Supplementary Information for:

Detection of the Three Gorges Dam influence on the Changjiang (Yangtze River) submerged delta

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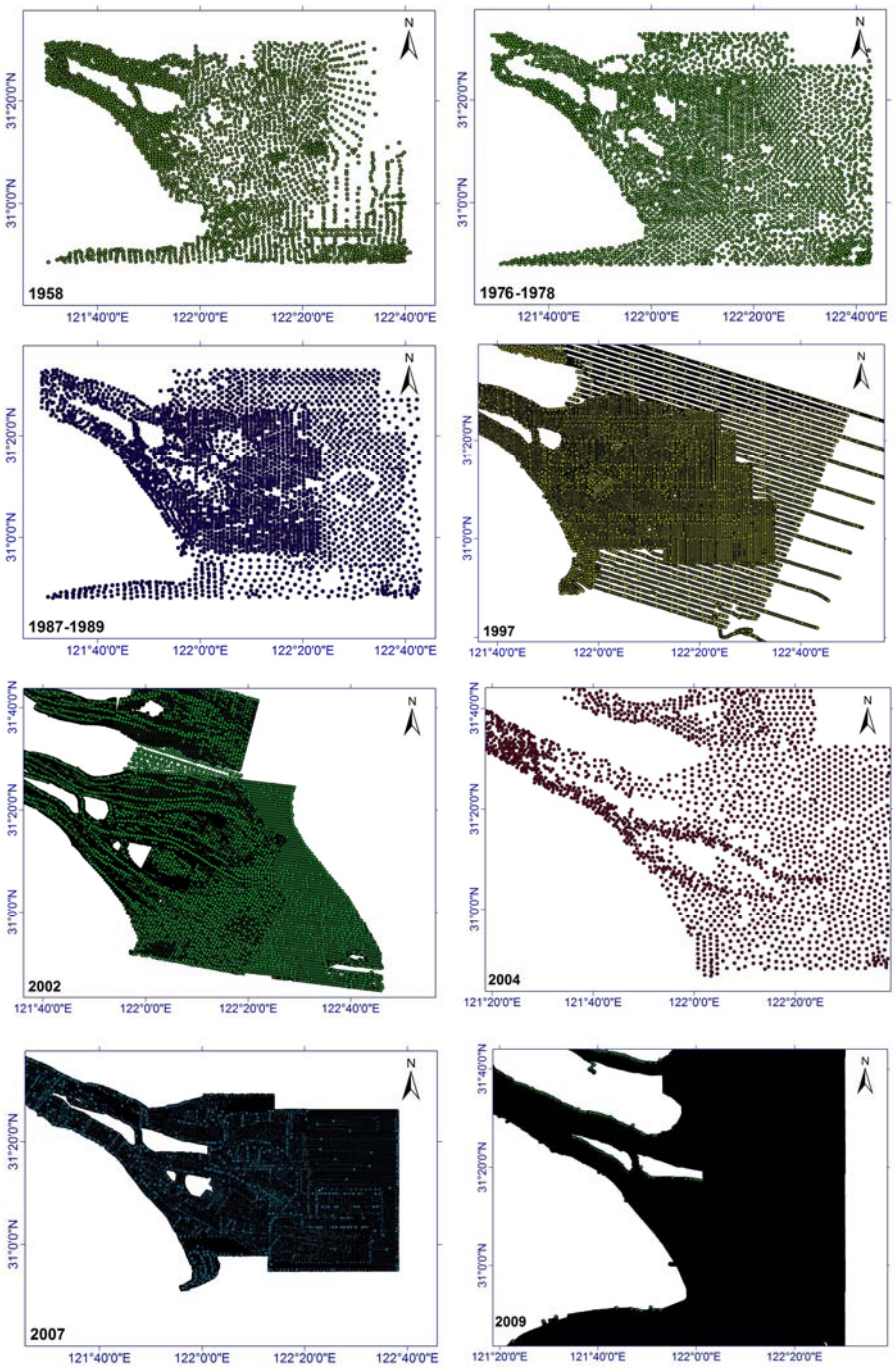

Fig. S1. Data points extracted from the Changjiang Estuary navigational charts drawn by ArcGis 9.3

