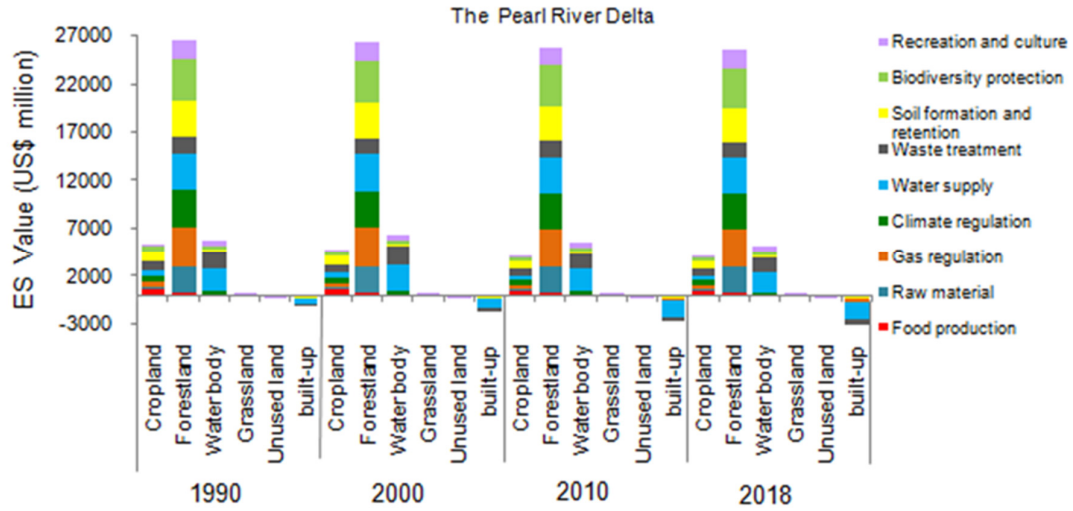
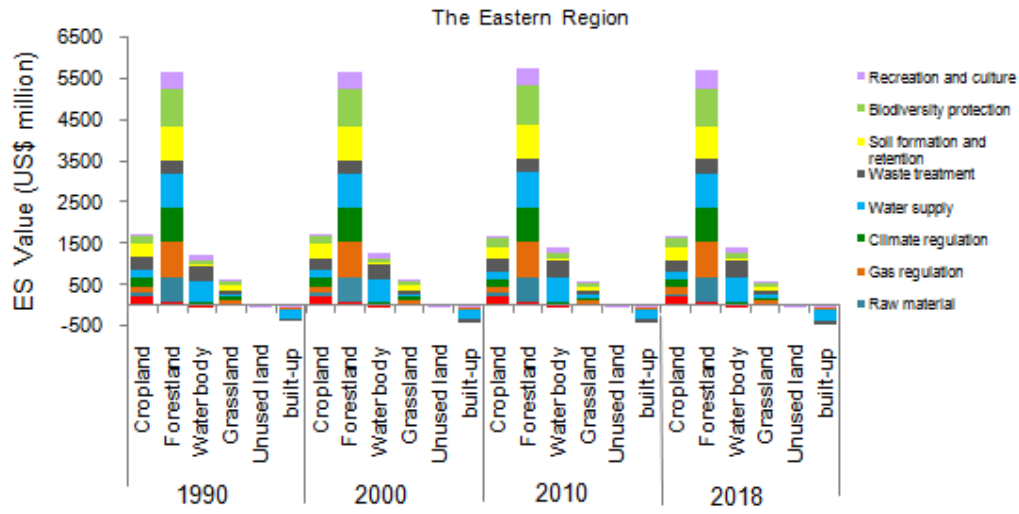


