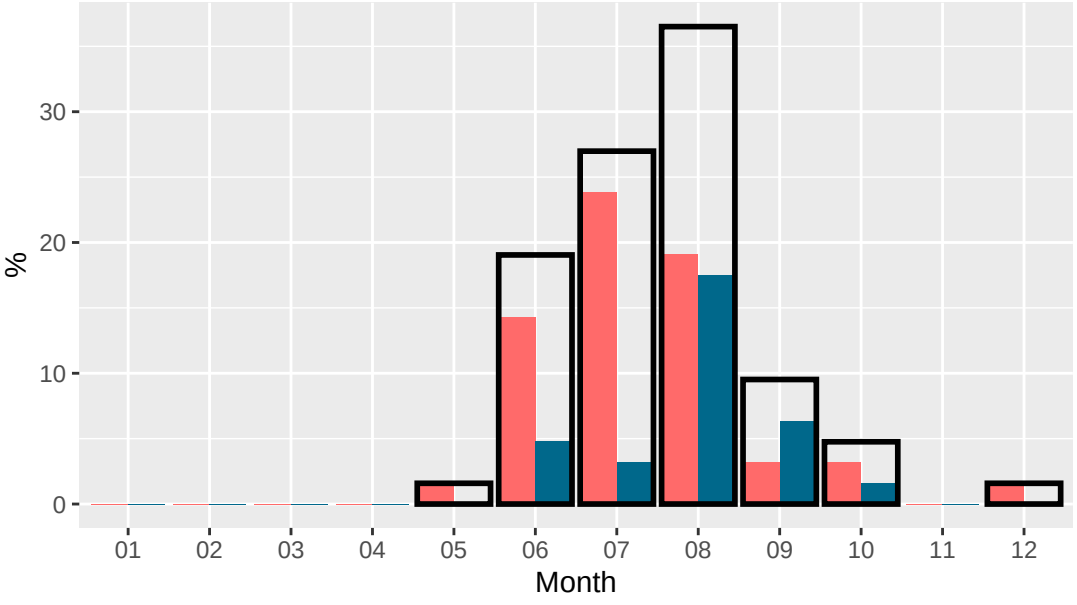
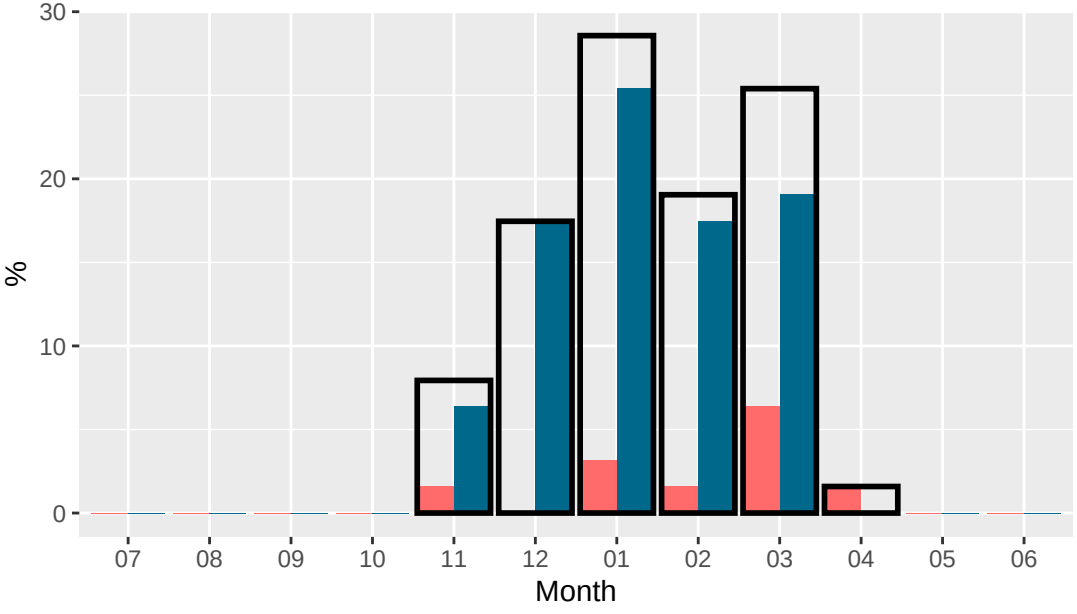
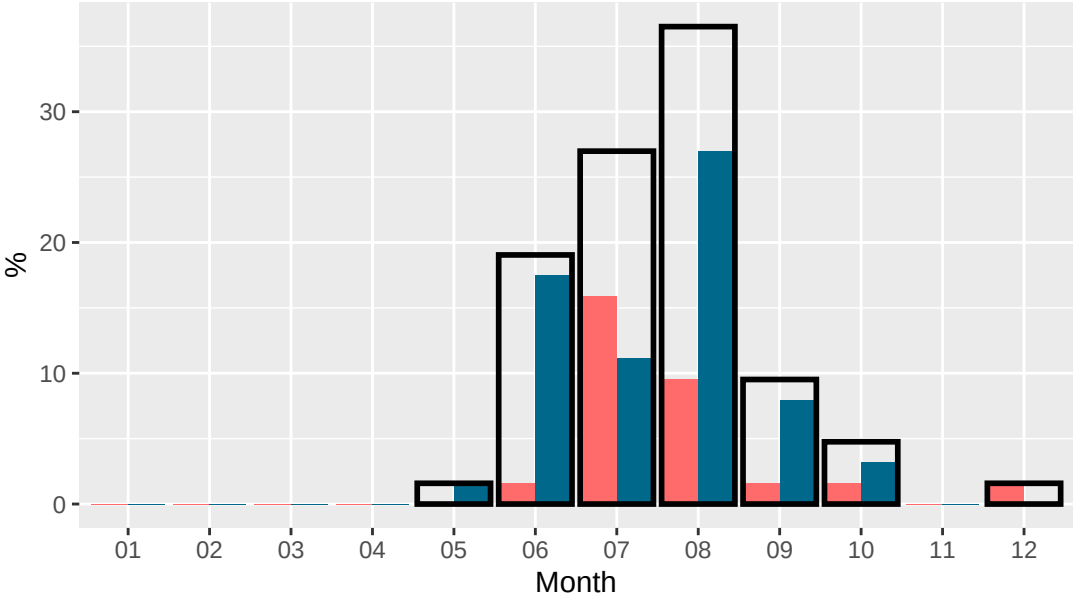
Month of a minimum monthly runoff during summer



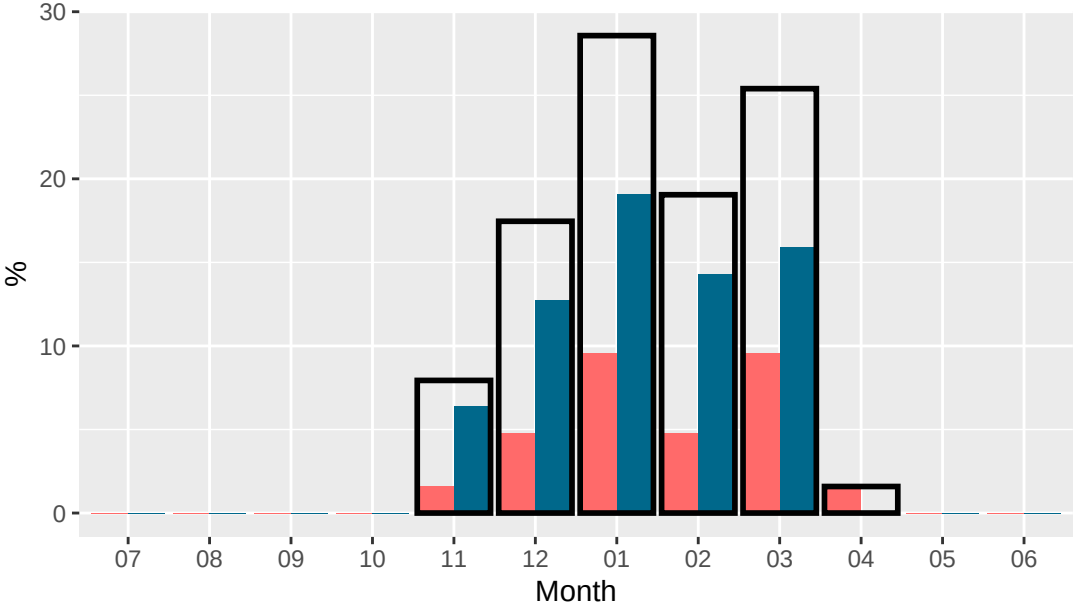
Month of a minimum monthly runoff during winter