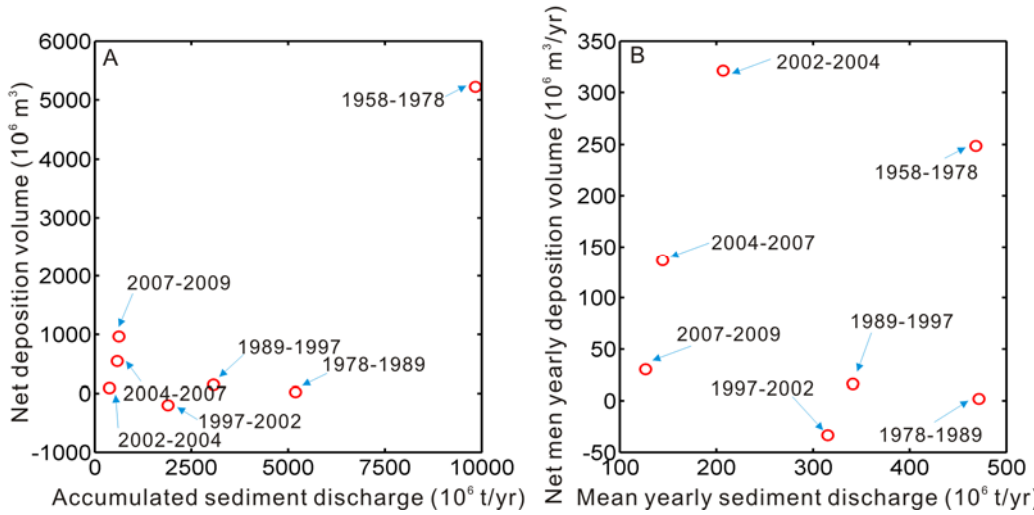

Fig. S2. Scattered points of sediment discharge into the estuary vs. deposition volume of the CSD. (A. the accumulated sediment discharge vs. correspondingly net deposition volume of the CSD during the different phases; B. the mean accumulated sediment discharge vs. correspondingly net mean deposition volume of the CSD during the different phases).

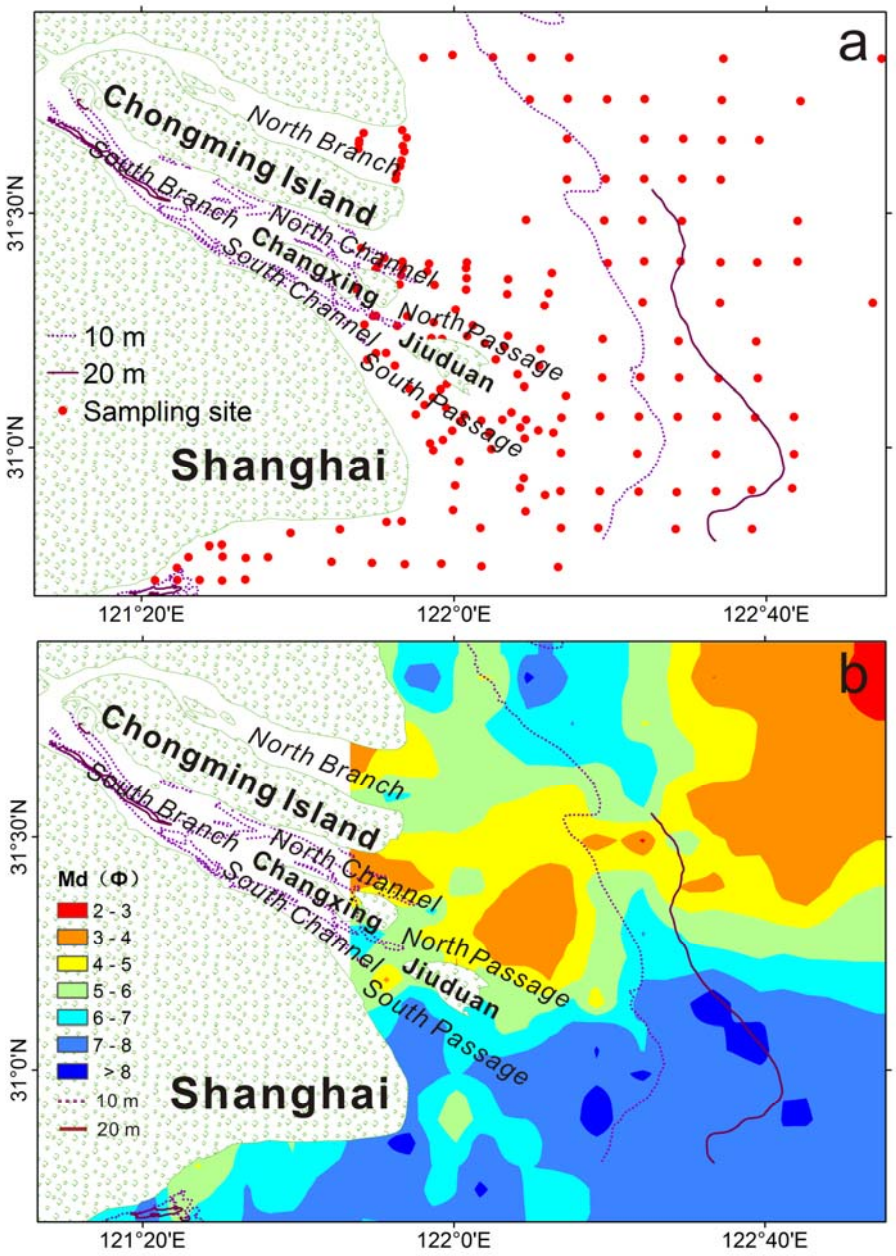

Fig. S3 The collected samples distribution (a) and corresponding distribution of the mean grain size (ϕ)

