



Supplement of

Land subsidence dynamics and their interplay with spatial and temporal land-use transitions in the Douala coastland, Cameroon

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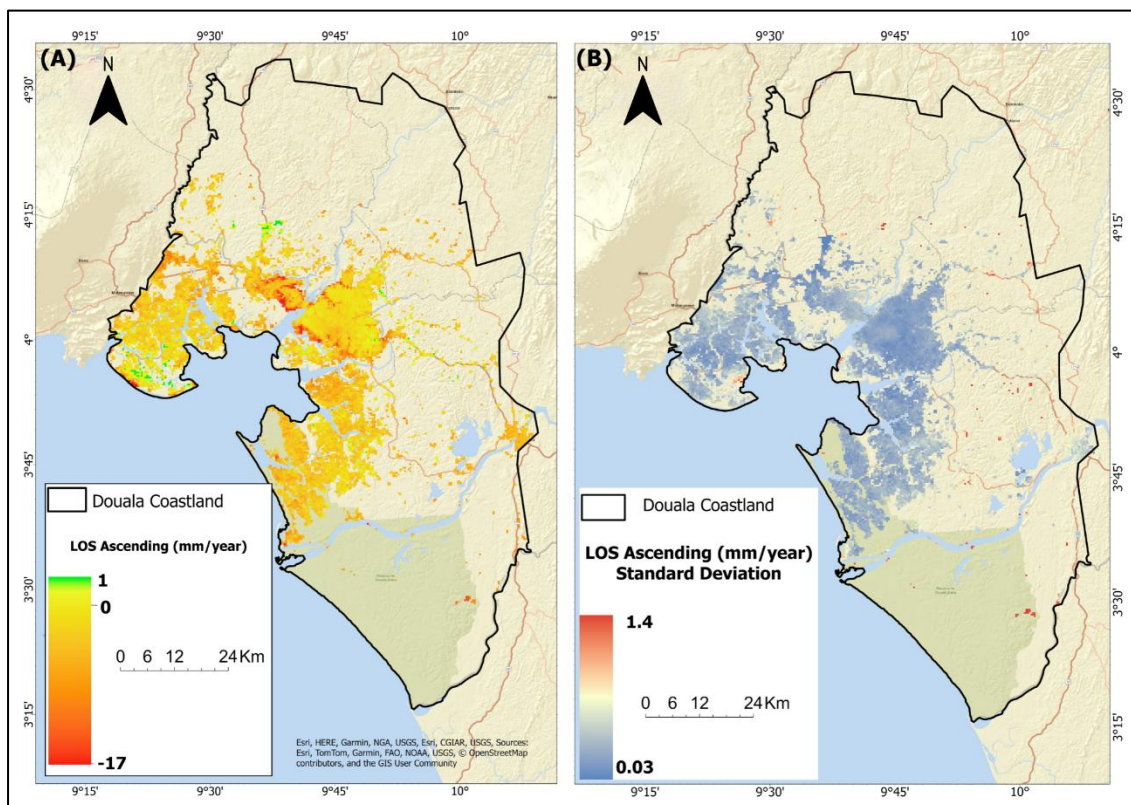
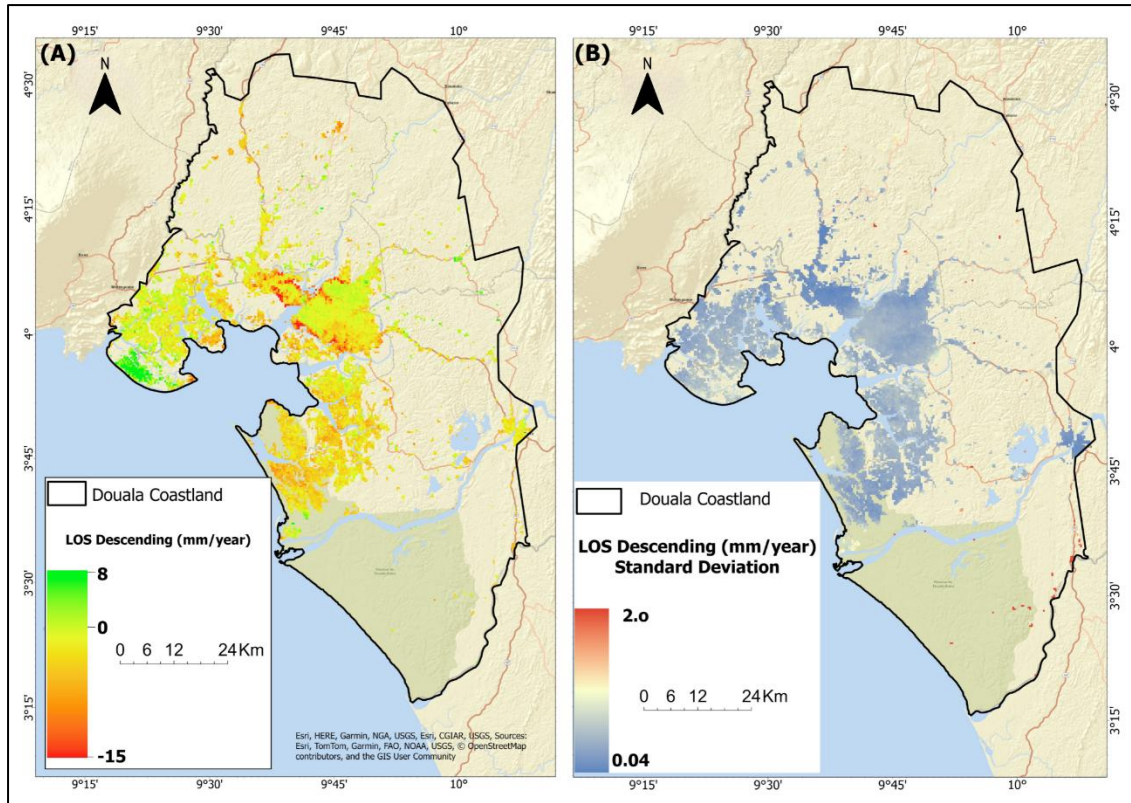


