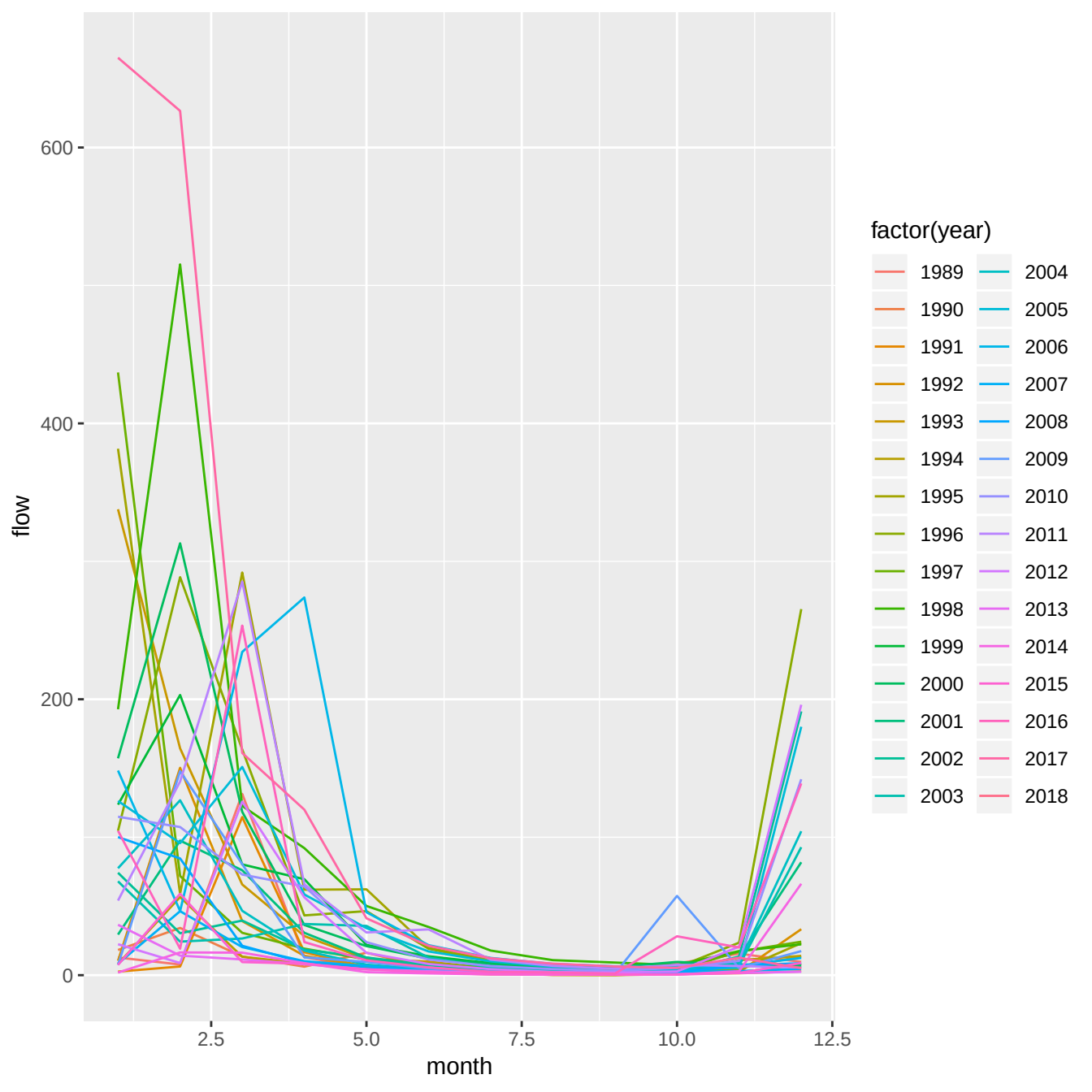
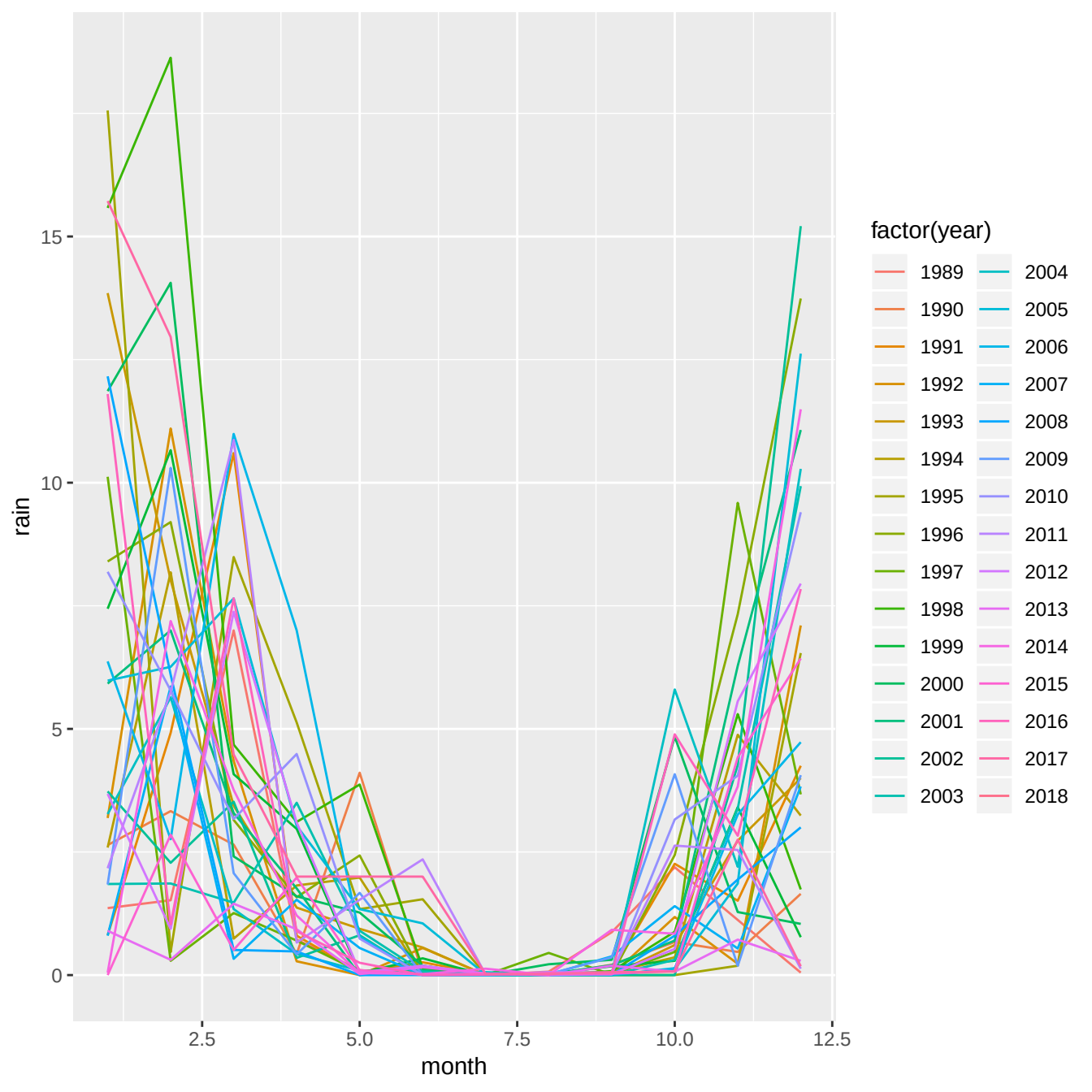
