*International Journal of Wildland Fire* 24(8), 1045–1061
doi: 10.1071/WF14167_AC


## Supplementary material

# Fire in Arctic Tundra of Alaska: past fire activity, future fire potential, and significance for land management and ecology

*Nancy H. F. French*[A,E], *Liza K. Jenkins*[A], *Tatiana V. Loboda*[B], *Michael Flannigan*[C], *Randi Jandt*[D], *Laura L. Bourgeau-Chavez*[A] *and Matthew Whitley*[A]

[A]Michigan Technological University, Michigan Tech Research Institute, 3600 Green Court, Suite 100, Ann Arbor, MI 48105, USA.

[B]University of Maryland, Dept of Geographical Sciences, 2181 LeFrak Hall, College Park, MD 20742, USA.

[C]University of Alberta, Department of Renewable Resources, Edmonton, AB T6G 2H1, Canada.

[D]Alaska Fire Science Consortium, University of Alaska, International Arctic Research Building, Fairbanks, AK 99775, USA.

[E]Corresponding author. Email: nhfrench@mtu.edu

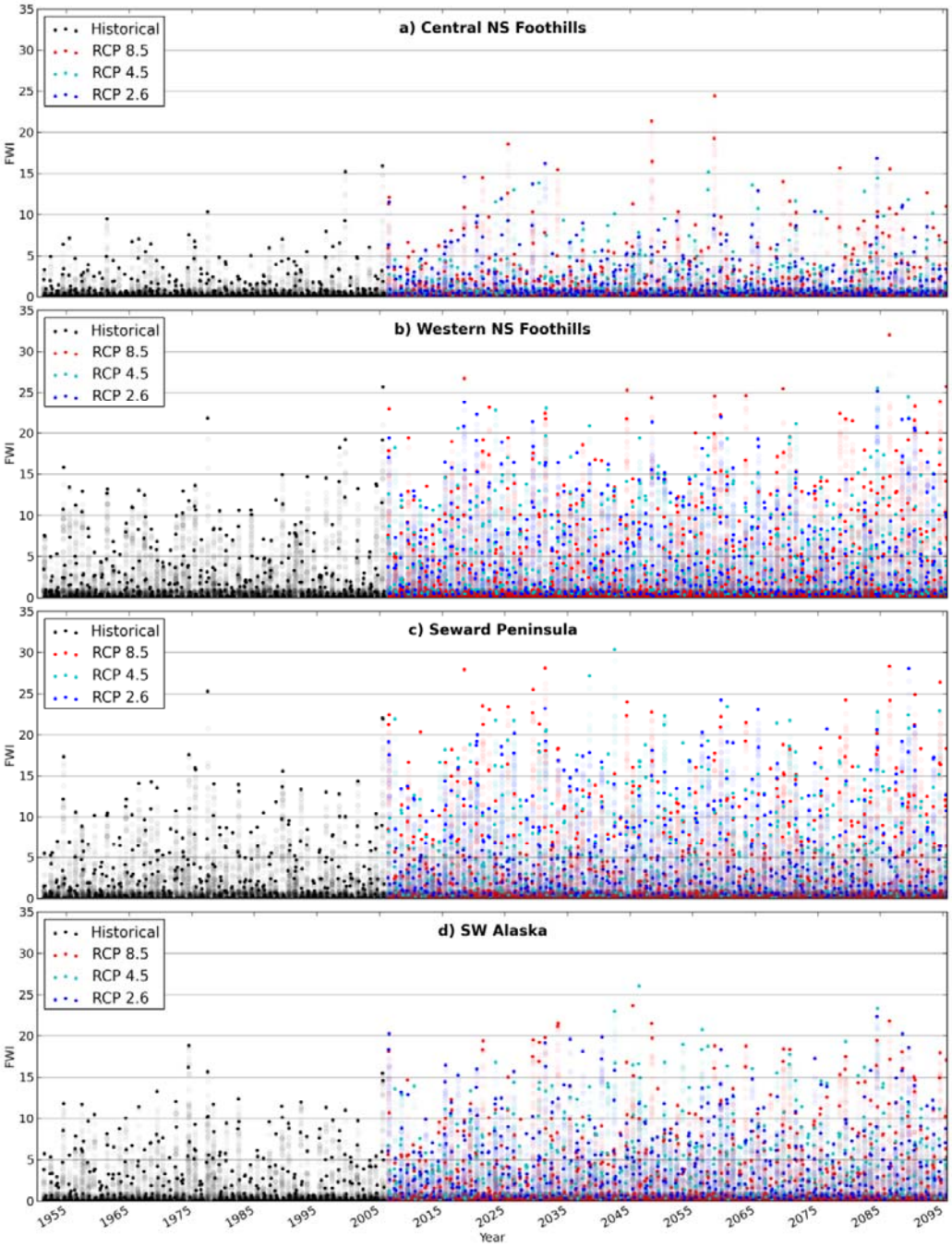



**Fig. S1.** Monthly maximum historical and projected Fire Weather Index values (bold points) overlaying the daily FWI (faint points) for: *a*) the central NS Foothills, *b*) the western NS Foothills (Noatak river basin), *c*) Seward Peninsula, and *d*) SW Alaska. Black represents modelled historical FWI and colours represent modelled future FWI for the three IPCC RCPs evaluated. Compare to Fig. 4 in the main text, which presents the daily FWI over same period.