Figure S1: Average line-of-sight (LOS) displacement velocity and associated uncertainty from ascending Sentinel-1 SAR observations over the Douala coastland. (A) Mean LOS displacement rates (mm/year) derived from the ascending Sentinel-1 dataset. (B) Standard deviation of the LOS displacement velocity, illustrating the spatial variability of measurement uncertainty.

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15 **Figure S2: Average line-of-sight (LOS) displacement velocity and associated uncertainty from descending Sentinel-1 SAR observations over the Douala coastland. (A) Mean LOS displacement rates (in mm/year) derived from the descending Sentinel-1 dataset. (B) Standard deviation of the LOS displacement velocity, illustrating the spatial variability of measurement uncertainty.**

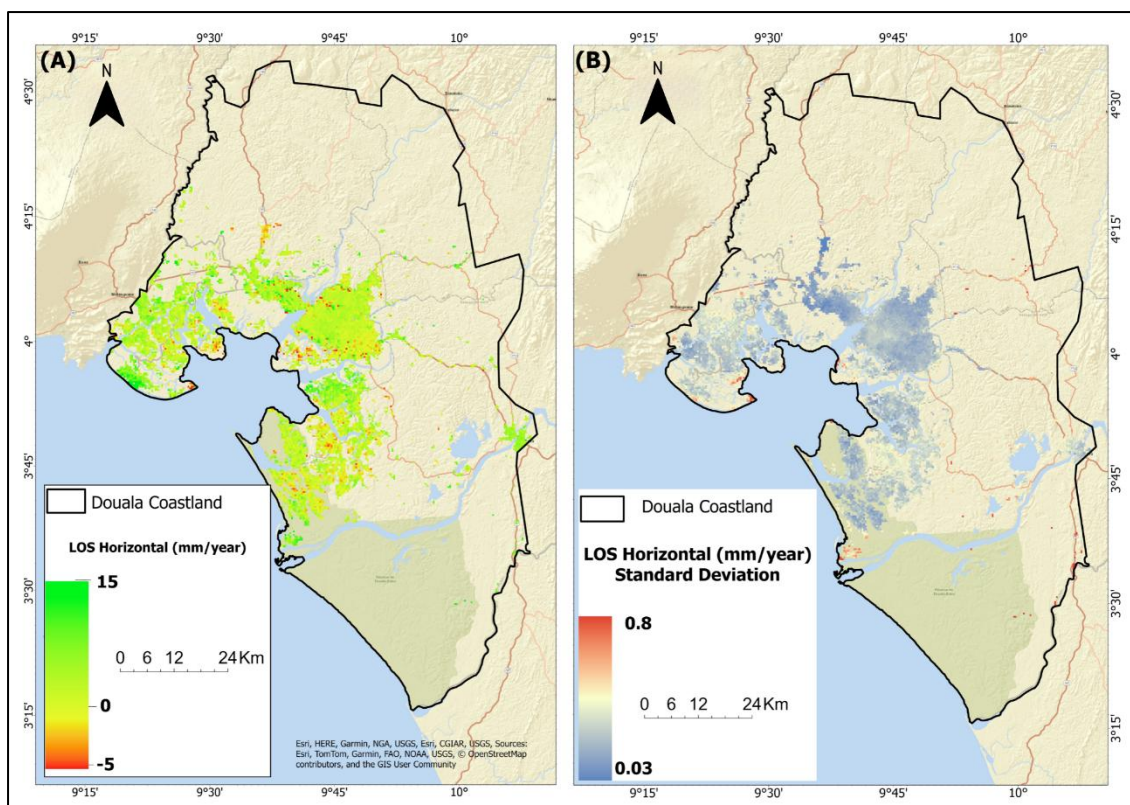


Figure S3: Average horizontal displacement velocity and corresponding uncertainty derived from descending Sentinel-1 SAR data over the Douala coastland. (A) Mean LOS horizontal displacement rates (in mm/year), highlighting regions exhibiting horizontal ground movement. (B) Standard deviation of the LOS horizontal deformation velocity, indicating the spatial distribution of measurement uncertainty.

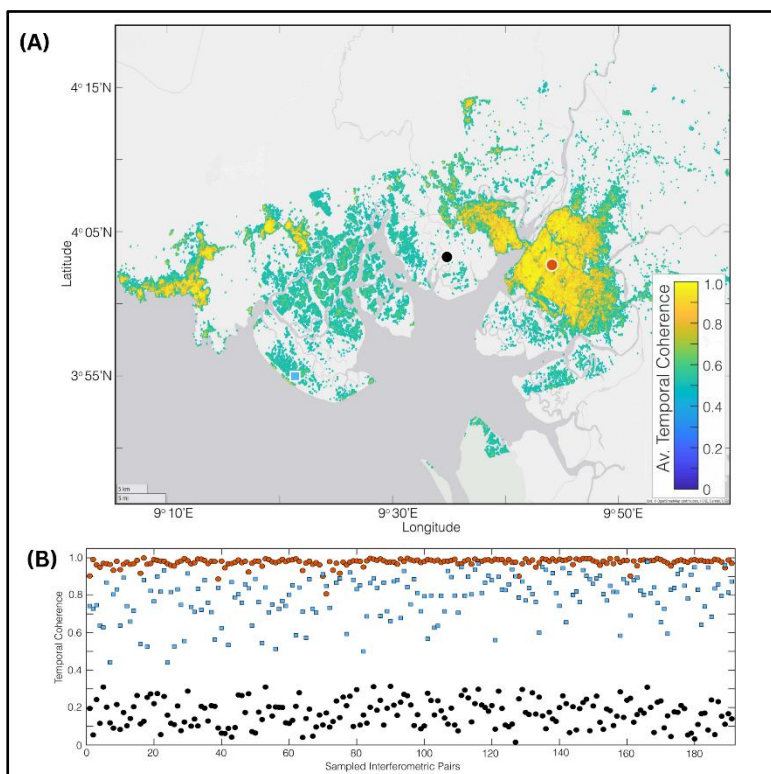


Figure S4: Coherence stability for land subsidence time-series analysis. (A) Average temporal coherence maps showing spatial variability and the values for the selected coherent pixels used in displacement monitoring only. (B) Temporal coherence trends at representative points (low, medium, and high coherence) highlight signal stability over time.