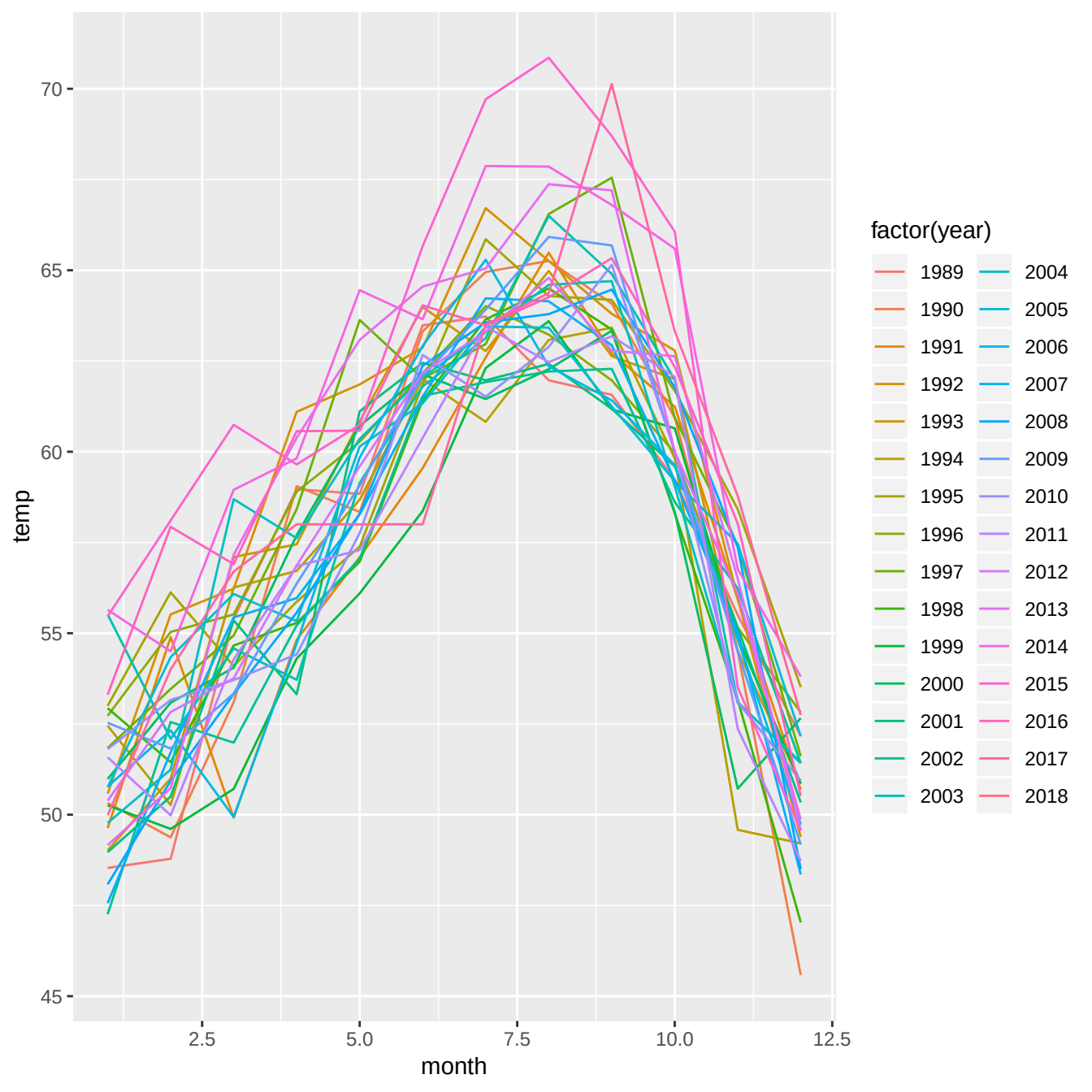
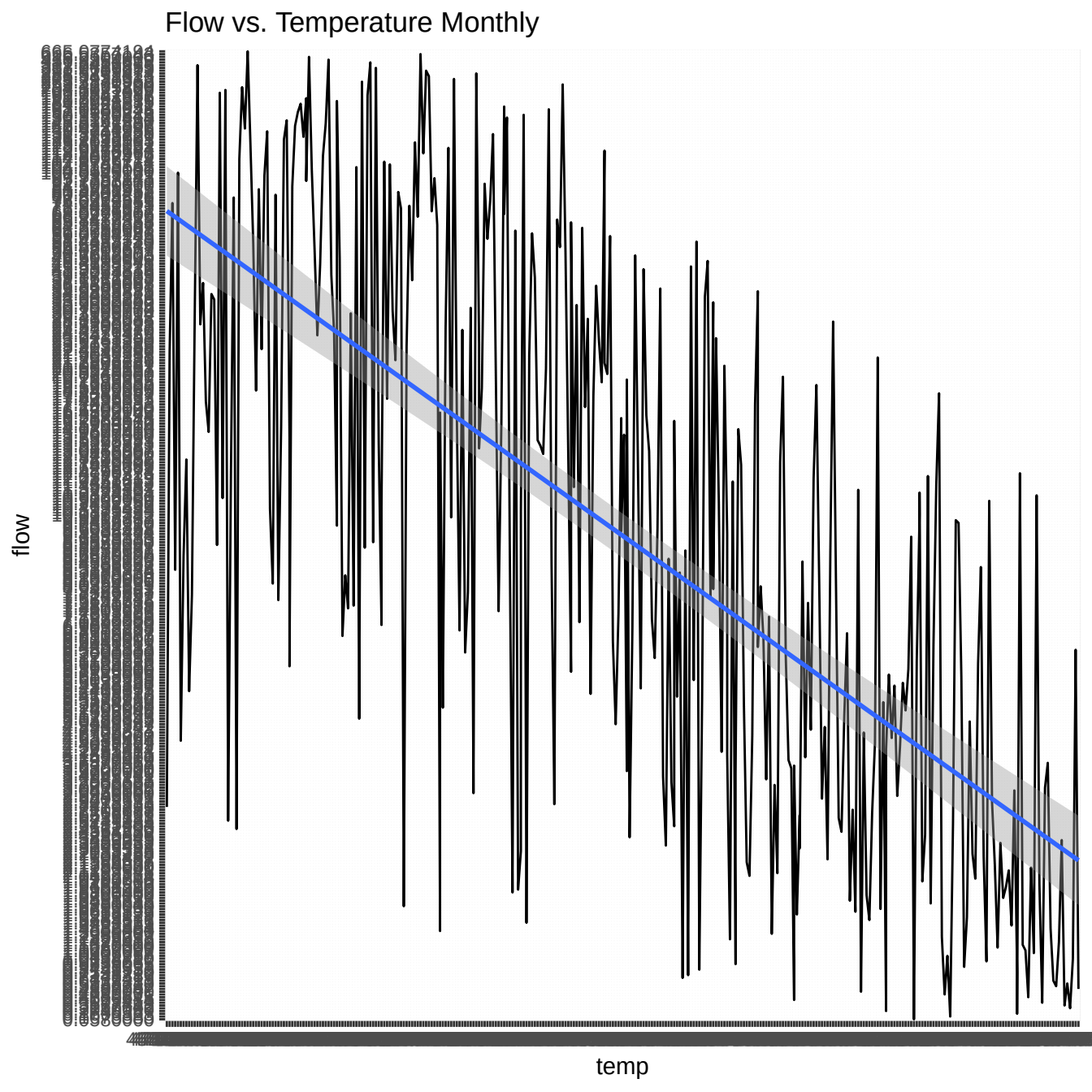