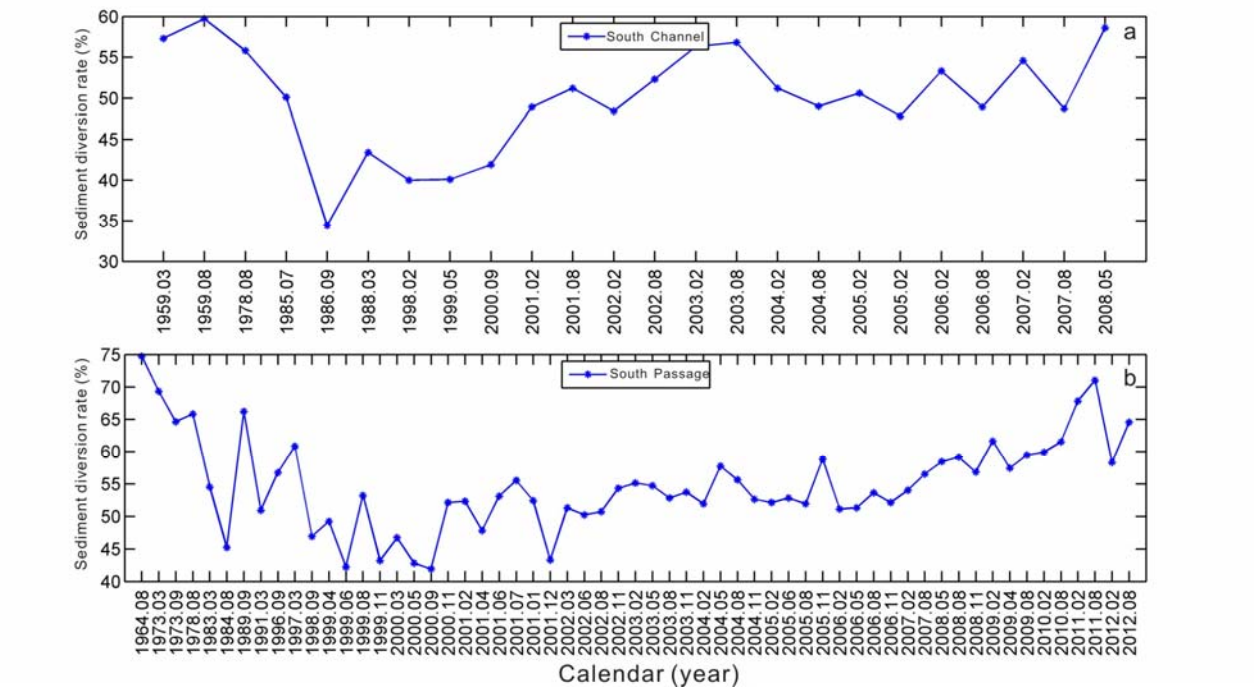

Fig. S4. River load partition between the S. Channel and Passage.

Table S1. Changjiang Estuary navigational charts

Date	Map Title	Scale	Surveyed	Published
1958	Changjiang Estuary and adjacent area (Survey done by the Navigation Guarantee Department of the Chinese Navy Headquartes) (NGDCNH)	1:100,000	1958	Nov. 1959
1978	Changjiang Estuary and adjacent area (NGDCNH)	1:120,000	1976~1978	Nov. 1979
1989	Changjiang Estuary and adjacent area (NGDCNH)	1:120,000	1987~1989	June 1990
1997	Changjiang Estuary and adjacent area (Survey done by Hydrological Bureau of the Changjiang Estuary) (HBCE)	1:50000	1997	
2002	Changjiang Estuary and adjacent area (HBCE)	1:100,000	2002	
2004	Changjiang Estuary and adjacent area (NGDCNH)	1:120,000	2004	Dec. 2004
2007	Changjiang Estuary and adjacent area (HBCE)	1:50000	2007	
2009	Changjiang Estuary and adjacent area (Surveyed done by Shanghai Institute of Geological Survey, China)	1:50000	2009	

Table S2. Accretion and erosion of the North Channel region above -10 m isobaths over different time intervals (10^6 m^3)

	1958-1978	1978-1989	1989-1997	1997-2002	2002-2004	2004-2007	2007-2009
Ev.	-528	-454	-576	-480	-504	-688	-273
Av.	+1270	+731	+581	+442	+873	+746	+448
Nv.	+742	+277	+5	-38	+369	+58	+175
Mnv.	+37	+25	+0.62	-7.6	+184	+19	+87.5

Ev: The eroded volume of the observed period; Av: The accreted volume of the observed period; Nv. The net volume changes of the observed period; Mnv. The mean yearly net volume changes of the observed periods.

