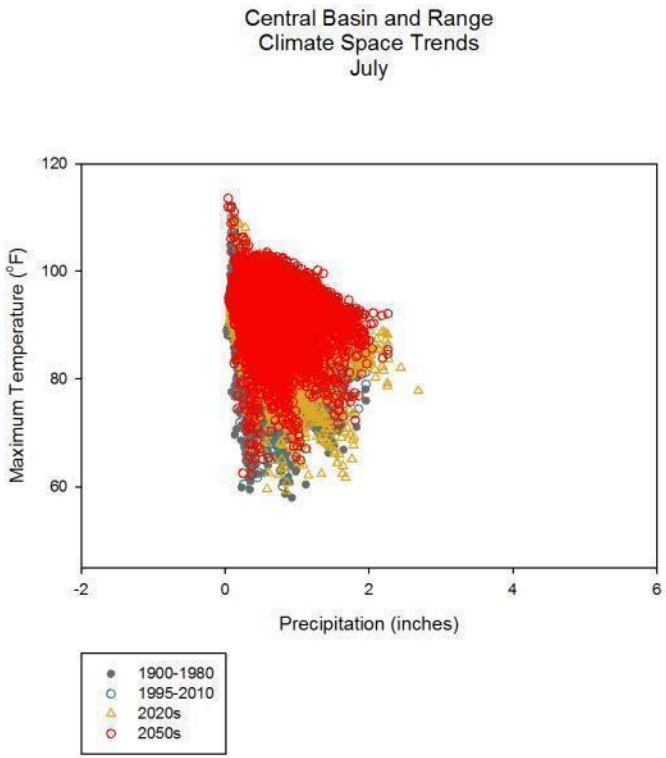
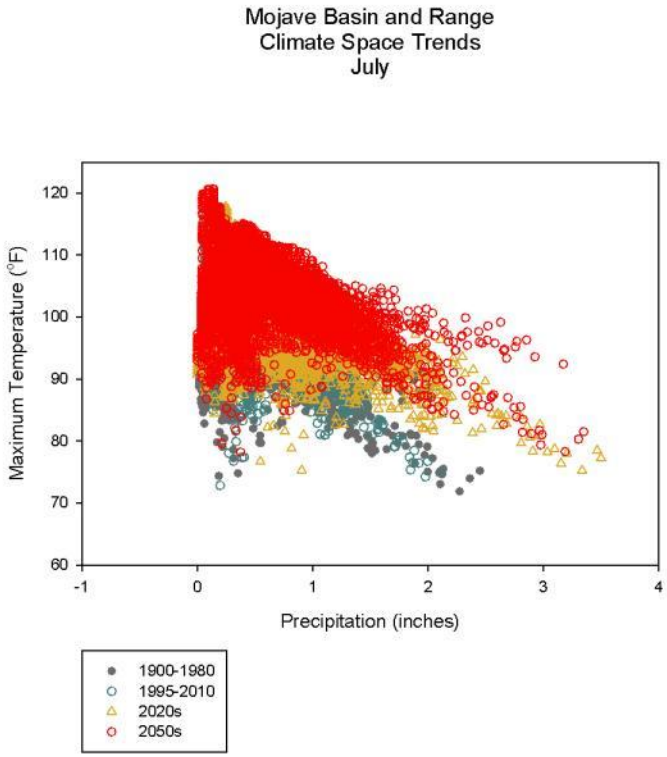
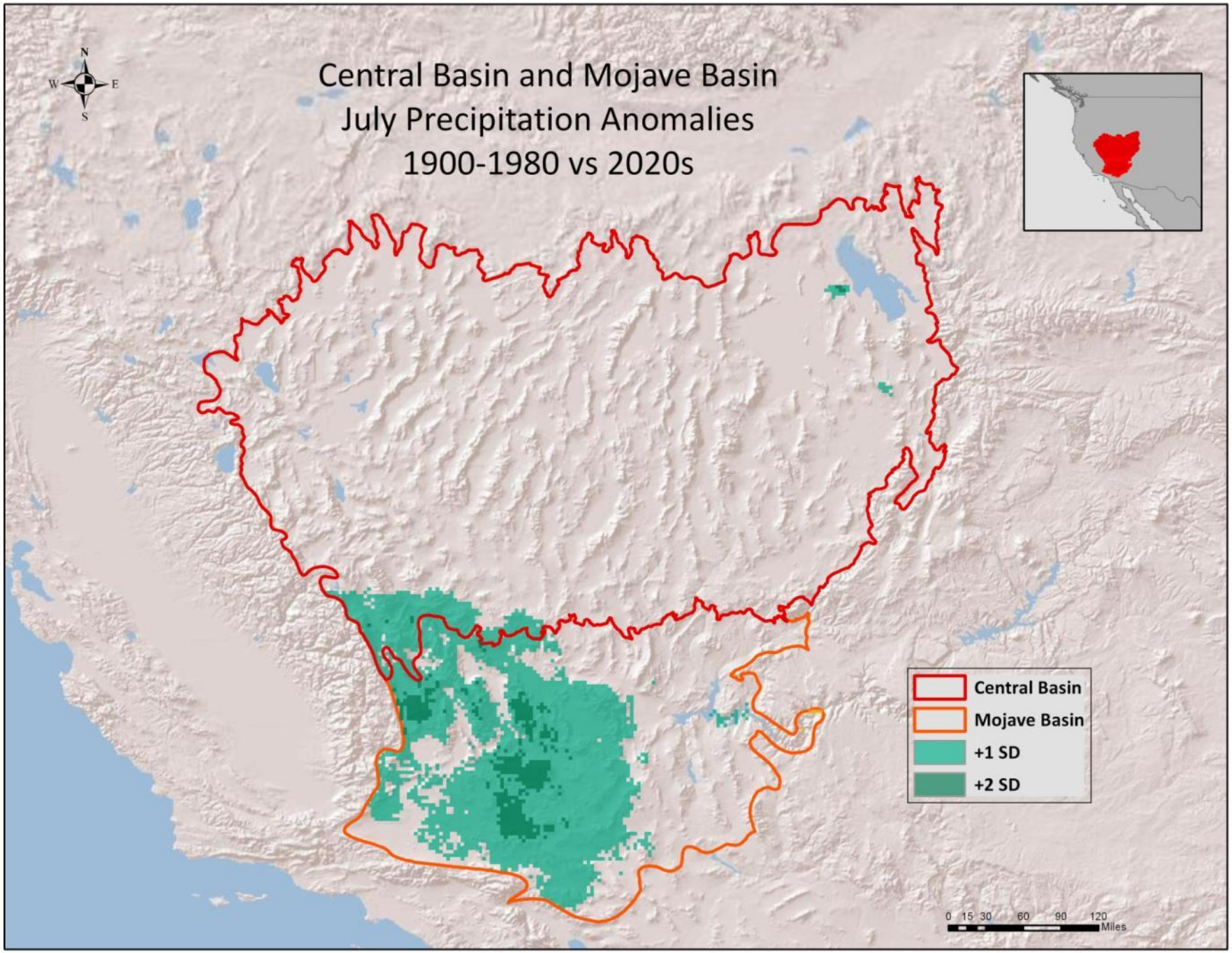
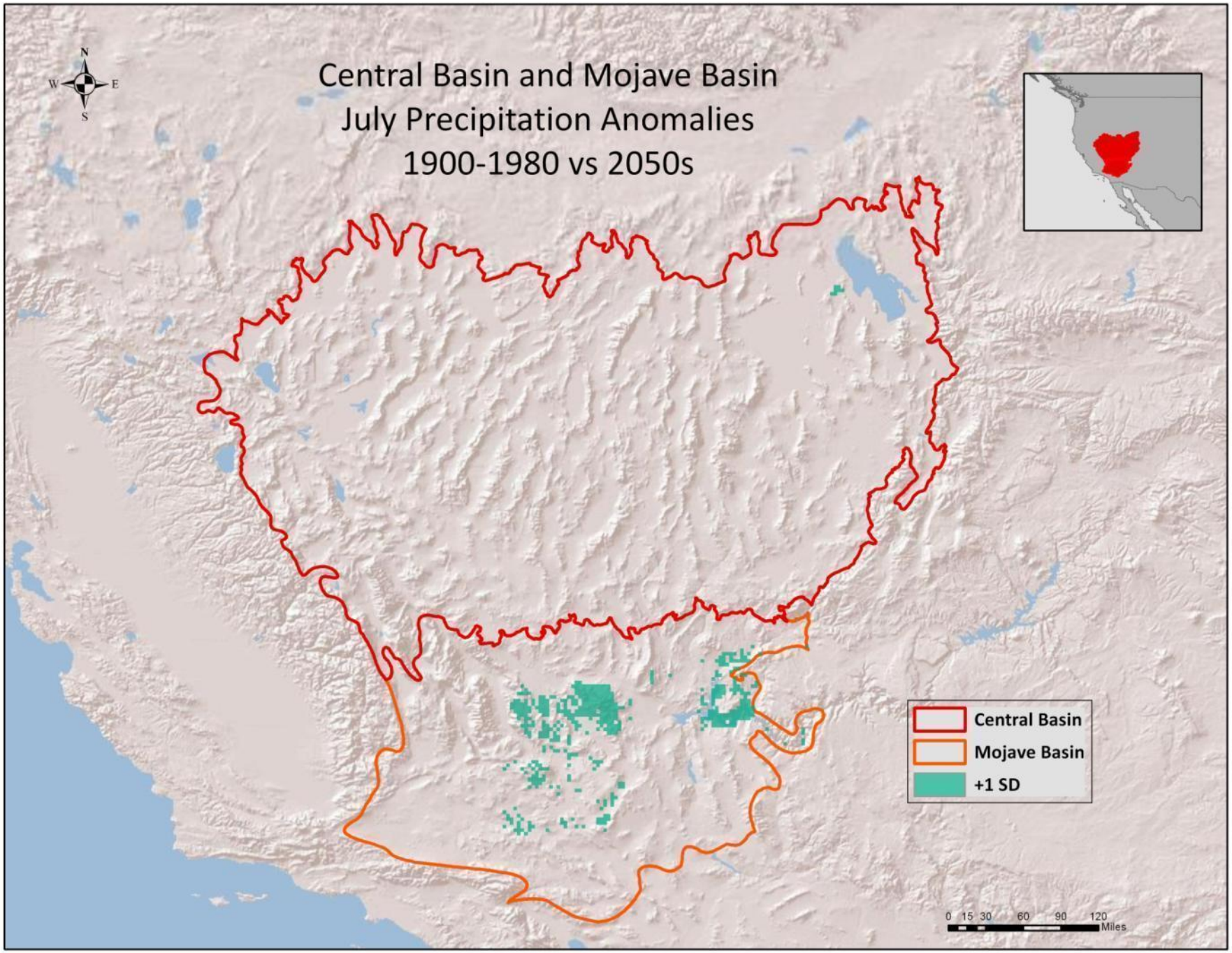
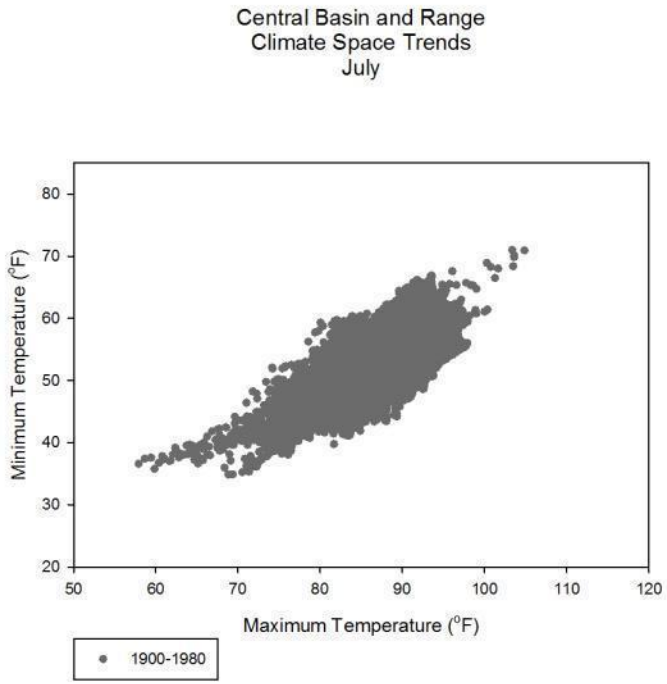
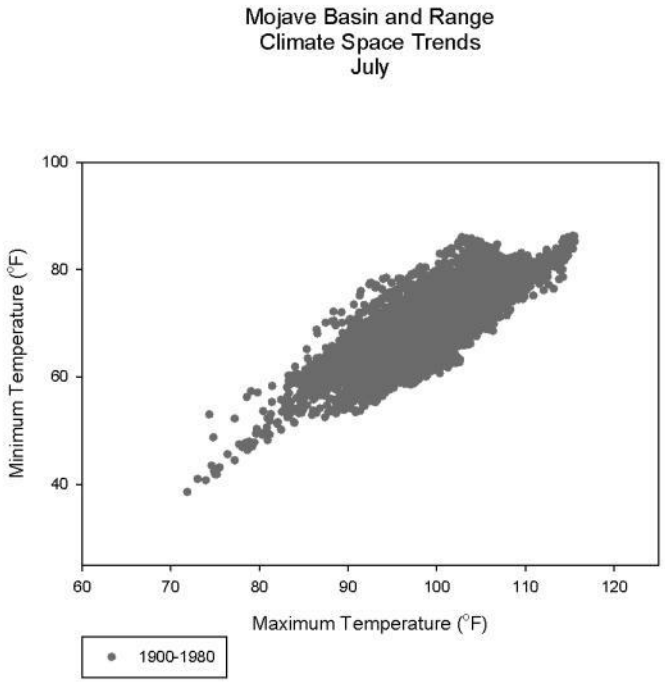