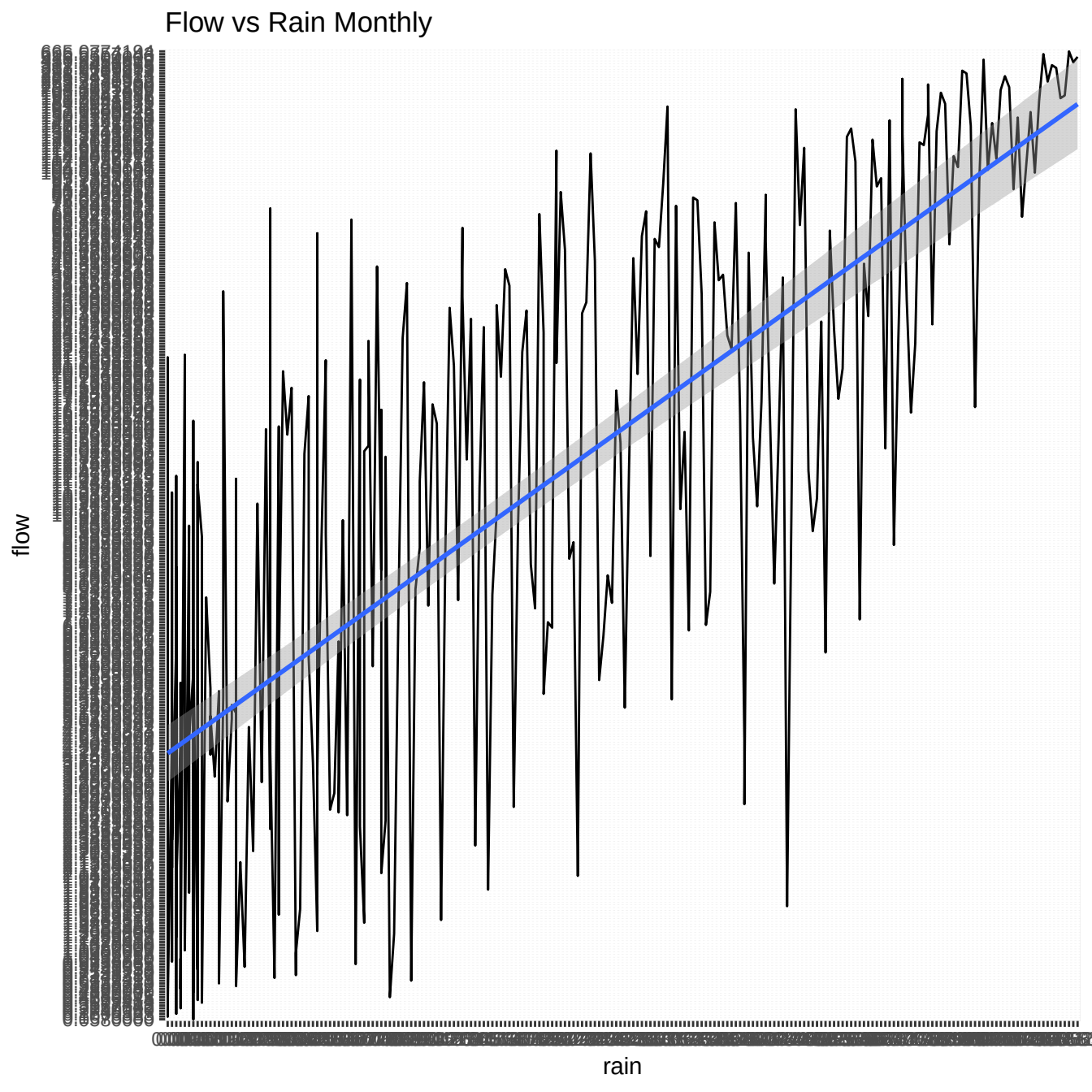
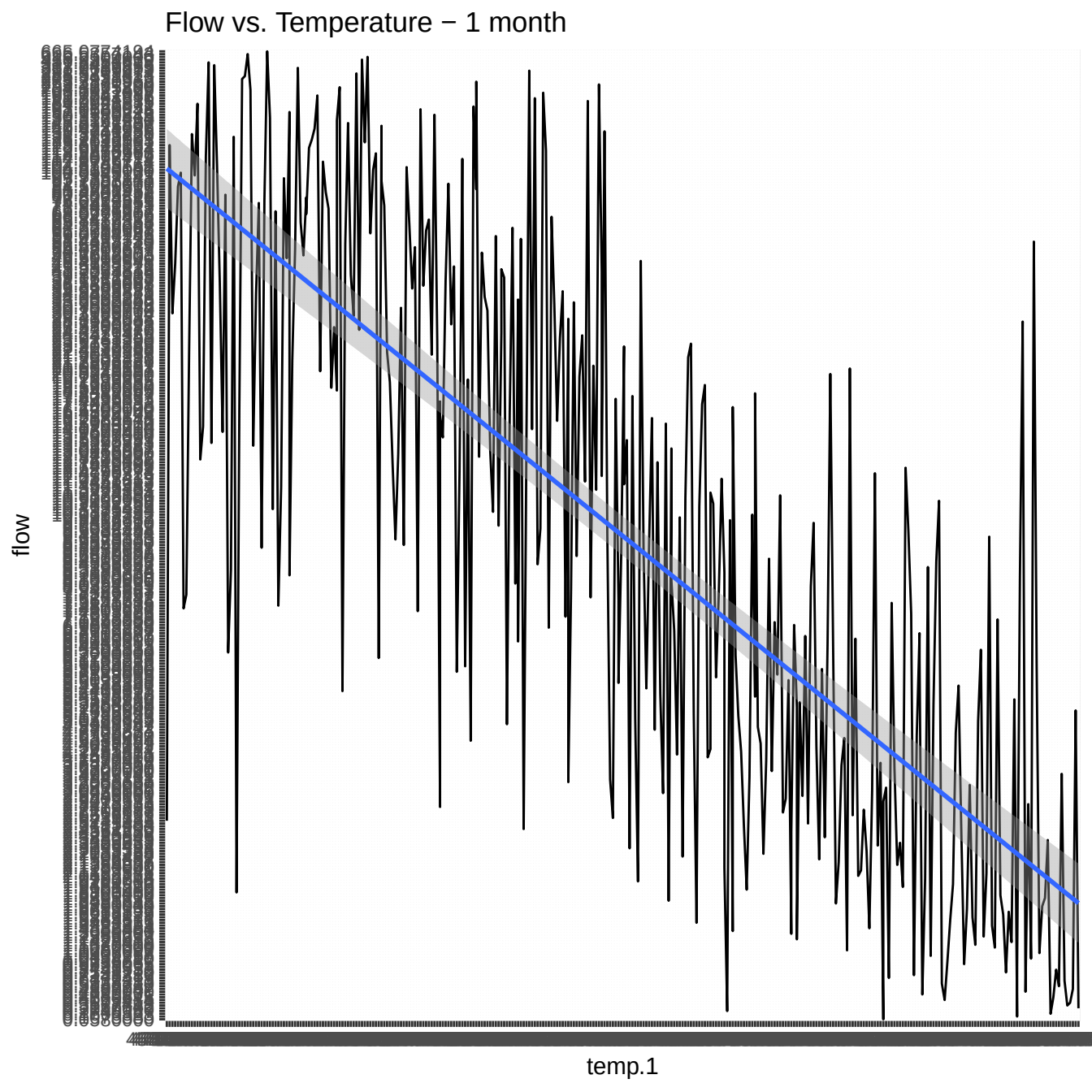

