

Figure S1. Total Land Area of Floodplain Extent by Year and Return Period. Dark line indicates median estimates, while shaded area indicates the range between 10th and 90th percentile estimates.

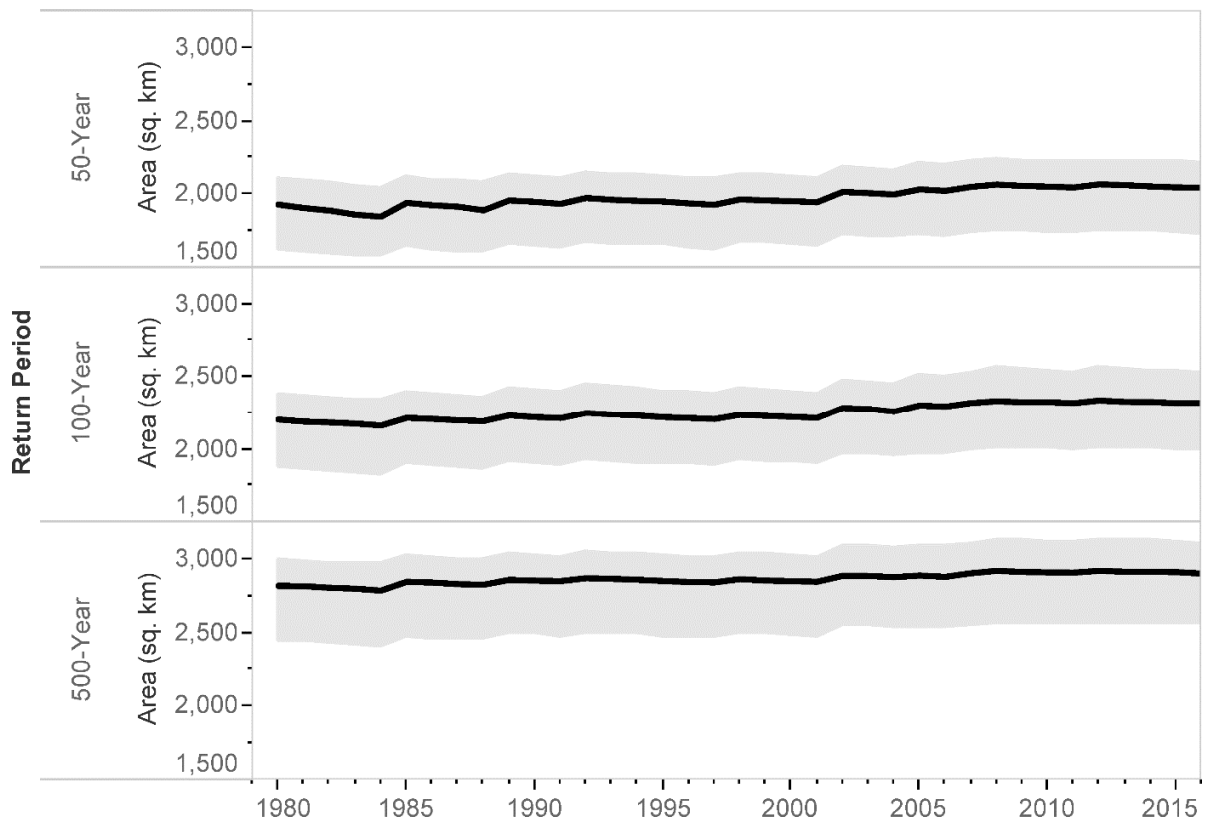


Figure S2. Populated Land Area of Floodplain Extent by Year and Return Period. Dark line indicates median estimates, while shaded area indicates the range between 10th and 90th percentile estimates.