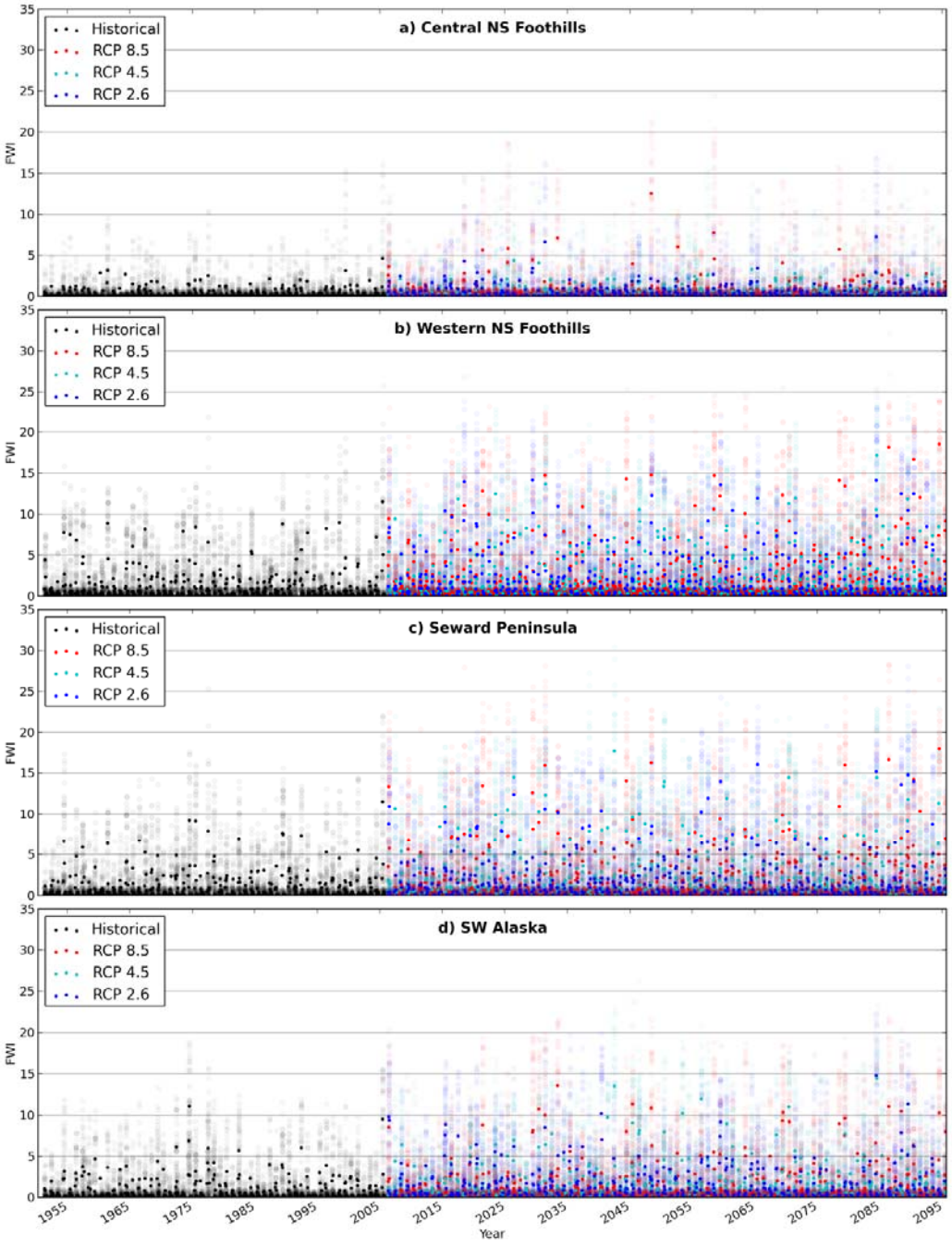
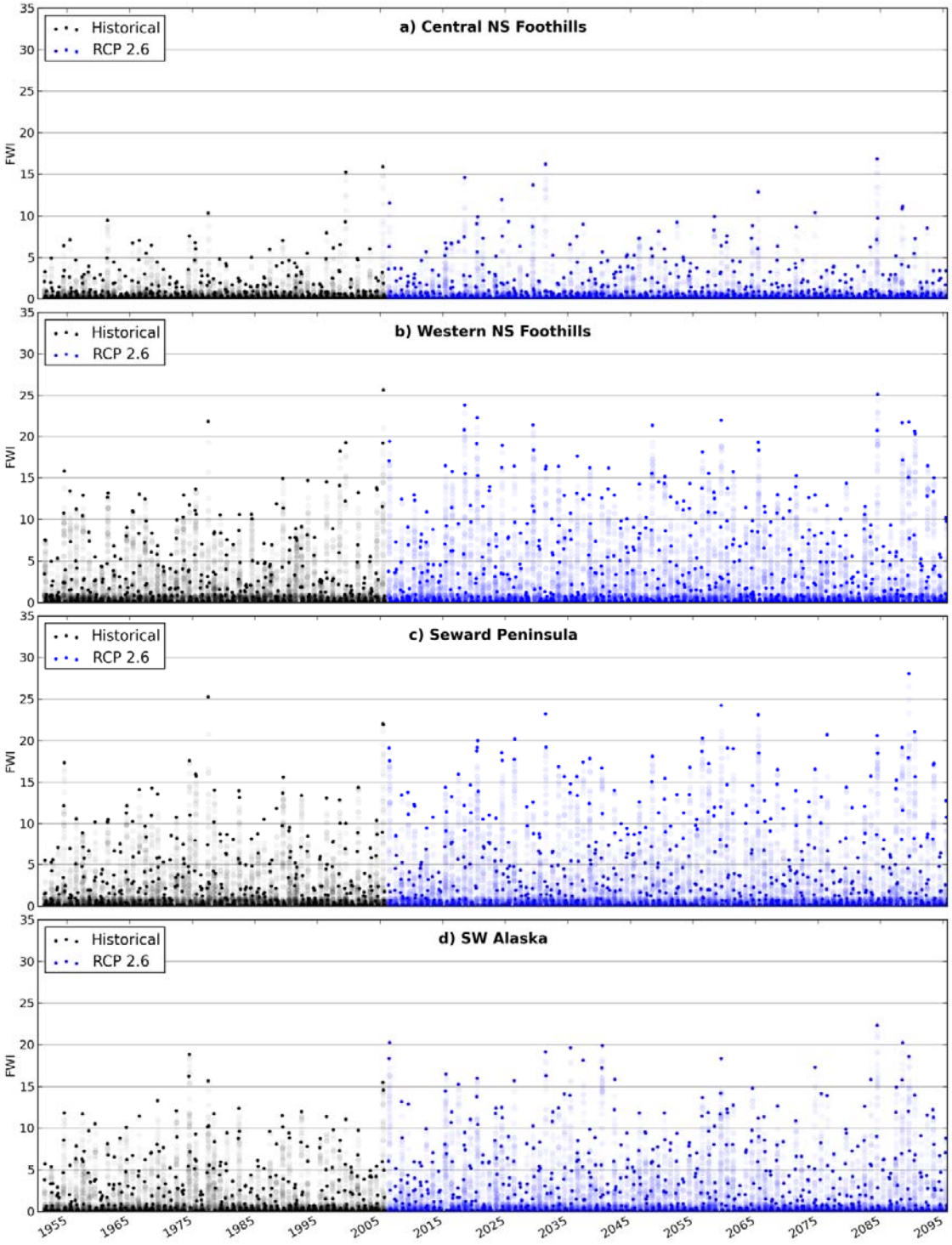