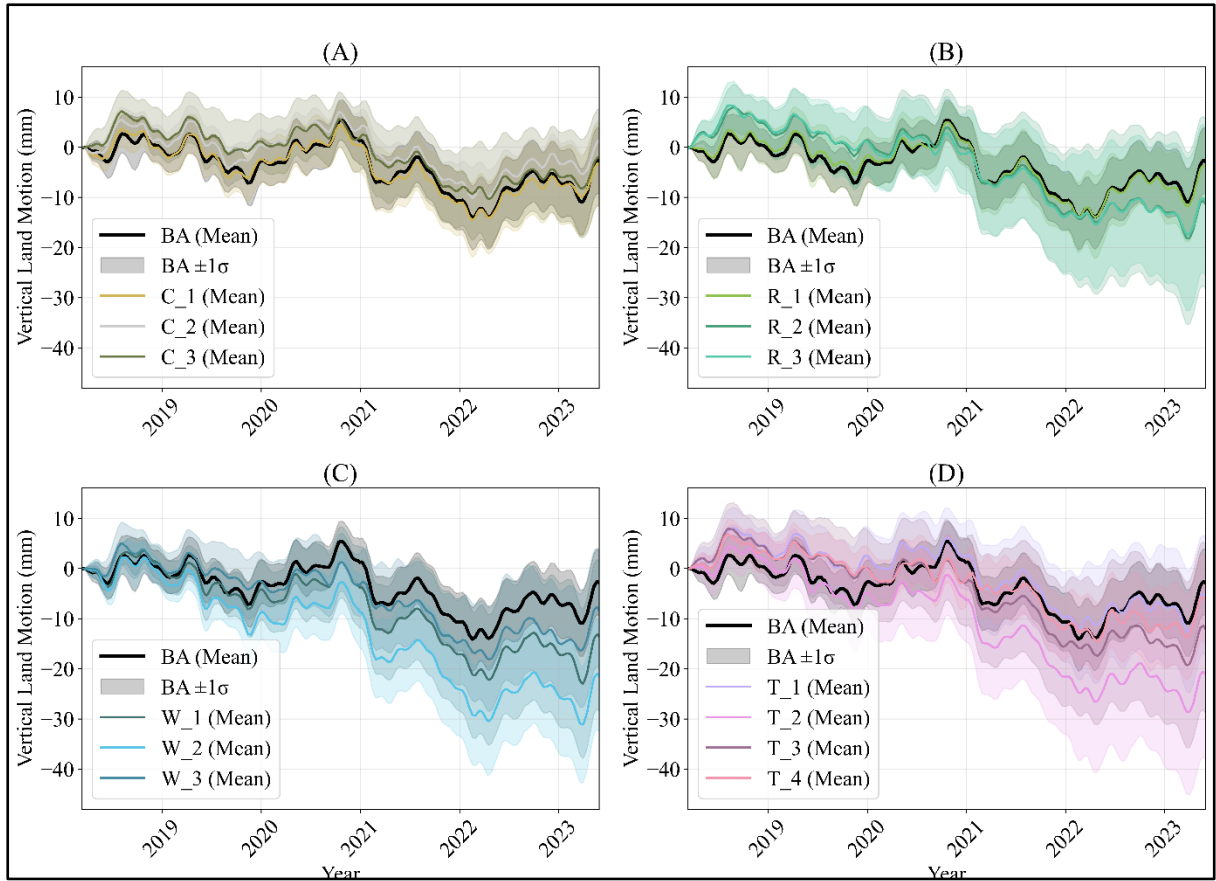