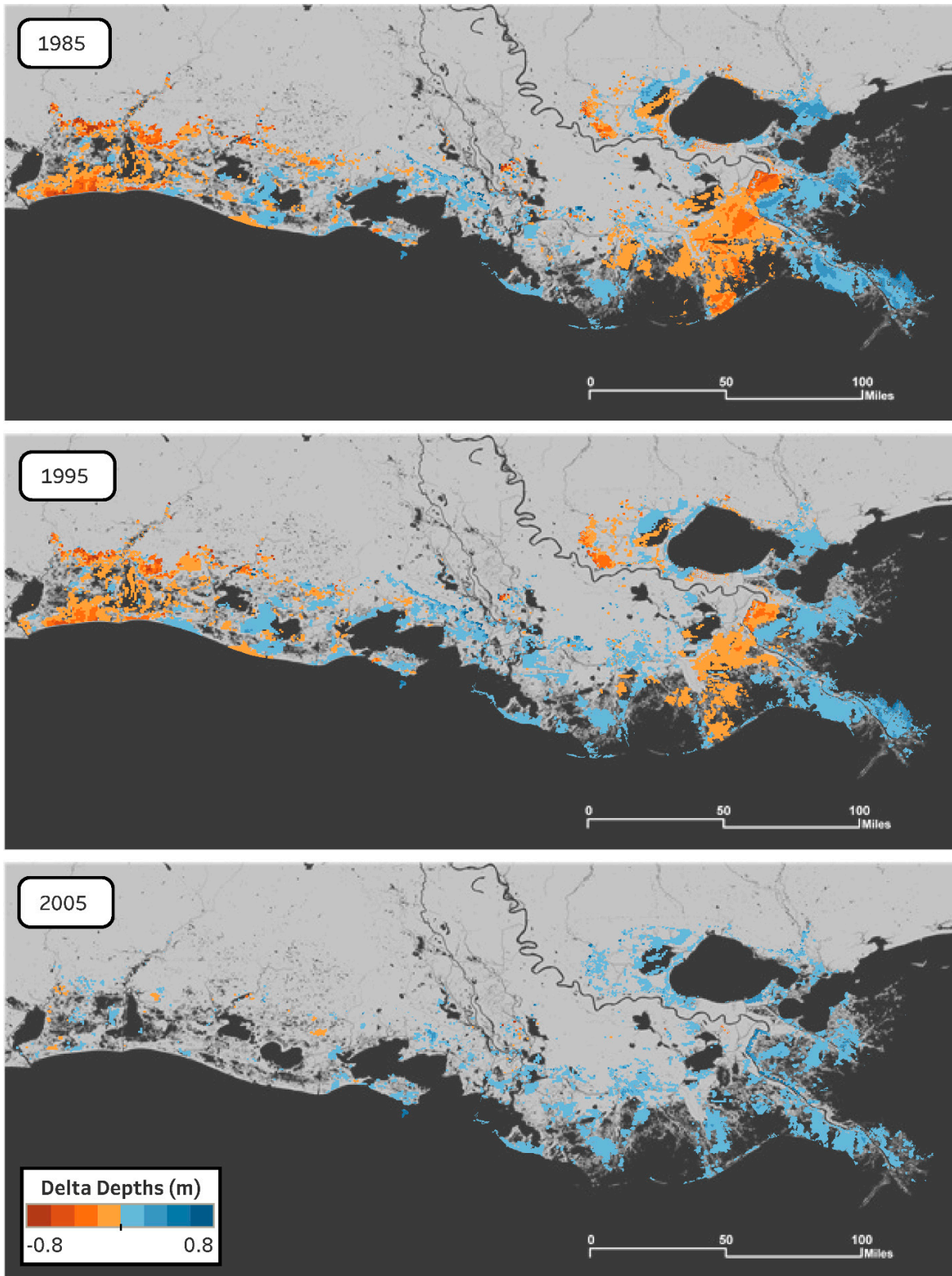
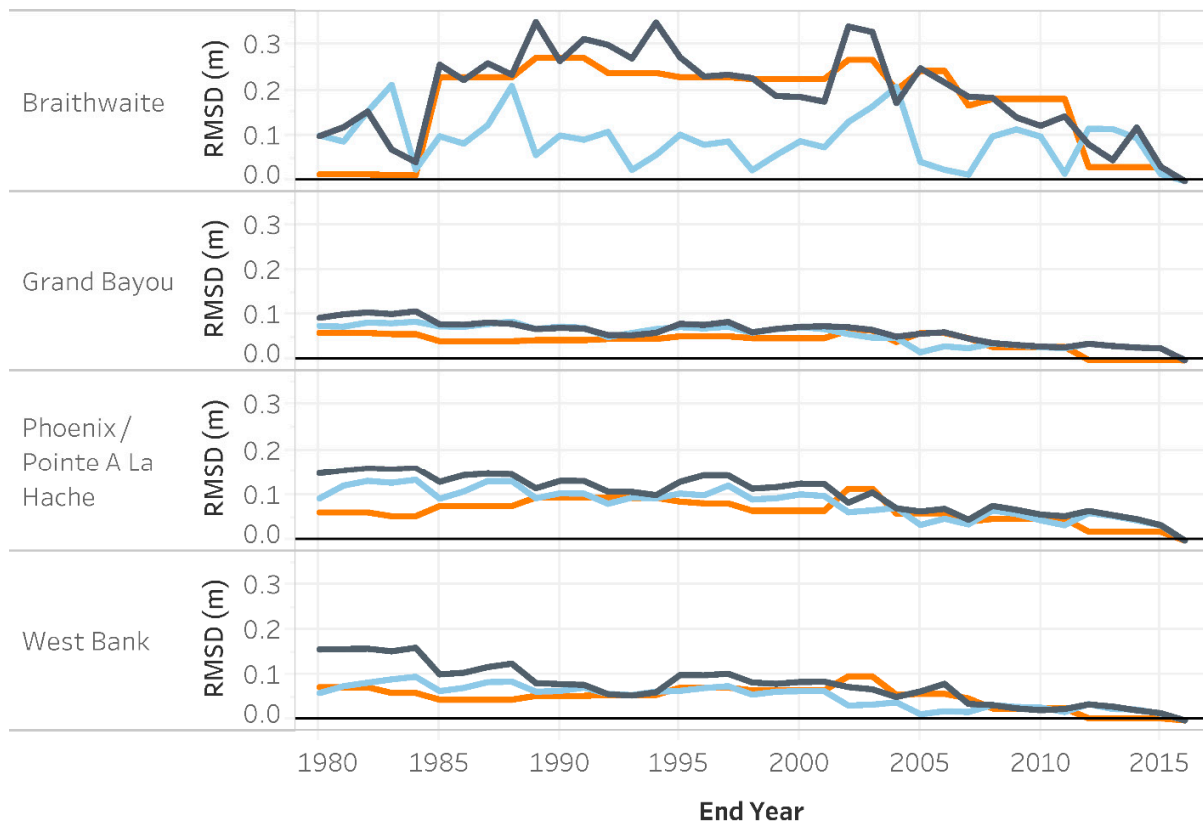