Central Basin and Range
Climate Space Trends
July
Maximum Temperature (°F)
Precipitation (inches)
120
100
80
60
-2
0
2
4
6
1900-1980
1995-2010
2020s
2050s

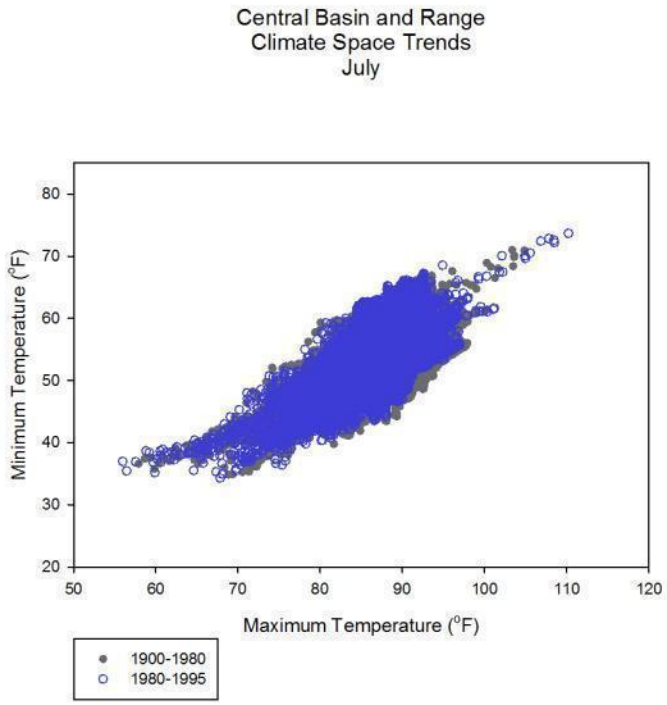

Mojave Basin and Range
Climate Space Trends
July
Maximum Temperature (°F)
Precipitation (inches)
120
110
100
90
80
70
60
-1
0
1
2
3
4
1900-1980
1995-2010
2020s
2050s

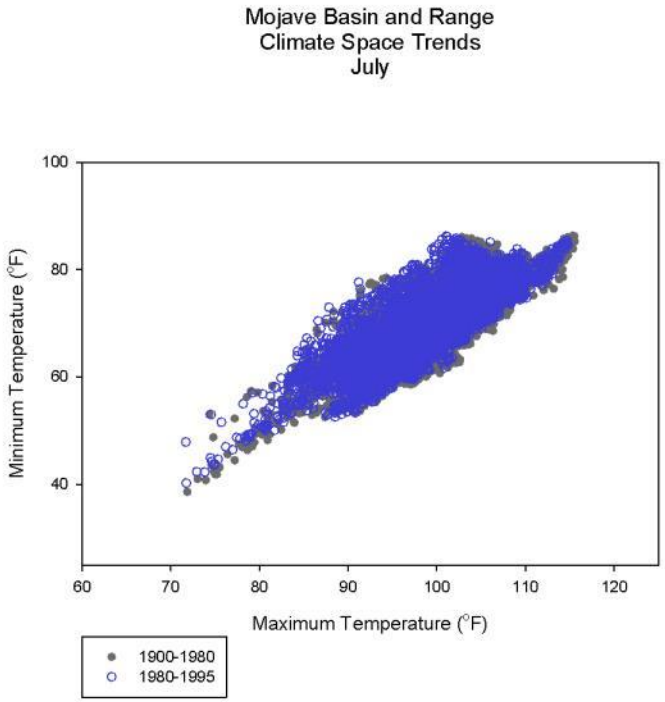

Central Basin and Mojave Basin
July Precipitation Anomalies
1900-1980 vs 2020s
N
W
E
S
Central Basin
Mojave Basin
+1 SD
+2 SD
0 15 30 60 90 120
Miles

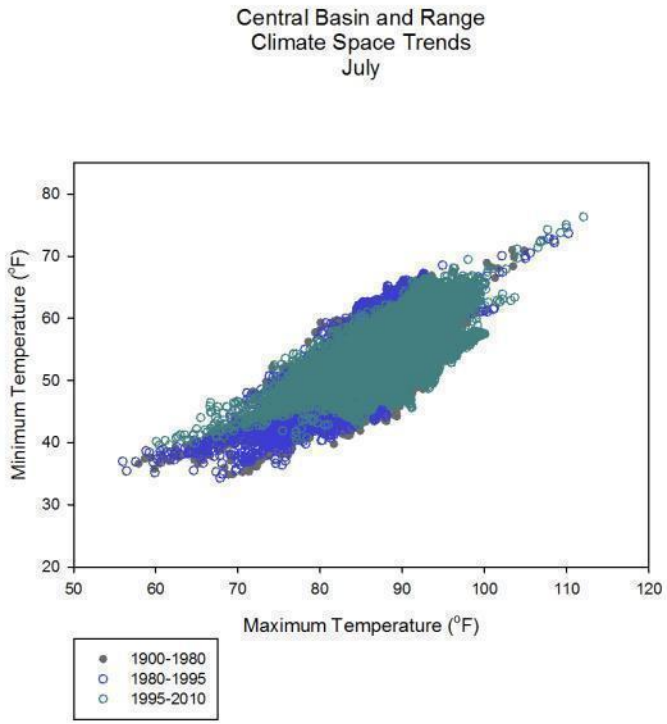

Central Basin and Mojave Basin
July Precipitation Anomalies
1900-1980 vs 2050s
N
W
E
S
Central Basin
Mojave Basin
+1 SD
0 15 30 60 90 120
Miles