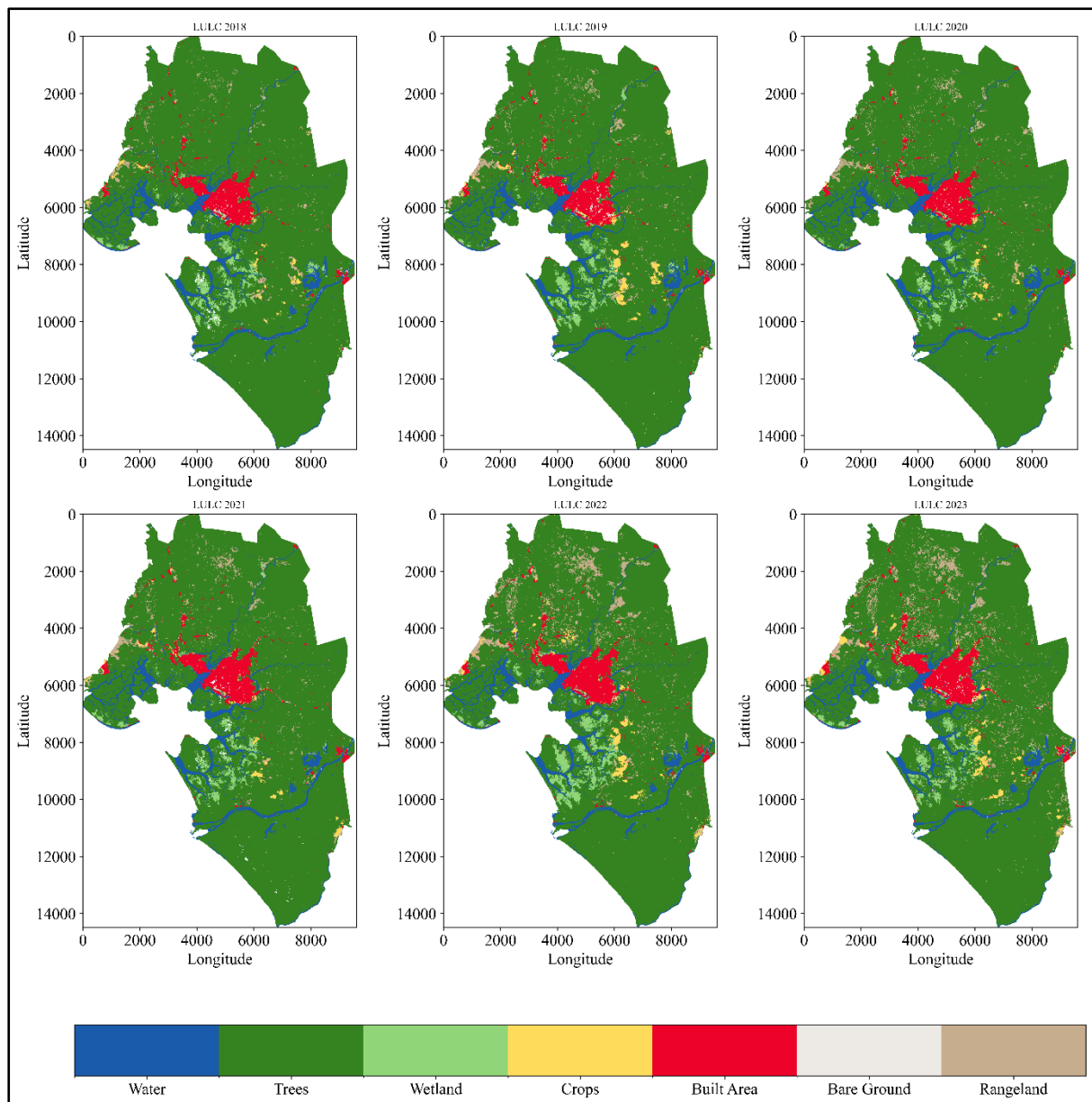