Figure S3. Difference in 500-Year Flood Depth Estimates (Reference Minus Truncated).



System Parameters Updated

Frequency and Likelihoods
 Frequency Only
 Likelihoods Only

Figure S4. Root Mean Square Deviation (RMSD) of 500-Year Flood Depth Predictions Over Time, Plaquemines Parish Risk Regions Exterior to HSDRRS.

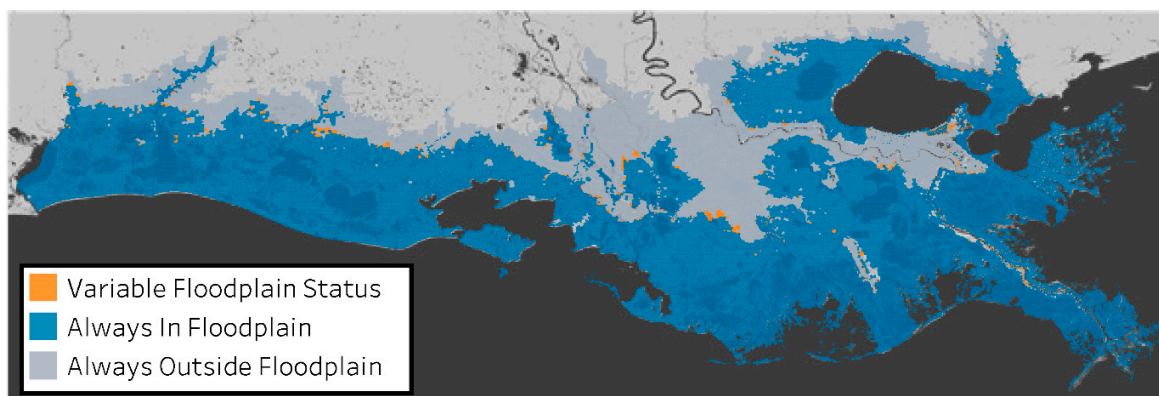


Figure S5. Variability in 500-Year Floodplain Classification, 1980 to 2016.

Table S1. Storm parameters at landfall for storms in the 446-storm suite.

