

Supplementary Material for:

Spatiotemporal Patterns of Ecological Condition under
Water-Salt Stress in the Yellow River Delta: An Improved
Remote Sensing Ecological Index Approach

Submitted to: Environmental Earth Sciences

Figure S1.

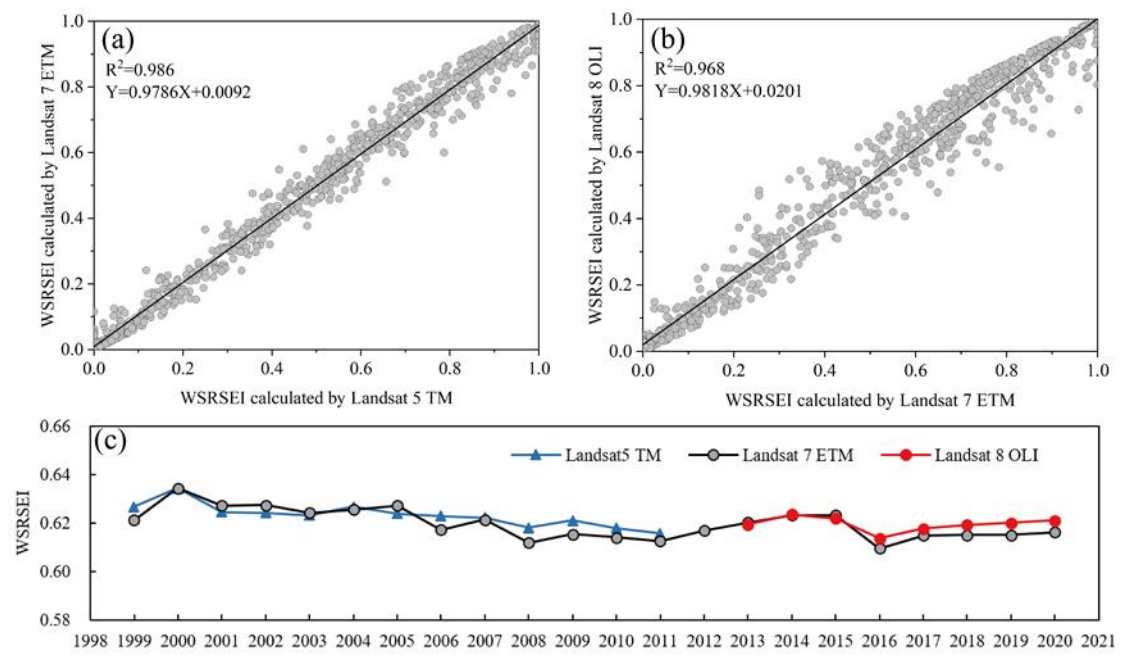


Fig 7. Consistency scatter plot of multiple sensors. (a) Landsat 5 TM vs. Landsat 7 ETM; (b) Landsat 7 ETM vs. Landsat 8 OLI; (c) Annual average time series comparison of multi-sensor WSRSEI

Table S1. Annual PCA statistics (1985–2025)

Year	Variance contribution rate	Factor loading			
		NDVI	WSS	NDBSI	LST
1985	83.55	0.5376	-0.8432	-0.0065	0.0031
1986	82.45	0.5573	-0.8303	-0.0052	0.0032
1987	83.48	0.5251	-0.8510	-0.0021	0.0020
1988	80.82	0.5402	-0.8415	-0.0059	0.0021
1989	84.51	0.5260	-0.8502	-0.0018	0.0239
1990	85.03	0.5204	-0.8539	-0.0043	0.0025
1991	83.28	0.5515	-0.8341	-0.0057	0.0021
1992	82.98	0.5543	-0.8323	-0.0063	0.0092
1993	80.45	0.5403	-0.8414	-0.0069	0.0032
1994	85.39	0.5280	-0.8492	-0.0035	0.0054
1995	85.15	0.5134	-0.8581	-0.0006	0.0036
1996	83.89	0.5172	-0.8558	-0.0031	0.0082
1997	84.07	0.5265	-0.8501	-0.0026	0.0072
1998	83.48	0.5461	-0.8376	-0.0083	0.0066
1999	82.64	0.5510	-0.8344	-0.0054	0.0085
2000	85.43	0.5420	-0.8403	-0.0005	0.0064
2001	81.22	0.5538	-0.8326	-0.0018	0.0033
2002	81.42	0.5311	-0.8472	-0.0004	0.0099
2003	83.32	0.5237	-0.8518	-0.0056	0.0106
2004	84.20	0.5207	-0.8536	-0.0096	0.0143
2005	83.60	0.5253	-0.8508	-0.0077	0.0087
2006	82.02	0.5537	-0.8326	-0.0089	0.0081
2007	85.18	0.5396	-0.8418	-0.0020	0.0135
2008	83.72	0.5544	-0.8322	-0.0083	0.0066
2009	81.66	0.5211	-0.8511	-0.0638	0.0023
2010	83.95	0.5410	-0.8410	-0.0034	0.0009
2011	84.64	0.5101	-0.8601	-0.0013	0.0126
2012	83.38	0.5312	-0.8470	-0.0096	0.0183
2013	84.02	0.5320	-0.8467	-0.0081	0.0075
2014	82.52	0.5318	-0.8469	-0.0026	0.0070
2015	82.99	0.5323	-0.8465	-0.0088	0.0013
2016	84.62	0.5269	-0.8498	-0.0040	0.0141
2017	84.30	0.5417	-0.8405	-0.0054	0.0005
2018	84.08	0.5327	-0.8463	-0.0002	0.0020
2019	83.45	0.5362	-0.8441	-0.0049	0.0057
2020	80.79	0.5310	-0.8470	-0.0022	0.0262
2021	83.63	0.5534	-0.8328	-0.0085	0.0037
2022	84.21	0.5455	-0.8381	-0.0051	0.0049
2023	83.64	0.5399	-0.8417	-0.0032	0.0078
2024	83.84	0.5566	-0.8307	-0.0011	0.0036
2025	81.61	0.5314	-0.8471	-0.0063	0.0043

Table S2. GA 20-Run Parameter Statistics Table

Number of times	<i>a</i>	<i>b</i>	<i>c</i>	R ²
1	5.5122	13.2004	4.6772	0.686
2	5.5031	13.1968	4.6723	0.686
3	5.5021	13.1968	4.6723	0.686
4	5.5064	13.1965	4.6723	0.686
5	5.5012	13.1962	4.6721	0.686
6	5.5041	13.197	4.6723	0.686
7	5.5016	13.1964	4.6722	0.686
8	5.5063	13.198	4.6728	0.686
9	5.5013	13.1956	4.6725	0.686
10	5.5035	13.1634	4.6724	0.686
11	5.5065	13.1964	4.6723	0.686
12	5.5019	13.1955	4.6725	0.686
13	5.5023	13.1946	4.6724	0.686
14	5.5067	13.1966	4.6727	0.686
15	5.5044	13.1978	4.6726	0.686
16	5.5101	13.2015	4.6725	0.686
17	5.5092	13.1982	4.6726	0.686
18	5.5071	13.1966	4.6723	0.686
19	5.5045	13.1935	4.6724	0.686
20	5.5056	13.1955	4.6725	0.686