

Supplementary Table 1: Results of the fitting procedure ordered by increasing AIC score.

Model	Seasonality	Mobility	Precipitation	Chlorophyll <i>a</i>	ENSO	IOD	Degrees of freedom ¹	log(Likelihood)	AIC	Δ AIC
1	+	-	-	-	+	-	11	-470.02	962.03	0
2	+	-	+	-	+	-	12	-469.22	962.45	0.4
3	+	-	-	-	+	+	13	-468.89	963.78	1.6
4	+	-	-	+	+	-	13	-468.95	963.89	1.9
5	+	-	-	-	-	+	11	-471.03	964.05	2.0
6	+	-	+	-	+	+	14	-468.07	964.15	2.1
7	+	-	-	+	-	+	13	-469.26	964.52	2.5
8	+	-	-	-	-	-	9	-473.27	964.53	2.5
9	+	-	+	+	+	-	14	-468.37	964.74	2.7
10	+	-	-	+	+	+	15	-467.38	964.76	2.7
11	+	-	+	-	-	+	12	-470.6	965.2	3.2
12	+	-	+	-	-	-	10	-472.84	965.67	3.6
13	+	+	+	-	+	-	15	-467.84	965.68	3.6
14	+	-	+	+	+	+	16	-466.9	965.79	3.8
15	+	-	+	+	-	+	14	-469.16	966.31	4.3
16	+	+	+	-	-	-	13	-470.27	966.53	4.5
17	+	-	-	+	-	-	11	-472.36	966.72	4.7
18	+	+	-	-	+	-	14	-469.75	967.51	5.5
19	+	+	-	-	-	-	12	-471.85	967.71	5.7
20	+	-	+	+	-	-	12	-471.95	967.89	5.9
21	+	+	-	-	-	+	14	-470.34	968.68	6.7
22	+	+	+	-	-	+	15	-469.39	968.78	6.7
23	+	+	+	-	+	+	17	-467.57	969.13	7.1
24	+	+	+	+	+	-	17	-467.58	969.16	7.1
25	+	+	-	+	+	-	16	-468.7	969.4	7.4
26	+	+	-	-	+	+	16	-468.76	969.52	7.5
27	+	+	+	+	-	-	15	-470.11	970.22	8.2
28	+	+	-	+	-	+	16	-469.19	970.38	8.4
29	+	+	-	+	-	-	14	-471.26	970.52	8.5
30	-	-	-	+	-	+	11	-474.37	970.73	8.7
31	+	+	-	+	+	+	18	-467.39	970.79	8.8
32	+	+	+	+	-	+	17	-468.65	971.29	9.3

¹ Number of parameters plus one (residual variance)

Model	Seasonality	Mobility	Precipitation	Chlorophyll a	ENSO	IOD	Degrees of freedom ¹	log(Likelihood)	AIC	Δ AIC
33	+	+	+	+	+	+	19	-466.67	971.33	9.3
34	-	-	+	+	-	+	12	-474.26	972.53	10.5
35	-	-	-	-	-	+	9	-478.68	975.36	13.3
36	-	-	+	-	-	+	10	-477.95	975.9	13.9
37	-	-	+	-	+	-	10	-478.06	976.12	14.1
38	-	-	-	-	+	-	9	-479.06	976.13	14.1
39	-	-	-	+	+	+	13	-475.28	976.56	14.5
40	-	+	-	+	-	+	14	-474.28	976.57	14.5
41	-	-	+	-	+	+	12	-476.34	976.69	14.7
42	-	-	-	+	+	-	11	-477.38	976.77	14.7
43	-	-	-	-	+	+	11	-477.41	976.81	14.8
44	-	-	-	-	-	-	7	-481.42	976.84	14.8
45	-	-	+	+	+	+	14	-474.49	976.97	14.9
46	-	+	+	+	+	-	15	-473.51	977.01	15.0
47	-	+	+	+	-	+	15	-473.67	977.33	15.3
48	-	-	+	-	-	-	8	-480.7	977.4	15.4
49	-	+	-	+	+	-	14	-474.77	977.53	15.5
50	-	-	+	+	+	-	12	-476.92	977.83	15.8
51	-	+	-	-	-	+	12	-477.1	978.2	16.2
52	-	-	-	+	-	-	9	-480.16	978.33	16.3
53	-	+	+	-	-	-	11	-478.27	978.54	16.5
54	-	+	+	-	-	+	13	-476.4	978.79	16.8
55	-	-	+	+	-	-	10	-479.62	979.24	17.2
56	-	+	+	+	-	-	13	-476.63	979.25	17.2
57	-	+	-	-	-	-	10	-479.65	979.29	17.3
58	-	+	-	+	-	-	12	-477.96	979.93	17.9
59	-	+	+	-	+	-	13	-477.04	980.09	18.0
60	-	+	-	-	+	-	12	-478.47	980.95	18.9
61	-	+	+	-	+	+	15	-475.75	981.49	19.5
62	-	+	-	-	+	+	14	-476.92	981.84	19.8
63	-	+	+	+	+	+	17	-473.94	981.88	19.9
64	-	+	-	+	+	+	16	-475.19	982.38	20.3

¹ Number of parameters plus one (residual variance)