flow
600
400
200
0
2.5
5.0
7.5
10.0
12.5
month
factor(year)
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

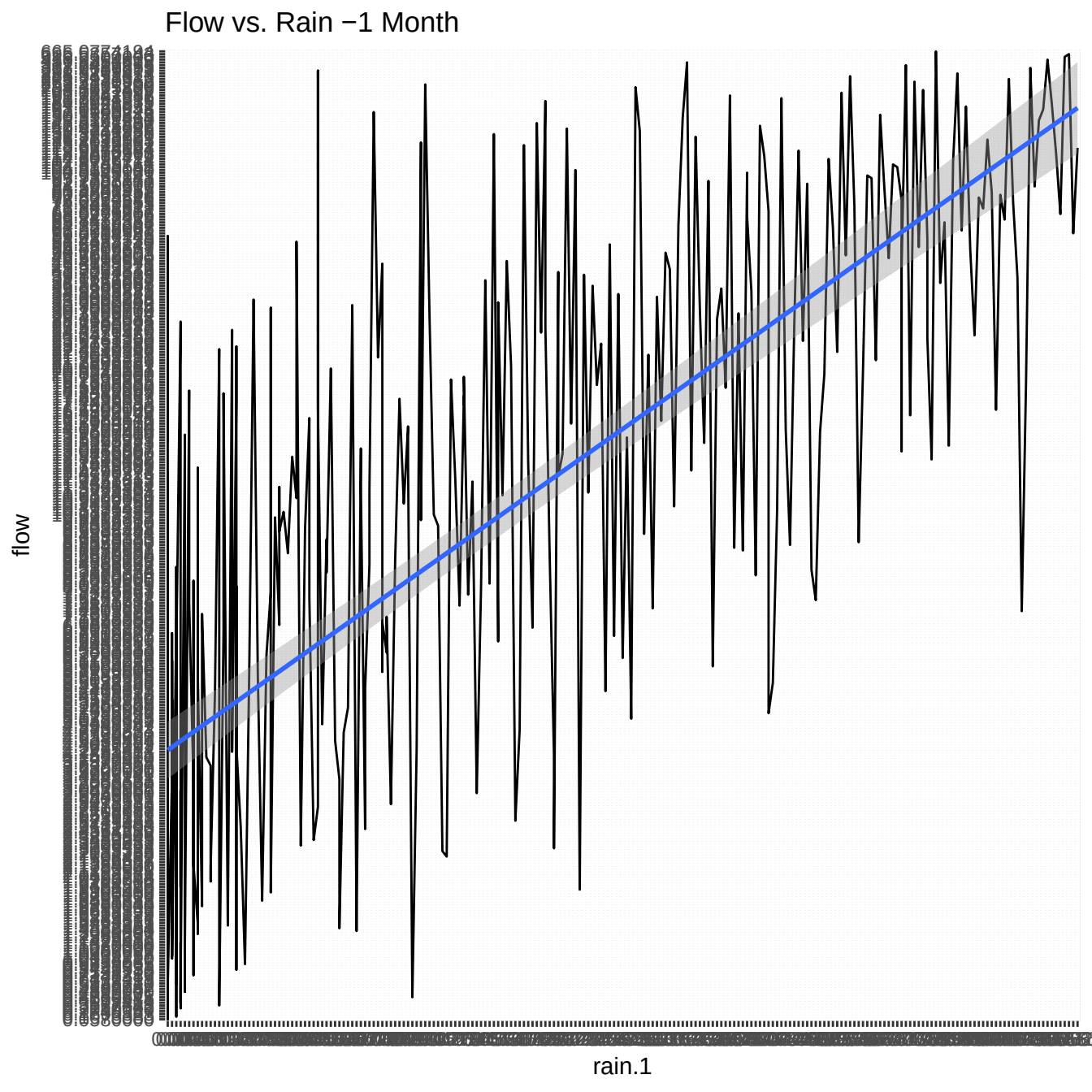

rain
15
10
5
0
2.5
5.0
7.5
10.0
12.5
month
factor(year)
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

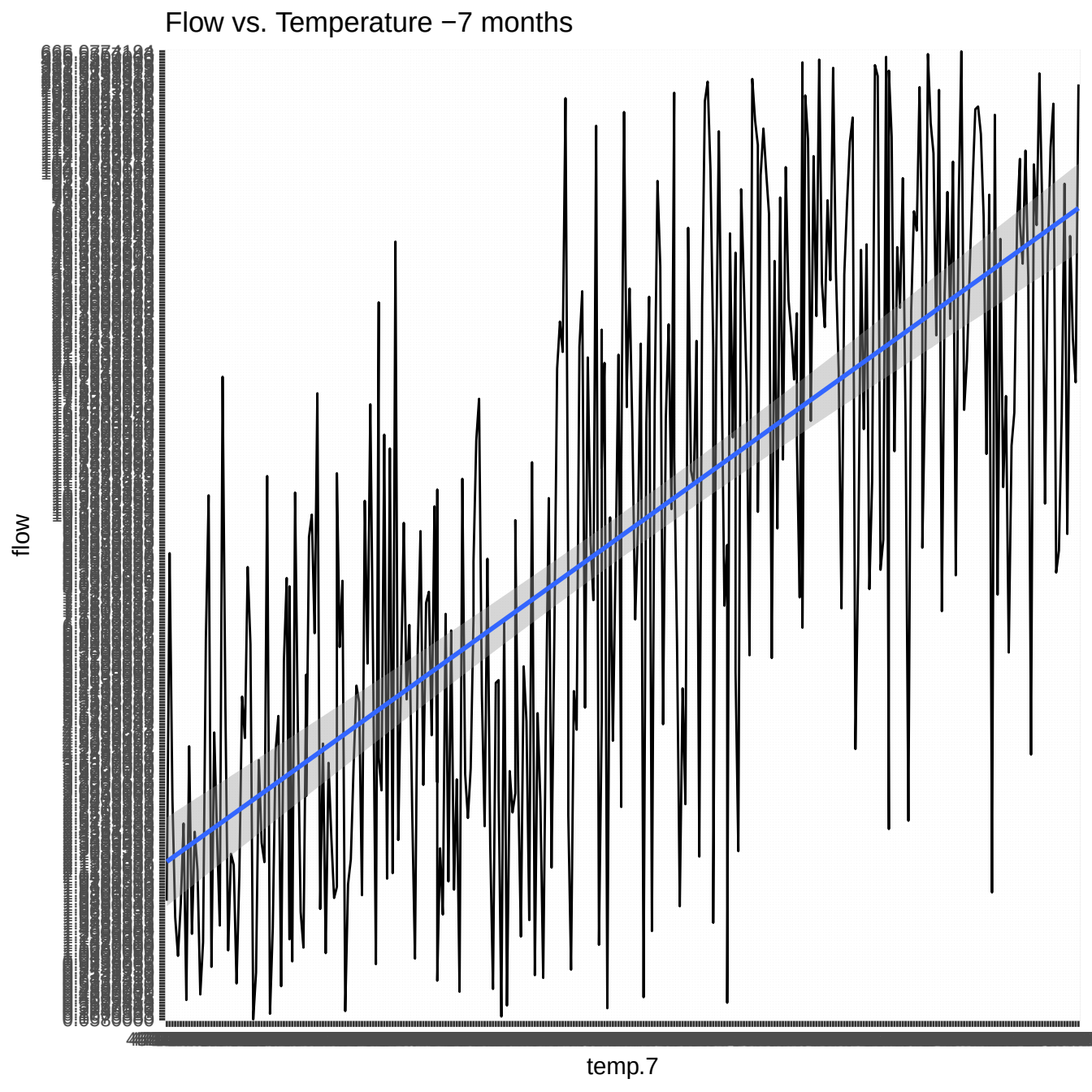

70
65
60
55
50
45
temp
2.5
5.0
7.5
10.0
12.5
month
factor(year)
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