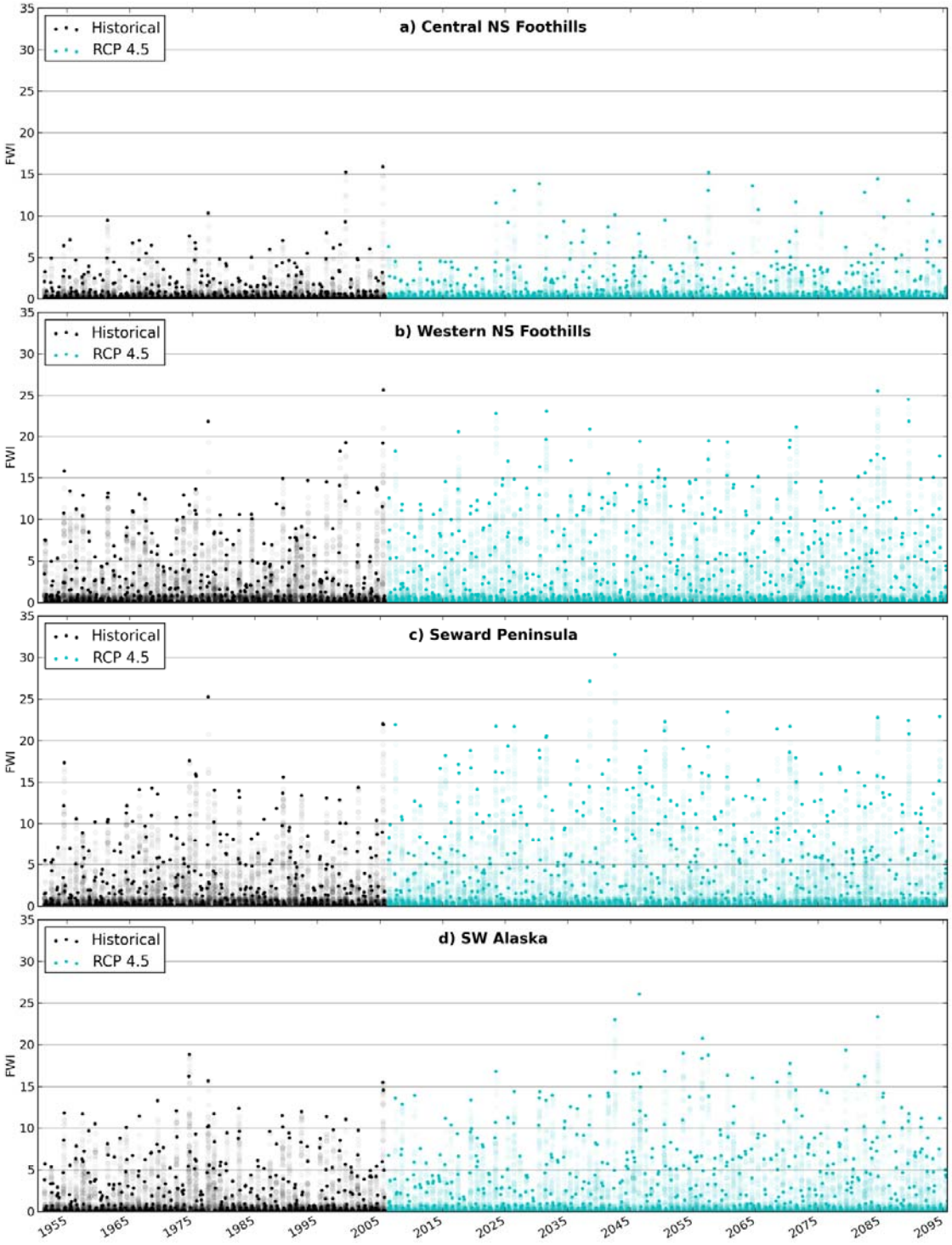