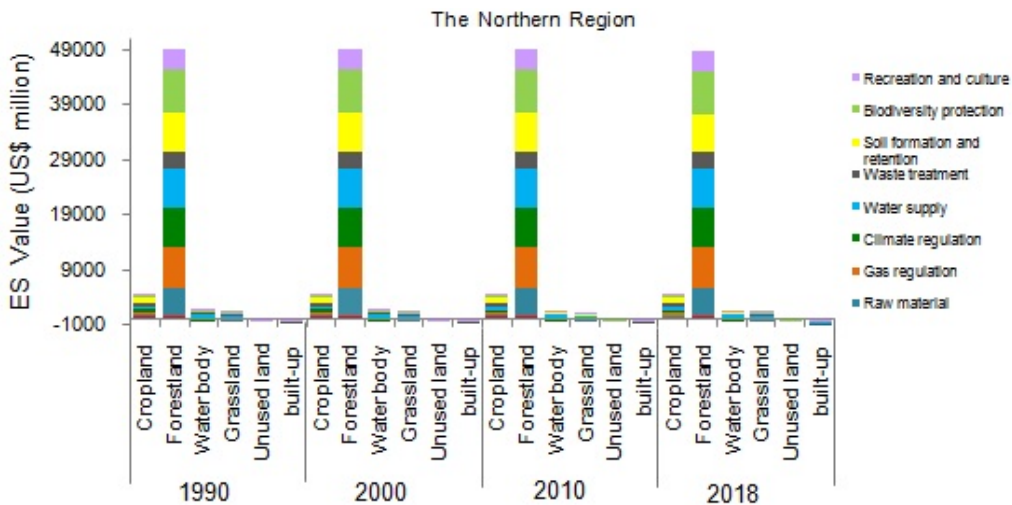
## Supplementary Materials



**Figure S1.** The ecosystem service value in the Pear River Delta of Guangdong from 1990 to 2018.

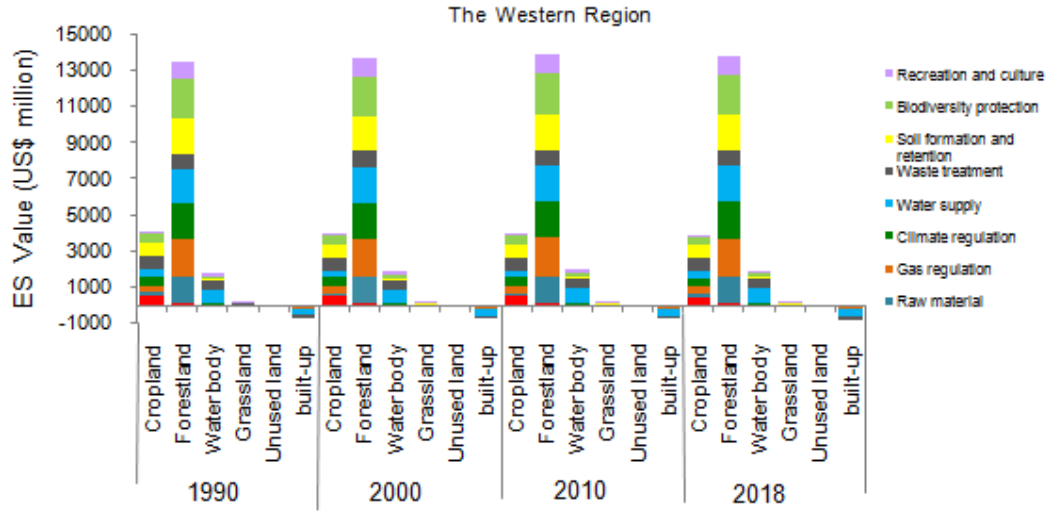


**Figure S2.** The ecosystem service value in the Eastern Region of Guangdong from 1990 to 2018.

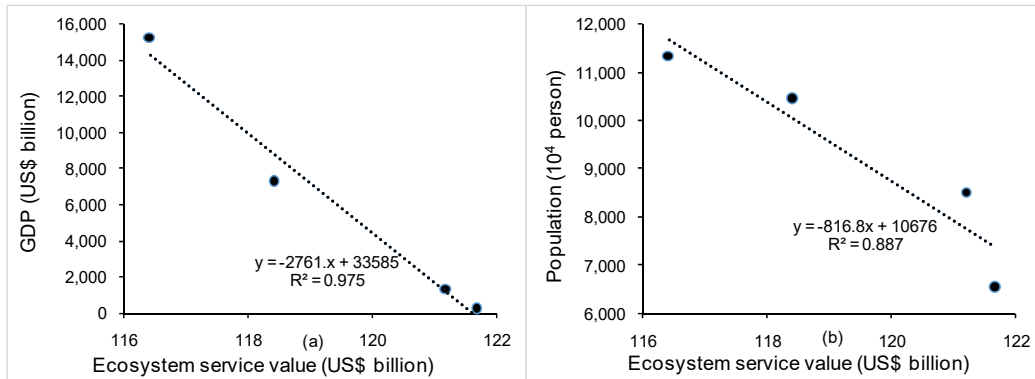


**Figure S3.