Figure S5: Average InSAR-derived land subsidence time series for areas classified as Built-up Areas (BA) since 1992 (black thick line in each subpanel), compared with the average displacement time series derived for the zones that experienced the LULC trajectories highlighted in Table 6 and Figure 10, i.e. from (A) Croplands to built-up, (B) Rangelands to built-up, (C) Wetlands to built-up, and (D) Tree cover areas to built-up land between 1992 and 2022. The subpanel provides the average trend (coloured line) and the associated standard deviation (shaded bandwidth with the same colour). Notice that the figure uses the same colour scales as used in Figure 10 to characterise each LULC trajectory.



40 **Figure S6: Annual land use maps of the Douala coastland between 2018 and 2023, coinciding with InSAR measurement period.**

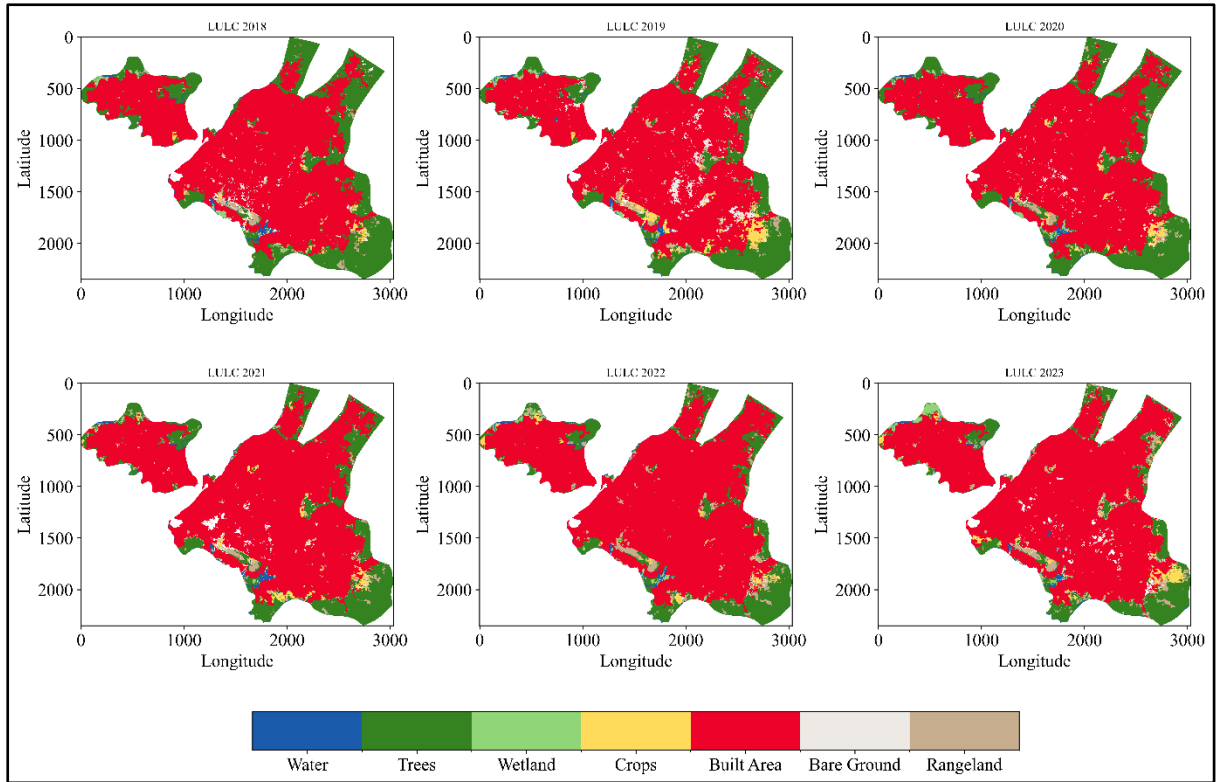


Figure S7: Annual land use maps of the Douala urban zones, coinciding with InSAR measurement period (2018-2023).

Table S1: Inventory of images of the SAR frame

Ascending, Frame 132, Path 1192			Descending, Frame 51, Paths 575 & 580		
Year	Month	Day	Year	Month	Day
2018	3	15	2018	3	10
2018	3	27	2018	3	22
2018	4	8	2018	4	3
2018	4	20	2018	4	15
2018	5	2	2018	4	27
2018	5	14	2018	5	9
2018	5	26	2018	5	21
2018	6	7	2018	6	14
2018	6	19	2018	6	26
2018	7	1	2018	7	8
2018	7	13	2018	7	20
2018	7	25	2018	8	1
2018	8	6	2018	8	25
2018	8	18	2018	9	6
2018	8	30	2018	9	18
2018	9	11	2018	9	30
2018	9	23	2018	10	12
2018	10	5	2018	10	24
2018	10	17	2018	11	5
2018	10	29	2018	11	17
2018	11	10	2018	11	29
2018	11	22	2018	12	11