**Fig. S2.** Monthly mean historical and projected Fire Weather Index values (bold points) overlaying the daily FWI (faint points) for: *a*) the central NS Foothills, *b*) the western NS Foothills (Noatak river basin), *c*) Seward Peninsula, and *d*) SW Alaska. Black represents modelled historical FWI and colours represent modelled future FWI for the three IPCC RCPs evaluated. Compare to Fig. 4 in the main text, which presents the daily FWI over same period.


a) Central NS Foothills
b) Western NS Foothills
c) Seward Peninsula
d) SW Alaska
Historical
RCP 2.6
FWI
0
5
10
15
20
25
30
35
1955
1965
1975
1985
1995
2005
2015
2025
2035
2045
2055
2065
2075
2085
2095


a) Central NS Foothills
b) Western NS Foothills
c) Seward Peninsula
d) SW Alaska
Historical
RCP 4.5
FWI
0
5
10
15
20
25
30
35
1955
1965
1975
1985
1995
2005
2015
2025
2035
2045
2055
2065
2075
2085
2095

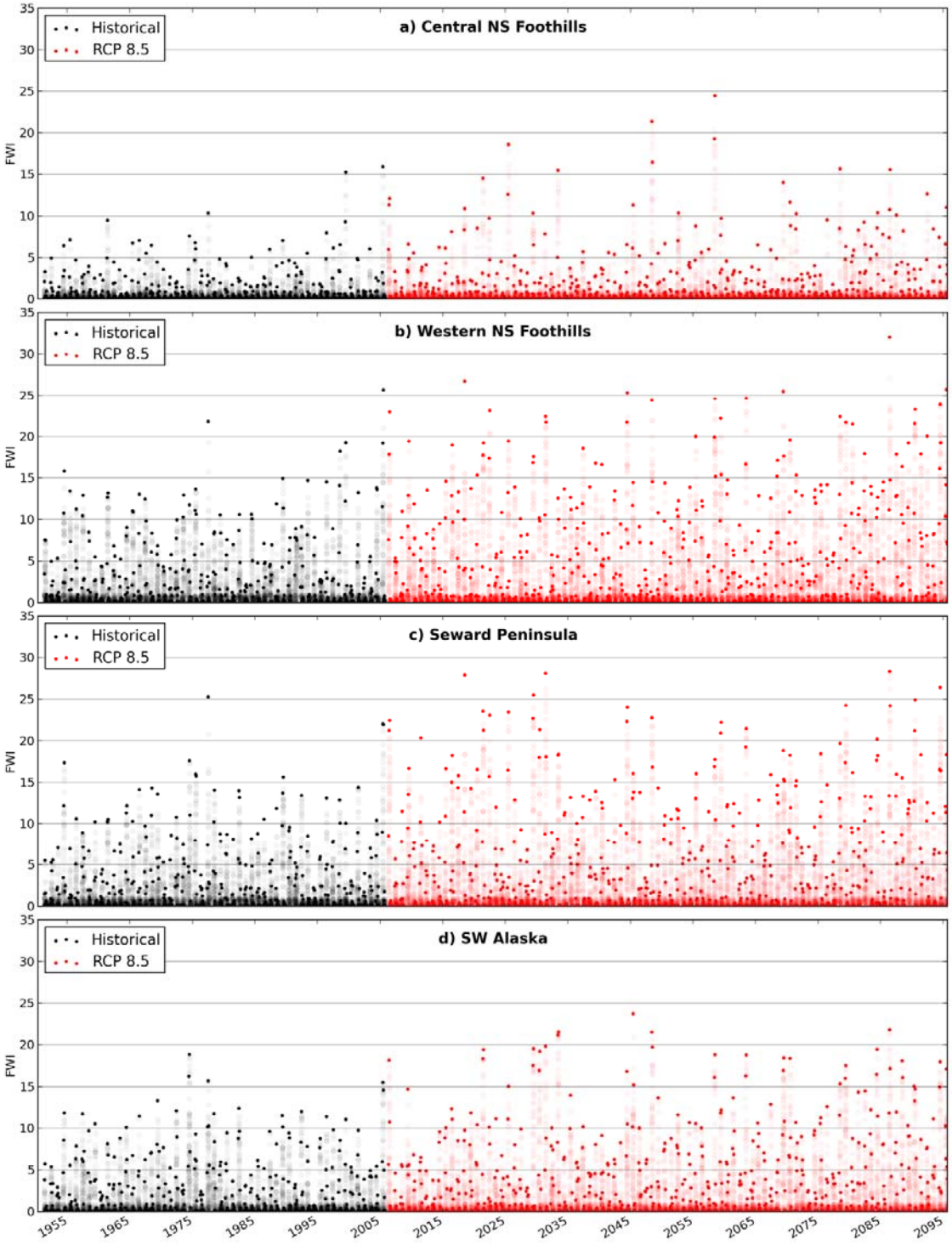
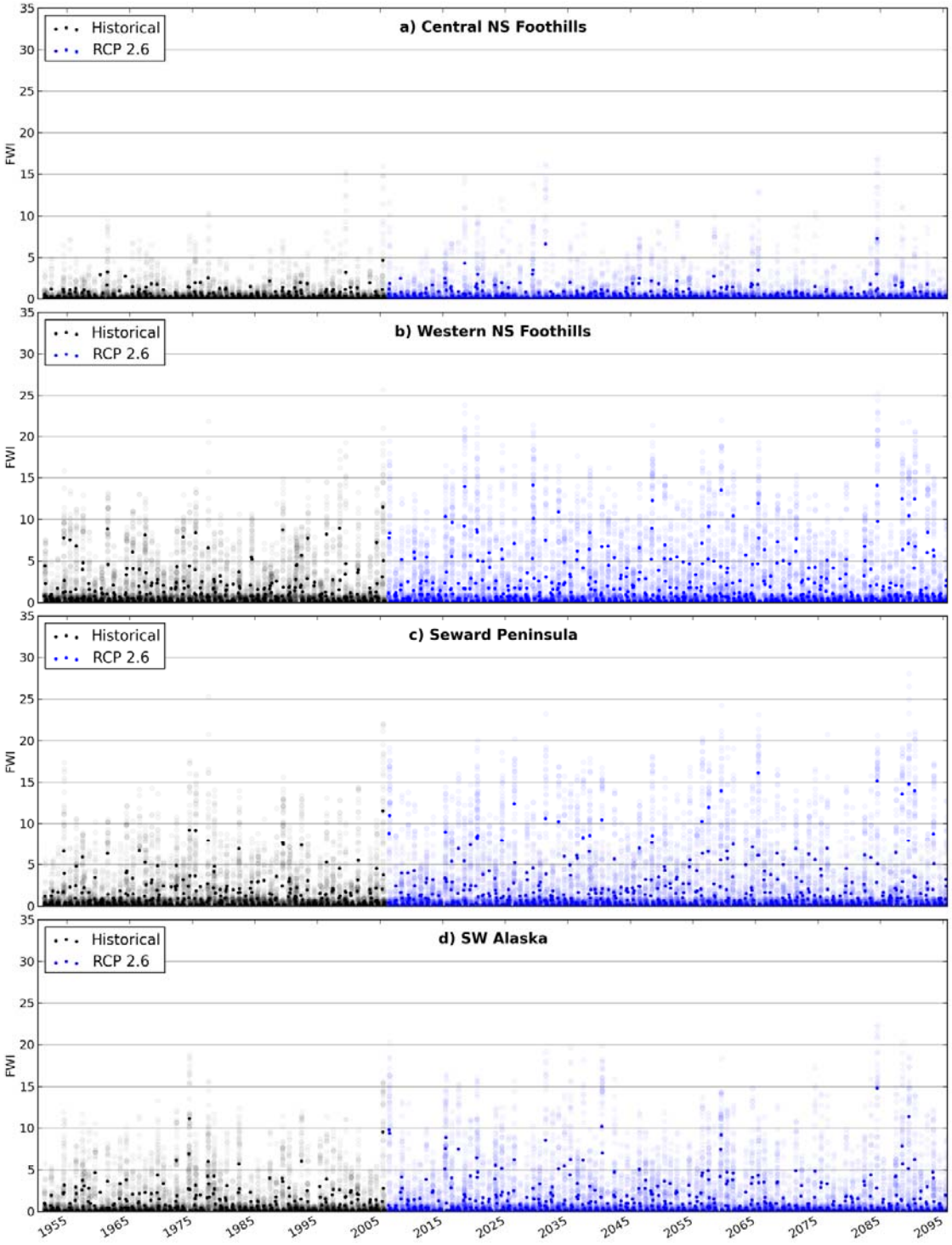
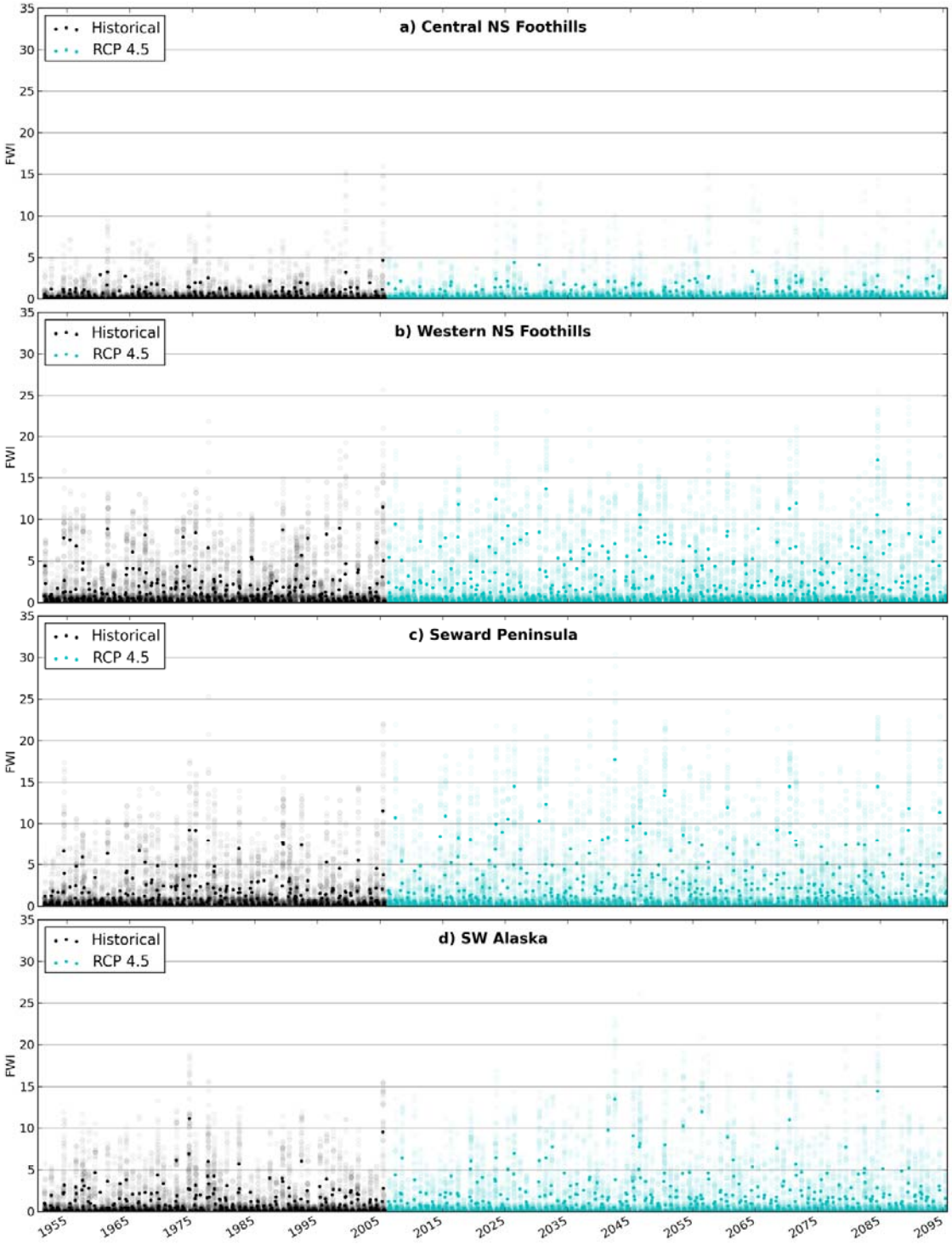