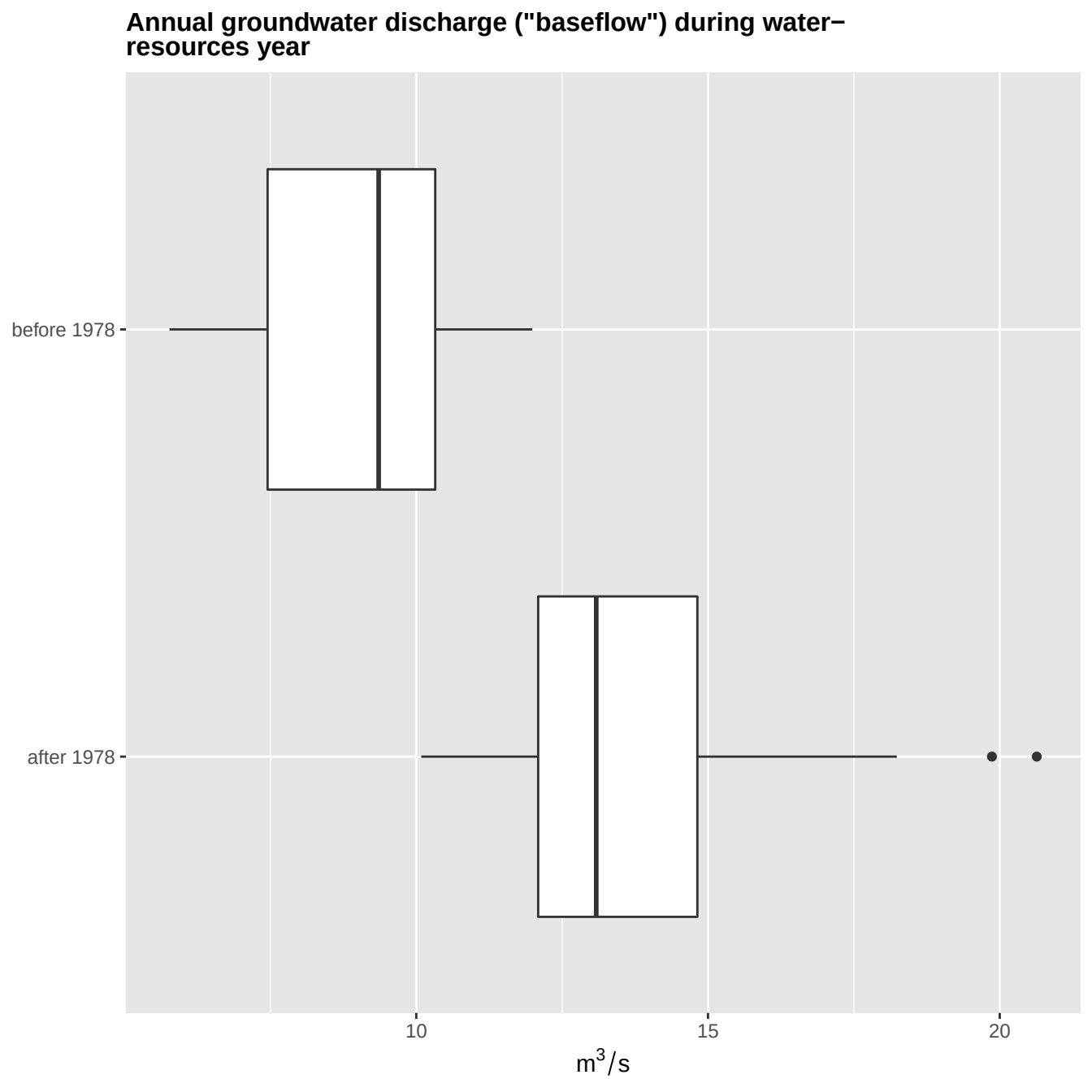


Month of a minimum monthly runoff during summer



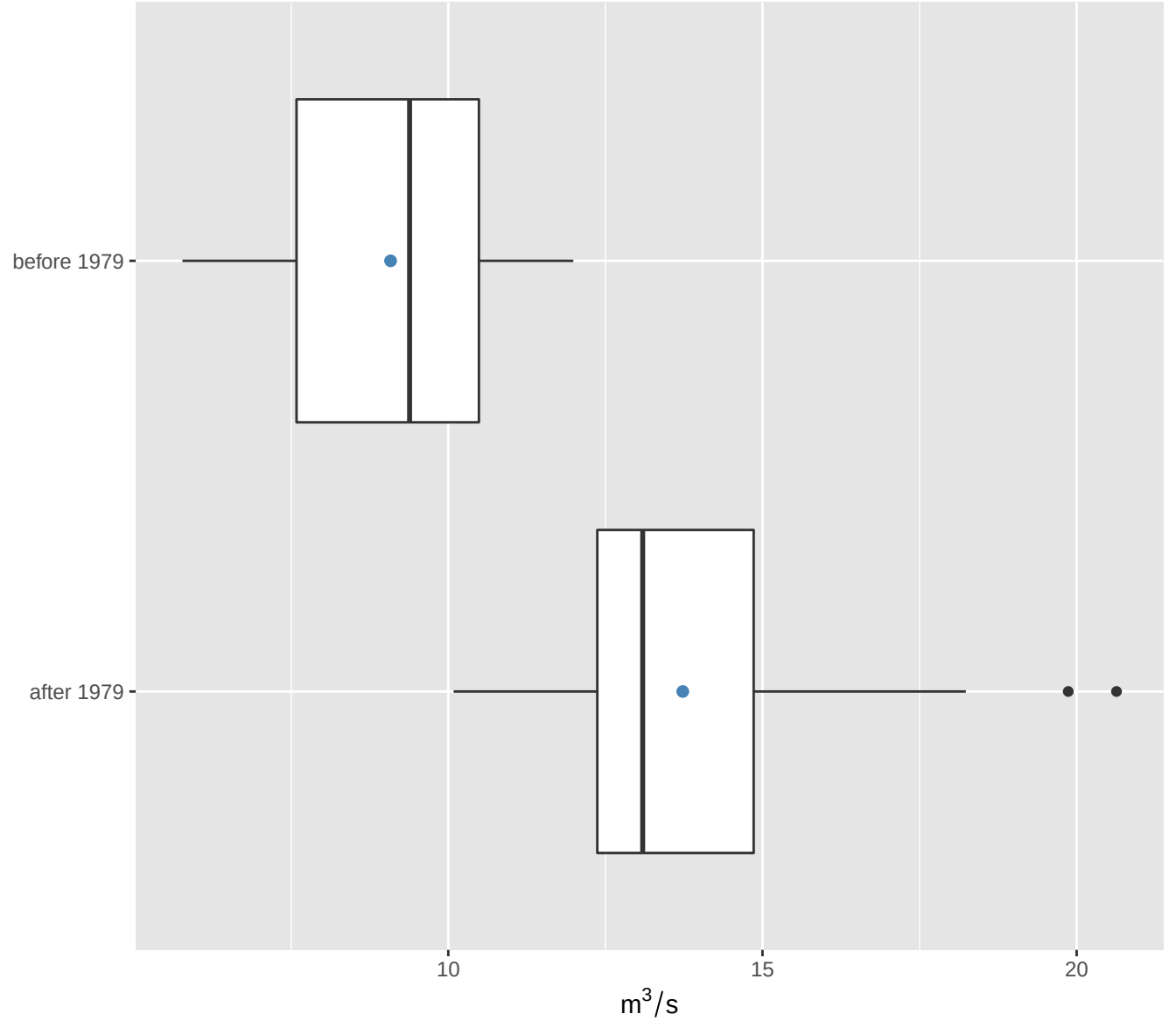
Month of a minimum monthly runoff during winter




Annual groundwater discharge ("baseflow") during water−resources year
before 1978
after 1978
10
15
20
m3/s

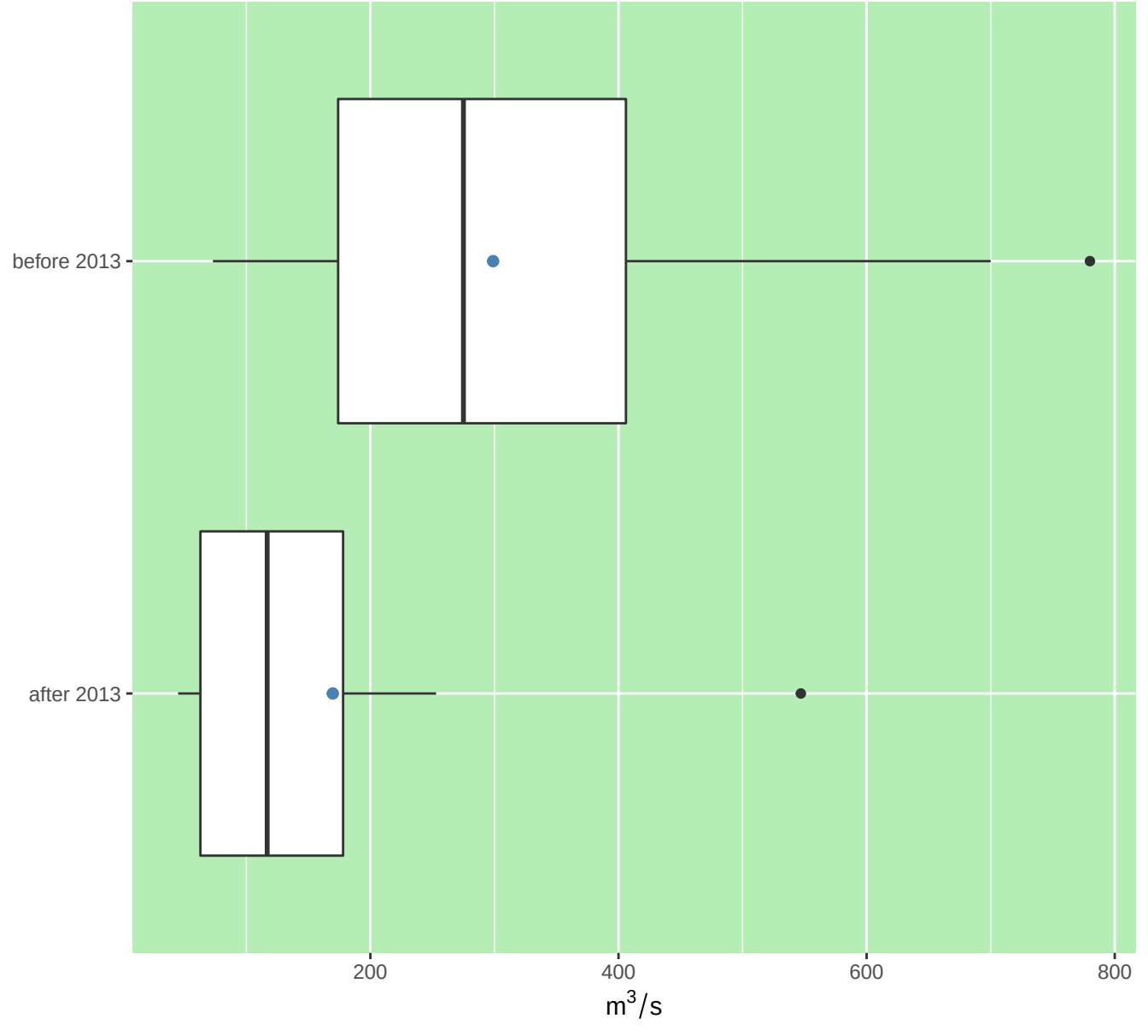
Annual groundwater discharge ("baseflow") during water−resources year

Student: t = −8.26, p = 0, m1 = 9.082, m2 = 13.732
Fisher: F = 0.545, p = 0.14601, cv1 = 0.205, cv2 = 0.184



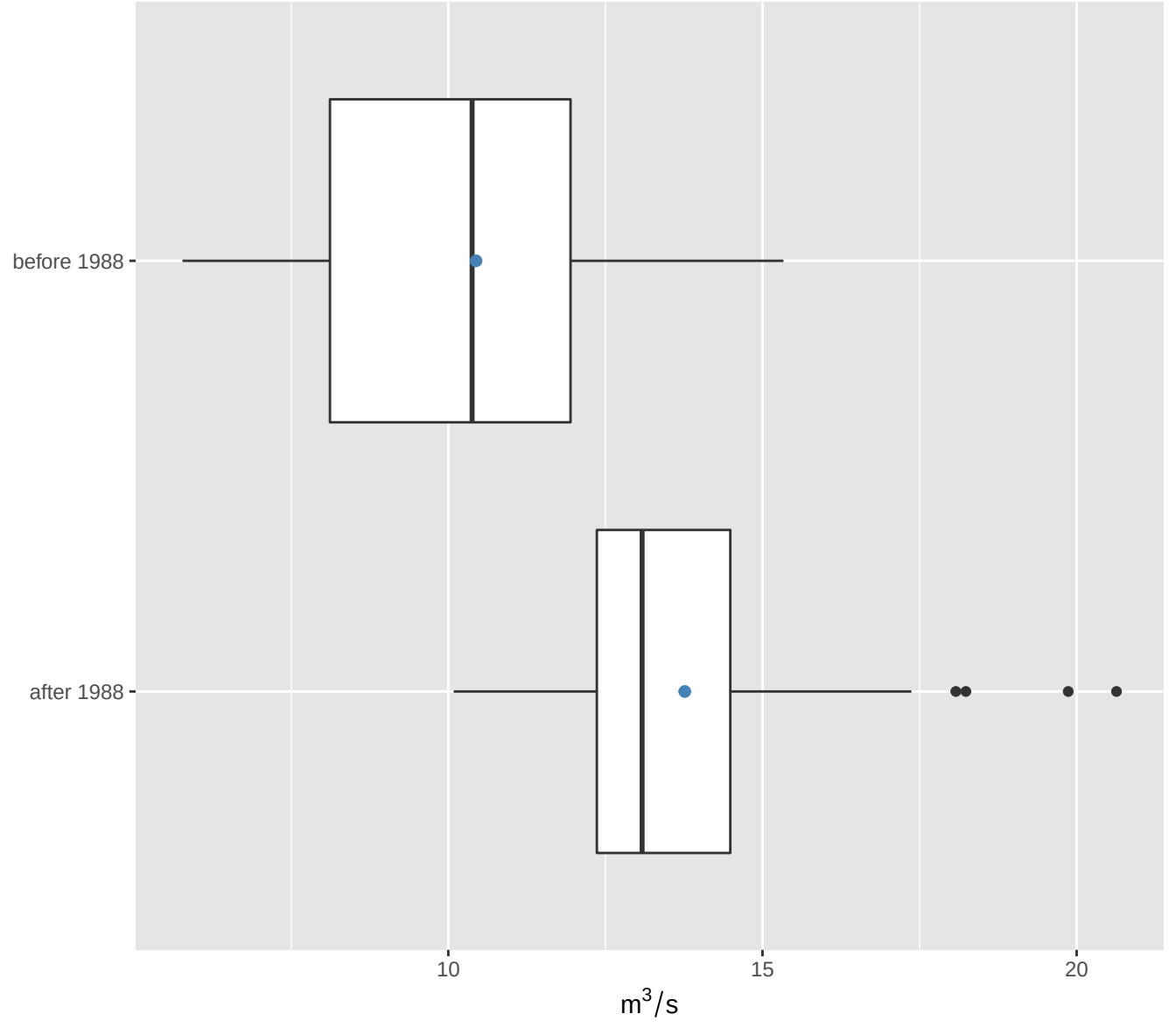
Maximum annual discharge during seasonal flood wave