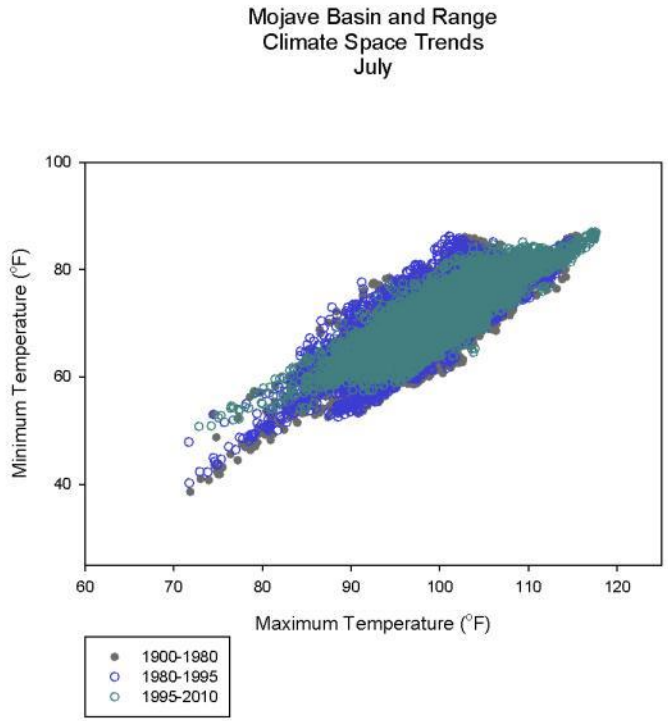

Central Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980

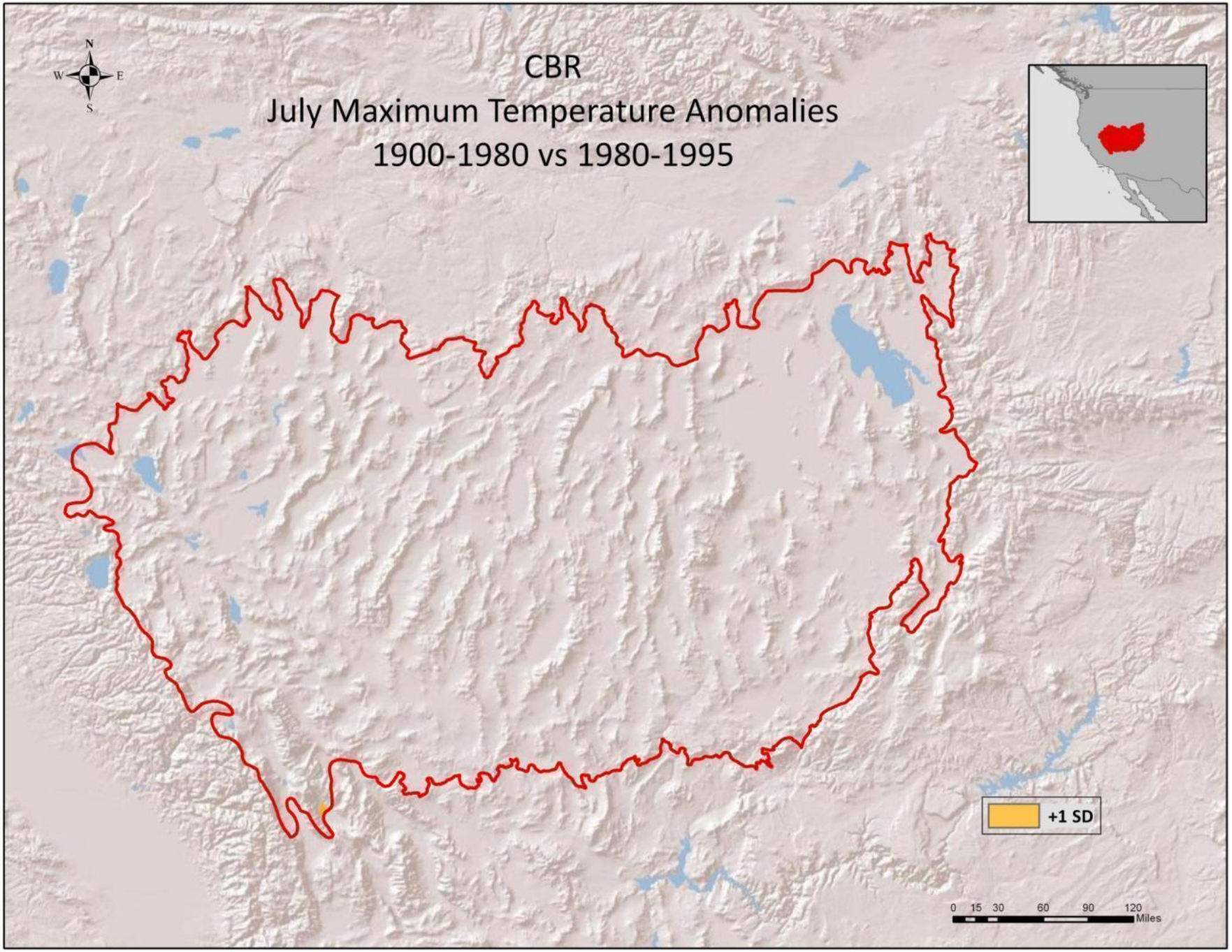

Mojave Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980

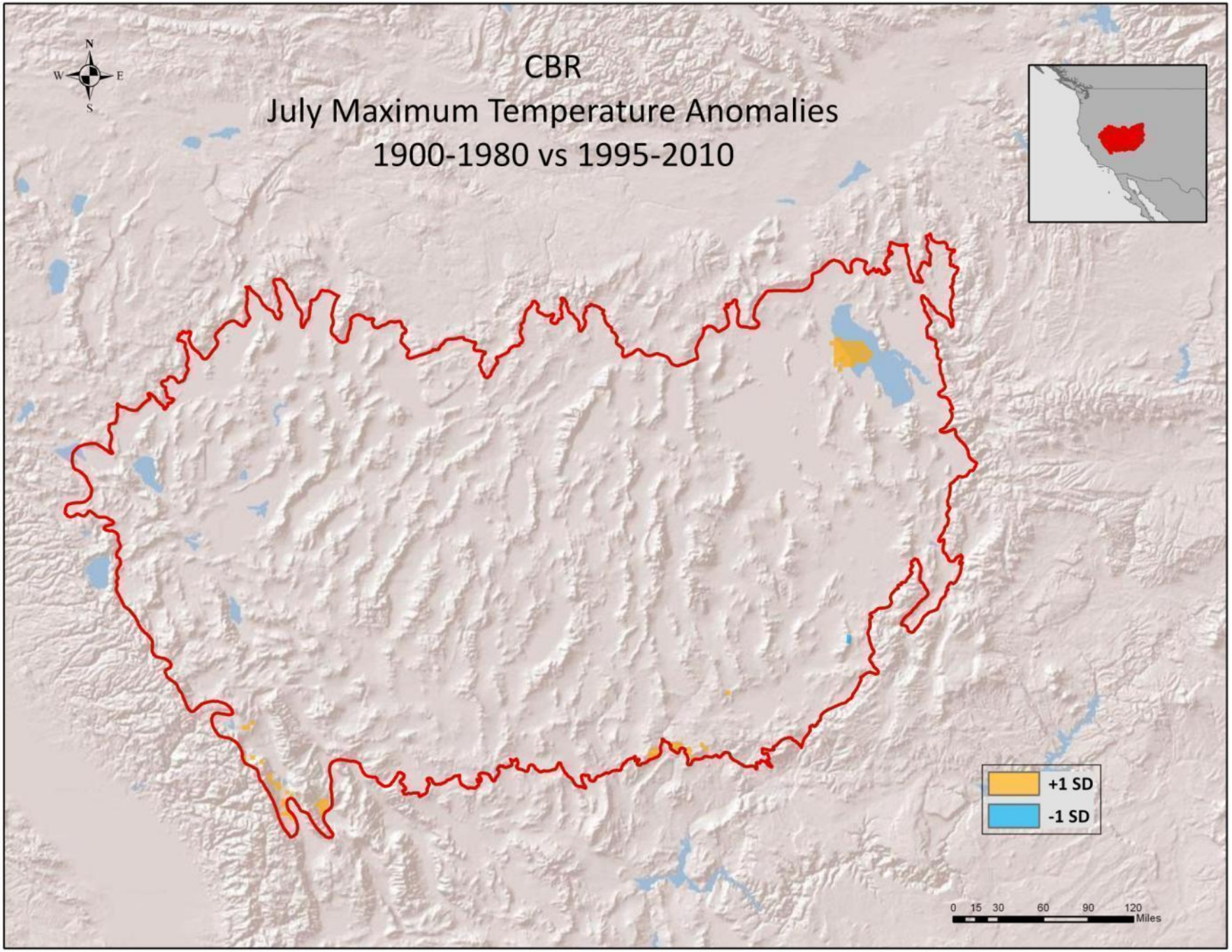

Central Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995

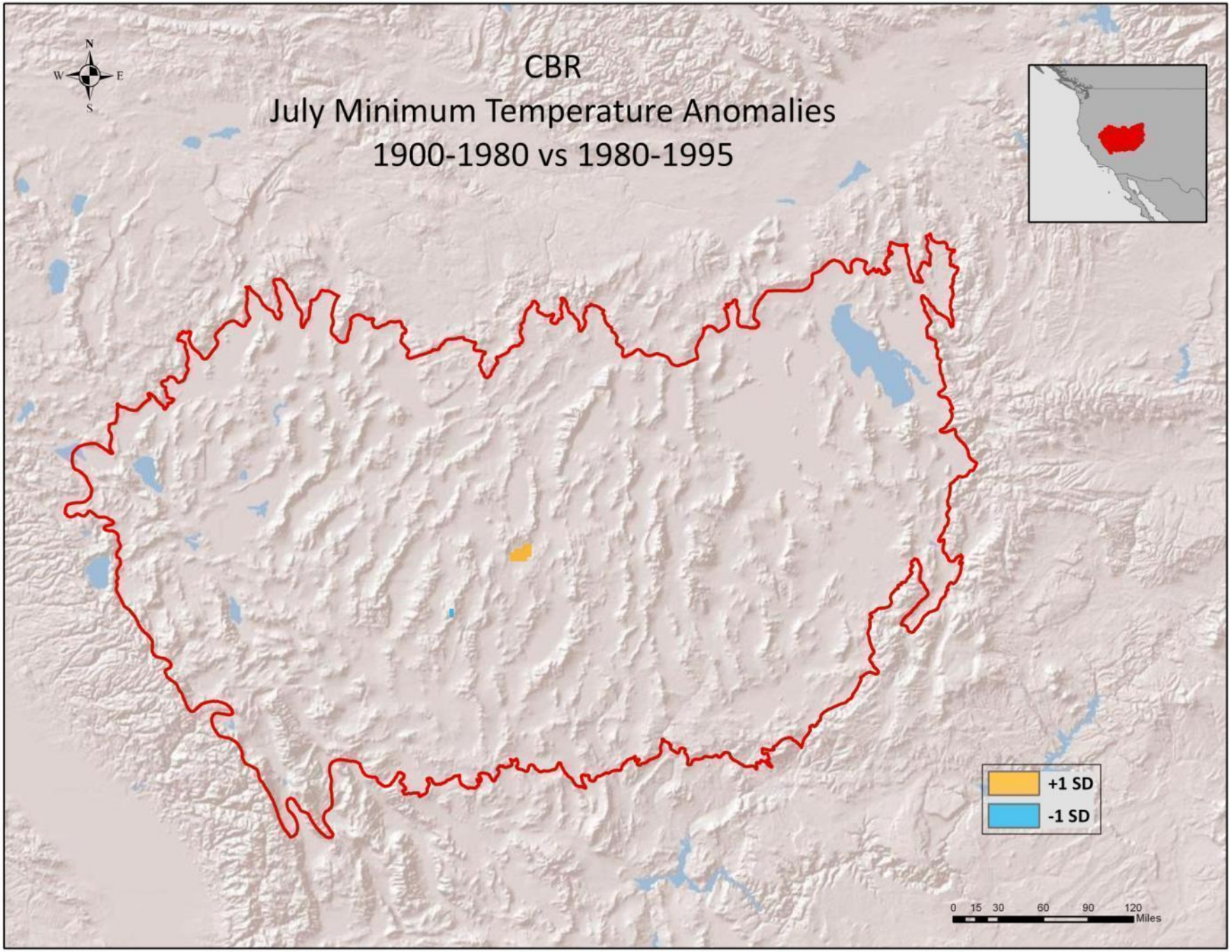

Mojave Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995

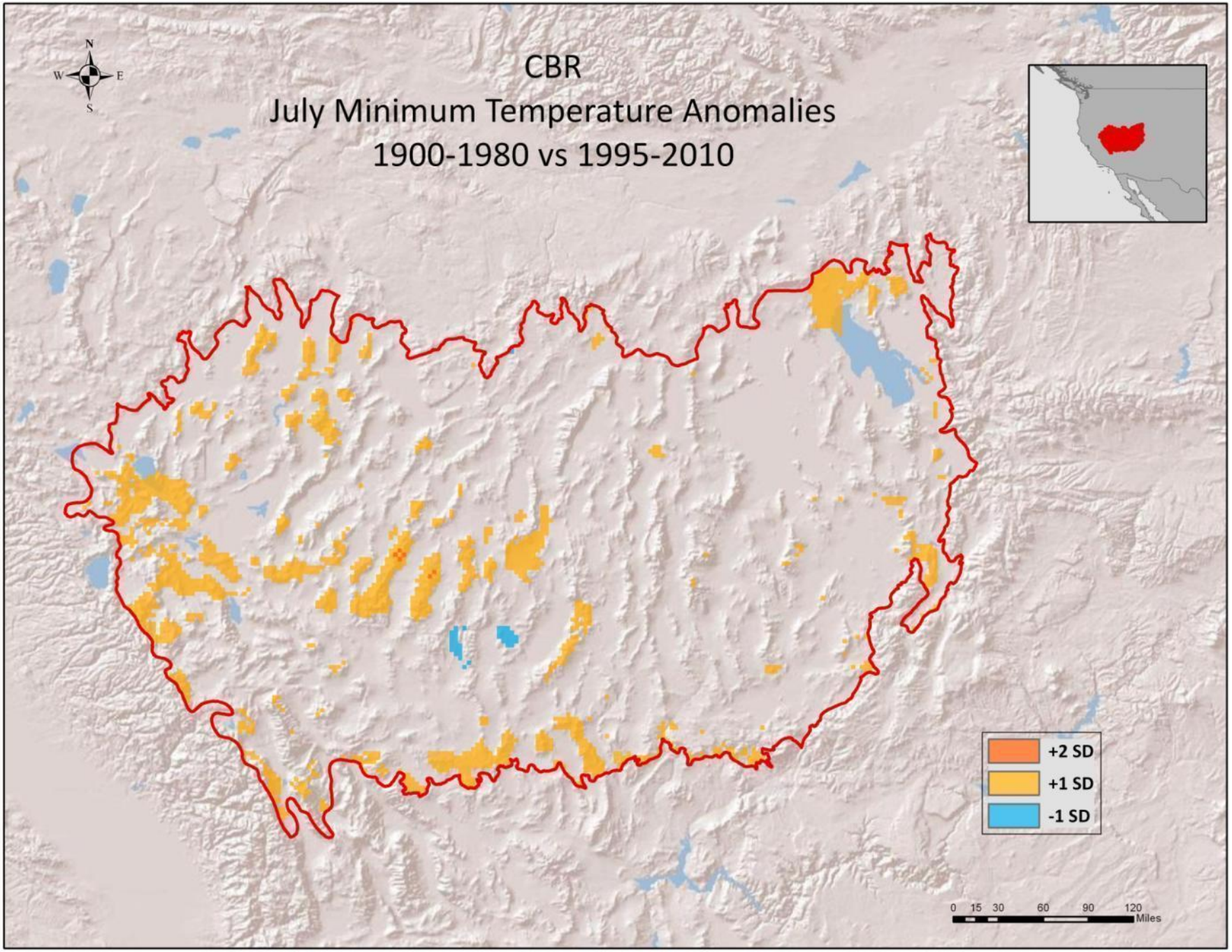