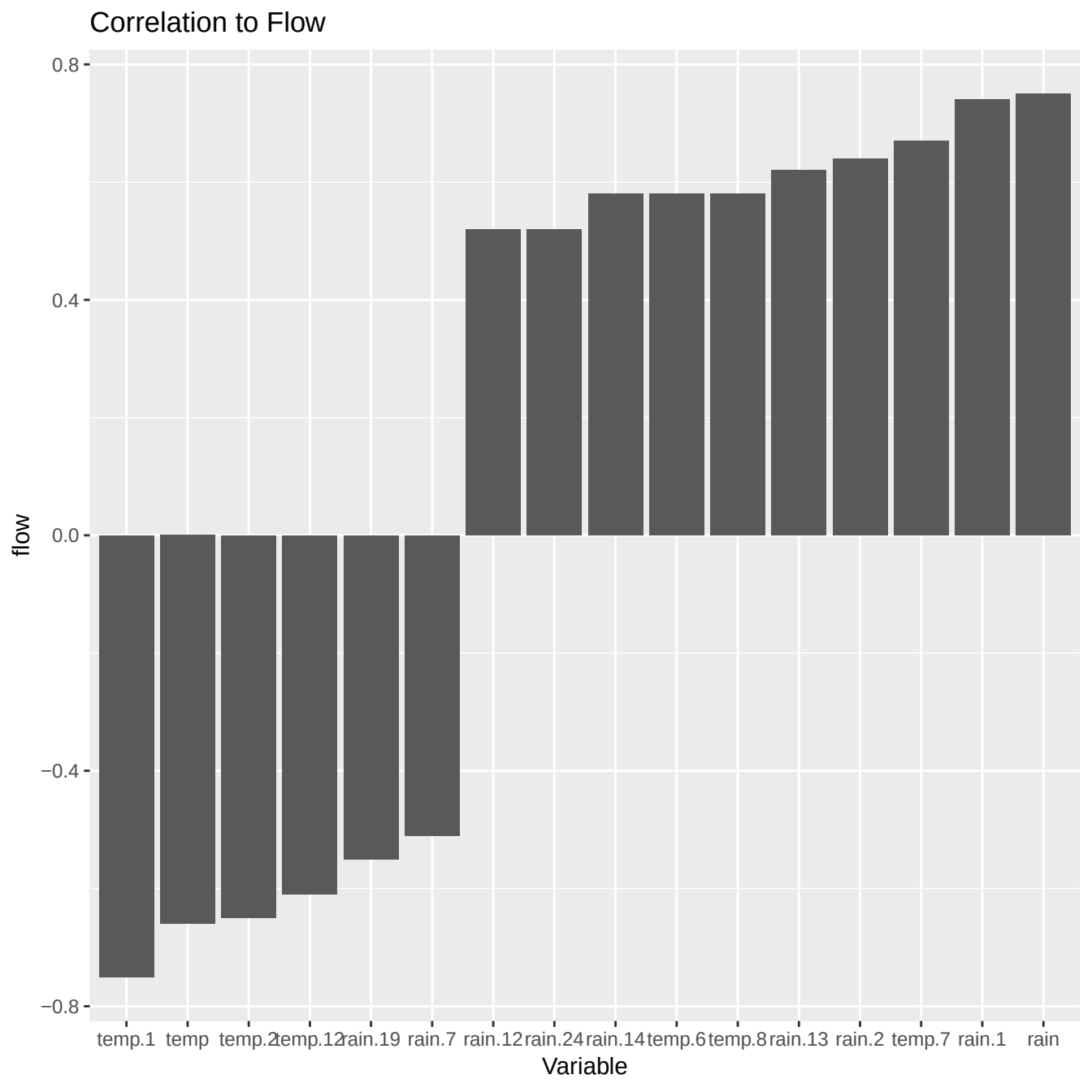

Flow vs. Temperature Monthly
flow
temp

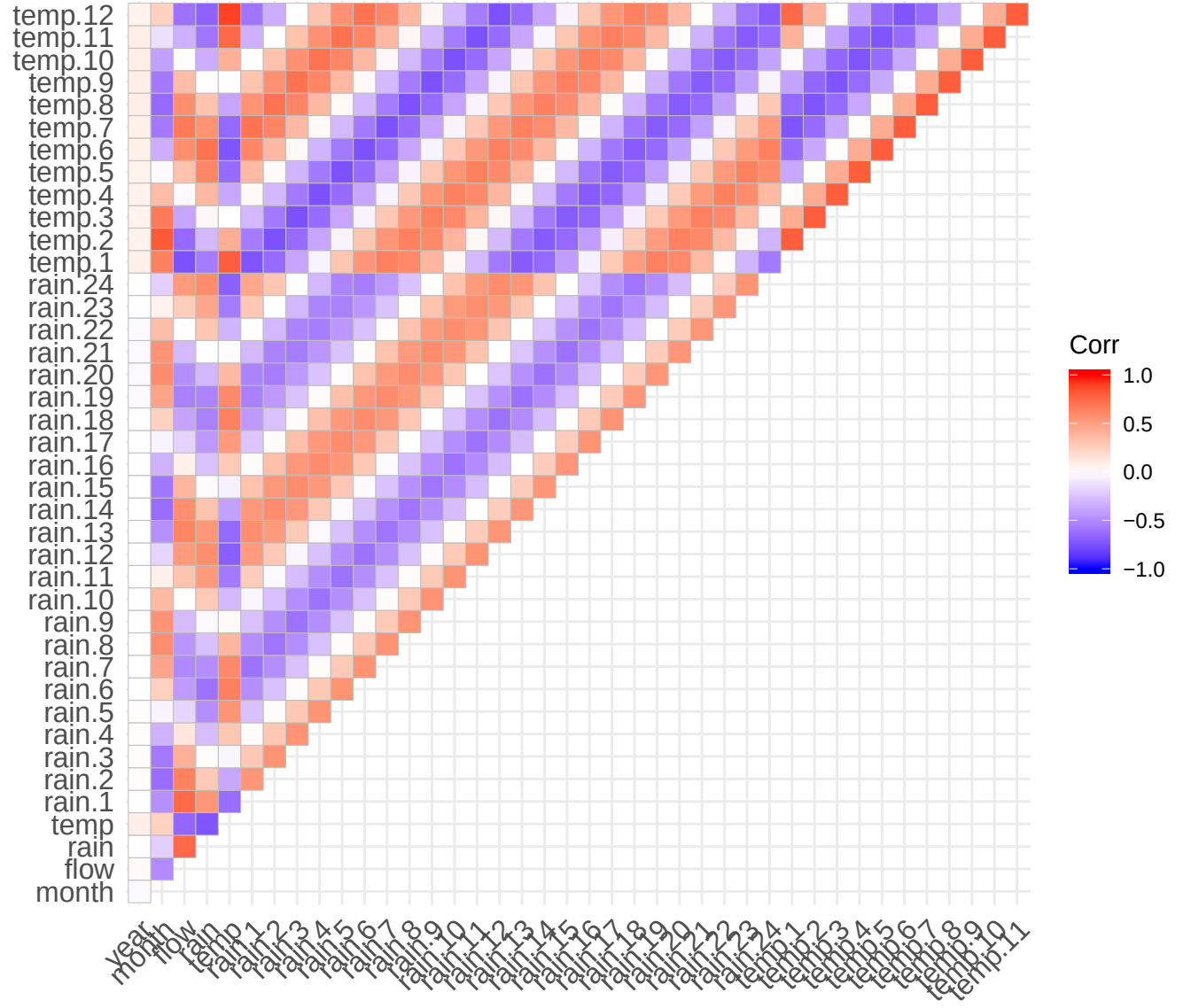

Flow vs Rain Monthly
flow
rain

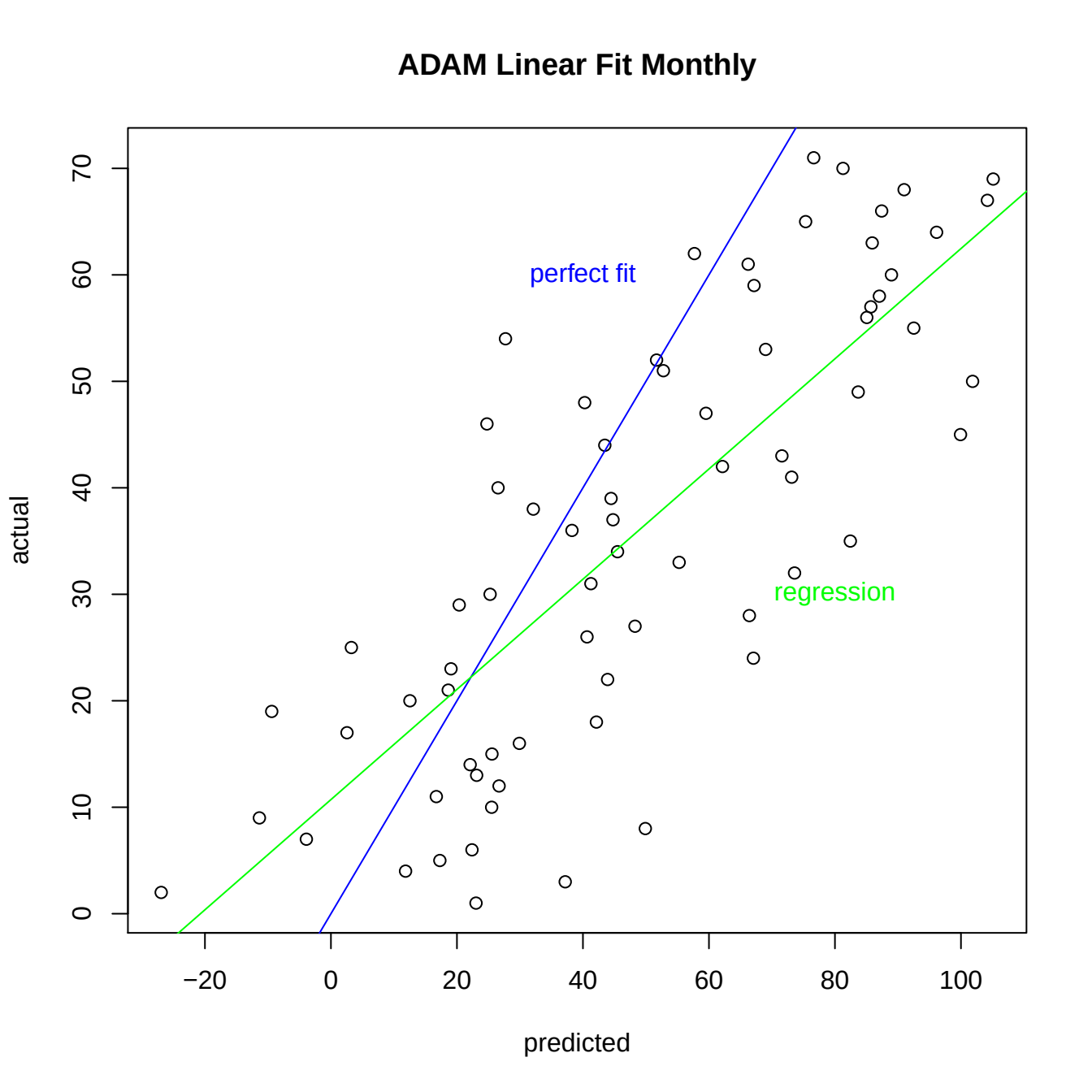