Student: t = 1.252, p = 0.22789, m1 = 298.925, m2 = 169.7
Fisher: F = 3.927, p = 0.06307, cv1 = 0.541, cv2 = 0.982



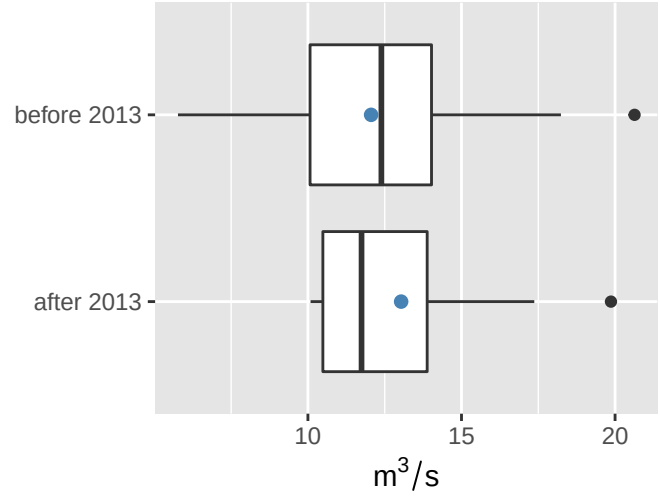
Annual groundwater discharge ("baseflow") during water−resources year

Student: t = 3.511, p = 0.00088, m1 = 10.442, m2 = 13.764
Fisher: F = 1.414, p = 0.33964, cv1 = 0.262, cv2 = 0.2



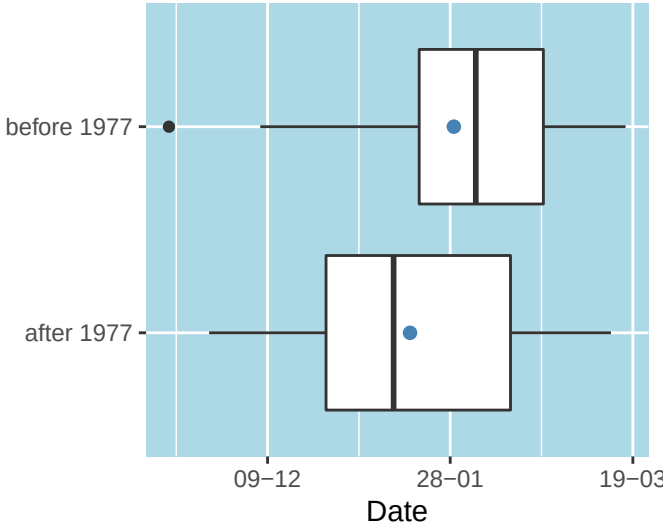
Annual groundwater discharge ("b
resources year

Student: t = 1.252, p = 0.22789, m1 = 1
Fisher: F = 3.927, p = 0.06307, cv1 = 0.



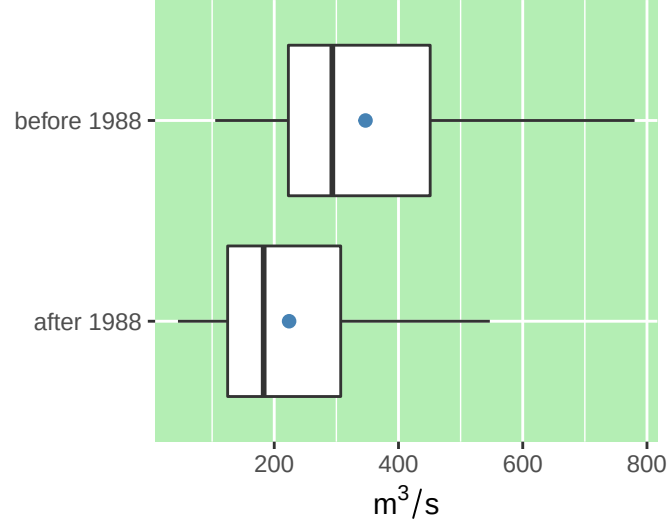
First date of 10−day window disch

Student: t = −2.654, p = 0.01412, m1 =
Fisher: F = 3.081, p = 0.00254, cv1 = 0.



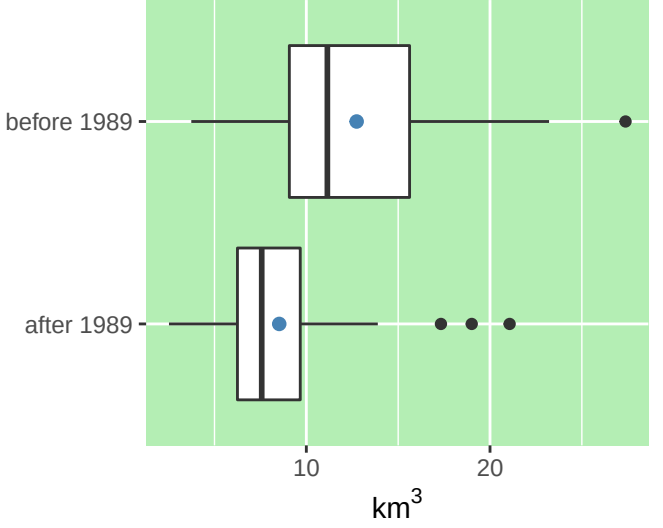
Maximum annual discharge during

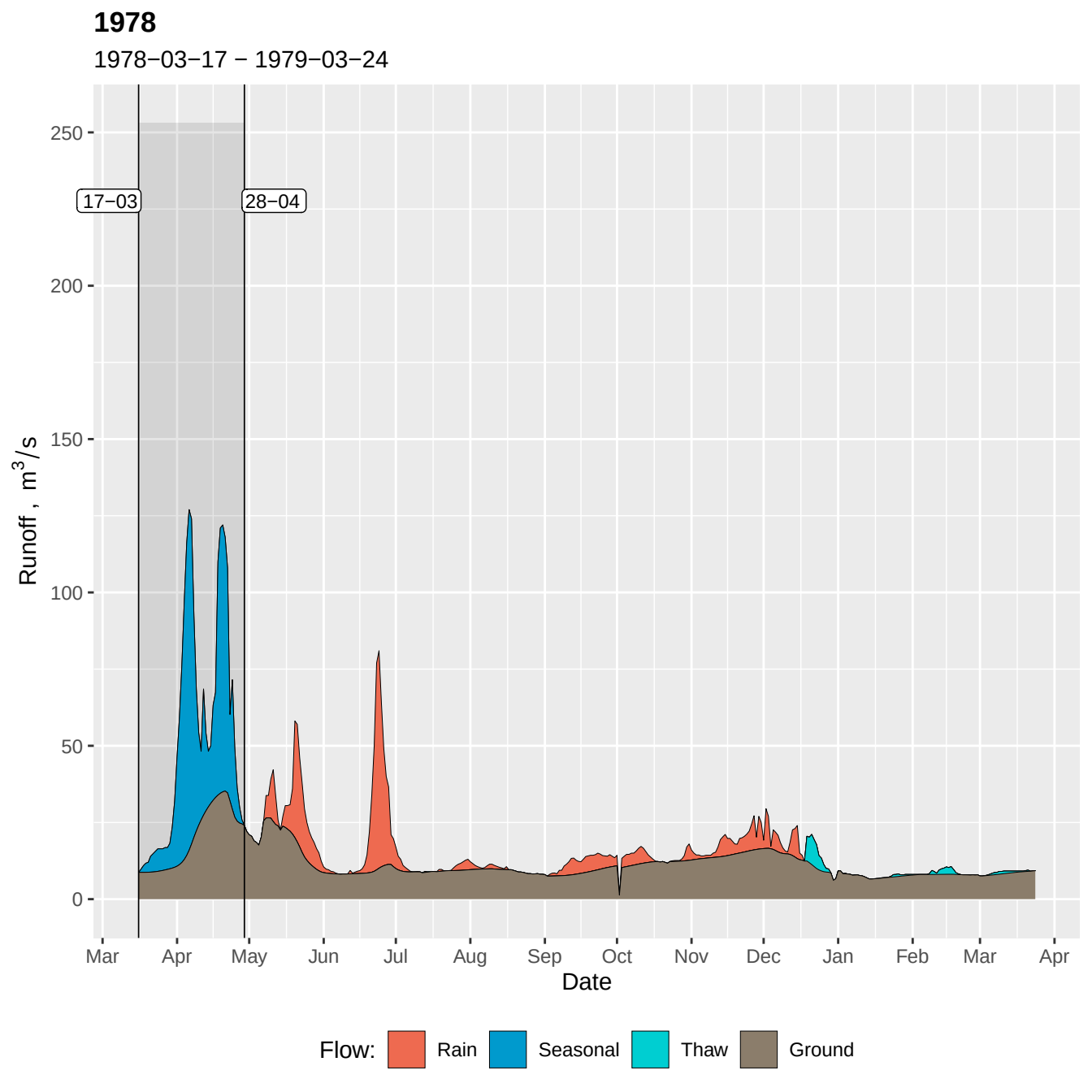
Student: t = 3.511, p = 0.00088, m1 = 3
Fisher: F = 1.414, p = 0.33964, cv1 = 0.

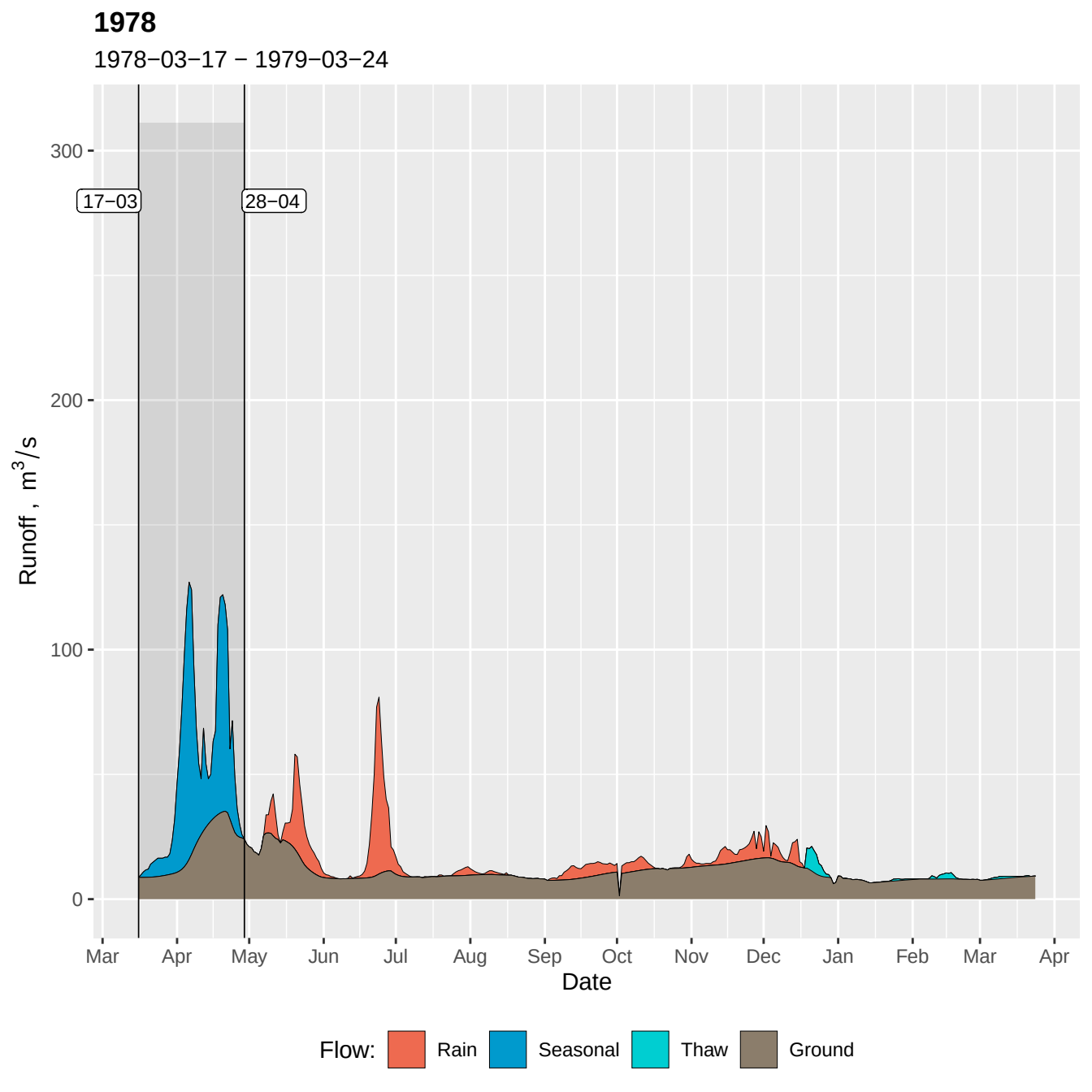


Seasonal flood runoff (with ground

Student: t = 3.357, p = 0.0014, m1 = 12.
Fisher: F = 1.51, p = 0.25927, cv1 = 0.4