**Fig. S3.** Monthly maximum historical and projected Fire Weather Index values (bold points) overlaying the daily FWI (faint points) for each climate scenario and region.


a) Central NS Foothills
b) Western NS Foothills
c) Seward Peninsula
d) SW Alaska
Historical
RCP 2.6
FWI
0
5
10
15
20
25
30
35
1955
1965
1975
1985
1995
2005
2015
2025
2035
2045
2055
2065
2075
2085
2095


a) Central NS Foothills
b) Western NS Foothills
c) Seward Peninsula
d) SW Alaska
Historical
RCP 4.5
FWI
0
5
10
15
20
25
30
35
1955
1965
1975
1985
1995
2005
2015
2025
2035
2045
2055
2065
2075
2085
2095

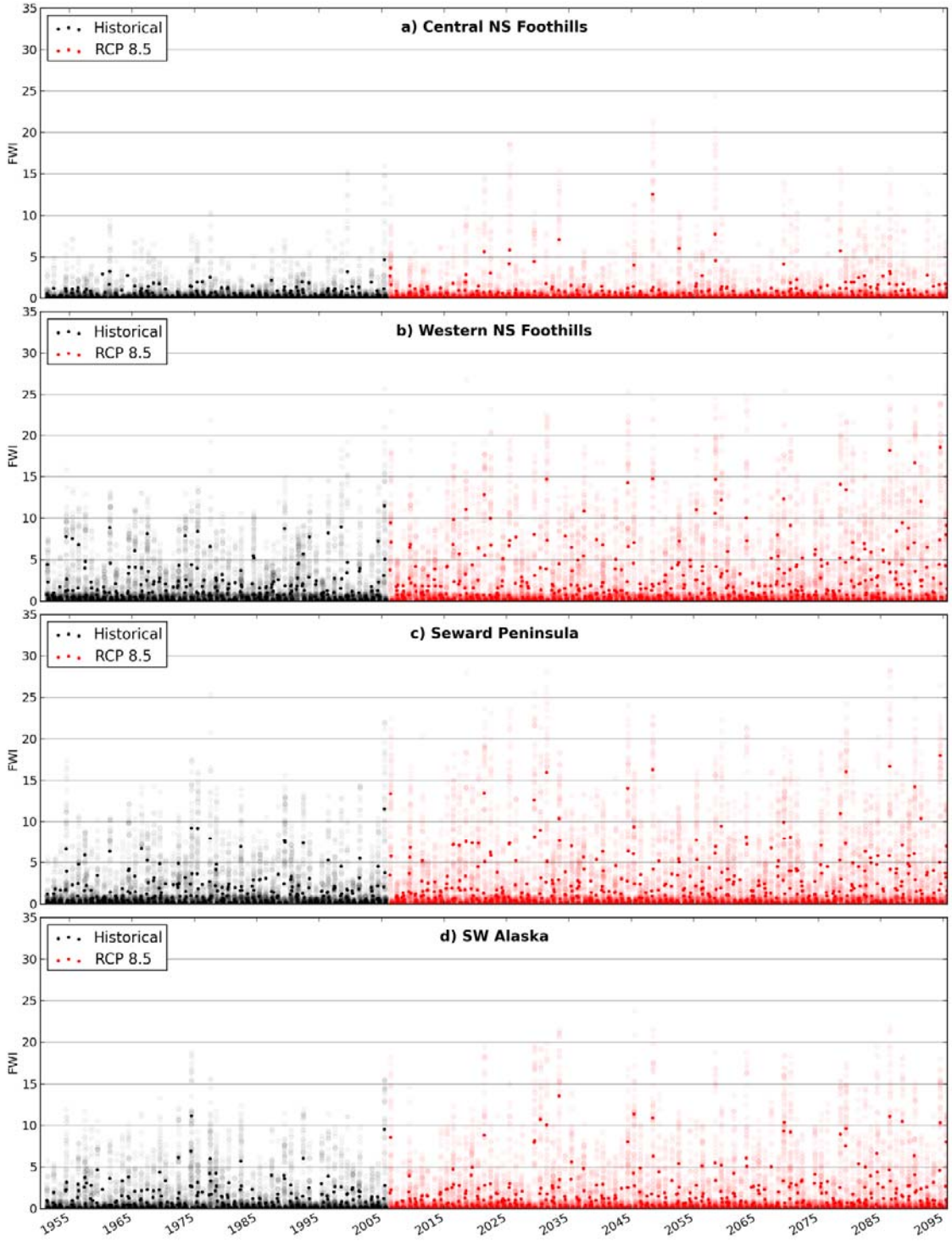
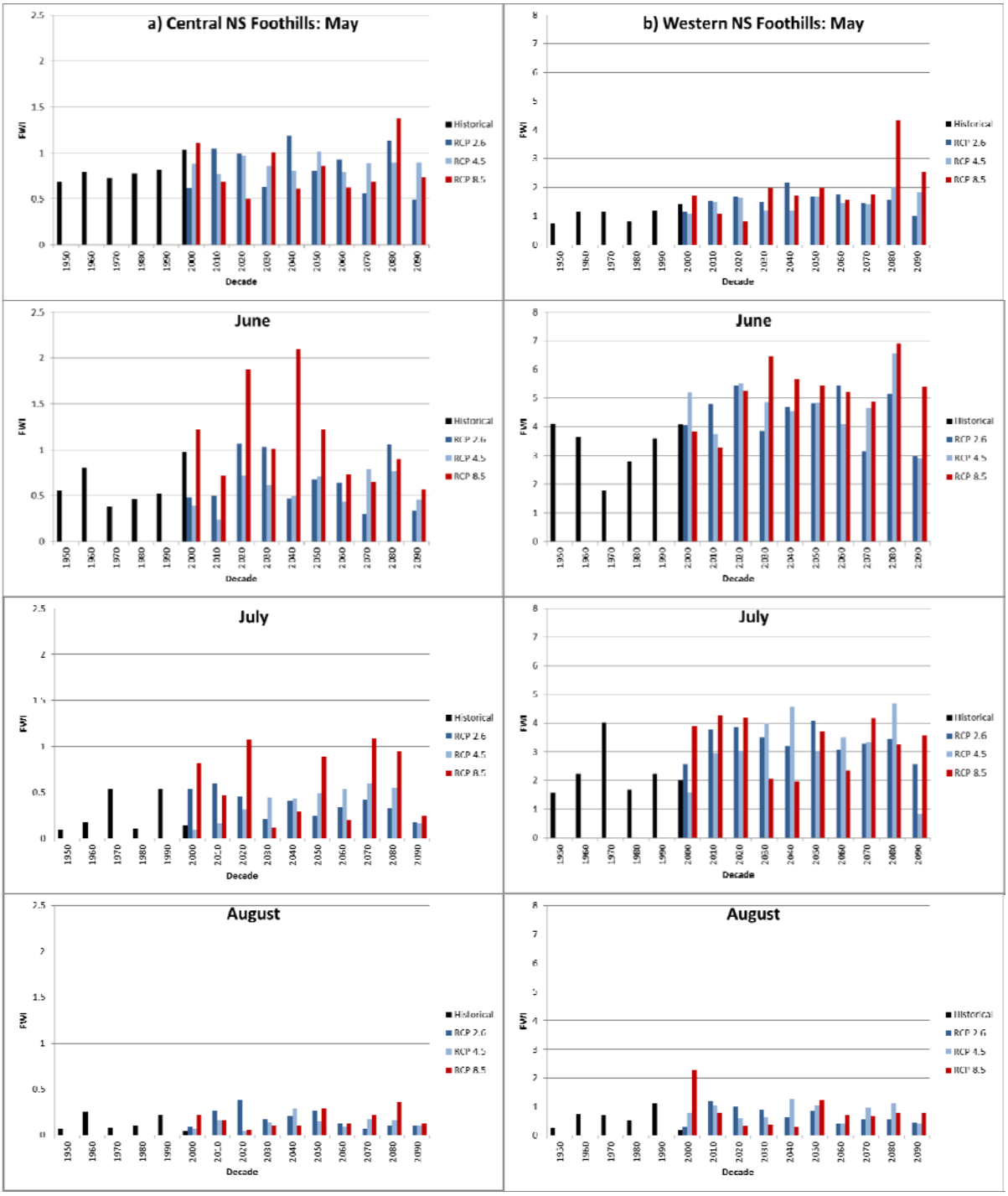