Flow vs. Temperature − 1 month
flow
temp.1

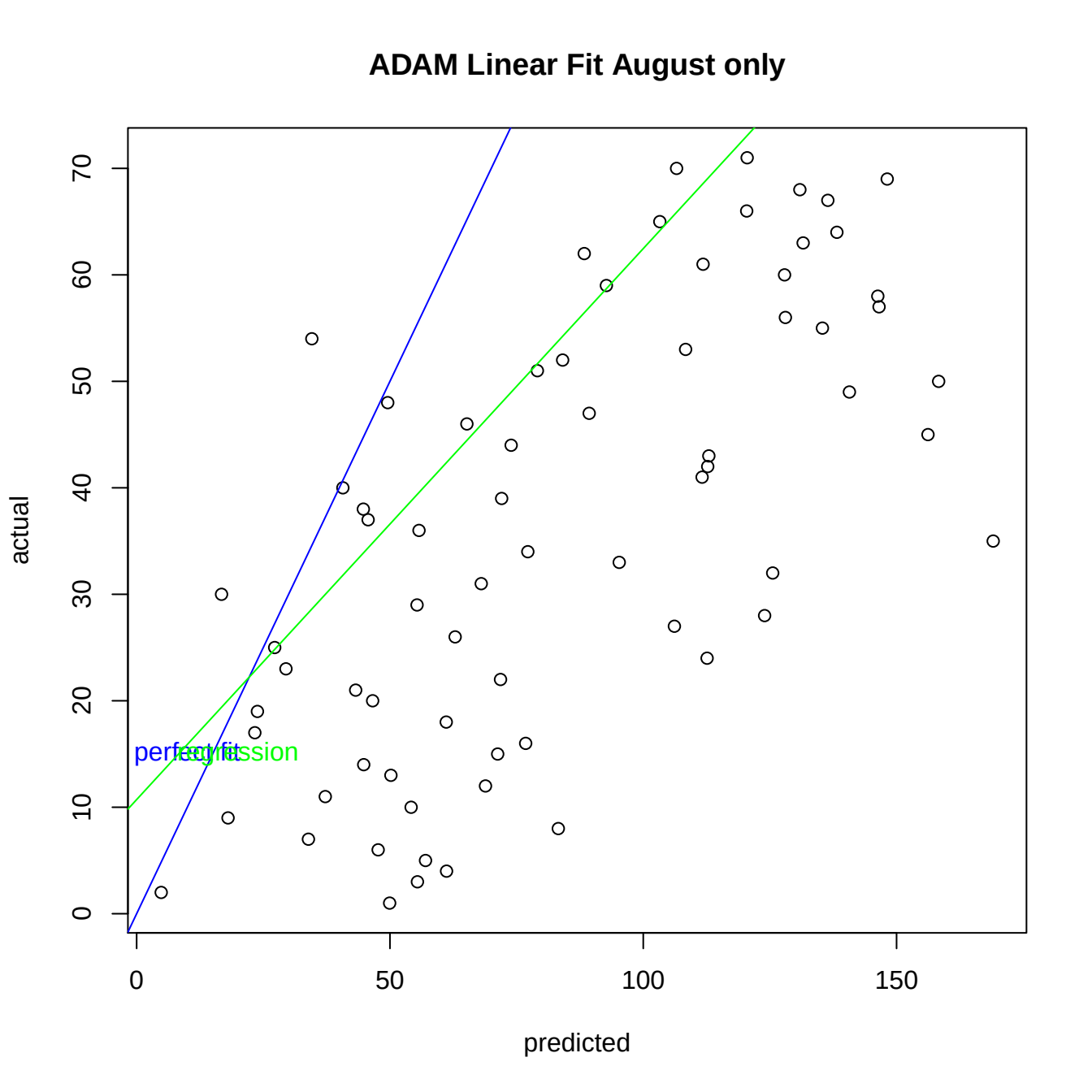

Flow vs. Rain −1 Month
flow
rain.1

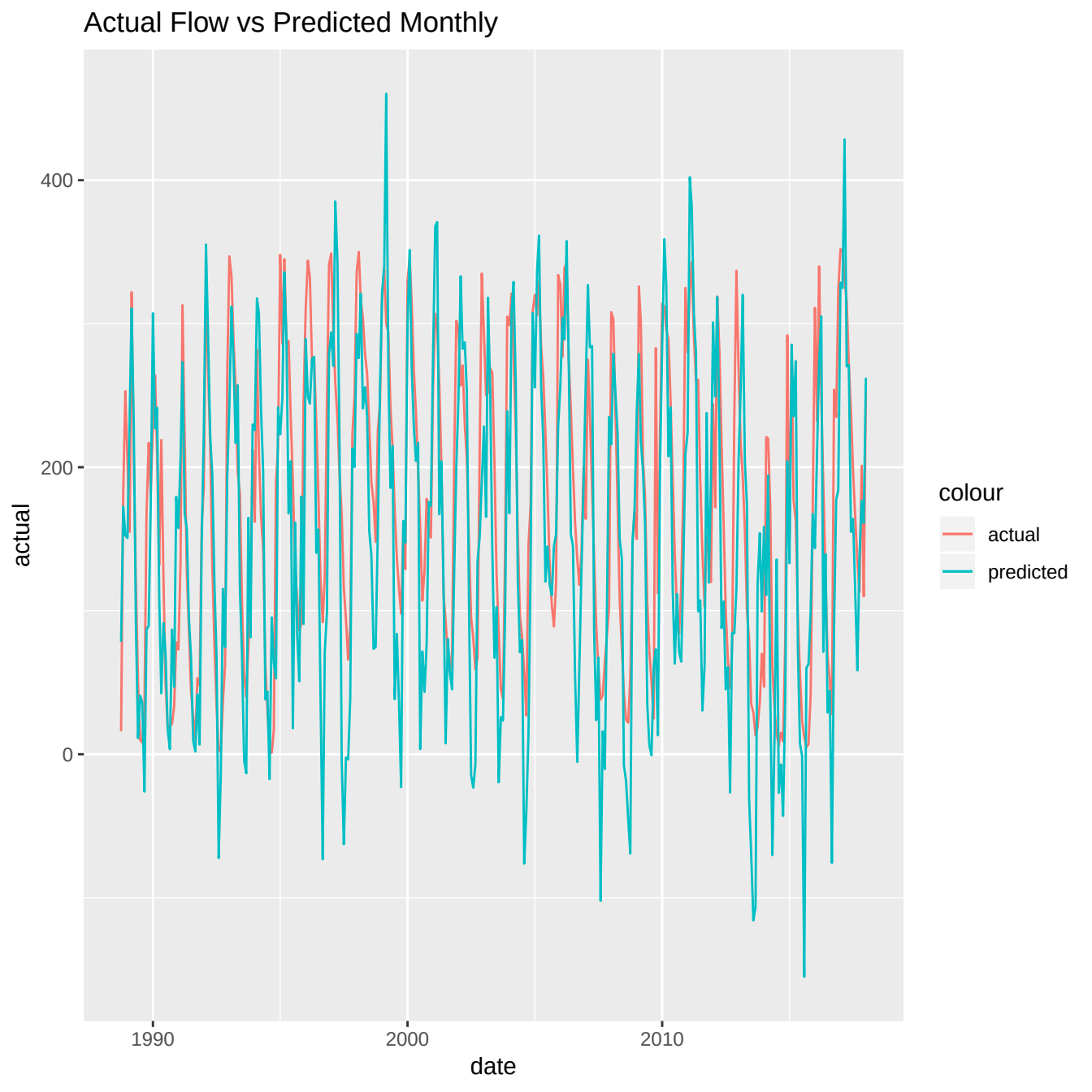

Flow vs. Temperature −7 months
flow
temp.7

