

## **Supporting information**

### **Lake wetland landscape simulation and multi-scenario prediction based on the PLUS model: A case study on Shengjin Lake Reserve, China**

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**Table S1.** Landscape development probability under different scenarios.

Scenario	Type	Grass Beach	Cropland	Built-up Land	Woodland	Reservoir/pond	Mudflats	Lake
NDS	Grass Beach	0.575	0.038	0.000	0.016	0.002	0.338	0.030
	Cropland	0.001	0.752	0.036	0.082	0.111	0.013	0.005
	Built-up Land	0.000	0.173	0.740	0.062	0.018	0.003	0.004
	Woodland	0.000	0.059	0.011	0.917	0.004	0.006	0.001
	Reservoir/pond	0.000	0.180	0.013	0.021	0.662	0.117	0.008
	Mudflats	0.023	0.032	0.006	0.019	0.038	0.751	0.129
	Lake	0.003	0.003	0.001	0.001	0.003	0.292	0.697
UDS	Grass Beach	0.575	0.038	0.000	0.016	0.002	0.338	0.030
	Cropland	0.001	0.747	0.043	0.082	0.110	0.013	0.005
	Built-up Land	0.000	0.075	0.888	0.027	0.008	0.001	0.002
	Woodland	0.000	0.059	0.014	0.915	0.004	0.006	0.001
	Reservoir/pond	0.000	0.180	0.015	0.021	0.660	0.116	0.008
	Mudflats	0.023	0.032	0.006	0.019	0.038	0.751	0.129
	Lake	0.003	0.003	0.001	0.001	0.003	0.292	0.697
EPS	Grass Beach	0.690	0.028	0.000	0.012	0.002	0.247	0.022
	Cropland	0.001	0.739	0.025	0.099	0.078	0.013	0.005
	Built-up Land	0.000	0.173	0.740	0.062	0.018	0.003	0.004
	Woodland	0.000	0.053	0.008	0.926	0.003	0.005	0.001
	Reservoir/pond	0.000	0.180	0.013	0.021	0.662	0.117	0.008
	Mudflats	0.030	0.030	0.005	0.018	0.027	0.711	0.168
	Lake	0.002	0.002	0.001	0.000	0.001	0.157	0.836

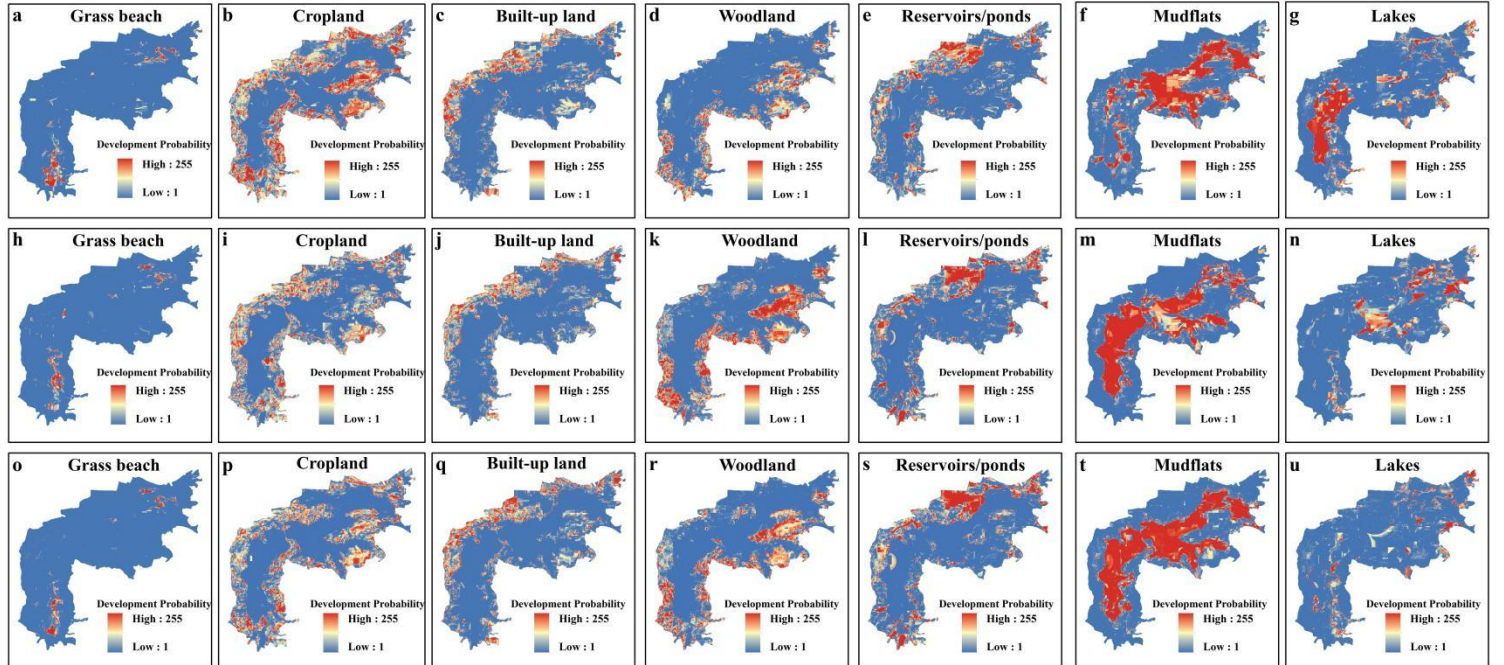
Note: this landscape transition probability combines the Markov model to predict the demand for land use in various scenarios; Columns represent inflow, and rows represent outflow.