Central Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995
1995-2010

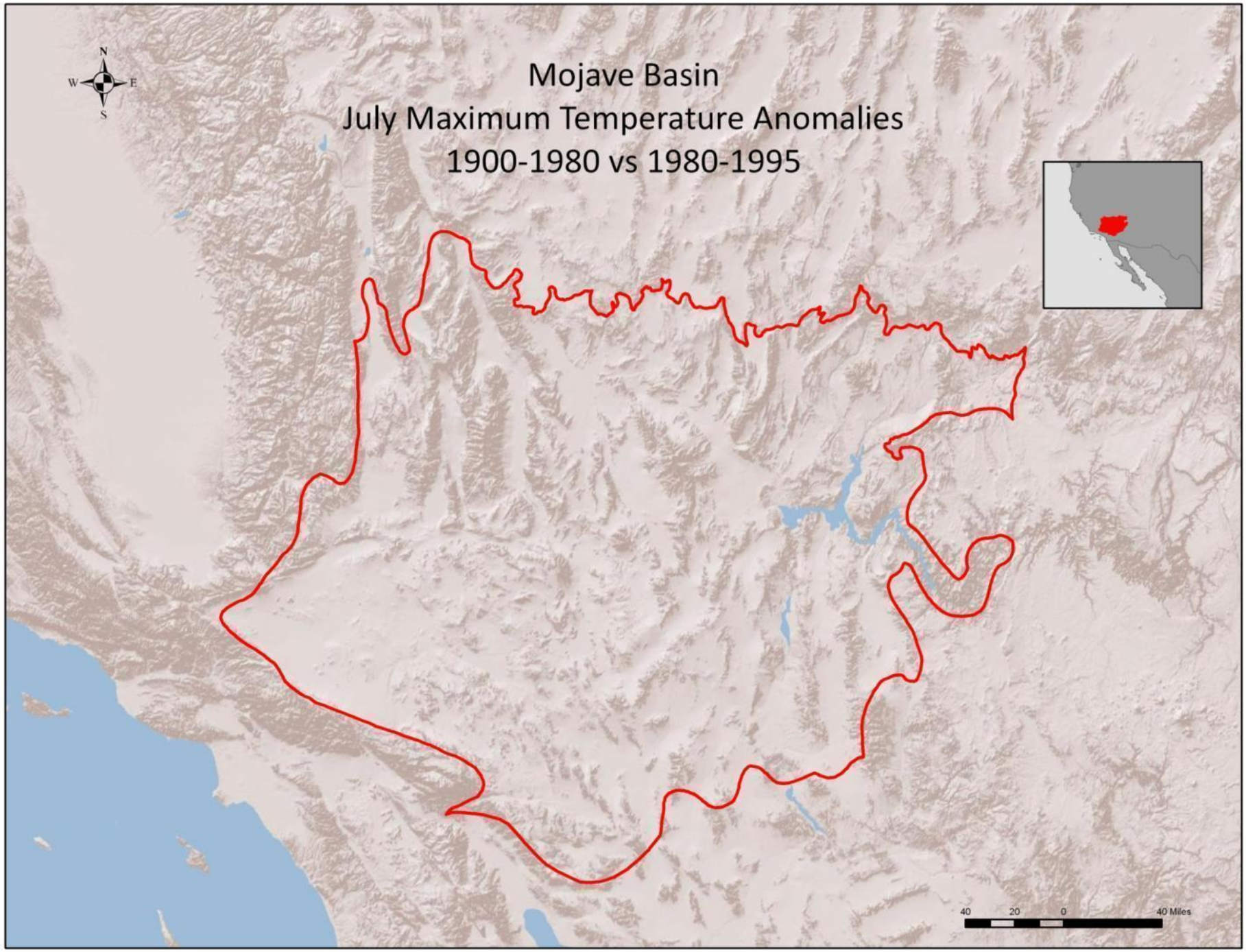

Mojave Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995
1995-2010

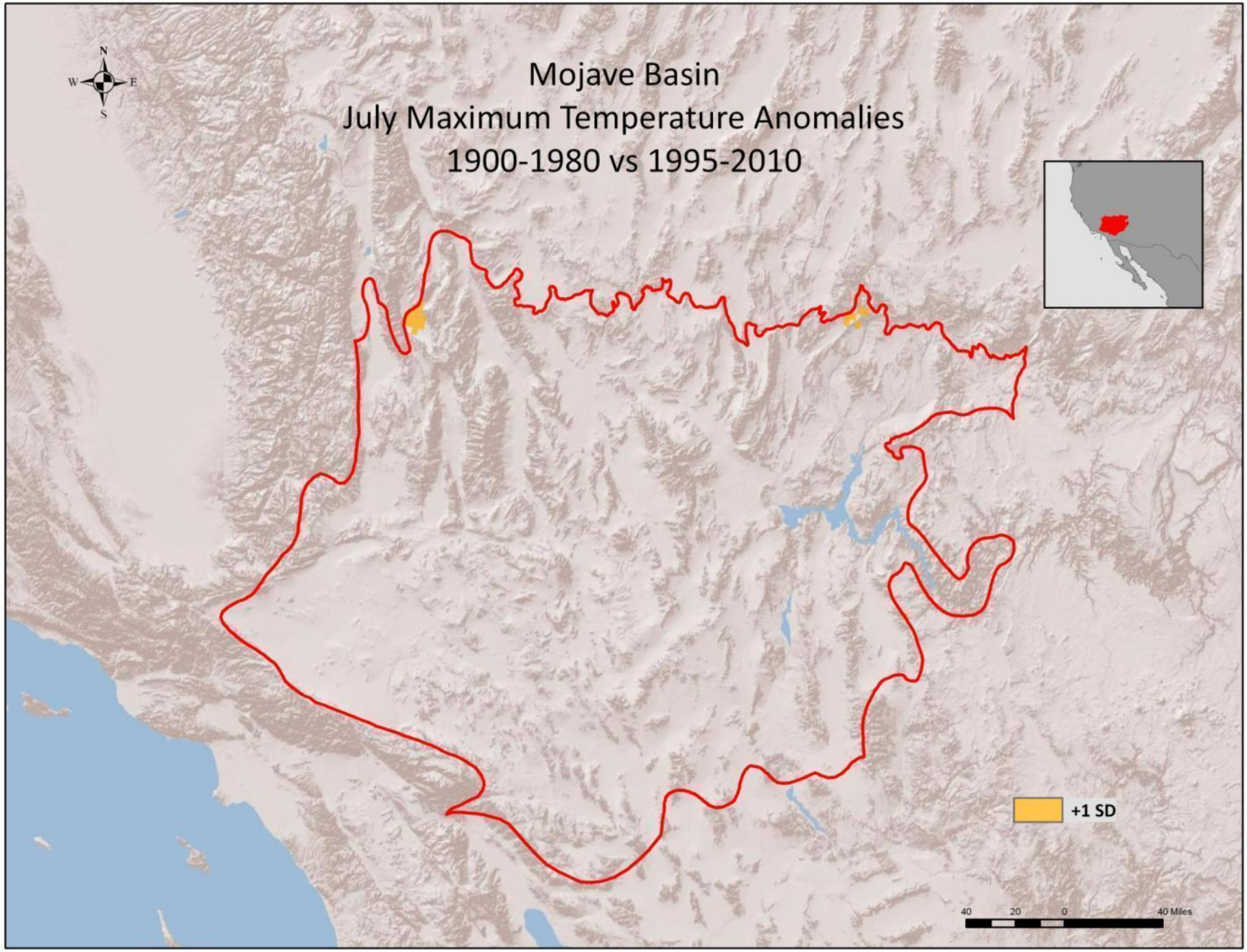

CBR
July Maximum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
+1 SD
0 15 30 60 90 120
Miles

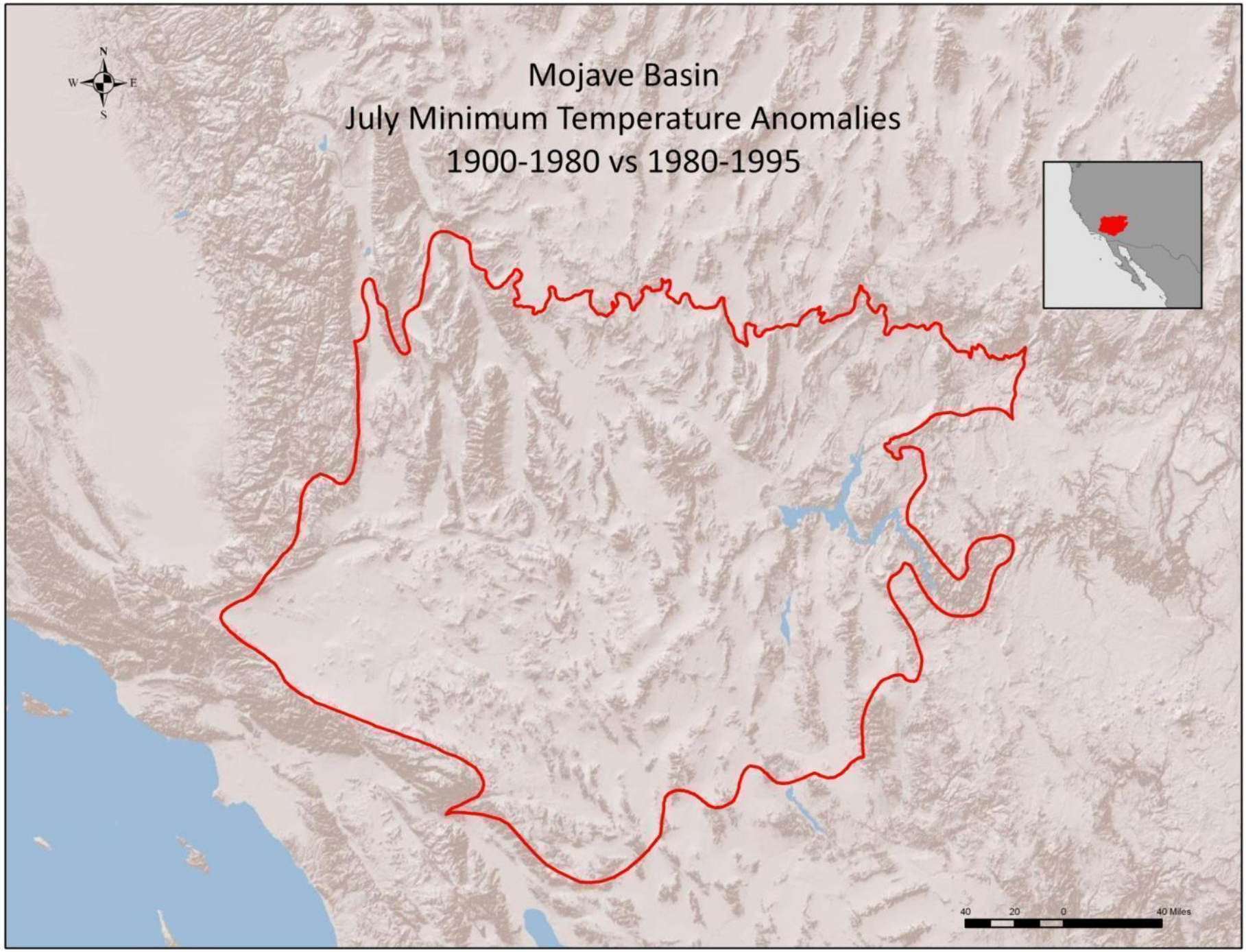

CBR
July Maximum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+1 SD
-1 SD
0 15 30 60 90 120
Miles