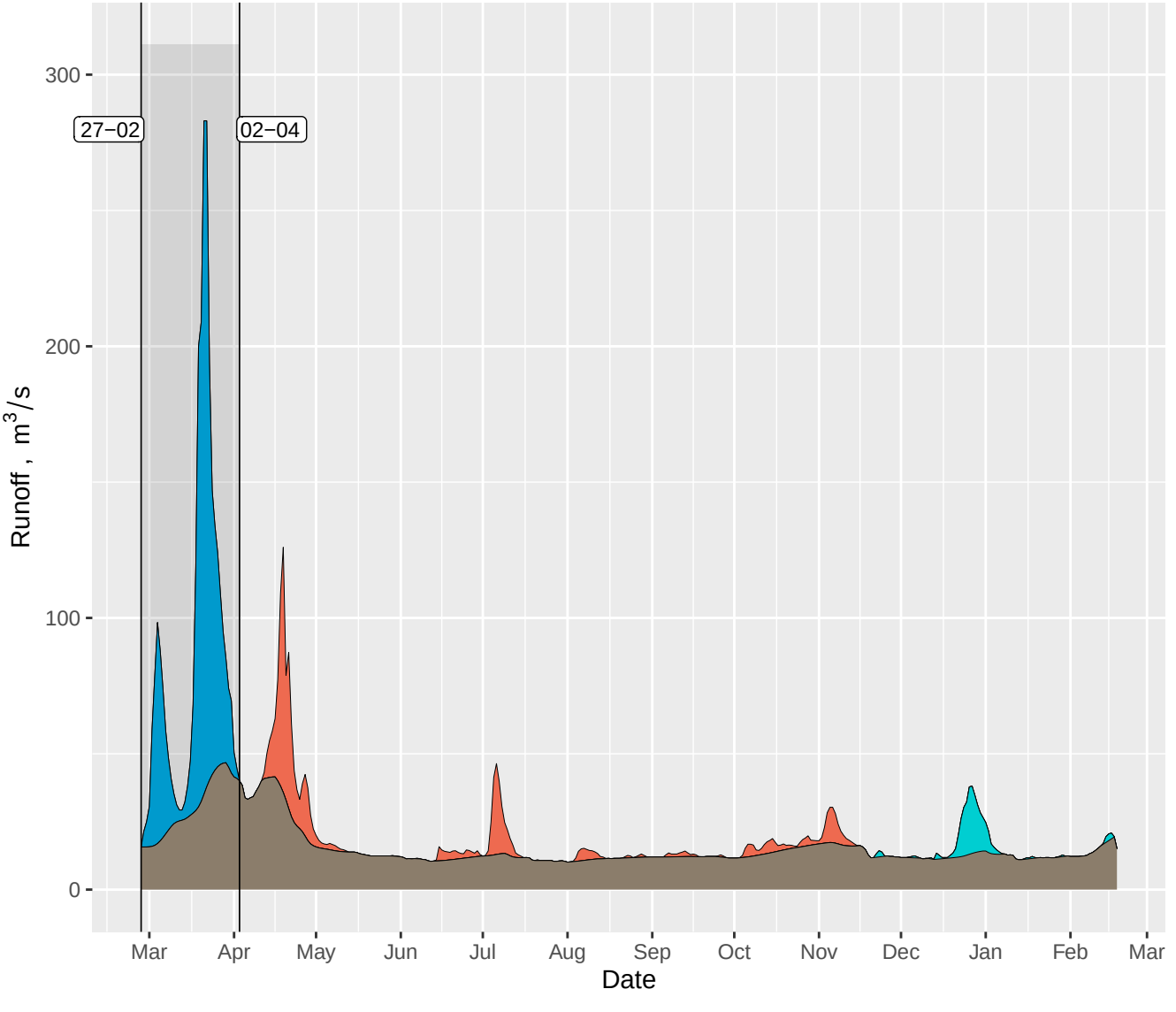



1978
1978−03−17 − 1979−03−24
17−03
28−04
250
200
150
100
50
0
Runoff , m3/s
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
Date
Flow:
Rain
Seasonal
Thaw
Ground


1978
1978−03−17 − 1979−03−24
300
200
100
0
17−03
28−04
Runoff , m3/s
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
Date
Flow:
Rain
Seasonal
Thaw
Ground