**Table S2.** Landscape Transition Matrix of the Reserve during 2010-2020(unit: ha).

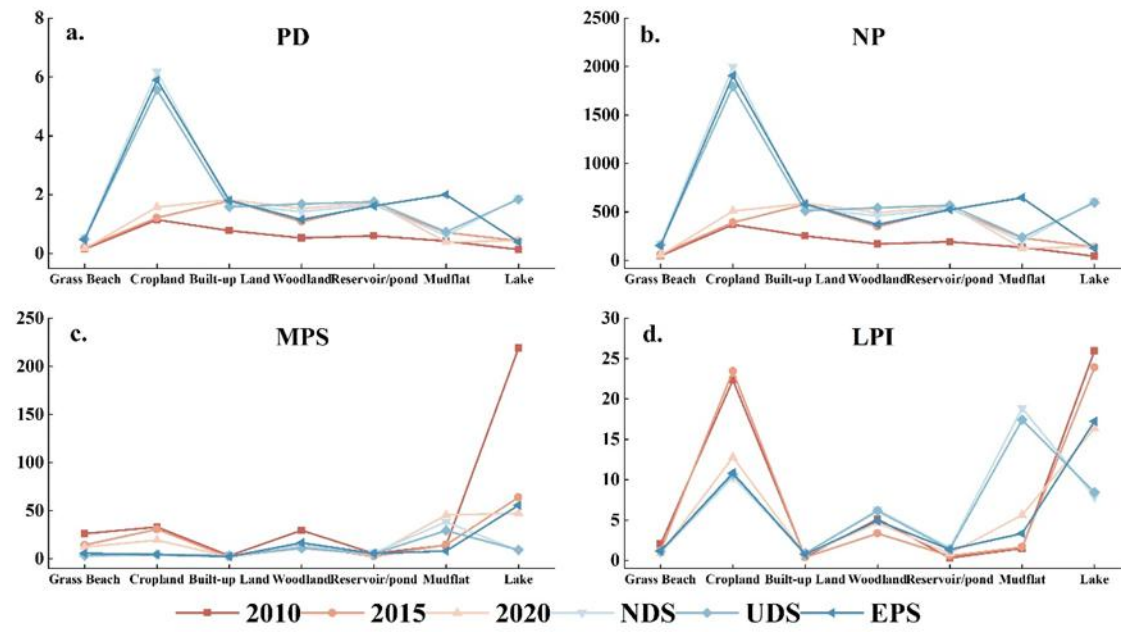
<div> <div>2020</div> <div>2010</div> </div>	Landscape Transition Matrix of the Reserve during 2010-2020								
	Mudflats	Built-up Land	Cropland	Grass Beach	Lake	Reservoir/pond	Woodland	Total	Outflow area
Mudflats	1426.70	28.22	104.09	77.29	151.20	69.08	70.81	1927.37	500.67
Built-up Land	2.09	548.06	194.78	0.00	12.51	26.66	50.38	834.48	286.42
Cropland	200.81	564.23	8938.40	77.69	81.70	1533.22	910.53	12306.58	3368.18
Grass Beach	733.16	4.37	14.27	479.43	64.58	3.17	10.35	1309.32	829.89
Lake	3295.55	9.34	61.40	22.59	6426.95	32.54	12.35	9860.72	3433.77
Reservoir/pond	120.74	18.50	149.42	0.09	29.07	725.06	21.15	1064.03	338.98
Woodland	41.67	77.51	515.30	3.29	10.24	45.50	4333.21	5026.70	693.49
Total	5820.73	1250.21	9977.65	660.38	6776.24	2435.22	5408.78	32329.19	9451.40
Inflow Area	4394.03	702.16	1039.25	180.95	349.29	1710.16	1075.57	9451.40	/