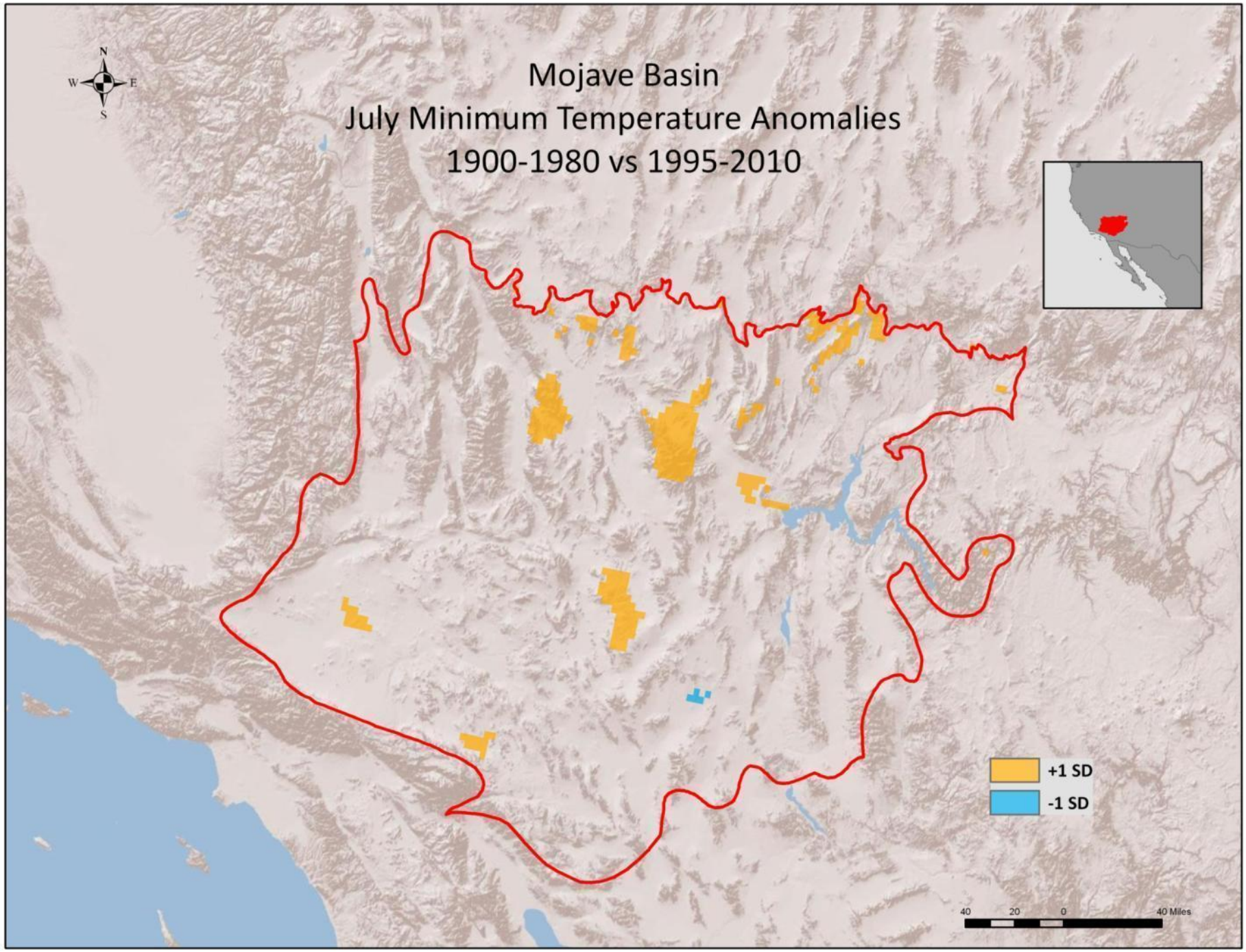

CBR
July Minimum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
+1 SD
-1 SD
0 15 30 60 90 120
Miles

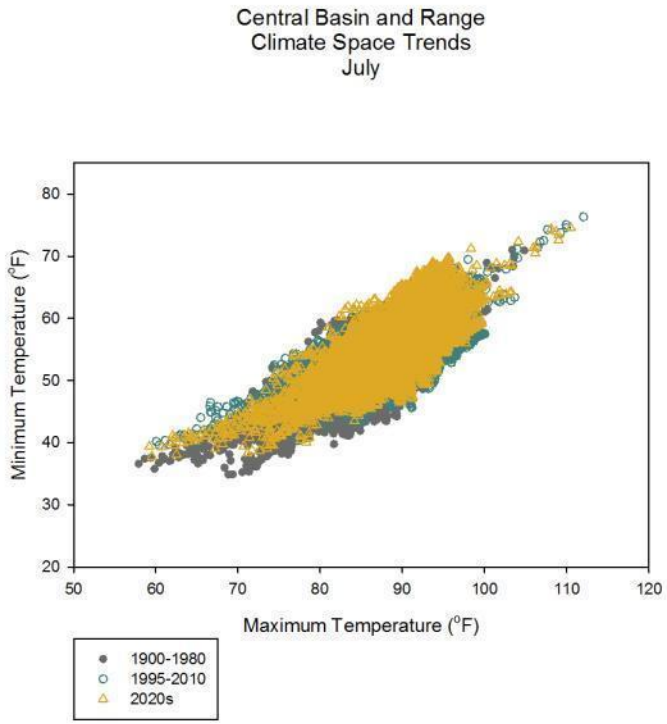

CBR
July Minimum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+2 SD
+1 SD
-1 SD
0 15 30 60 90 120
Miles

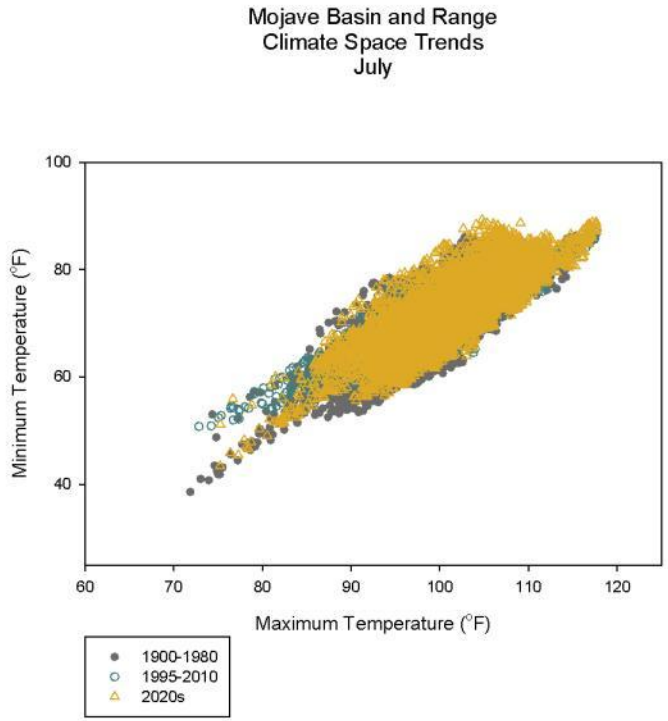

Mojave Basin
July Maximum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
40
20
0
40 Miles

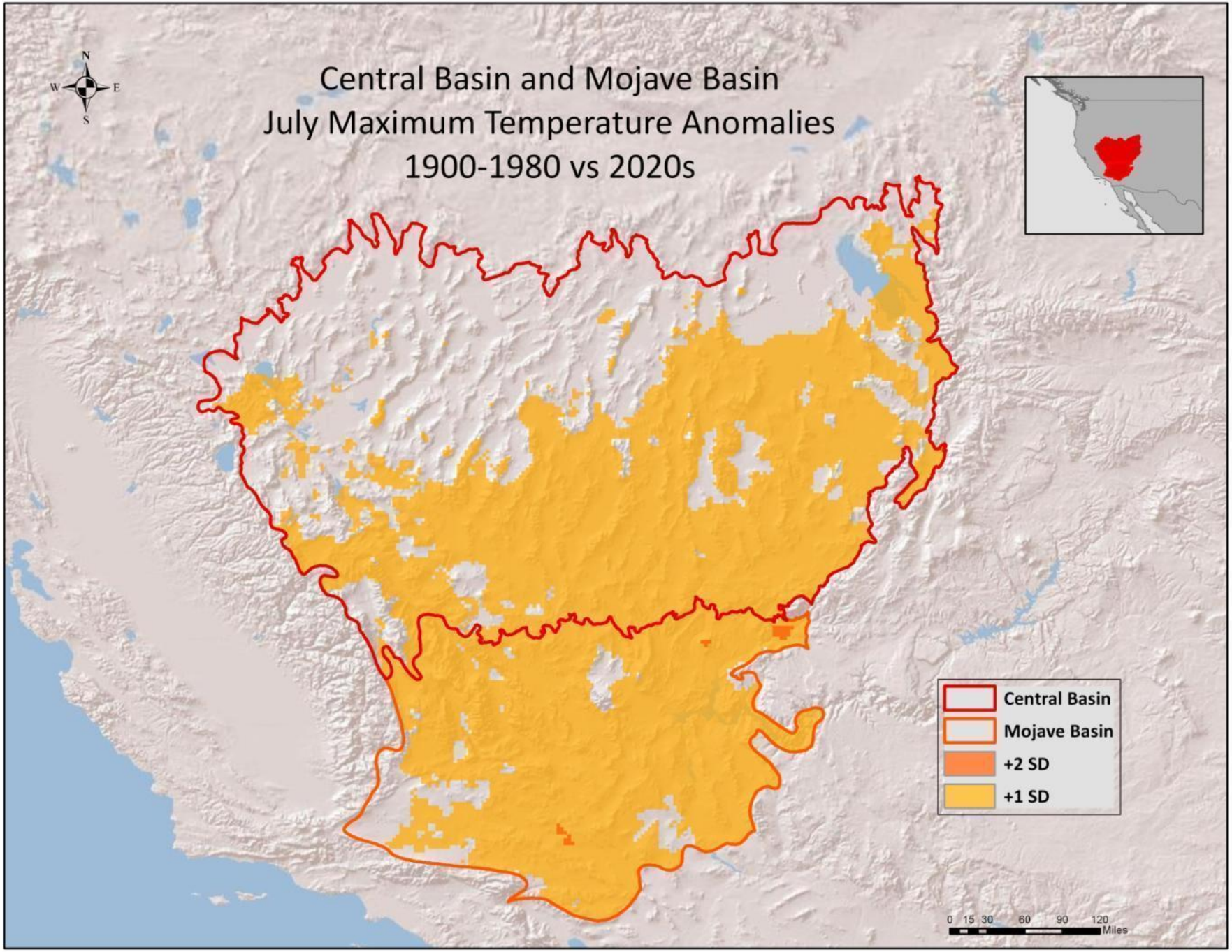

Mojave Basin
July Maximum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+1 SD
40
20
0
40 Miles