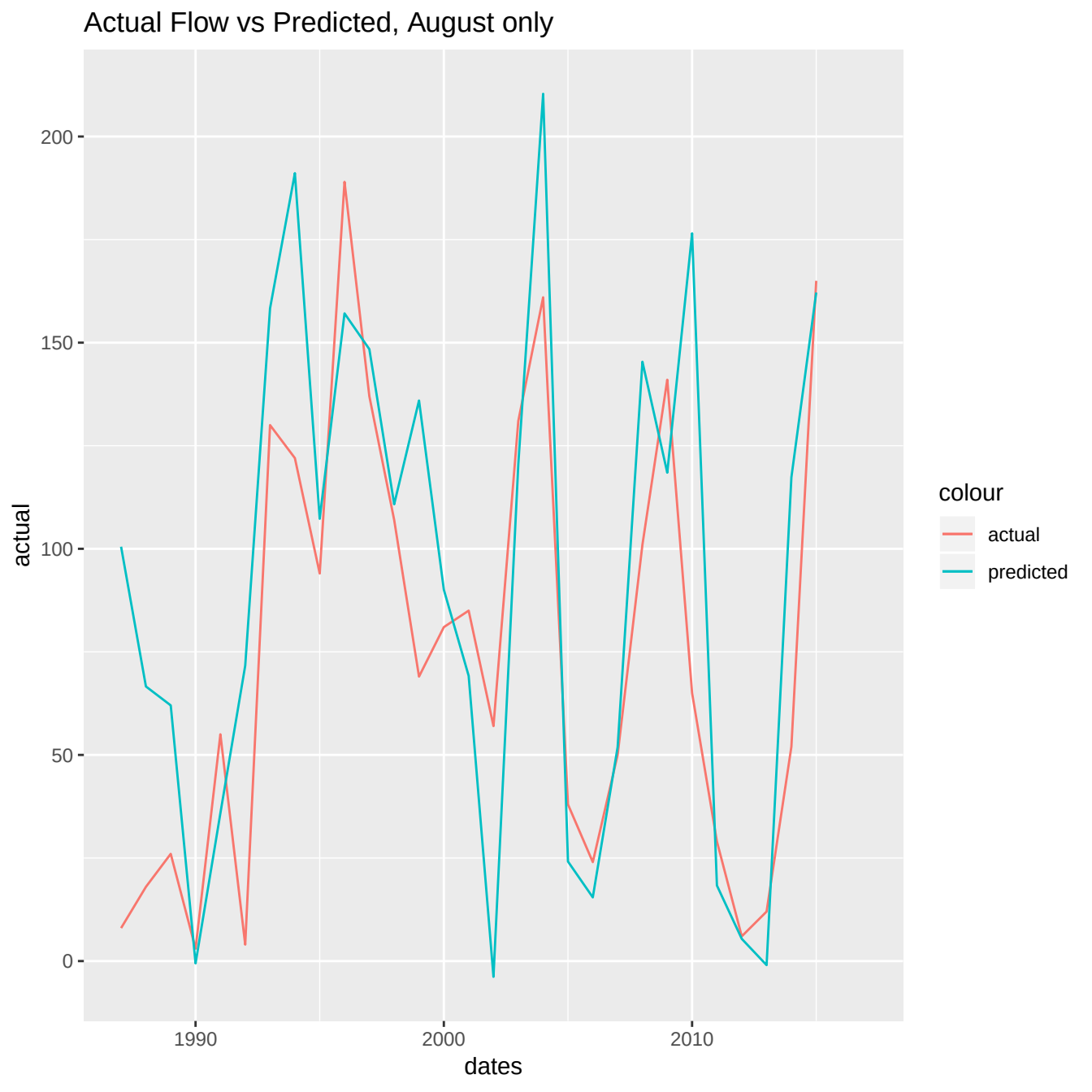

Correlation to Flow
0.8
0.4
0.0
−0.4
−0.8
flow
temp.1
temp
temp.2
temp.12
rain.19
rain.7
rain.12
rain.24
rain.14
temp.6
temp.8
rain.13
rain.2
temp.7
rain.1
rain
Variable