2018	12	4	2018	12	23
2018	12	16	2019	1	4
2018	12	28	2019	1	16
2019	1	9	2019	1	28
2019	1	21	2019	2	9
2019	2	2	2019	2	21
2019	2	14	2019	3	5
2019	2	26	2019	3	17
2019	3	10	2019	3	29
2019	3	22	2019	4	10
2019	4	3	2019	4	22
2019	4	15	2019	5	4
2019	4	27	2019	5	16
2019	5	9	2019	5	28
2019	5	21	2019	6	9
2019	6	2	2019	6	21
2019	6	14	2019	7	3
2019	6	26	2019	7	15
2019	7	8	2019	7	27
2019	7	20	2019	8	8
2019	8	1	2019	8	20
2019	8	13	2019	9	1
2019	8	25	2019	9	13
2019	9	6	2019	9	25
2019	9	18	2019	10	7
2019	9	30	2019	10	19
2019	10	12	2019	10	31
2019	10	24	2019	11	12
2019	11	5	2019	11	24
2019	11	17	2019	12	6
2019	11	29	2019	12	18
2019	12	11	2019	12	30
2019	12	23	2020	1	11
2020	1	4	2020	1	23
2020	1	16	2020	2	4
2020	1	28	2020	2	16
2020	2	9	2020	2	28
2020	2	21	2020	3	11
2020	3	4	2020	3	23
2020	3	16	2020	4	4
2020	3	28	2020	4	16
2020	4	9	2020	4	28
2020	4	21	2020	5	10
2020	5	3	2020	5	22
2020	5	15	2020	6	3
2020	5	27	2020	6	15

2020	6	8	2020	6	27
2020	6	20	2020	7	9
2020	7	2	2020	7	21
2020	7	14	2020	8	2
2020	7	26	2020	8	14
2020	8	7	2020	9	7
2020	8	19	2020	9	19
2020	8	31	2020	10	1
2020	9	12	2020	10	13
2020	9	24	2020	10	25
2020	10	6	2020	11	6
2020	10	18	2020	11	18
2020	10	30	2020	11	30
2020	11	11	2020	12	12
2020	11	23	2020	12	24
2020	12	5	2021	1	5
2020	12	29	2021	1	17
2021	1	10	2021	1	29
2021	1	22	2021	2	10
2021	2	3	2021	2	22
2021	2	15	2021	3	6
2021	2	27	2021	3	18
2021	3	11	2021	3	30
2021	3	23	2021	4	11
2021	4	4	2021	4	23
2021	4	16	2021	5	5
2021	4	28	2021	5	17
2021	5	10	2021	5	29
2021	5	22	2021	6	10
2021	6	3	2021	6	22
2021	6	15	2021	7	4
2021	6	27	2021	7	16
2021	7	9	2021	7	28
2021	7	21	2021	8	9
2021	8	2	2021	8	21
2021	8	14	2021	9	2
2021	8	26	2021	9	14
2021	9	7	2021	9	26
2021	9	19	2021	10	8
2021	10	1	2021	10	20
2021	10	13	2021	11	1
2021	10	25	2021	11	13
2021	11	6	2021	11	25
2021	11	18	2021	12	7
2021	11	30	2021	12	19
2021	12	12	2021	12	31

2021	12	24	2022	1	12
2022	1	5	2022	1	24
2022	1	17	2022	2	5
2022	1	29	2022	2	17
2022	2	10	2022	3	1
2022	2	22	2022	3	13
2022	3	6	2022	3	25
2022	3	18	2022	4	6
2022	3	30	2022	4	18
2022	4	11	2022	4	30
2022	4	23	2022	5	12
2022	5	5	2022	6	5
2022	5	17	2022	6	17
2022	5	29	2022	6	29
2022	6	10	2022	7	11
2022	6	22	2022	7	23
2022	7	4	2022	8	4
2022	7	16	2022	8	16
2022	7	28	2022	8	28
2022	8	9	2022	10	3
2022	8	21	2022	10	15
2022	9	2	2022	10	27
2022	9	14	2022	11	8
2022	9	26	2022	11	20
2022	10	8	2022	12	2
2022	11	1	2022	12	14
2022	11	13	2022	12	26
2022	11	25	2023	1	7
2022	12	7	2023	1	31
2022	12	19	2023	2	12
2022	12	31	2023	2	24
2023	1	12	2023	3	8
2023	1	24	2023	3	20
2023	2	5	2023	4	1
2023	2	17	2023	4	13
2023	3	1	2023	4	25
2023	3	13	2023	5	7
2023	3	25	2023	5	19
2023	4	6	2023	5	31
2023	4	18	2023	6	12
2023	4	30			
2023	5	12			
2023	5	24			
2023	6	5			
2023	6	17			