** The ecosystem service value in the Northern Mountainous Region of Guangdong from 1990

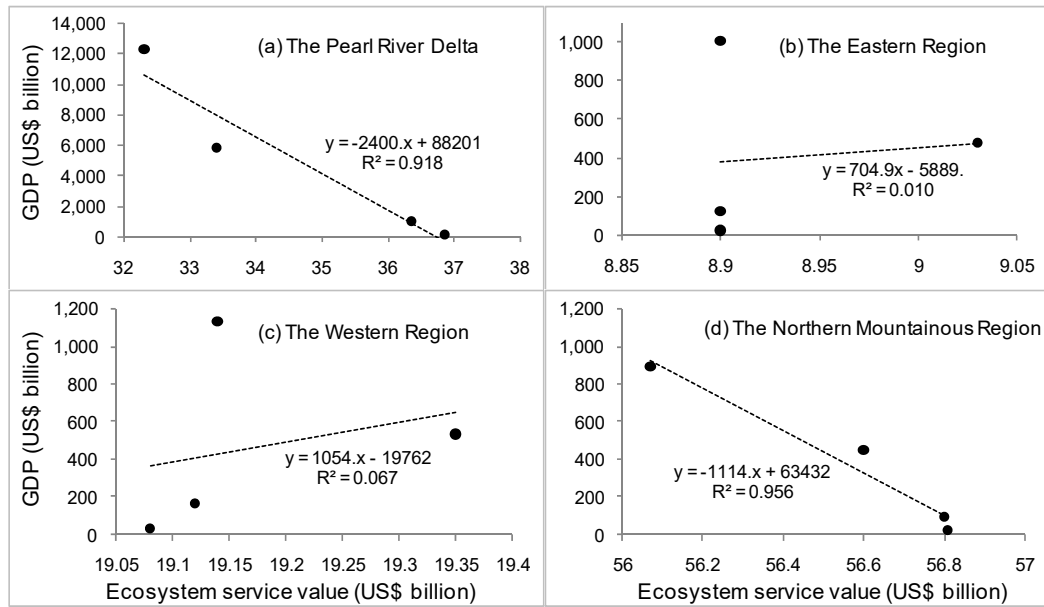
to 2018.



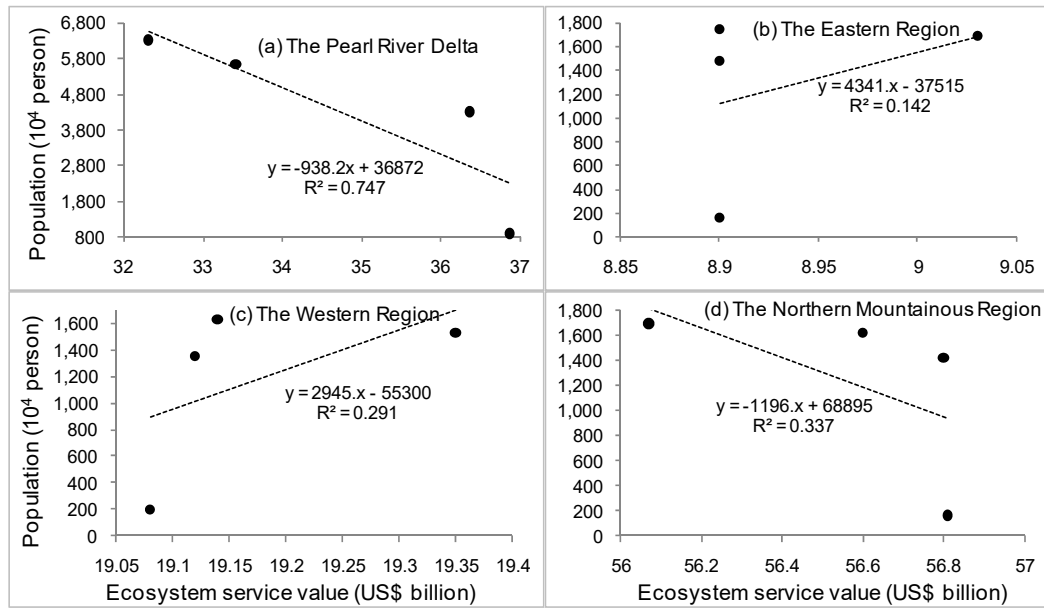
**Figure S4.** The ecosystem service value in the Western Region of Guangdong from 1990 to 2018.



**Figure S5.** Relationship between (a) total ecosystem service value and GDP ( US\$ in 2018),(b) total ecosystem service value and population in Guangdong province from 1990 to 2018.