Storm ID	c_p (mb)	r (nm)	v_f (knots)	θ_l^1	Longitude (°)
1	960	11	11	0	-91.2111
2	960	21	11	0	-91.2111
3	960	35.6	11	0	-91.2111
4	930	8	11	0	-91.2111
5	930	17.7	11	0	-91.2111
6	930	25.8	11	0	-91.2111
7	900	6	11	0	-91.2111
8	900	14.9	11	0	-91.2111
9	900	21.8	11	0	-91.2111
10	960	11	11	0	-90.4511
11	960	21	11	0	-90.4511
12	960	35.6	11	0	-90.4511
13	930	8	11	0	-90.4511
14	930	17.7	11	0	-90.4511
15	930	25.8	11	0	-90.4511
16	900	6	11	0	-90.4511
17	900	14.9	11	0	-90.4511
18	900	21.8	11	0	-90.4511
19	960	11	11	0	-89.8479
20	960	21	11	0	-89.8479
21	960	35.6	11	0	-89.8479
22	930	8	11	0	-89.8479
23	930	17.7	11	0	-89.8479
24	930	25.8	11	0	-89.8479
25	900	6	11	0	-89.8479
26	900	14.9	11	0	-89.8479
27	900	21.8	11	0	-89.8479
28	960	11	11	0	-89.2758
29	960	21	11	0	-89.2758
30	960	35.6	11	0	-89.2758
31	930	8	11	0	-89.2758
32	930	17.7	11	0	-89.2758
33	930	25.8	11	0	-89.2758
34	900	6	11	0	-89.2758
35	900	14.9	11	0	-89.2758
36	900	21.8	11	0	-89.2758
37	960	11	11	0	-88.6467
38	960	21	11	0	-88.6467

¹ Heading angle at landfall is measured as degrees clockwise from the mean heading angle observed from historic storms that made landfall near the given track.

39	960	35.6	11	0	-88.6467
40	930	8	11	0	-88.6467
41	930	17.7	11	0	-88.6467
42	930	25.8	11	0	-88.6467
43	900	6	11	0	-88.6467
44	900	14.9	11	0	-88.6467
45	900	21.8	11	0	-88.6467
46	960	18.2	11	-45	-91.3677
47	960	24.6	11	-45	-91.3677
48	900	12.5	11	-45	-91.3677
49	900	18.4	11	-45	-91.3677
50	960	18.2	11	-45	-90.7238
51	960	24.6	11	-45	-90.7238
52	900	12.5	11	-45	-90.7238
53	900	18.4	11	-45	-90.7238
54	960	18.2	11	-45	-89.9208
55	960	24.6	11	-45	-89.9208
56	900	12.5	11	-45	-89.9208
57	900	18.4	11	-45	-89.9208
58	960	18.2	11	-45	-89.1054
59	960	24.6	11	-45	-89.1054
60	900	12.5	11	-45	-89.1054
61	900	18.4	11	-45	-89.1054
66	960	18.2	11	45	-90.9941
67	960	24.6	11	45	-90.9941
68	900	12.5	11	45	-90.9941
69	900	18.4	11	45	-90.9941
70	960	18.2	11	45	-90.2138
71	960	24.6	11	45	-90.2138
72	900	12.5	11	45	-90.2138
73	900	18.4	11	45	-90.2138
74	960	18.2	11	45	-89.638
75	960	24.6	11	45	-89.638
76	900	12.5	11	45	-89.638
77	900	18.4	11	45	-89.638
78	960	18.2	11	45	-89.0471
79	960	24.6	11	45	-89.0471
80	900	12.5	11	45	-89.0471
81	900	18.4	11	45	-89.0471
82	960	17.7	6	0	-91.1978
83	900	17.7	6	0	-91.1978
84	960	17.7	6	0	-90.454
85	900	17.7	6	0	-90.454