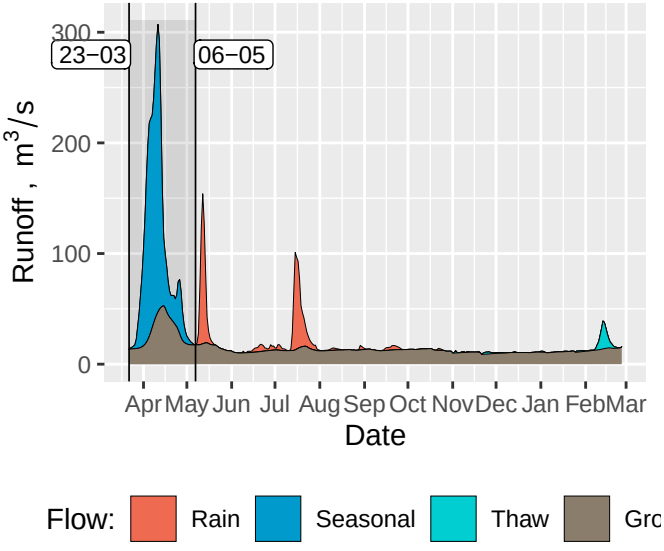
1989

1989−02−27 − 1990−02−18



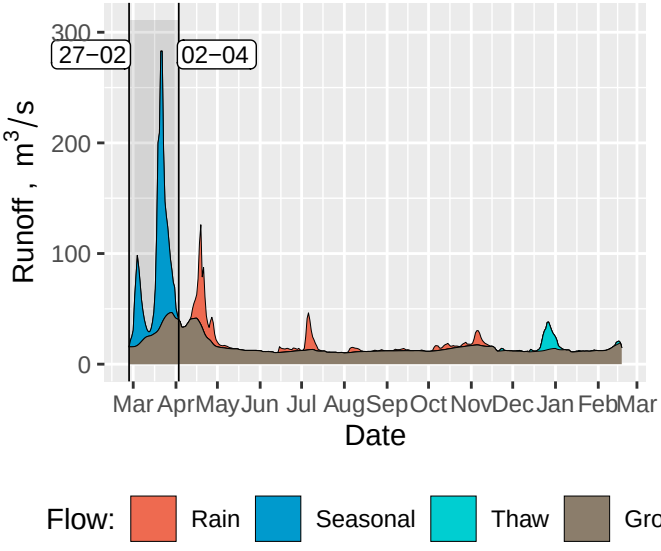
1988

1988−03−23 − 1989−02−26



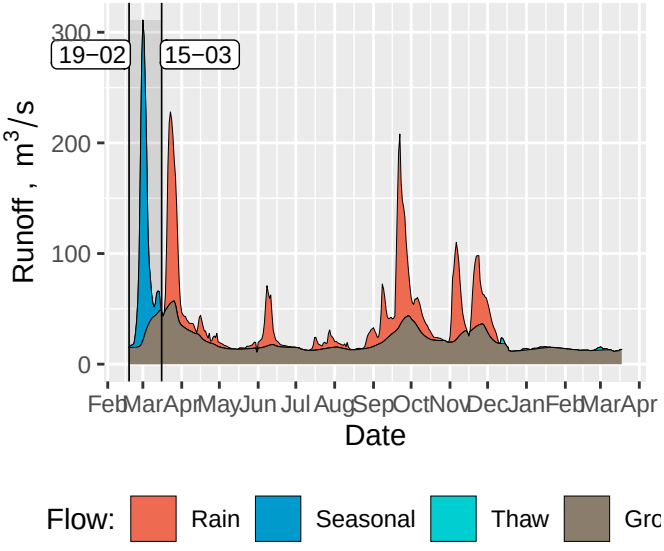
1989

1989−02−27 − 1990−02−18



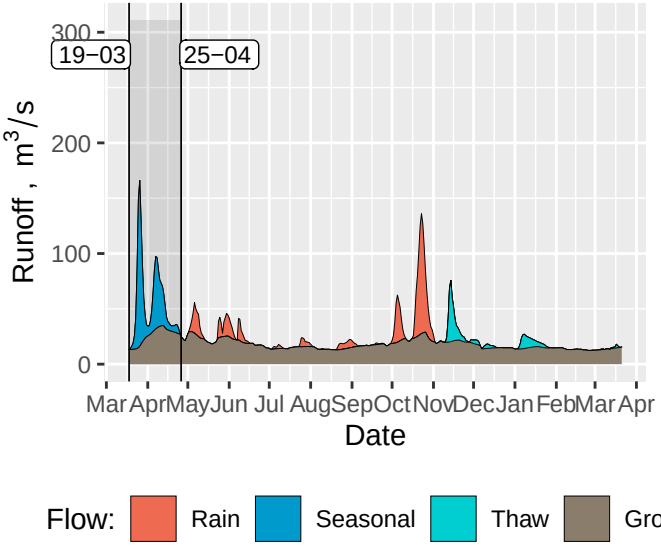
1990

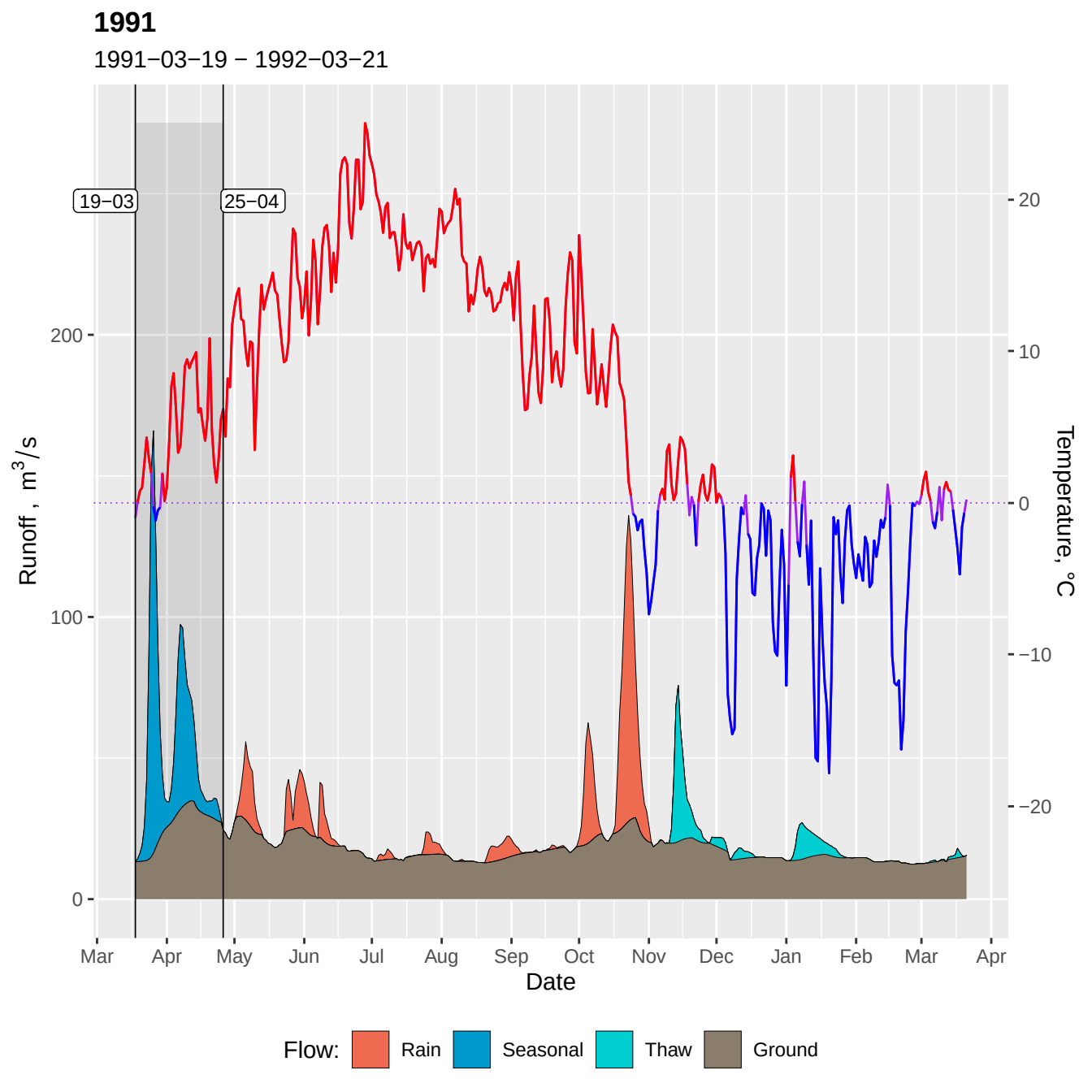
1990−02−19 − 1991−03−18

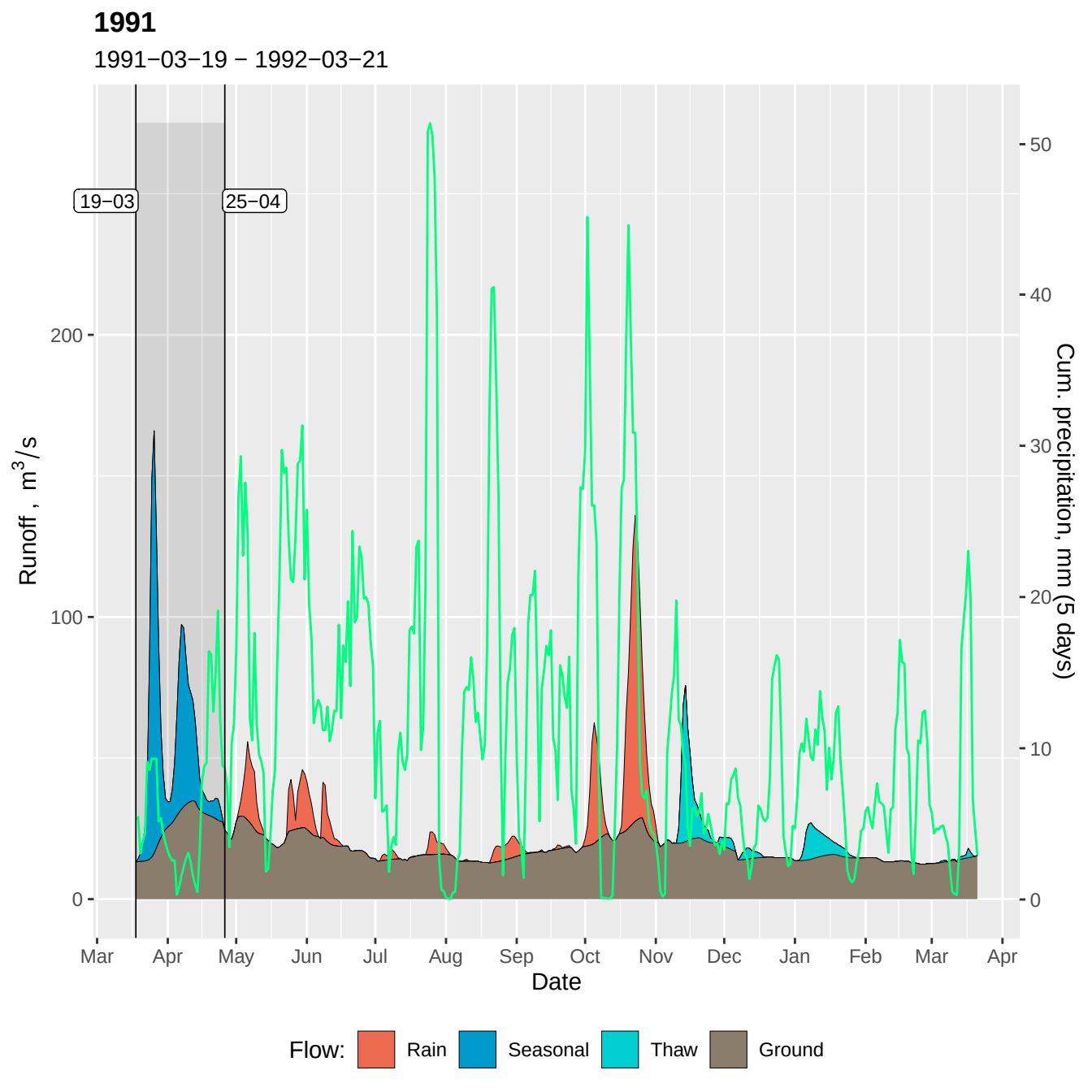