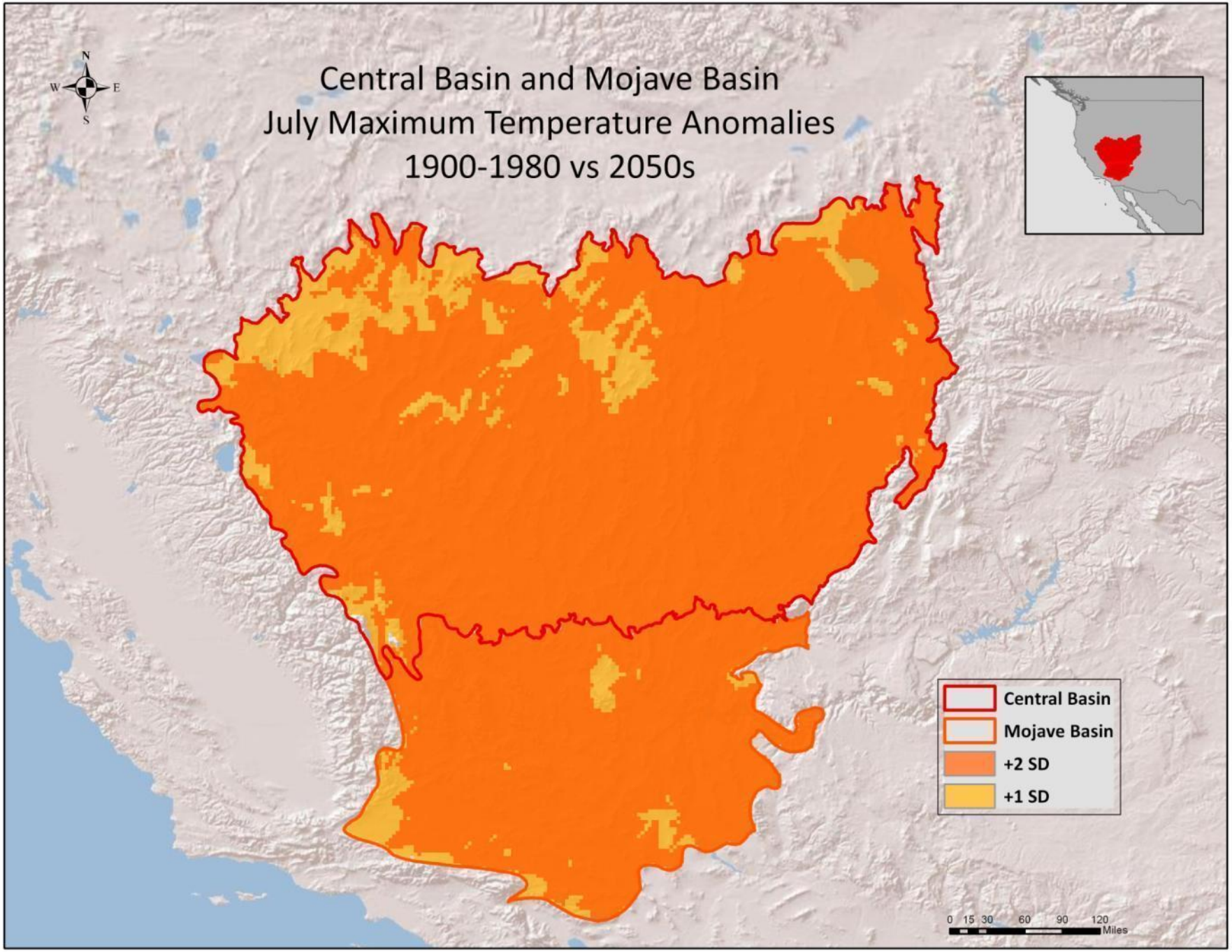

Mojave Basin
July Minimum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
40
20
0
40 Miles

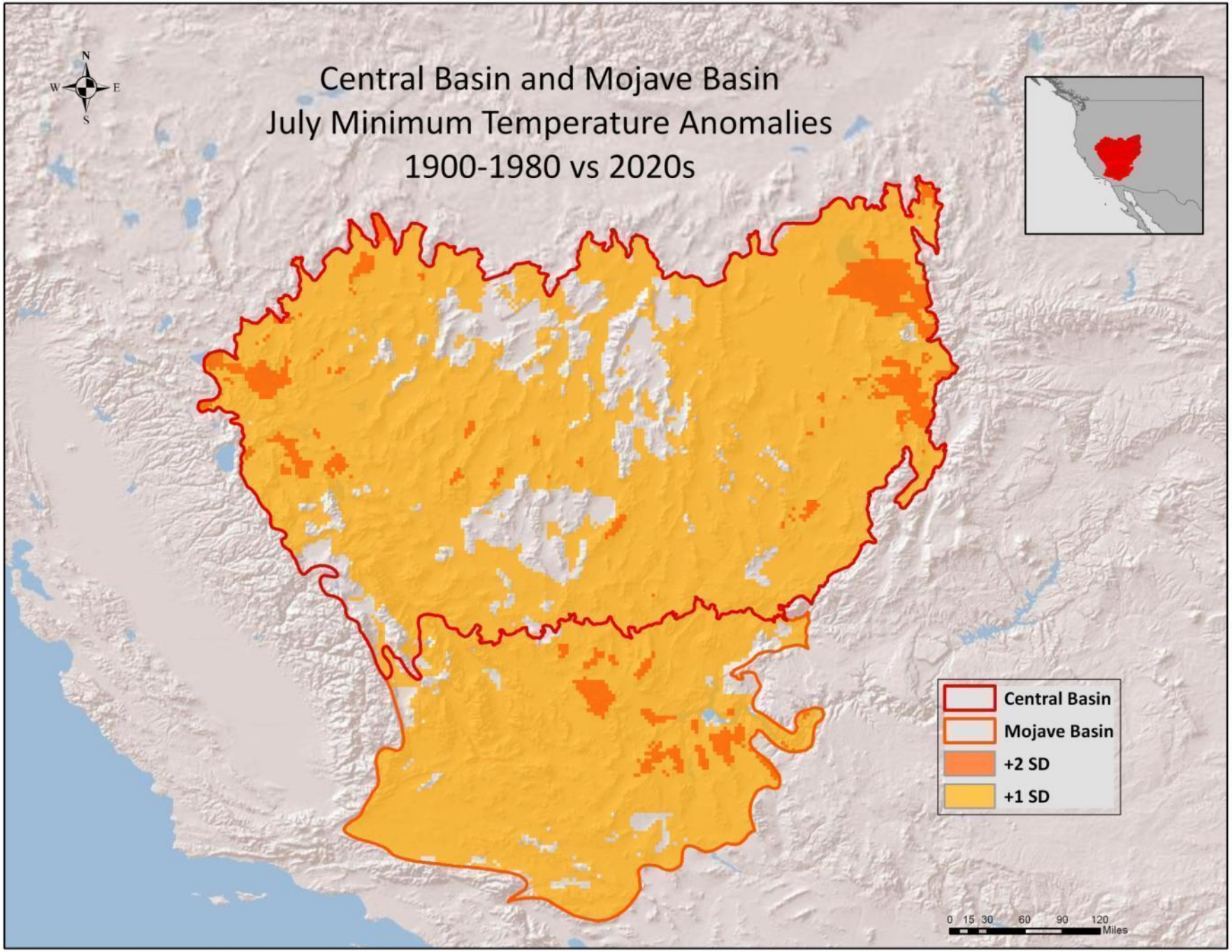

Mojave Basin
July Minimum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+1 SD
-1 SD
40
20
0
40 Miles

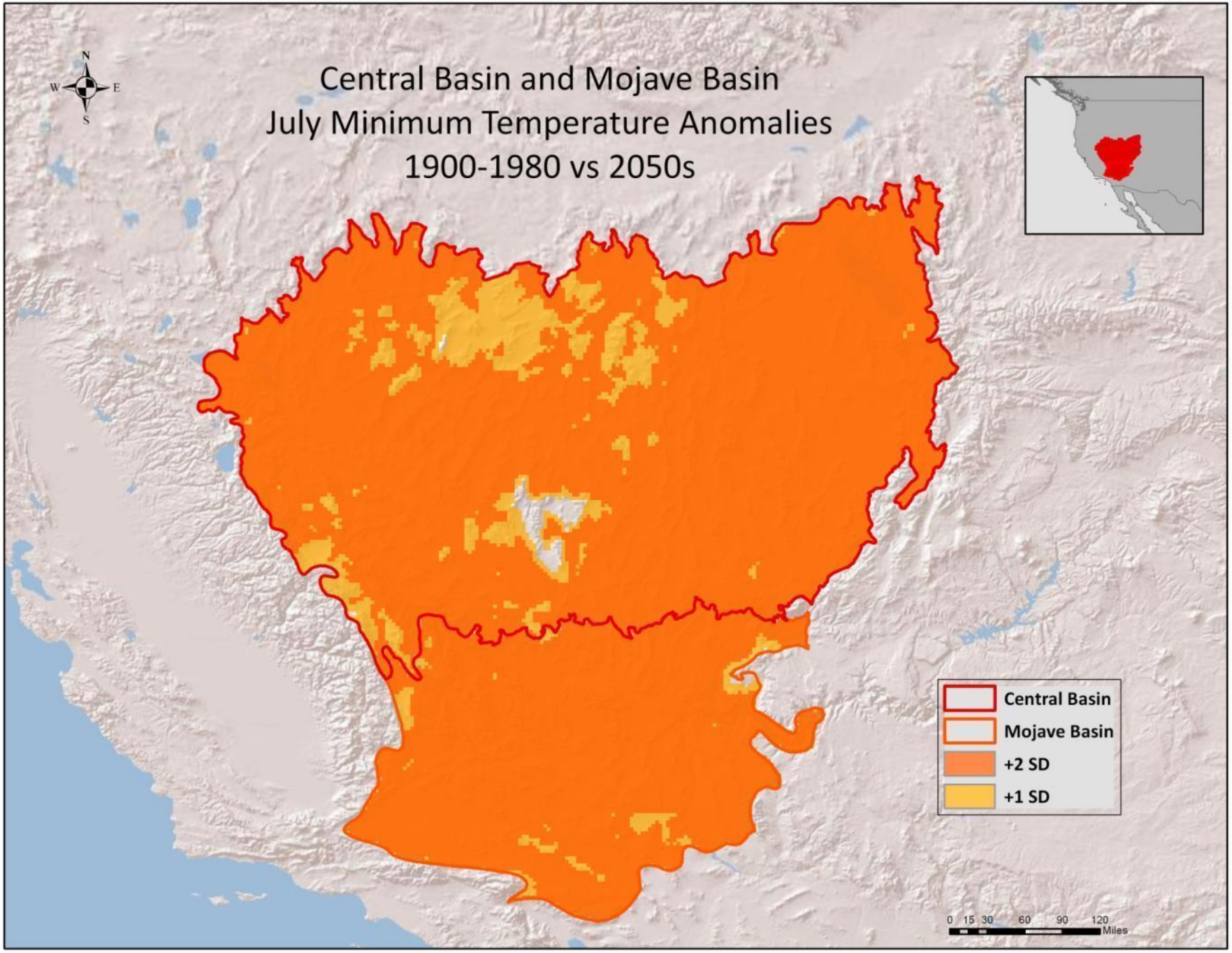

Central Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980
1995-2010
2020s

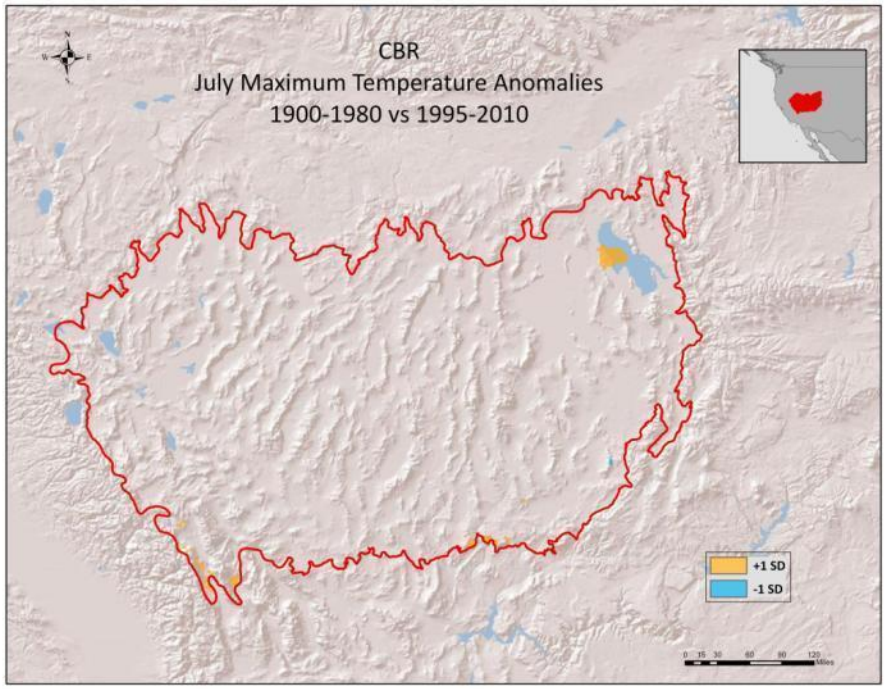

Mojave Basin and Range
Climate Space Trends
July
Minimum Temperature (°F)
Maximum Temperature (°F)
1900-1980
1995-2010
2020s