**Figure S6.** Relationship between total ecosystem service value and GDP (US\$ in 2018) in the four regions in Guangdong province from 1990 to 2018.



**Figure S7.** Relationship between total ecosystem service value and population in the four regions in Guangdong province from 1990 to 2018.

**Table S1.**Ecosystem service trade-off degree in Guangdong province from1990 to 2018.

1990–2018	FP	RM	GR	CR	WS	WT	SFR	BP	RC
FP	1.00	1.18	0.28	0.61	0.12	0.24	0.48	0.66	1.64
RM	0.85	1.00	0.24	0.51	0.10	0.20	0.41	0.56	1.39
GR	3.56	4.20	1.00	2.16	0.42	0.86	1.71	2.37	5.82
CR	1.64	1.94	0.46	1.00	0.19	0.40	0.79	1.09	2.69
WS	8.50	10.04	2.39	5.17	1.00	2.05	4.09	5.65	13.91
WT	4.14	4.88	1.16	2.52	0.49	1.00	1.99	2.75	6.77
SFR	2.08	2.45	0.58	1.26	0.24	0.50	1.00	1.38	3.40
BP	1.50	1.78	0.42	0.91	0.18	0.36	0.72	1.00	2.46
RC	0.61	0.72	0.17	0.37	0.07	0.15	0.29	0.41	1.00
<b>1990–2000</b>									
FP	1.00	2.37	0.42	1.33	0.88	–2.10	0.57	3.52	–1.22
RM	0.42	1.00	0.18	0.56	0.37	–0.89	0.24	1.48	–0.52
GR	2.41	5.71	1.00	3.19	2.12	–5.06	1.37	8.47	–2.95
CR	0.75	1.79	0.31	1.00	0.66	–1.58	0.43	2.65	–0.92
WS	1.14	2.69	0.47	1.51	1.00	–2.39	0.64	4.00	–1.39
WT	–0.48	–1.13	–0.20	–0.63	–0.42	1.00	–0.27	–1.68	0.58
SFR	1.76	4.18	0.73	2.34	1.55	–3.70	1.00	6.20	–2.16
BP	0.28	0.67	0.12	0.38	0.25	–0.60	0.16	1.00	–0.35
RC	–0.82	–1.94	–0.34	–1.08	–0.72	1.72	–0.46	–2.88	1.00
<b>2000–2010</b>									
FP	1.00	2.01	0.32	0.73	0.10	0.19	0.60	0.76	1.23
RM	0.50	1.00	0.16	0.36	0.05	0.09	0.30	0.38	0.61
GR	3.13	6.29	1.00	2.28	0.32	0.58	1.87	2.37	3.84
CR	1.37	2.76	0.44	1.00	0.14	0.25	0.82	1.04	1.68
WS	9.90	19.90	3.16	7.21	1.00	1.84	5.90	7.49	12.15
WT	5.39	10.85	1.72	3.93	0.54	1.00	3.22	4.08	6.62
SFR	1.68	3.37	0.54	1.22	0.17	0.31	1.00	1.27	2.06
BP	1.32	2.66	0.42	0.96	0.13	0.24	0.79	1.00	1.62
RC	0.81	1.64	0.26	0.59	0.08	0.15	0.49	0.62	1.00
<b>2010–2018</b>									
FP	1.00	0.35	0.14	0.23	0.05	0.10	0.25	0.22	0.34
RM	2.82	1.00	0.39	0.65	0.15	0.29	0.71	0.61	0.96
GR	7.29	2.58	1.00	1.68	0.38	0.75	1.83	1.58	2.48
CR	4.35	1.54	0.60	1.00	0.22	0.45	1.09	0.94	1.48
WS	19.40	6.87	2.66	4.46	1.00	1.99	4.88	4.21	6.60
WT	9.77	3.46	1.34	2.25	0.50	1.00	2.46	2.12	3.32
SFR	3.98	1.41	0.55	0.91	0.21	0.41	1.00	0.86	1.35
BP	4.61	1.63	0.63	1.06	0.24	0.47	1.16	1.00	1.57
RC	2.94	1.04	0.40	0.68	0.15	0.30	0.74	0.64	1.00

Note: FP-Food production; RM-Raw material; GR-Gas regulation; CR-Climate regulation; WS-Water supply; WT-Waste treatment; SFR-Soil formation and retention; BP-Biodiversity protection; RC-Recreation and culture.