Table S3. Accretion and erosion of the North Passage region above the -10 m isobath over different time intervals ($x10^6$ m^3)

	1958-1978	1978-1989	1989-1997	1997-2002	2002-2004	2004-2007	2007-2009
Ev.	-332	-494	-156	-385	-426	-426	-188
Av.	+1476	+623	+601	+303	+440	+755	+87
Nv.	+1144	+129	+445	-82	+14	+329	-101
Mnv.	+57	+12	+56	-16	+7	+109	-50

Ev: The eroded volume of the observed period; Av: The accreted volume of the observed period; Nv. The net volume changes of the observed period; Mnv. The mean yearly net volume changes of the observed periods.

Table S4. Accretion and erosion of the South Passage region above the -10 m isobaths over different time intervals ($x10^6$ m^3)

	1958-1978	1978-1989	1989-1997	1997-2002	2002-2004	2004-2007	2007-2009
Ev.	-59	-146	-125	-154	-97	-168	-88
Av.	+545	+133	+134	+245	+346	+170	+70
Nv.	+486	-13	+9	+91	+249	+2	-18
Mnv.	+24	-1	+1	+18	+125	+0.67	-9

Ev: The eroded volume of the observed period; Av: The accreted volume of the observed period; Nv. The net volume changes of the observed period; Mnv. The mean yearly net volume changes of the observed periods.

Table S5. Accretion and erosion of the Changjiang estuarine submerged delta below the -10 m isobaths over different time intervals ($x10^6$ m^3)

	1958-1978	1978-1989	1989-1997	1997-2002	2002-2004	2004-2007	2007-2009
Ev.	-274	-754	-604	-345	-66	-114	-33
Av.	+3125	+384	+291	+174	+398	+270	+67.7
Nv.	+2851	-370	-313	-171	+332	+156	+35
Mnv.	+143	-34	-39	-34	+166	+52	+17

Ev: The eroded volume of the observed period; Av: The accreted volume of the observed period; Nv. The net volume changes of the observed period; Mnv. The mean yearly net volume changes of the observed periods.

Table S6. Accretion and erosion of the whole submerged delta over different time intervals ($x10^6$ m^3)

	1958-1978	1978-1989	1989-1997	1997-2002	2002-2004	2004-2007	2007-2009
Area	4930	5158	5214	5129	5473	4134	3379
Ar1	1252	2499	2627	2559	1428	2029	2037
Ev.	-1193	-1848	-1461	-1364	-1093	-1395	-582
EL.	-0.95	-0.74	-0.56	-0.53	-0.77	-0.69	-0.29
Ar2	3678	2659	2587	2570	4045	2105	1342
Av.	+6416	+1871	+1607	+1164	+2057	+1941	+673
AL.	+1.74	+0.70	+0.62	+0.45	+0.51	+0.92	+0.50
Nv.	+5223	+23	+146	-200	+964	+546	+91
NEL.	+1.06	+0.004	+0.03	-0.04	+0.18	+0.13	+0.03
MNEL	+5.3	+0.04	+0.38	+0.8	+9.0	+4.33	+1.5
Mnv.	+261	+2	+18	-40	+482	+182	+45

Area: The encompassed surface area (km^2); Arl: Area of erosion; Ar2: Area of deposition; Ev. The eroded volume of the observed periods; EL (m): Net erosion depth per unit area (EL.=Ev./Ar1); AL (m): Net accumulation depth per unit area (AL.=Ev./Ar1); Av. The accreted volume of the observed periods; Nv. The net volume changes of the observed periods; NEL (m): Net depth deposition/erosion depth change (NEL.=Nv./Area); MNEL (cm): Yearly mean depth change per unit area; Mnv: The mean yearly net volume change of the observed period; Mnv. The mean yearly net volume changes of the observed periods.

Table S7. Statistics of increased water level at Wusong by impacts of storm/typhoon

Number	Occurrences	Increased water level (m)	Max. tidal level (m)	Max. wind power (Class)	Max. precipitation (mm)	Typhoon No. or name
1	1.9.1981	1.51	5.74	11～12	22	8114
2	27.9.1983	1.17	4.86	8～10	24	8310
3	27.8.1986	1.12	4.50	10	25	8615
4	4.8.1989	1.11	5.35	10	90.9	8913
5	18.8.1997	1.45	5.99	8～10	131	9711
6	31.8.2000	1.38	5.87	12	79	Prapiroon
7	14.9.2000	1.29	5.4	8	82.8	Saosmei
8	8.9.2002	0.96	5.53	7	/	Sinlaku