86	960	17.7	6	0	-89.847
87	900	17.7	6	0	-89.847
88	960	17.7	6	0	-89.27
89	900	17.7	6	0	-89.27
90	960	17.7	6	0	-88.649
91	900	17.7	6	0	-88.649
92	930	17.7	6	-45	-91.3729
93	930	17.7	6	-45	-90.7129
94	930	17.7	6	-45	-89.92
95	930	17.7	6	-45	-89.0971
97	930	17.7	6	45	-90.992
98	930	17.7	6	45	-90.21
99	930	17.7	6	45	-89.6425
100	930	17.7	6	45	-89.05
101	930	17.7	17	0	-91.2177
102	930	17.7	17	0	-90.4437
103	930	17.7	17	0	-89.8476
104	930	17.7	17	0	-89.2743
105	930	17.7	17	0	-88.6455
106	930	17.7	17	-45	-91.373
107	930	17.7	17	-45	-90.7265
108	930	17.7	17	-45	-89.9205
109	930	17.7	17	-45	-89.106
111	930	17.7	17	45	-90.9923
112	930	17.7	17	45	-90.2108
113	930	17.7	17	45	-89.6386
114	930	17.7	17	45	-89.0571
115	960	17.7	11	0	-90.8224
116	900	17.7	11	0	-90.8224
117	960	17.7	11	0	-90.1267
118	900	17.7	11	0	-90.1267
119	960	17.7	11	0	-89.6
120	900	17.7	11	0	-89.6
121	960	17.7	11	0	-88.95
122	900	17.7	11	0	-88.95
123	960	17.7	11	-45	-91.0508
124	960	17.7	11	-45	-90.3192
125	960	17.7	11	-45	-89.5123
126	900	17.7	11	-45	-91.0508
127	900	17.7	11	-45	-90.3192
128	900	17.7	11	-45	-89.5123
131	960	17.7	11	45	-90.6
132	900	17.7	11	45	-90.6

133	960	17.7	11	45	-89.9267
134	900	17.7	11	45	-89.9267
135	960	17.7	11	45	-89.3457
136	900	17.7	11	45	-89.3457
137	960	17.7	6	0	-90.81
138	900	17.7	6	0	-90.81
139	960	17.7	6	0	-90.138
140	900	17.7	6	0	-90.138
141	960	17.7	6	0	-89.6
142	900	17.7	6	0	-89.6
143	960	17.7	6	0	-88.952
144	900	17.7	6	0	-88.952
145	930	17.7	6	-45	-91.0486
146	930	17.7	6	-45	-90.3243
147	930	17.7	6	-45	-89.5057
149	930	17.7	6	45	-90.605
150	930	17.7	6	45	-89.9233
151	930	17.7	6	45	-89.35
152	930	17.7	17	0	-90.8207
153	930	17.7	17	0	-90.13
154	930	17.7	17	0	-89.6
155	930	17.7	17	0	-88.9548
156	930	17.7	17	-45	-91.047
157	930	17.7	17	-45	-90.3185
158	930	17.7	17	-45	-89.5195
160	930	17.7	17	45	-90.6068
161	930	17.7	17	45	-89.9217
162	930	17.7	17	45	-89.3445
201	960	11	11	0	-94.22
202	960	21	11	0	-94.22
203	960	35.6	11	0	-94.22
204	930	8	11	0	-94.22
205	930	17.7	11	0	-94.22
206	930	25.8	11	0	-94.22
207	900	6	11	0	-94.22
208	900	14.9	11	0	-94.22
209	900	21.8	11	0	-94.22
210	960	11	11	0	-93.5575
211	960	21	11	0	-93.5575
212	960	35.6	11	0	-93.5575
213	930	8	11	0	-93.5575
214	930	17.7	11	0	-93.5575
215	930	25.8	11	0	-93.5575

216	900	6	11	0	-93.5575
217	900	14.9	11	0	-93.5575
218	900	21.8	11	0	-93.5575
219	960	11	11	0	-92.9641
220	960	21	11	0	-92.9641
221	960	35.6	11	0	-92.9641
222	930	8	11	0	-92.9641
223	930	17.7	11	0	-92.9641
224	930	25.8	11	0	-92.9641
225	900	6	11	0	-92.9641
226	900	14.9	11	0	-92.9641
227	900	21.8	11	0	-92.9641
228	960	11	11	0	-92.3165
229	960	21	11	0	-92.3165
230	960	35.6	11	0	-92.3165
231	930	8	11	0	-92.3165
232	930	17.7	11	0	-92.3165
233	930	25.8	11	0	-92.3165
234	900	6	11	0	-92.3165
235	900	14.9	11	0	-92.3165
236	900	21.8	11	0	-92.3165
237	960	11	11	0	-91.6535
238	960	21	11	0	-91.6535
239	960	35.6	11	0	-91.6535
240	930	8	11	0	-91.6535
241	930	17.7	11	0	-91.6535
242	930	25.8	11	0	-91.6535
243	900	6	11	0	-91.6535
244	900	14.9	11	0	-91.6535
245	900	21.8	11	0	-91.6535
246	960	18.2	11	-45	-94.26
247	960	24.6	11	-45	-94.26
248	900	12.5	11	-45	-94.26
249	900	18.4	11	-45	-94.26
250	960	18.2	11	-45	-93.2636
251	960	24.6	11	-45	-93.2636
252	900	12.5	11	-45	-93.2636
253	900	18.4	11	-45	-93.2636
254	960	18.2	11	-45	-92.3845
255	960	24.6	11	-45	-92.3845
256	900	12.5	11	-45	-92.3845
257	900	18.4	11	-45	-92.3845
258	960	18.2	11	-45	-91.7515