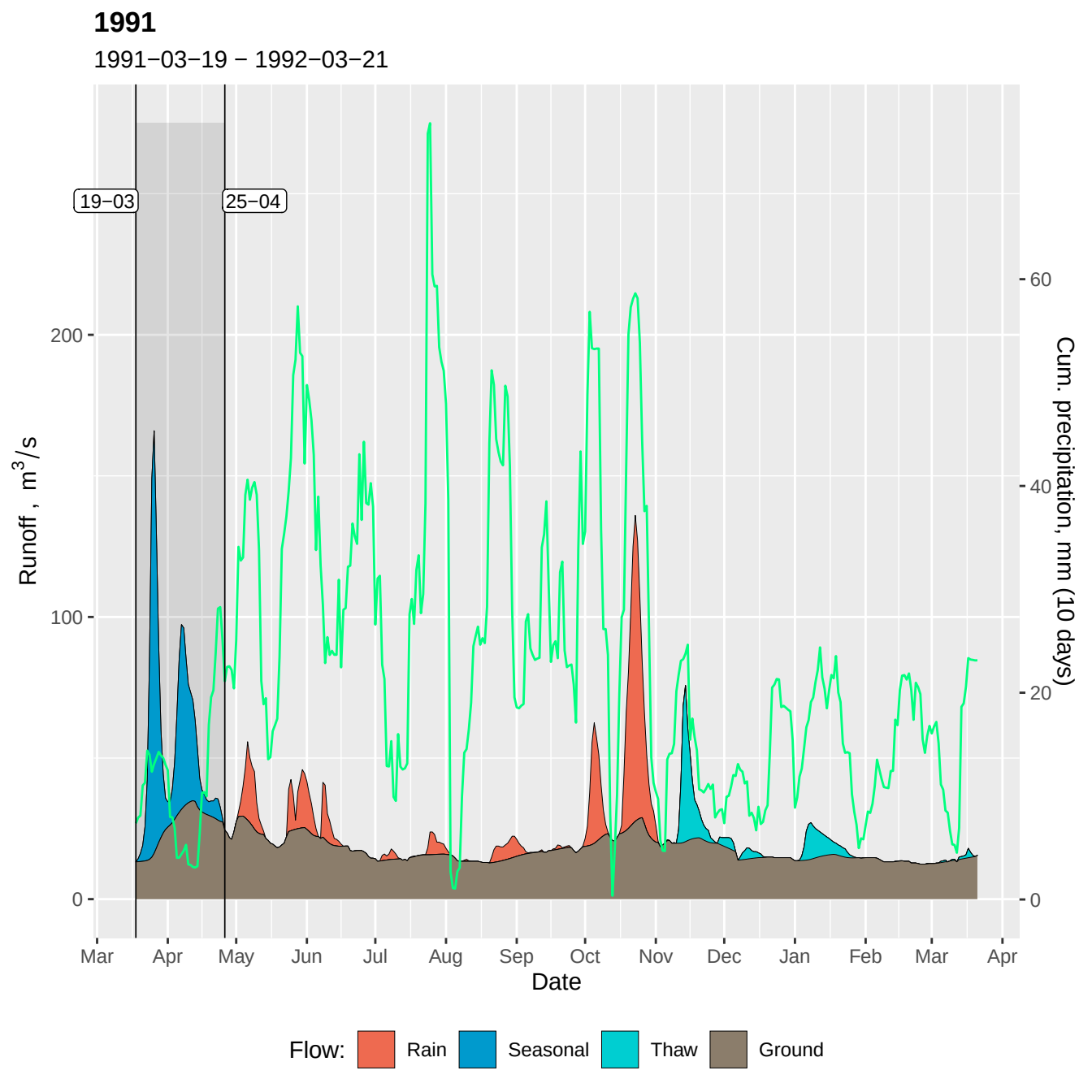
1991

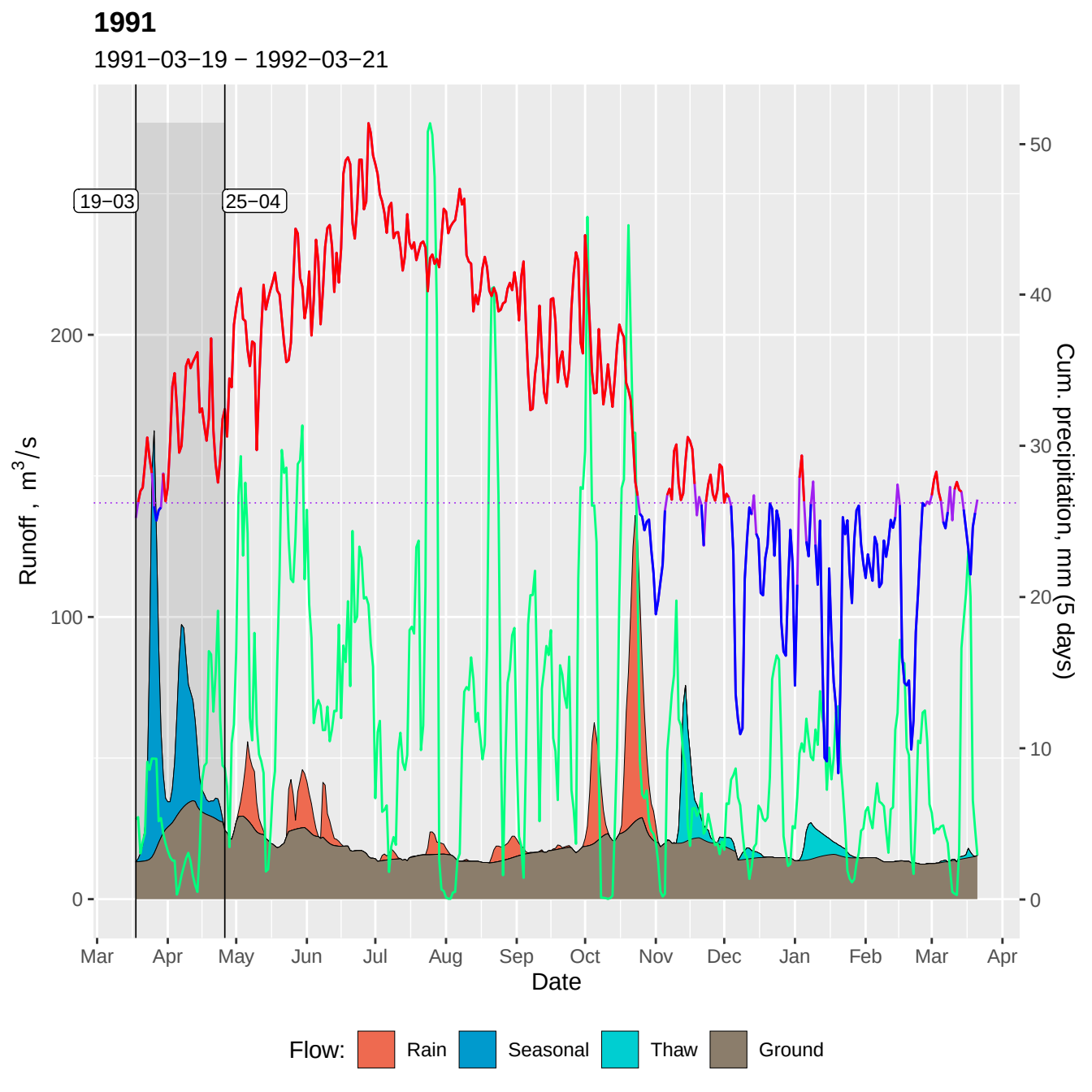
1991−03−19 − 1992−03−21

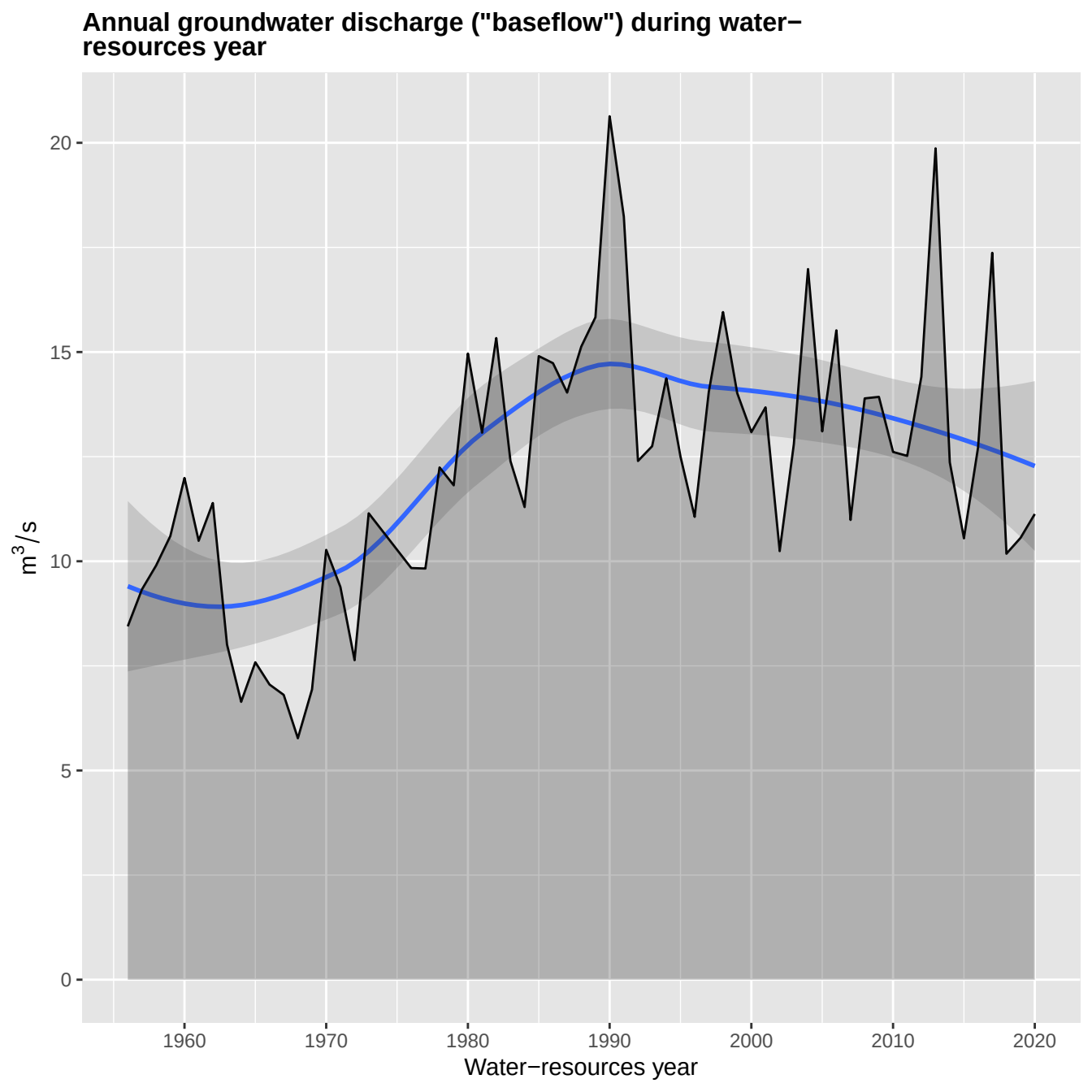


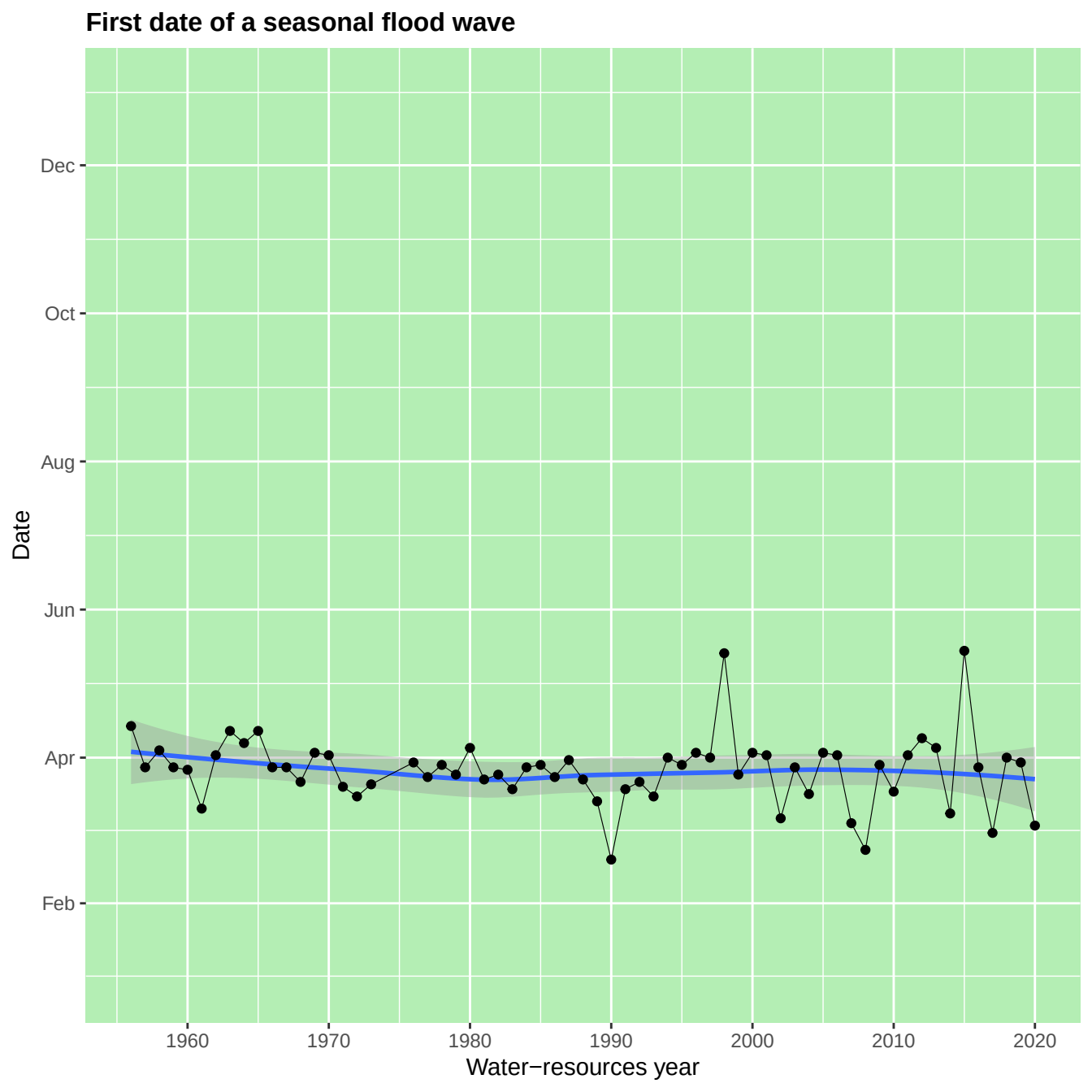

1991
1991−03−19 − 1992−03−21
19−03
25−04
200
100
0
20
10
0
−10
−20
Runoff , m3/s
Temperature, °C
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
Date
Flow:
Rain
Seasonal
Thaw
Ground