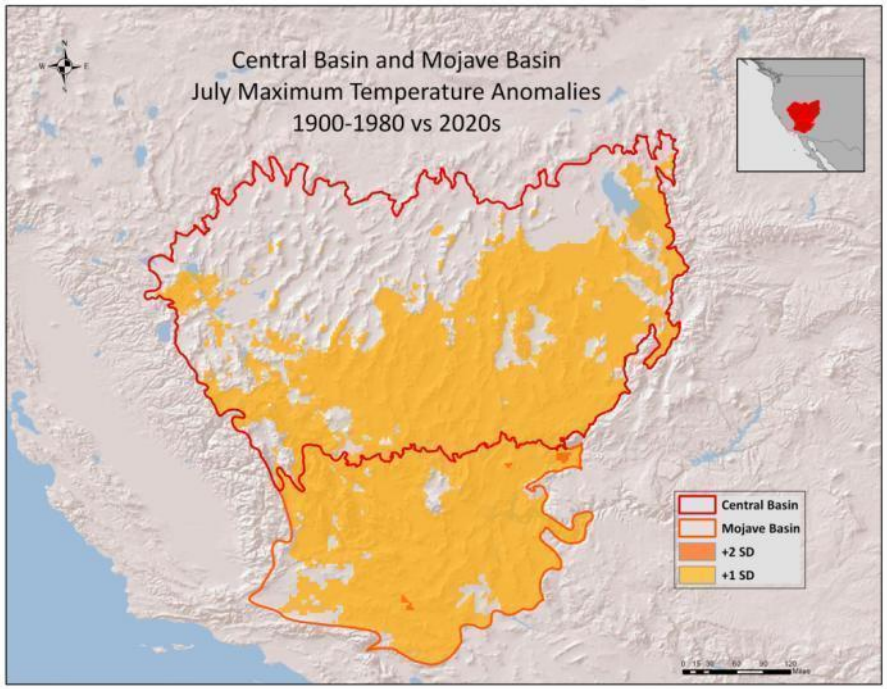

Central Basin and Mojave Basin
July Maximum Temperature Anomalies
1900-1980 vs 2020s
N
W
E
S
Central Basin
Mojave Basin
+2 SD
+1 SD
0 15 30 60 90 120
Miles

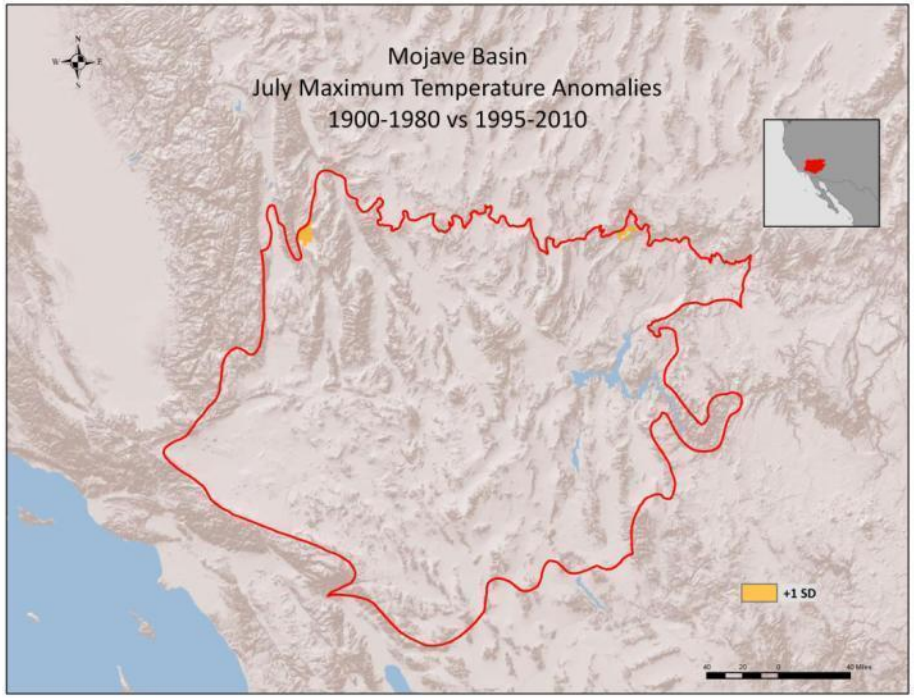

Central Basin and Mojave Basin
July Maximum Temperature Anomalies
1900-1980 vs 2050s
N
W
E
S
Central Basin
Mojave Basin
+2 SD
+1 SD
0 15 30 60 90 120
Miles

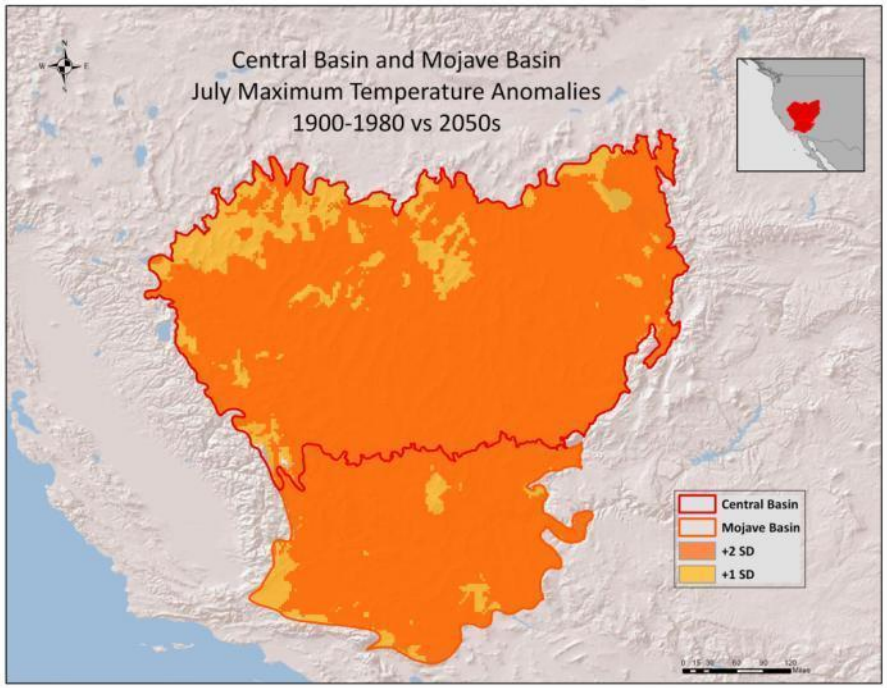

Central Basin and Mojave Basin
July Minimum Temperature Anomalies
1900-1980 vs 2020s
N
W
E
S
Central Basin
Mojave Basin
+2 SD
+1 SD
0 15 30 60 90 120
Miles

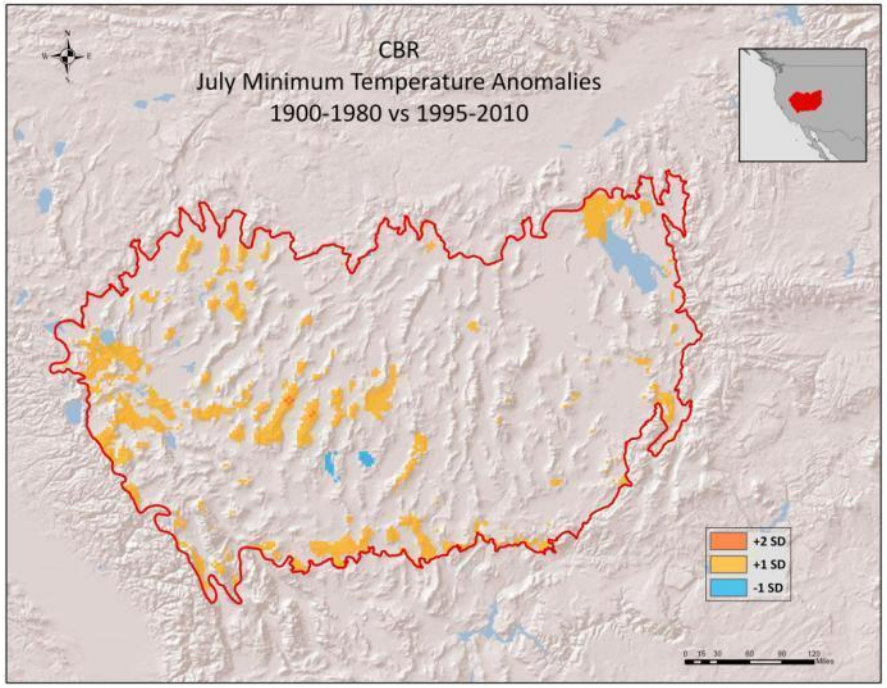

Central Basin and Mojave Basin
July Minimum Temperature Anomalies
1900-1980 vs 2050s
N
W
E
S
Central Basin
Mojave Basin
+2 SD
+1 SD
0 15 30 60 90 120
Miles