Note: The inflow area(2020) represents the area of transfer from other landscapes to that landscape in 2020; The outflow area(2010) represents the area of transfer of the landscape to

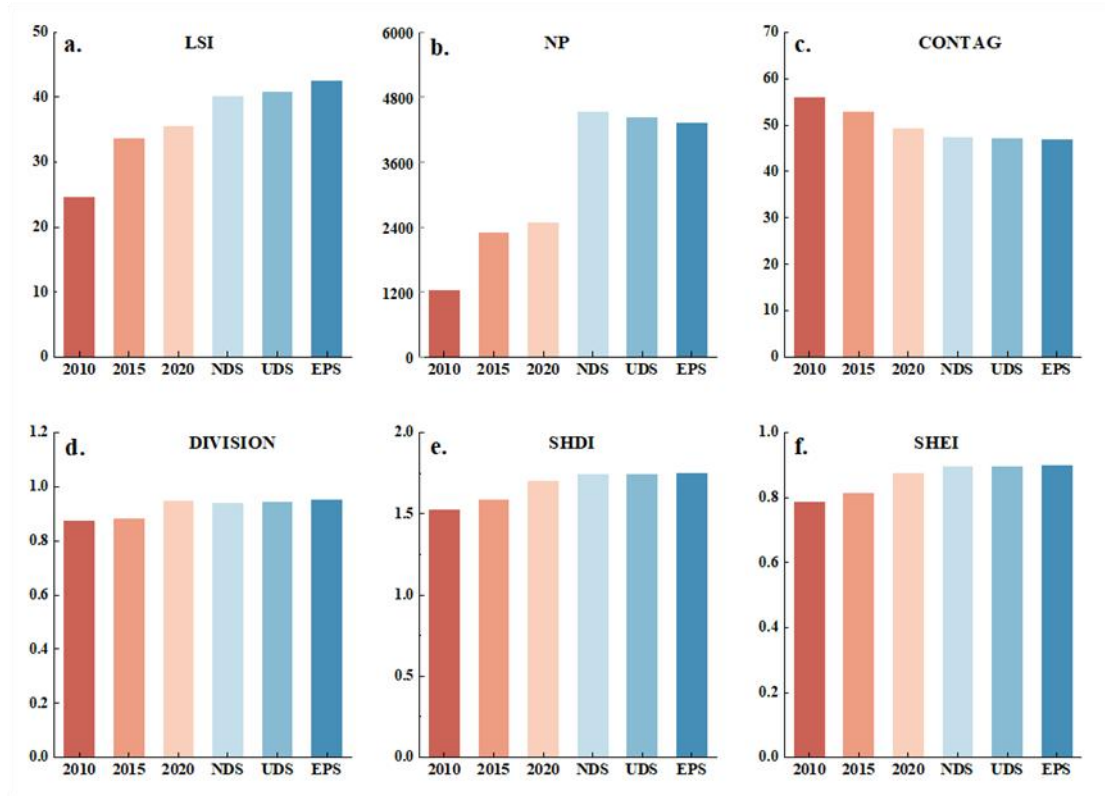
other landscapes in 2010.



**Figure S1.** Probability of landscape change at different intervals.  
(a-g): 5-year interval from 2010-2015; (h-n): 5-year interval from 2015-2020;  
(o-u): 10-year interval from 2010-2020.



**Figure S2.** Variations in landscape indices at the class level in the reserve from 2010 to 2030.



**Figure S3.** Variations in landscape indices at the landscape level during 2010-2030 under different scenarios.