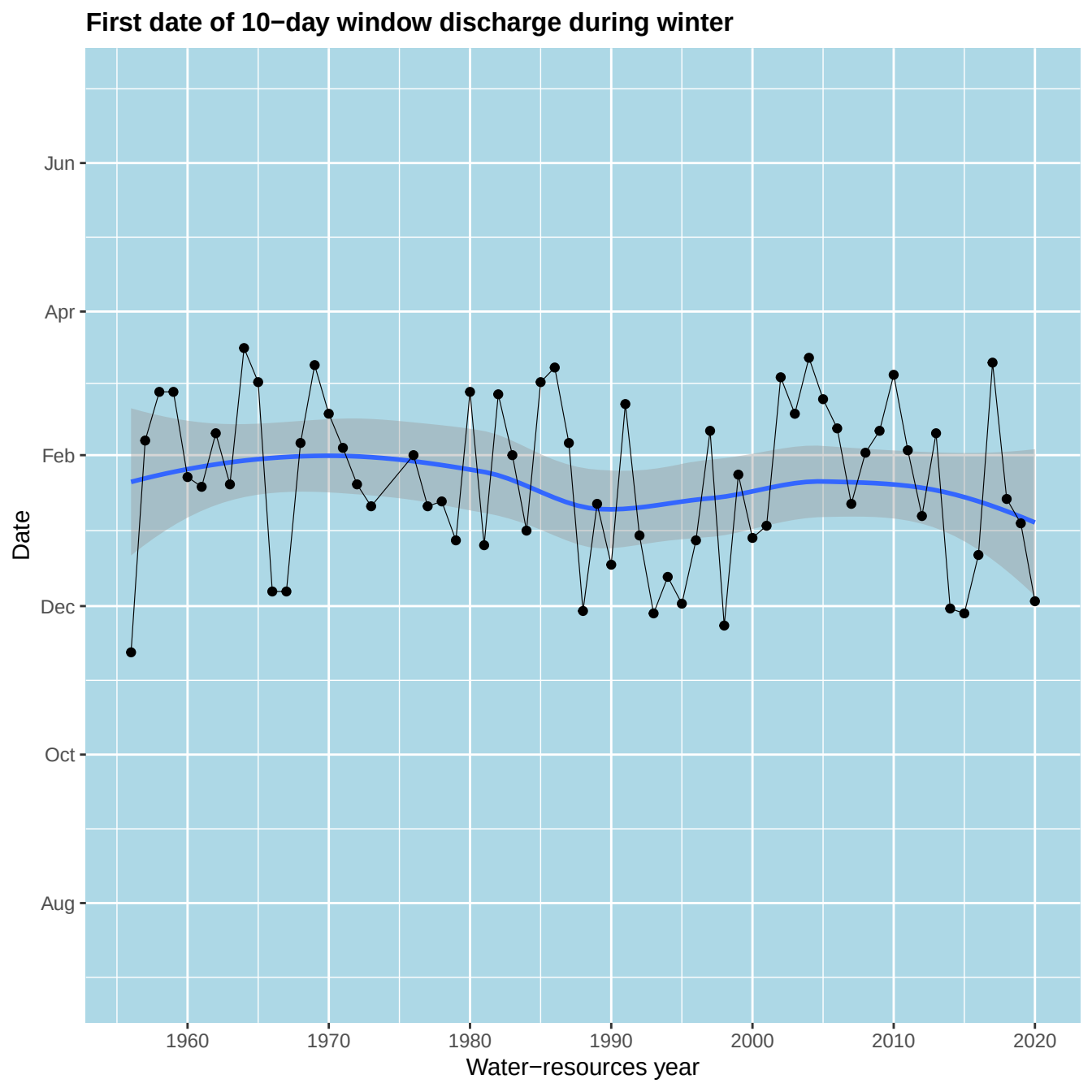

1991
1991−03−19 − 1992−03−21
19−03
25−04
Runoff , m3/s
Cum. precipitation, mm (5 days)
0
100
200
0
10
20
30
40
50
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
Date
Flow:
Rain
Seasonal
Thaw
Ground

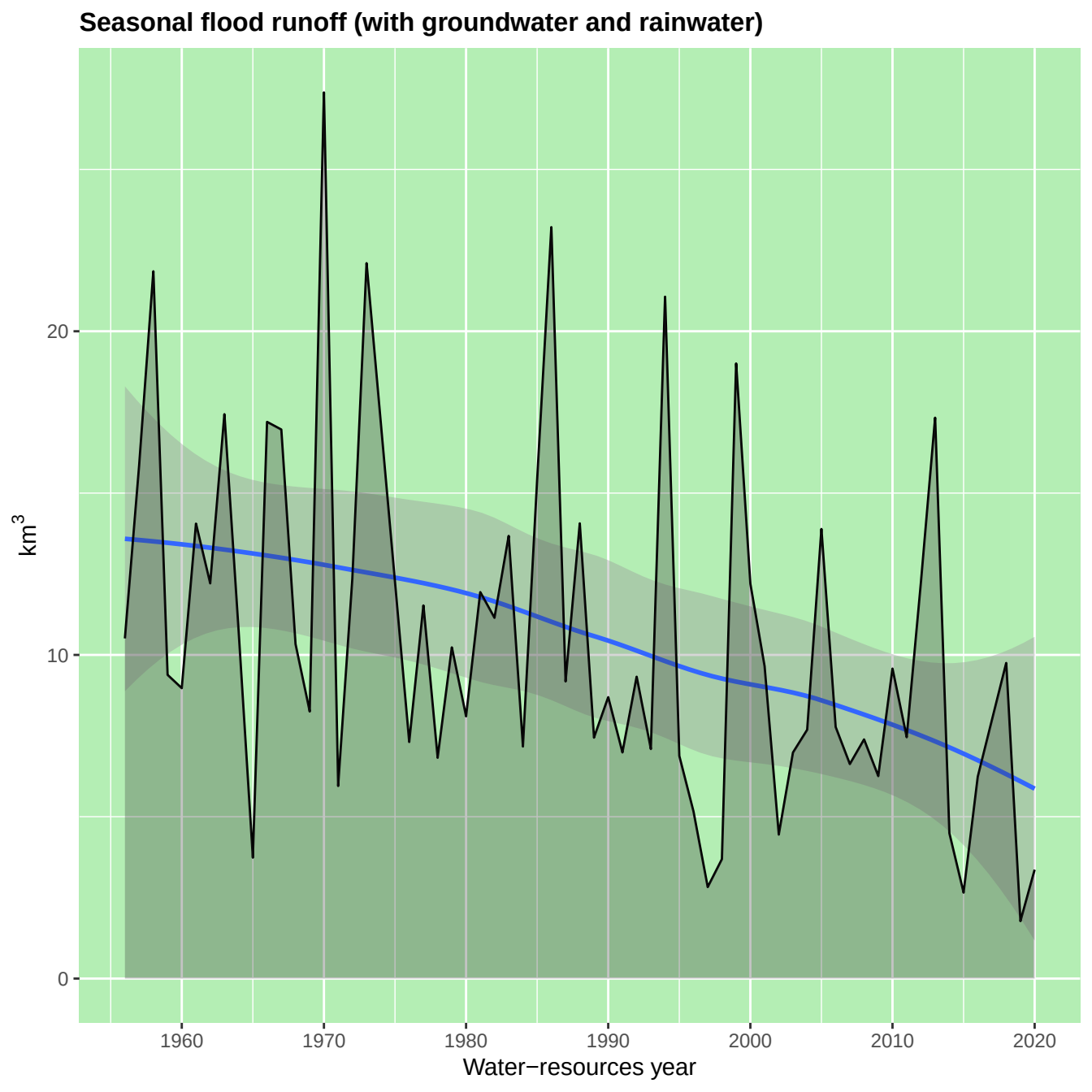

1991
1991−03−19 − 1992−03−21
19−03
25−04
Runoff , m3/s
0
100
200
Cum. precipitation, mm (10 days)
0
20
40
60
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
Date
Flow:
Rain
Seasonal
Thaw
Ground

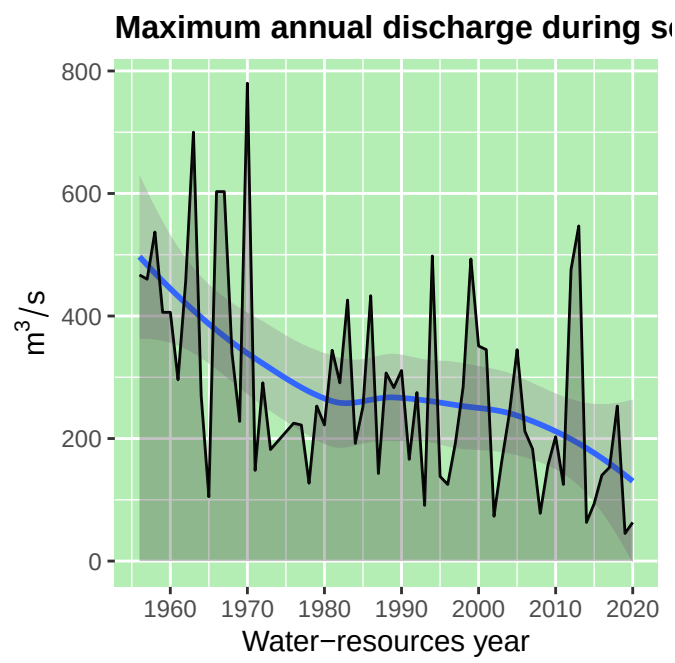

1991
1991−03−19 − 1992−03−21
19−03
25−04
Runoff , m3/s
Cum. precipitation, mm (5 days)
0
100
200
0
10
20
30
40
50
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
Date
Flow:
Rain
Seasonal
Thaw
Ground

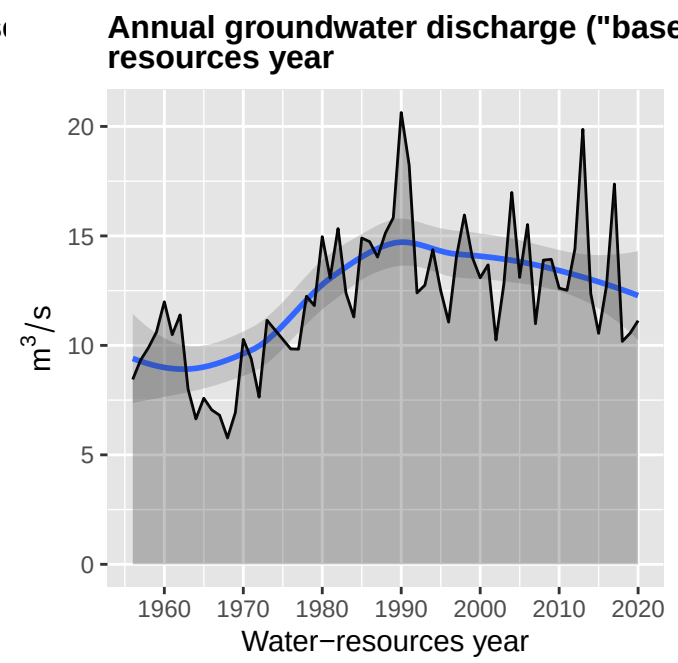

Annual groundwater discharge ("baseflow") during water−resources year
20
15
10
5
0
m3/s
1960
1970
1980
1990
2000
2010
2020
Water−resources year

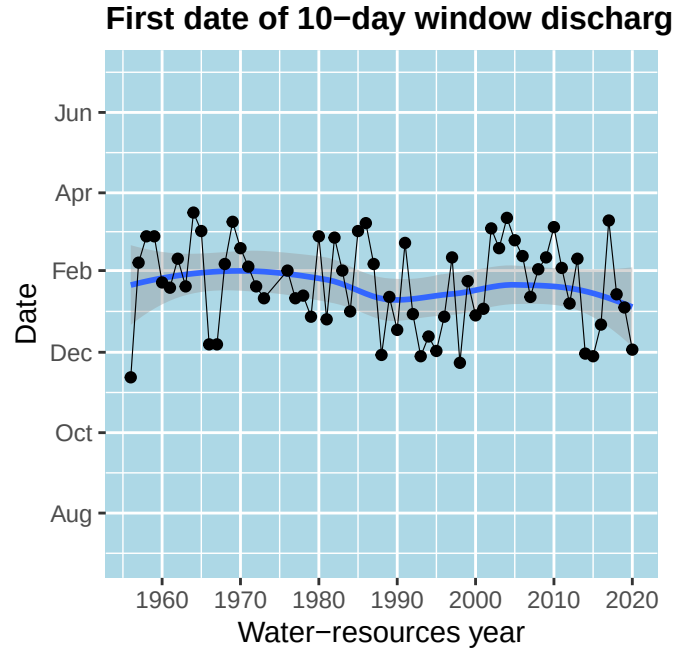

First date of a seasonal flood wave
Dec
Oct
Aug
Jun
Apr
Feb
Date
1960
1970
1980
1990
2000
2010
2020
Water−resources year

