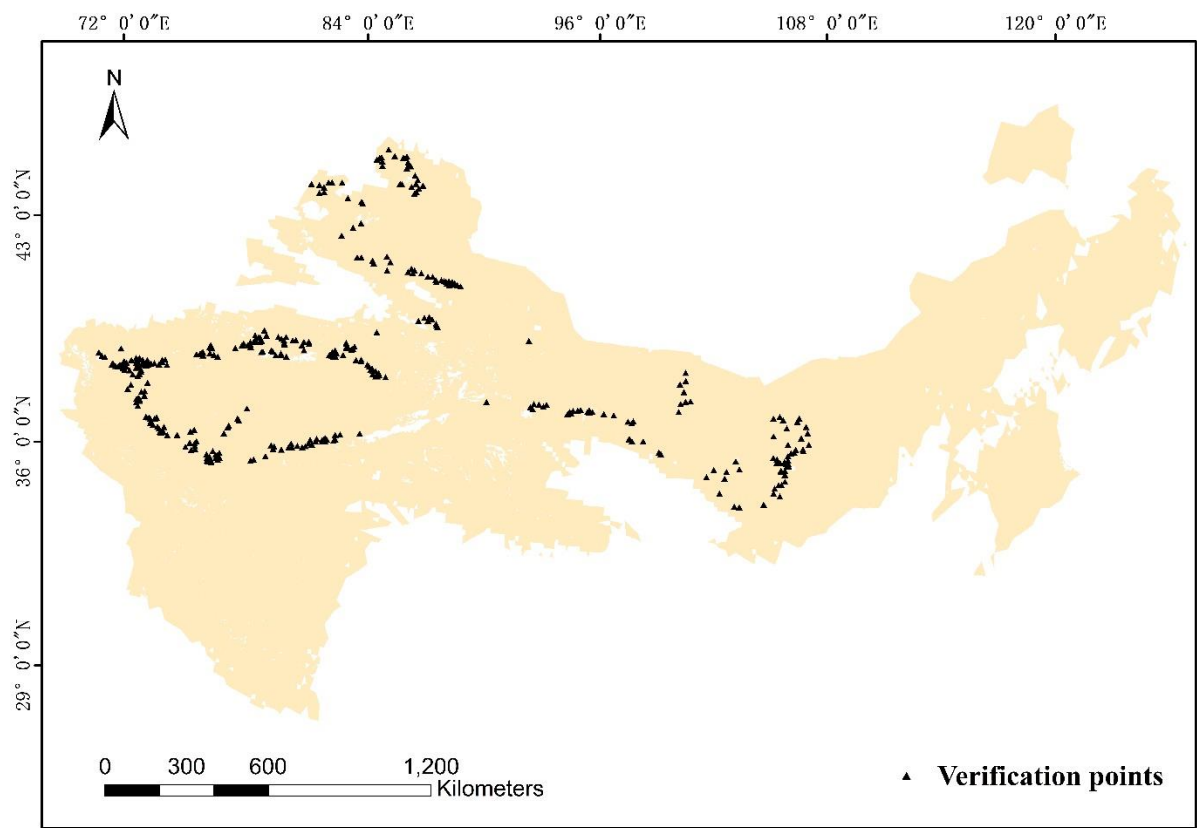
**Table S1.** Change in land area with different degrees of desertification

Years	Light(km <sup>2</sup> )	Moderate(km <sup>2</sup> )	Severe(km <sup>2</sup> )	Extremely severe(km <sup>2</sup> )	Total(km <sup>2</sup> )
2000	831511.55	348726.66	762752.21	1605472.83	3548463.25
2001	841050.67	328836.54	755477.24	1623535.03	3548899.48
2002	978302.20	302382.72	723673.38	1500908.13	3505266.43
2003	992196.69	336316.12	699323.95	1480921.93	3508758.69
2004	929871.21	332738.04	724854.61	1525641.50	3513105.36
2005	878365.09	288929.58	749494.47	1554535.81	3471324.95
2006	936172.05	307819.02	776936.48	1491387.83	3512315.38
2007	887193.96	368273.24	777248.93	1461764.69	3494480.82
2008	910048.46	310117.01	688291.90	1550761.67	3459219.04
2009	873696.90	351487.83	748212.16	1520251.95	3493648.84
2010	951984.16	353279.31	749274.13	1434323.43	3488861.03
2011	948315.62	349840.58	734508.10	1400871.39	3433535.69
2012	963933.17	312201.02	701756.65	1406486.42	3384377.26
2013	960750.28	298160.12	725877.15	1395488.64	3380276.19
2014	939663.29	301600.37	753453.06	1429181.51	3423898.23
2015	912621.12	307422.62	762405.83	1388048.59	3370498.16
2016	986947.40	318729.11	700313.09	1379235.59	3385225.19
2017	1000853.43	317145.39	668276.81	1378985.96	3365261.59
2018	959860.66	314822.48	667641.18	1354451.65	3296775.97
2019	983870.43	271698.09	701456.57	1329410.17	3286435.26
2020	908423.78	294451.44	727563.18	1380181.40	3310619.80

**Table S2.** Land use transfer matrix for the study area

2020 2001	Desert	Farmland	Grassland	Shrubs	Snow	Urban Land	Water	Wetlands	Woodland	Total
Desert	2168205.68	3100.24	98552.87	2532.84	11047.27	30.27	2463.04	192.45	0.00	2286124.66
Farmland	67.05	188129.82	12583.49	5.15	0.00	2222.56	40.10	219.19	21.76	203289.12
Grassland	21111.92	61289.21	1165965.16	4288.12	151.69	436.74	250.28	1073.93	976.08	1255543.12
Shrubs	1050.29	10.98	3064.58	5756.65	45.60	0	0	0.65	477.66	10406.40
Snow	1438.06	0.63	44.31	1.46	13451.31	0	7.25	0.50	0	14943.51
Urban Land	0	0	0	0	0	22344.21	0	0	0	22344.21
Water	976.23	26.77	410.46	0.00	98.24	0.57	20494.87	90.62	0	22097.76
Wetlands	42.38	19.07	276.94	0.00	1.60	18.94	124.91	898.65	19.35	1401.84
Woodland	0.50	0.18	260.49	45.31	4.16	0.00	0.00	21.51	1509.59	1841.73
Total	2192892.11	252576.90	1281158.29	12629.54	24799.86	25053.30	23380.45	2497.49	3004.42	3817992.36

S2. Figure S1



**Figure S1.** Precision verification point distribution of the data set. The dataset classifies desertification categories into extremely severe, severe, moderate, and light, mainly by drifting sand area and vegetation cover.