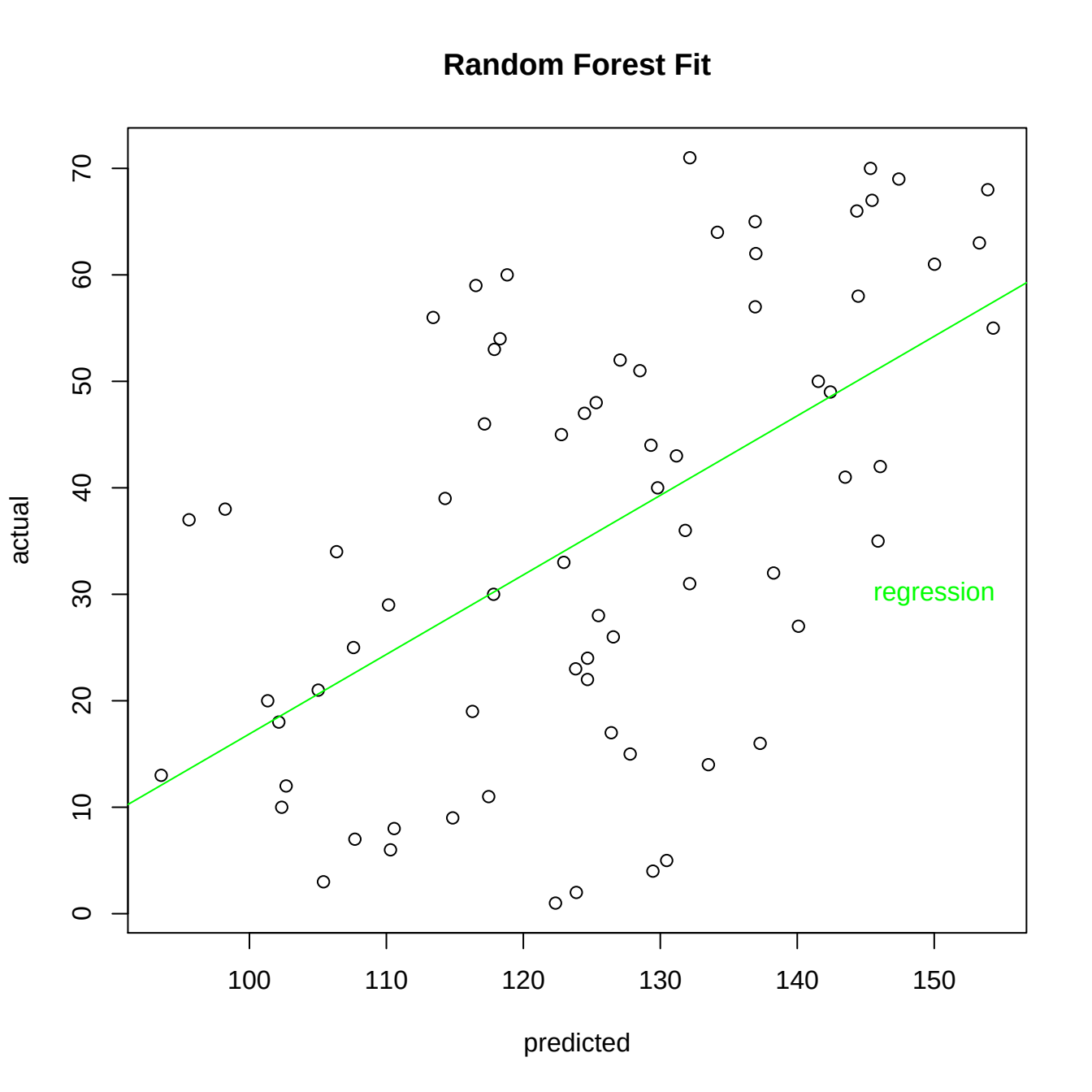

temp.12
temp.11
temp.10
temp.9
temp.8
temp.7
temp.6
temp.5
temp.4
temp.3
temp.2
temp.1
rain.24
rain.23
rain.22
rain.21
rain.20
rain.19
rain.18
rain.17
rain.16
rain.15
rain.14
rain.13
rain.12
rain.11
rain.10
rain.9
rain.8
rain.7
rain.6
rain.5
rain.4
rain.3
rain.2
rain.1
temp
rain
flow
month
year
month
flow
rain
temp.1
rain.1
rain.2
rain.3
rain.4
rain.5
rain.6
rain.7
rain.8
rain.9
rain.10
rain.11
rain.12
rain.13
rain.14
rain.15
rain.16
rain.17
rain.18
rain.19
rain.20
rain.21
rain.22
rain.23
rain.24
temp.1
temp.2
temp.3
temp.4
temp.5
temp.6
temp.7
temp.8
temp.9
temp.10
temp.11
Corr
1.0
0.5
0.0
−0.5
−1.0

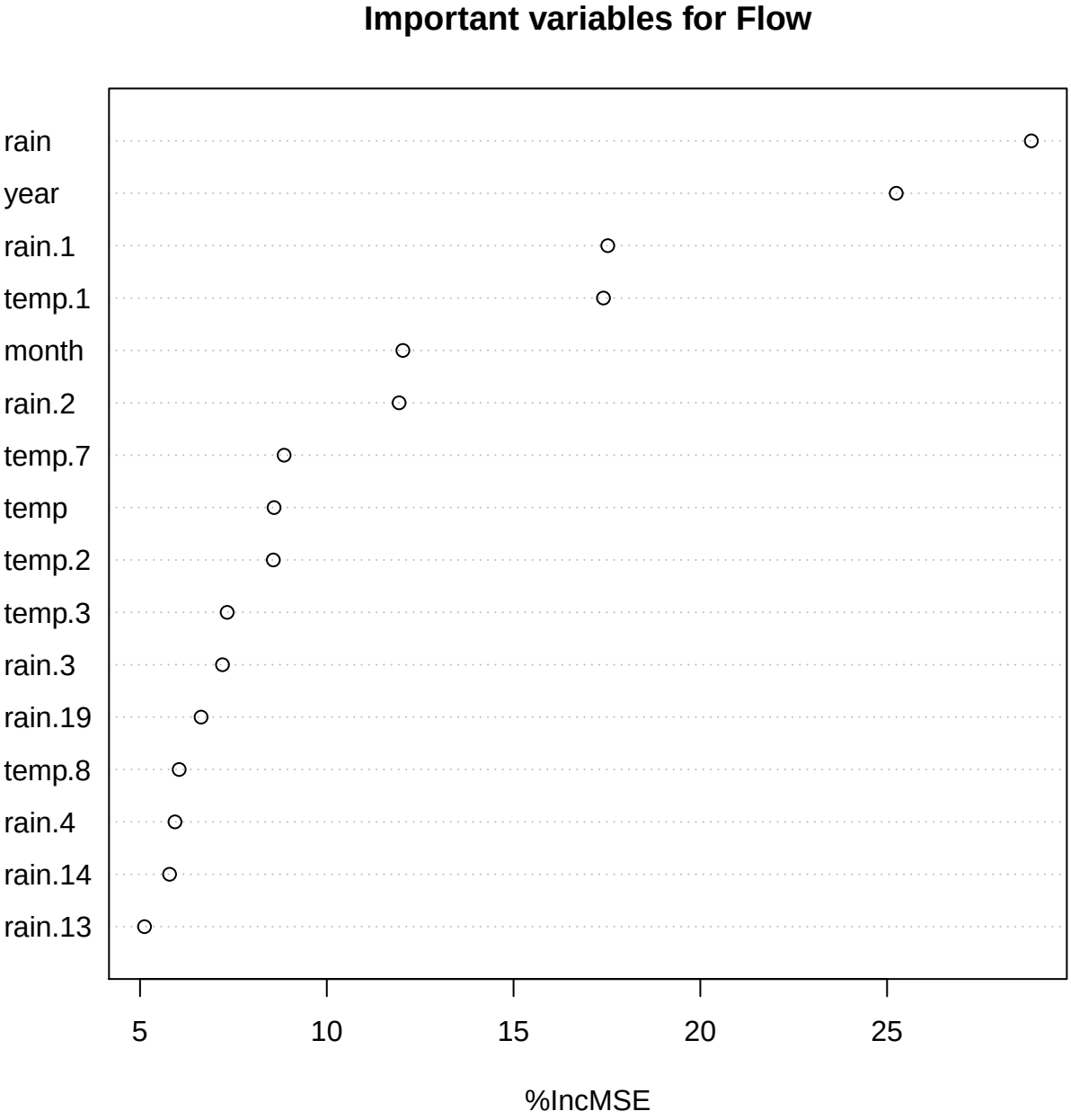

ADAM Linear Fit Monthly
perfect fit
regression
actual
predicted
0
10
20
30
40
50
60
70
−20
0
20
40
60
80
100


ADAM Linear Fit August only
actual
predicted
0
10
20
30
40
50
60
70
0
50
100
150
perfect fit
regression


Actual Flow vs Predicted Monthly
400
200
0
actual
1990
2000
2010
date
colour
actual
predicted


Actual Flow vs Predicted, August only
actual
dates
colour
actual
predicted
200
150
100
50
0
1990
2000
2010


Random Forest Fit
actual
predicted
0
10
20
30
40
50
60
70
100
110
120
130
140
150
regression


Important variables for Flow
rain
year
rain.1
temp.1
month
rain.2
temp.7
temp
temp.2
temp.3
rain.3
rain.19
temp.8
rain.4
rain.14
rain.13
5
10
15
20
25
%IncMSE