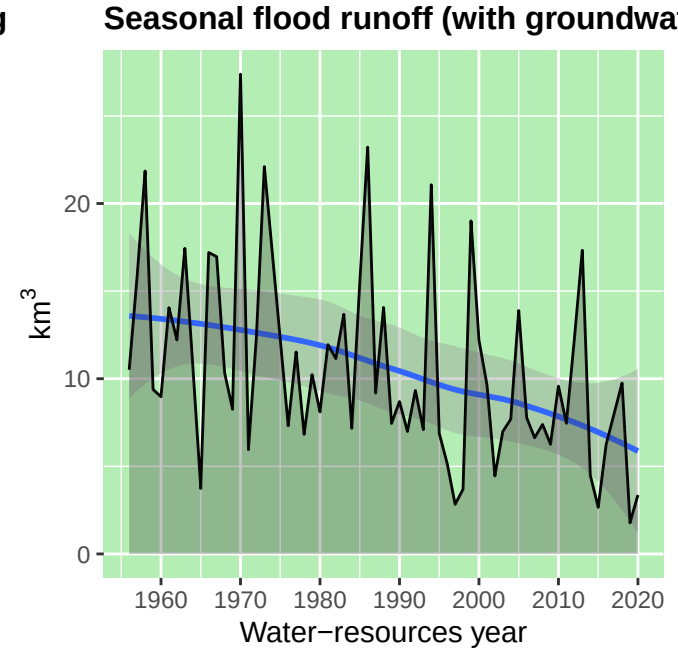

First date of 10−day window discharge during winter
Jun
Apr
Feb
Dec
Oct
Aug
Date
1960
1970
1980
1990
2000
2010
2020
Water−resources year


Seasonal flood runoff (with groundwater and rainwater)
km3
20
10
0
1960
1970
1980
1990
2000
2010
2020
Water−resources year


Maximum annual discharge during s
800
600
400
200
0
m3/s
1960
1970
1980
1990
2000
2010
2020
Water−resources year

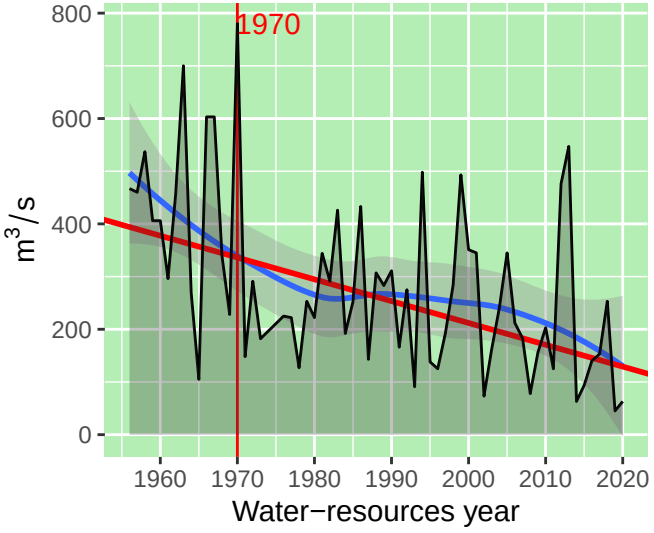

Annual groundwater discharge ("base
resources year
20
15
10
5
0
m3/s
1960
1970
1980
1990
2000
2010
2020
Water−resources year


First date of 10−day window discharg
Jun
Apr
Feb
Dec
Oct
Aug
Date
1960
1970
1980
1990
2000
2010
2020
Water−resources year


Seasonal flood runoff (with groundwa
20
10
0
km3
1960
1970
1980
1990
2000
2010
2020
Water−resources year

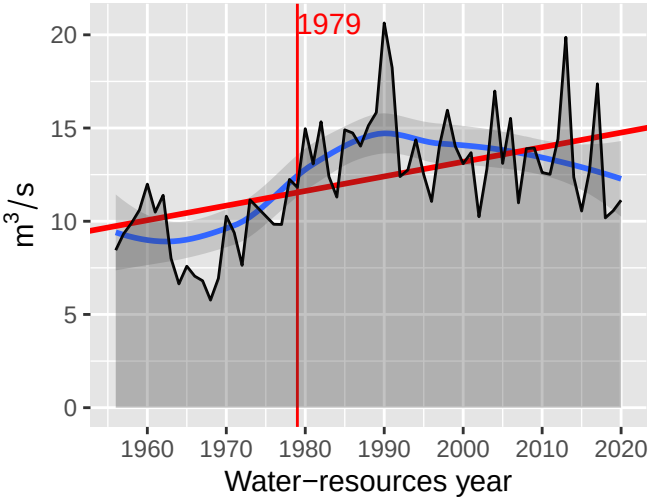
Maximum annual discharge during s

Mann−Kendall: z = −3.998, p = 6e−05
Theil−Sen: i = −4.14, p = 0. Pettitt: U* = 468



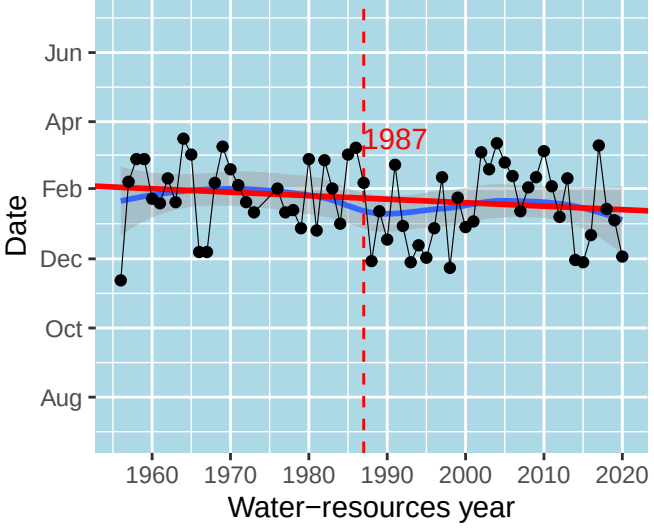
Annual groundwater discharge ("base resources year

Mann−Kendall: z = 3.843, p = 0.00012
Theil−Sen: i = 0.07832, p = 0. Pettitt: U* = 80



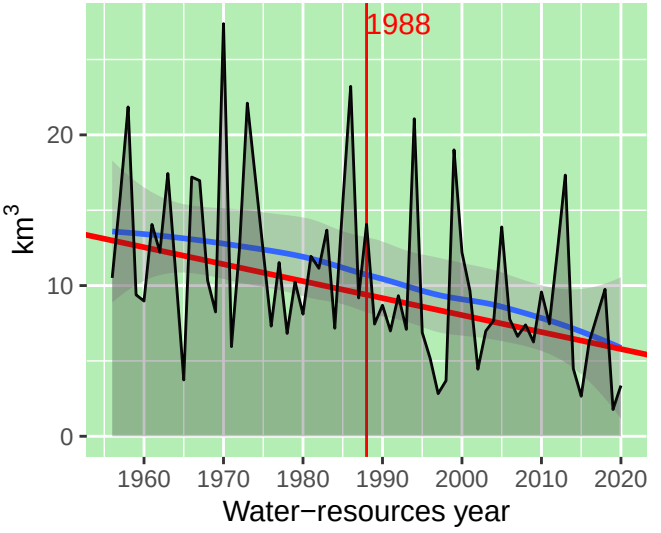
First date of 10−day window discharg

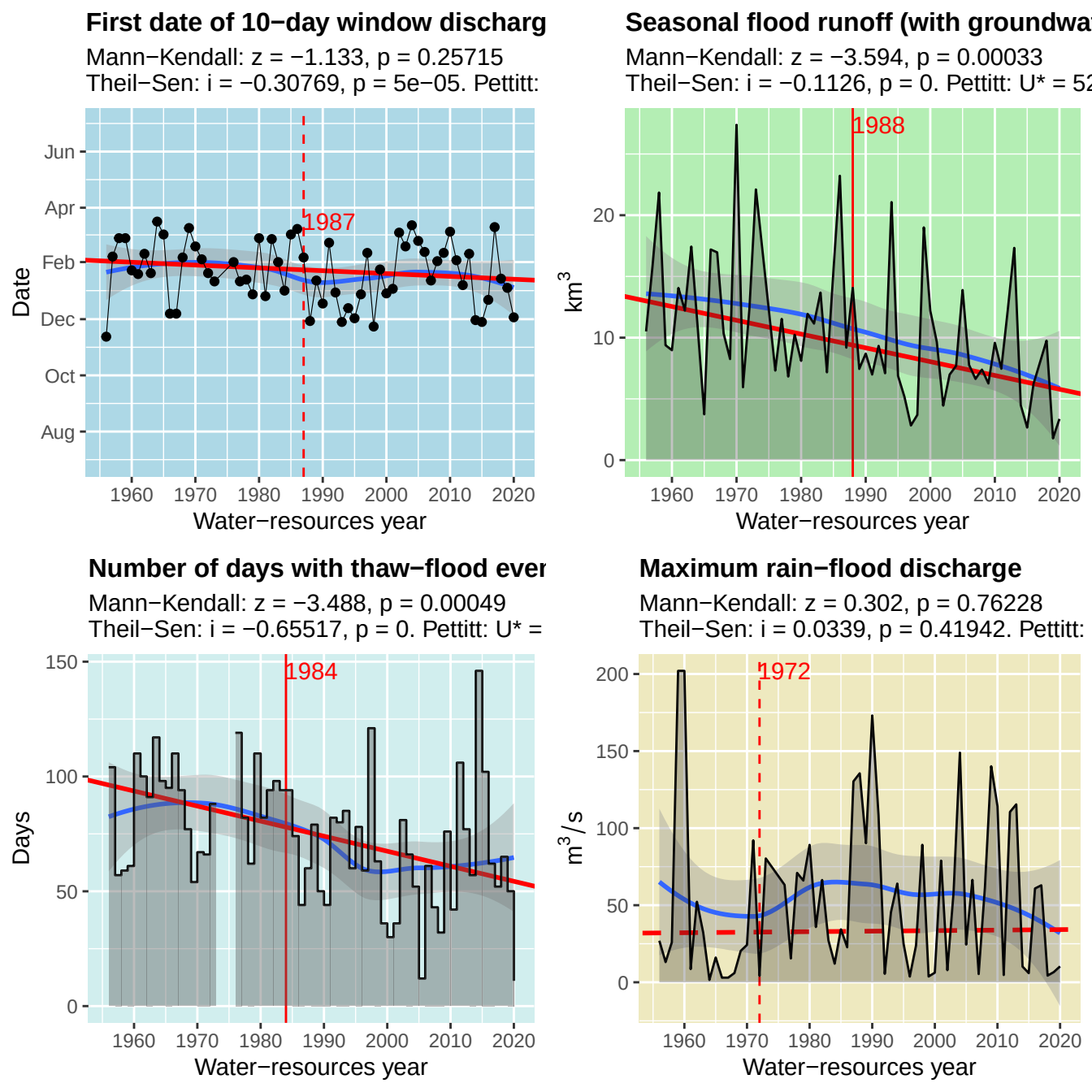
Mann−Kendall: z = −1.133, p = 0.25715
Theil−Sen: i = −0.30769, p = 5e−05. Pettitt:



Seasonal flood runoff (with groundwa

Mann−Kendall: z = −3.594, p = 0.00033
Theil−Sen: i = −0.1126, p = 0. Pettitt: U* = 52




First date of 10−day window discharg
Mann−Kendall: z = −1.133, p = 0.25715
Theil−Sen: i = −0.30769, p = 5e−05. Pettitt:
Jun
Apr
Feb
Dec
Oct
Aug
Date
1987
1960
1970
1980
1990
2000
2010
2020
Water−resources year
Seasonal flood runoff (with groundwa
Mann−Kendall: z = −3.594, p = 0.00033
Theil−Sen: i = −0.1126, p = 0. Pettitt: U* = 52
1988
20
10
0
km3
1960
1970
1980
1990
2000
2010
2020
Water−resources year
Number of days with thaw−flood ever
Mann−Kendall: z = −3.488, p = 0.00049
Theil−Sen: i = −0.65517, p = 0. Pettitt: U* =
150
100
50
0
Days
1984
1960
1970
1980
1990
2000
2010
2020
Water−resources year
Maximum rain−flood discharge
Mann−Kendall: z = 0.302, p = 0.76228
Theil−Sen: i = 0.0339, p = 0.41942. Pettitt:
200
150
100
50
0
m3/s
1972
1960
1970
1980
1990
2000
2010
2020
Water−resources year