259	960	24.6	11	-45	-91.7515
260	900	12.5	11	-45	-91.7515
261	900	18.4	11	-45	-91.7515
266	960	18.2	11	45	-94.2467
267	960	24.6	11	45	-94.2467
268	900	12.5	11	45	-94.2467
269	900	18.4	11	45	-94.2467
270	960	18.2	11	45	-93.2833
271	960	24.6	11	45	-93.2833
272	900	12.5	11	45	-93.2833
273	900	18.4	11	45	-93.2833
274	960	18.2	11	45	-92.3167
275	960	24.6	11	45	-92.3167
276	900	12.5	11	45	-92.3167
277	900	18.4	11	45	-92.3167
278	960	18.2	11	45	-91.4135
279	960	24.6	11	45	-91.4135
280	900	12.5	11	45	-91.4135
281	900	18.4	11	45	-91.4135
282	960	17.7	6	0	-94.2244
283	900	17.7	6	0	-94.2244
284	960	17.7	6	0	-93.5575
285	900	17.7	6	0	-93.5575
286	960	17.7	6	0	-92.96
287	900	17.7	6	0	-92.96
288	960	17.7	6	0	-92.3178
289	900	17.7	6	0	-92.3178
290	960	17.7	6	0	-91.6522
291	900	17.7	6	0	-91.6522
292	930	17.7	6	-45	-94.25
293	930	17.7	6	-45	-93.265
294	930	17.7	6	-45	-92.38
295	930	17.7	6	-45	-91.75
297	930	17.7	6	45	-94.254
298	930	17.7	6	45	-93.2867
299	930	17.7	6	45	-92.3189
300	930	17.7	6	45	-91.414
301	930	17.7	17	0	-94.225
302	930	17.7	17	0	-93.5624
303	930	17.7	17	0	-92.964
304	930	17.7	17	0	-92.3159
305	930	17.7	17	0	-91.6531
306	930	17.7	17	-45	-94.2567

307	930	17.7	17	-45	-93.265
308	930	17.7	17	-45	-92.3771
309	930	17.7	17	-45	-91.7442
311	930	17.7	17	45	-94.25
312	930	17.7	17	45	-93.28
313	930	17.7	17	45	-92.3144
314	930	17.7	17	45	-91.4137
315	960	17.7	11	0	-93.9253
316	900	17.7	11	0	-93.9253
317	960	17.7	11	0	-93.2294
318	900	17.7	11	0	-93.2294
319	960	17.7	11	0	-92.6065
320	900	17.7	11	0	-92.6065
321	960	17.7	11	0	-91.9718
322	900	17.7	11	0	-91.9718
323	960	17.7	11	-45	-93.734
324	960	17.7	11	-45	-92.8027
325	960	17.7	11	-45	-92.0336
326	900	17.7	11	-45	-93.734
327	900	17.7	11	-45	-92.8027
328	900	17.7	11	-45	-92.0336
331	960	17.7	11	45	-93.7278
332	900	17.7	11	45	-93.7278
333	960	17.7	11	45	-92.7953
334	900	17.7	11	45	-92.7953
335	960	17.7	11	45	-91.9044
336	900	17.7	11	45	-91.9044
337	960	17.7	6	0	-93.9233
338	900	17.7	6	0	-93.9233
339	960	17.7	6	0	-93.2344
340	900	17.7	6	0	-93.2344
341	960	17.7	6	0	-92.6133
342	900	17.7	6	0	-92.6133
343	960	17.7	6	0	-91.9733
344	900	17.7	6	0	-91.9733
345	930	17.7	6	-45	-93.7267
346	930	17.7	6	-45	-92.8
347	930	17.7	6	-45	-92.035
349	930	17.7	6	45	-93.7278
350	930	17.7	6	45	-92.7867
351	930	17.7	6	45	-91.904
352	930	17.7	17	0	-93.9225
353	930	17.7	17	0	-93.232