**Fig. S4.** Monthly mean historical and projected Fire Weather Index values (bold points) overlaying the daily FWI (faint points) for each climate scenario and region.


a) Central NS Foothills: May
b) Western NS Foothills: May
June
June
July
July
August
August
FWI
Decade
Historical
RCP 2.6
RCP 4.5
RCP 8.5

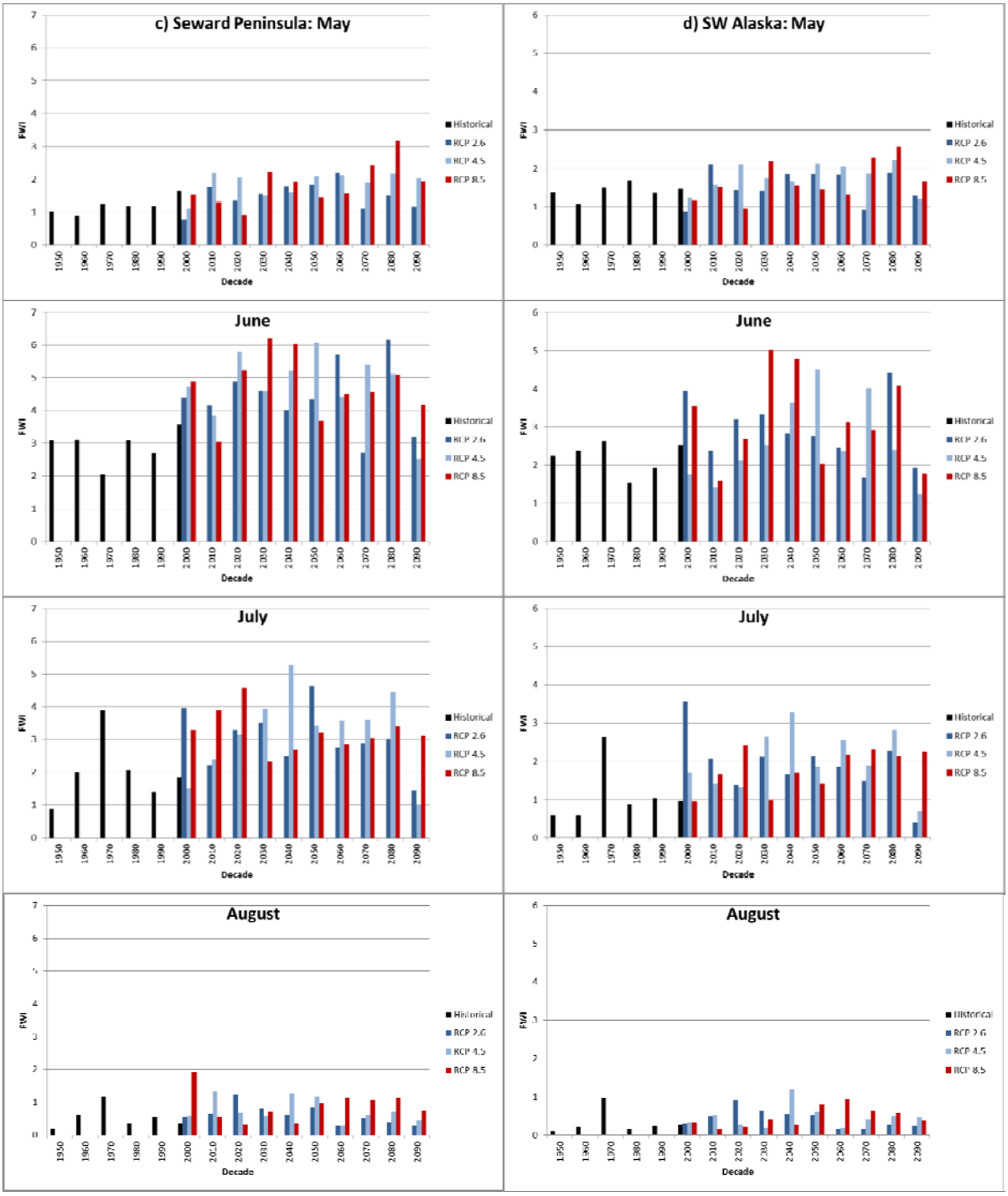



**Fig. S5.** Decadal mean summer monthly historical and projected FWI for three future climate scenarios for: *a*) the central NS Foothills, *b*) the western NS Foothills (Noatak river basin), *c*) Seward Peninsula, and *d*) SW Alaska. Black represents modelled historical FWI and colours represent modelled future FWI for the three IPCC RCPs evaluated. Compare to Fig. 4 in the main text, which presents the daily FWI over same period.