354	930	17.7	17	0	-92.61
355	930	17.7	17	0	-91.9723
356	930	17.7	17	-45	-93.7327
357	930	17.7	17	-45	-92.8012
358	930	17.7	17	-45	-92.0317
360	930	17.7	17	45	-93.73
361	930	17.7	17	45	-92.7932
362	930	17.7	17	45	-91.9037
401	975	11	11	0	-94.22
402	975	21	11	0	-94.22
403	975	35.6	11	0	-94.22
404	975	11	11	0	-93.5575
405	975	21	11	0	-93.5575
406	975	35.6	11	0	-93.5575
407	975	11	11	0	-92.9641
408	975	21	11	0	-92.9641
409	975	35.6	11	0	-92.9641
410	975	11	11	0	-92.3165
411	975	21	11	0	-92.3165
412	975	35.6	11	0	-92.3165
413	975	11	11	0	-91.6535
414	975	21	11	0	-91.6535
415	975	35.6	11	0	-91.6535
416	975	18.2	11	-45	-94.26
417	975	24.6	11	-45	-94.26
418	975	18.2	11	-45	-93.2636
419	975	24.6	11	-45	-93.2636
420	975	18.2	11	-45	-92.3845
421	975	24.6	11	-45	-92.3845
422	975	18.2	11	-45	-91.7515
423	975	24.6	11	-45	-91.7515
424	975	18.2	11	45	-94.2467
425	975	24.6	11	45	-94.2467
426	975	18.2	11	45	-93.2833
427	975	24.6	11	45	-93.2833
428	975	18.2	11	45	-92.3167
429	975	24.6	11	45	-92.3167
430	975	18.2	11	45	-91.4135
431	975	24.6	11	45	-91.4135
432	975	17.7	6	0	-94.2244
433	975	17.7	6	0	-93.5575
434	975	17.7	6	0	-92.96
435	975	17.7	6	0	-92.3178

436	975	17.7	6	0	-91.6522
437	975	17.7	6	-45	-94.25
438	975	17.7	6	-45	-93.265
439	975	17.7	6	-45	-92.38
440	975	17.7	6	-45	-91.75
441	975	17.7	6	45	-94.254
442	975	17.7	6	45	-93.2867
443	975	17.7	6	45	-92.3189
444	975	17.7	6	45	-91.414
445	975	17.7	17	0	-94.225
446	975	17.7	17	0	-93.5624
447	975	17.7	17	0	-92.964
448	975	17.7	17	0	-92.3159
449	975	17.7	17	0	-91.6531
450	975	17.7	17	-45	-94.2567
451	975	17.7	17	-45	-93.265
452	975	17.7	17	-45	-92.3771
453	975	17.7	17	-45	-91.7442
454	975	17.7	17	45	-94.25
455	975	17.7	17	45	-93.28
456	975	17.7	17	45	-92.3144
457	975	17.7	17	45	-91.4137
458	975	17.7	11	0	-93.9253
459	975	17.7	11	0	-93.2294
460	975	17.7	11	0	-92.6065
461	975	17.7	11	0	-91.9718
462	975	17.7	6	0	-93.9233
463	975	17.7	6	0	-93.2344
464	975	17.7	6	0	-92.6133
465	975	17.7	6	0	-91.9733
466	975	17.7	6	-45	-93.7267
467	975	17.7	6	-45	-92.8
468	975	17.7	6	-45	-92.035
469	975	17.7	6	45	-93.7278
470	975	17.7	6	45	-92.7867
471	975	17.7	6	45	-91.904
501	975	11	11	0	-91.2111
502	975	21	11	0	-91.2111
503	975	35.6	11	0	-91.2111
504	975	11	11	0	-90.4511
505	975	21	11	0	-90.4511
506	975	35.6	11	0	-90.4511
507	975	11	11	0	-89.8479

508	975	21	11	0	-89.8479
509	975	35.6	11	0	-89.8479
510	975	11	11	0	-89.2758
511	975	21	11	0	-89.2758
512	975	35.6	11	0	-89.2758
513	975	11	11	0	-88.6467
514	975	21	11	0	-88.6467
515	975	35.6	11	0	-88.6467
516	975	18.2	11	-45	-91.3677
517	975	24.6	11	-45	-91.3677
518	975	18.2	11	-45	-90.7238
519	975	24.6	11	-45	-90.7238
520	975	18.2	11	-45	-89.9208
521	975	24.6	11	-45	-89.9208
522	975	18.2	11	-45	-89.1054
523	975	24.6	11	-45	-89.1054
524	975	18.2	11	45	-90.9941
525	975	24.6	11	45	-90.9941
526	975	18.2	11	45	-90.2138
527	975	24.6	11	45	-90.2138
528	975	18.2	11	45	-89.638
529	975	24.6	11	45	-89.638
530	975	18.2	11	45	-89.0471
531	975	24.6	11	45	-89.0471
532	975	17.7	6	0	-91.1978
533	975	17.7	6	0	-90.454
534	975	17.7	6	0	-89.847
535	975	17.7	6	0	-89.27
536	975	17.7	6	0	-88.649
537	975	17.7	6	-45	-91.3729
538	975	17.7	6	-45	-90.7129
539	975	17.7	6	-45	-89.92
540	975	17.7	6	-45	-89.0971
541	975	17.7	6	45	-90.992
542	975	17.7	6	45	-90.21
543	975	17.7	6	45	-89.6425
544	975	17.7	6	45	-89.05
545	975	17.7	17	0	-91.2177
546	975	17.7	17	0	-90.4437
547	975	17.7	17	0	-89.8476
548	975	17.7	17	0	-89.2743
549	975	17.7	17	0	-88.6455
550	975	17.7	17	-45	-91.373

551	975	17.7	17	-45	-90.7265
552	975	17.7	17	-45	-89.9205
553	975	17.7	17	-45	-89.106
554	975	17.7	17	45	-90.9923
555	975	17.7	17	45	-90.2108
556	975	17.7	17	45	-89.6386
557	975	17.7	17	45	-89.0571
558	975	17.7	11	0	-90.8224
559	975	17.7	11	0	-90.1267
560	975	17.7	11	0	-89.6
561	975	17.7	11	0	-88.95
562	975	17.7	6	0	-90.81
563	975	17.7	6	0	-90.138
564	975	17.7	6	0	-89.6
565	975	17.7	6	0	-88.952
566	975	17.7	6	-45	-91.0486
567	975	17.7	6	-45	-90.3243
568	975	17.7	6	-45	-89.5057
569	975	17.7	6	45	-90.605
570	975	17.7	6	45	-89.9233
571	975	17.7	6	45	-89.35

Table S2. Floodplain extent by end year, total land area and populated area.

End Year	Return Period					
	Area (sq. km)			Populated Area (sq. km)		
	50-Year	100-Year	500-Year	50-Year	100-Year	500-Year
1980	15178	15729	16973	1932	2204	2819
1981	15142	15704	16961	1908	2191	2817
1982	15110	15683	16947	1891	2185	2806
1983	15046	15659	16940	1863	2176	2800
1984	15019	15630	16927	1850	2163	2787
1985	15200	15755	17018	1944	2216	2847
1986	15172	15735	17010	1928	2209	2842
1987	15149	15712	16997	1917	2199	2831
1988	15110	15699	16990	1893	2194	2827
1989	15229	15790	17046	1960	2234	2860
1990	15208	15765	17033	1951	2222	2854
1991	15191	15749	17025	1937	2214	2851
1992	15261	15823	17075	1977	2251	2871
1993	15242	15801	17060	1965	2240	2867
1994	15226	15789	17047	1957	2233	2861
1995	15214	15767	17028	1953	2221	2852
1996	15196	15753	17018	1940	2215	2845
1997	15177	15738	17012	1931	2208	2843
1998	15247	15803	17055	1967	2238	2865
1999	15234	15790	17038	1960	2230	2855
2000	15219	15769	17028	1955	2224	2851
2001	15205	15756	17021	1948	2216	2847
2002	15342	15885	17108	2019	2286	2887
2003	15324	15869	17102	2010	2279	2886
2004	15301	15842	17086	2001	2260	2879
2005	15385	15917	17104	2035	2304	2889
2006	15366	15905	17091	2025	2297	2880
2007	15417	15954	17132	2053	2321	2905
2008	15447	15998	17177	2068	2334	2921
2009	15428	15984	17159	2059	2327	2914
2010	15420	15973	17149	2055	2327	2911
2011	15414	15953	17140	2049	2320	2909
2012	15445	16004	17177	2070	2339	2921
2013	15435	15981	17163	2065	2330	2915
2014	15422	15975	17155	2056	2329	2914
2015	15415	15949	17145	2049	2321	2913
2016	15399	15946	17132	2047	2320	2903