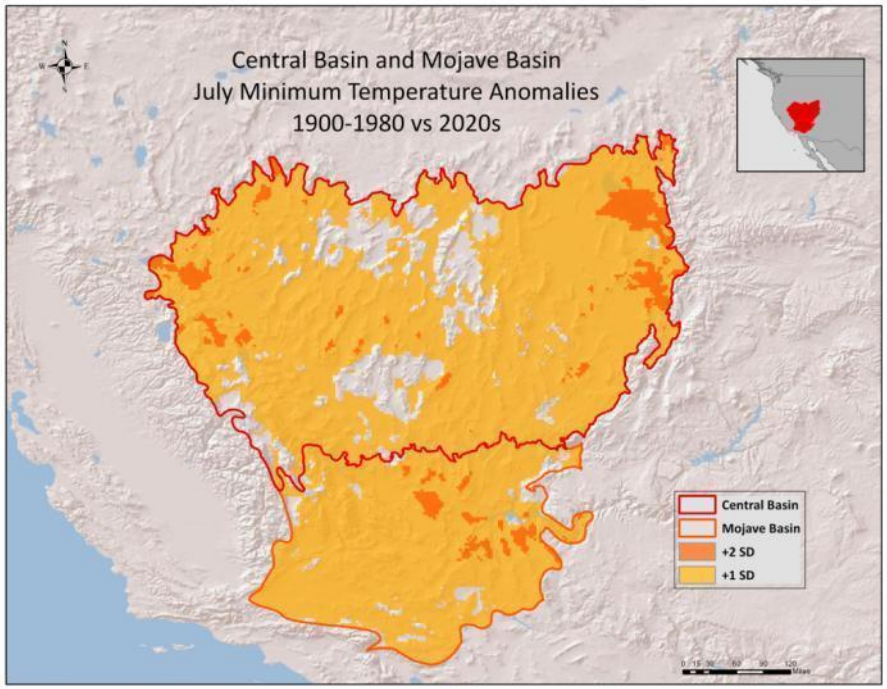

CBR
July Maximum Temperature Anomalies
1900-1980 vs 1995-2010
+1 SD
-1 SD

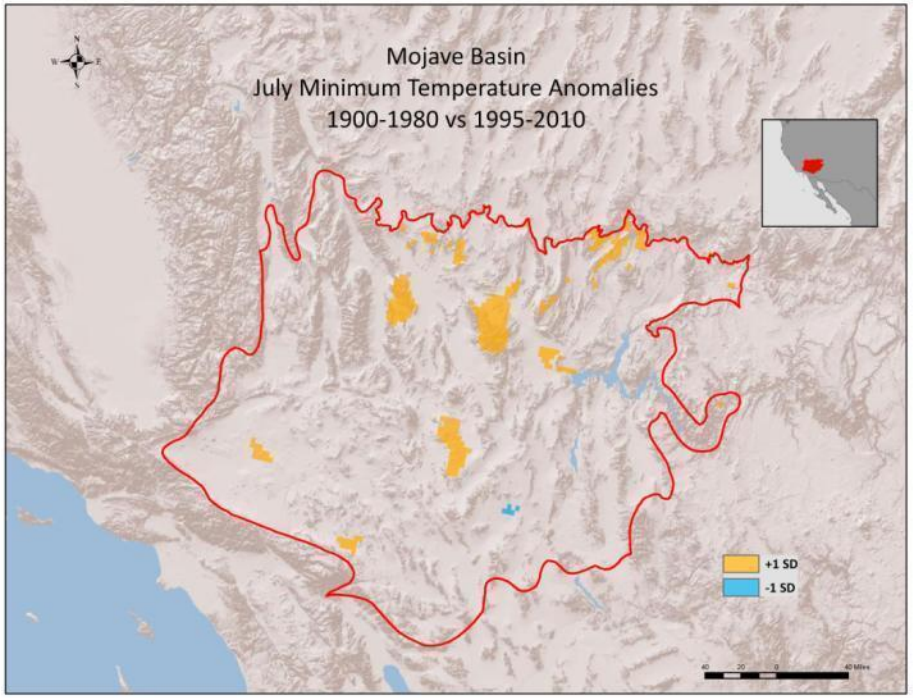

Central Basin and Mojave Basin
July Maximum Temperature Anomalies
1900-1980 vs 2020s
Central Basin
Mojave Basin
+2 SD
+1 SD

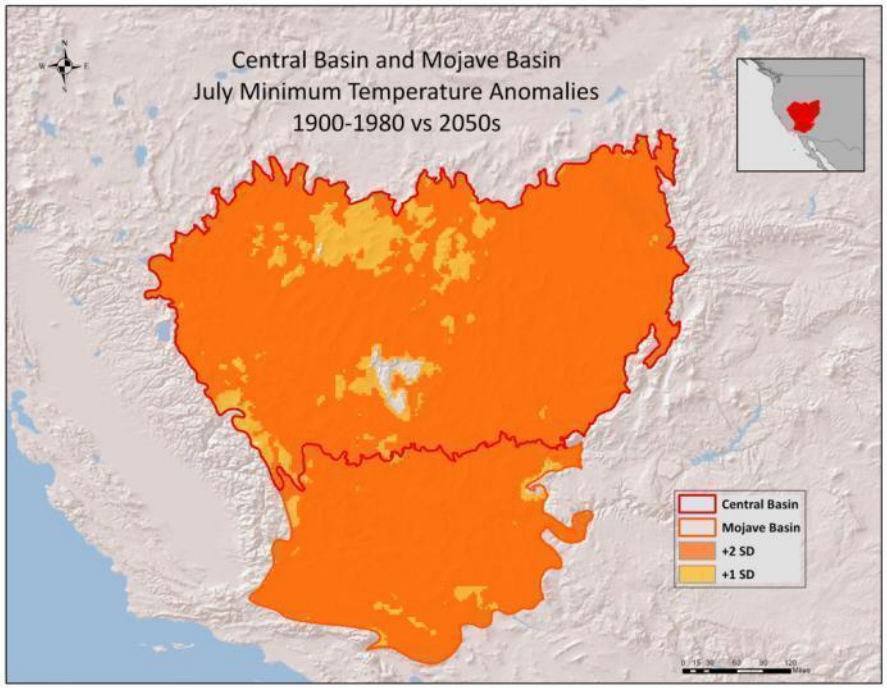

Mojave Basin
July Maximum Temperature Anomalies
1900-1980 vs 1995-2010
+1 SD

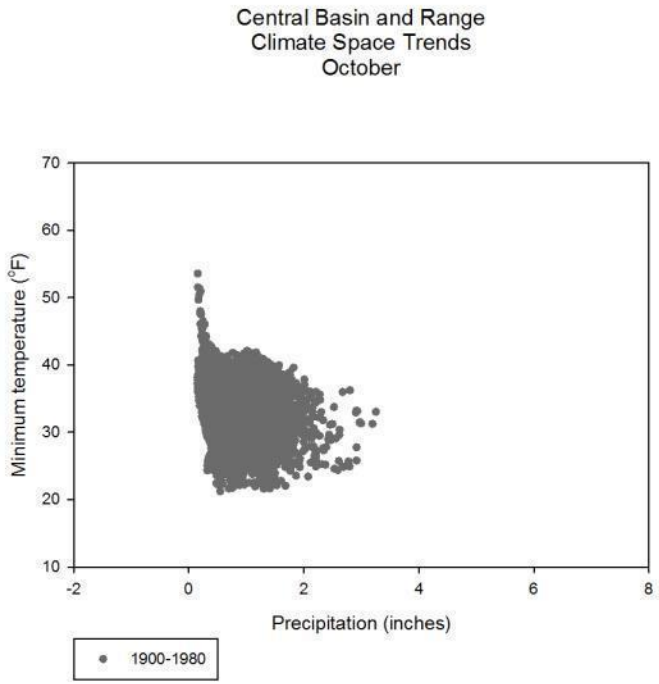

Central Basin and Mojave Basin
July Maximum Temperature Anomalies
1900-1980 vs 2050s
Central Basin
Mojave Basin
+2 SD
+1 SD

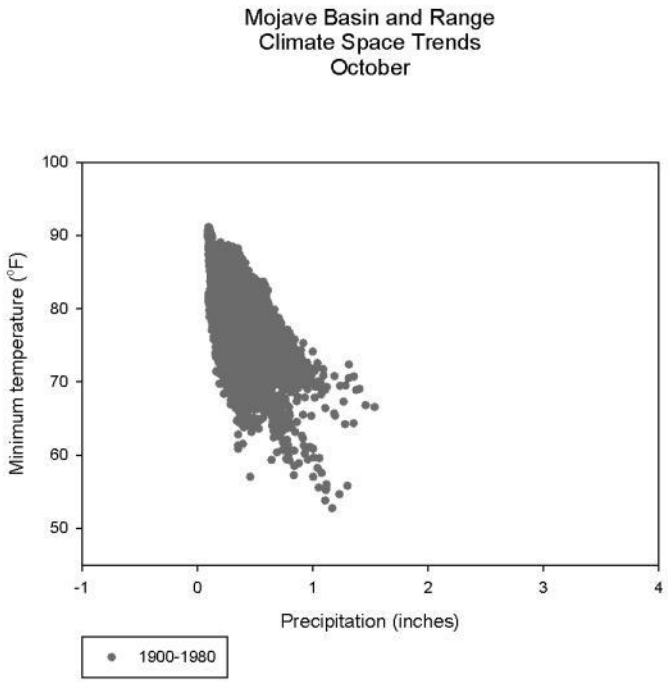

CBR
July Minimum Temperature Anomalies
1900-1980 vs 1995-2010
+2 SD
+1 SD
-1 SD

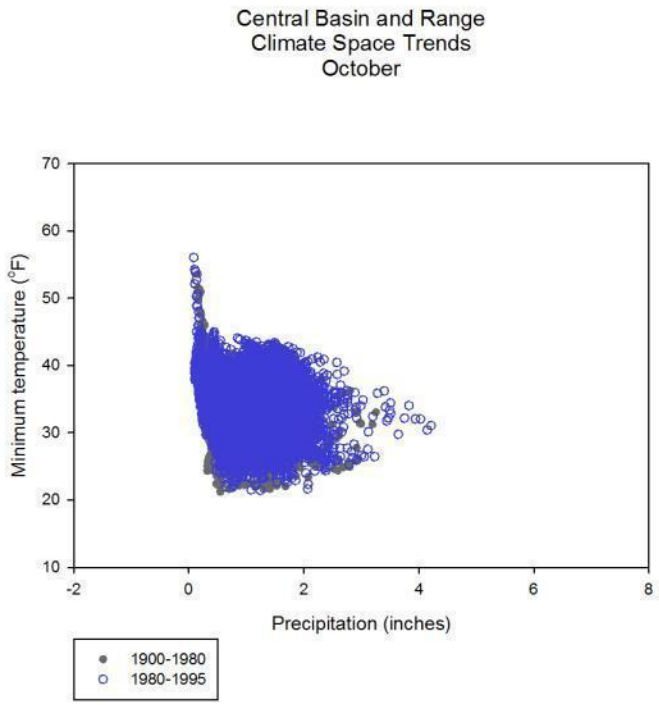

Central Basin and Mojave Basin
July Minimum Temperature Anomalies
1900-1980 vs 2020s
Central Basin
Mojave Basin
+2 SD
+1 SD

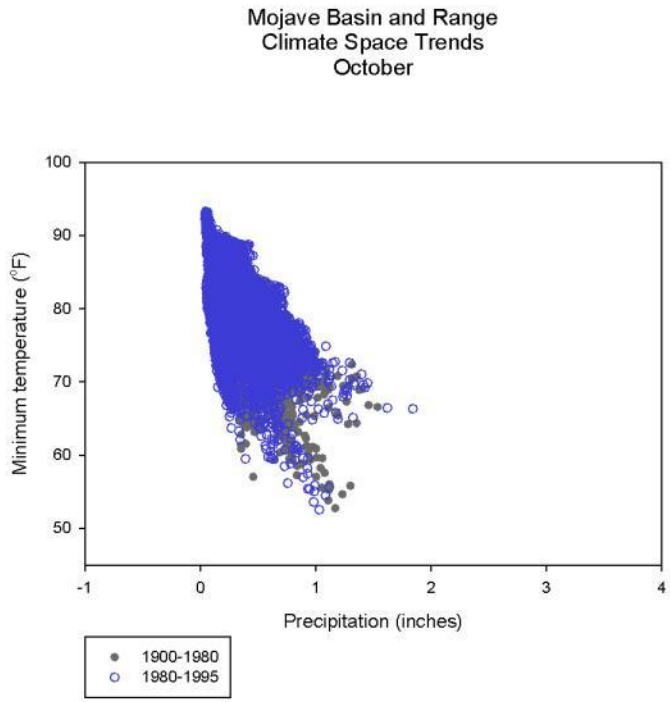

Mojave Basin
July Minimum Temperature Anomalies
1900-1980 vs 1995-2010
+1 SD
-1 SD


Central Basin and Mojave Basin
July Minimum Temperature Anomalies
1900-1980 vs 2050s
Central Basin
Mojave Basin
+2 SD
+1 SD


Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
70
60
50
40
30
20
10
-2
0
2
4
6
8
Precipitation (inches)
1900-1980


Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
100
90
80
70
60
50
-1
0
1
2
3
4
Precipitation (inches)
1900-1980


Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
70
60
50
40
30
20
10
-2
0
2
4
6
8
1900-1980
1980-1995


Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
100
90
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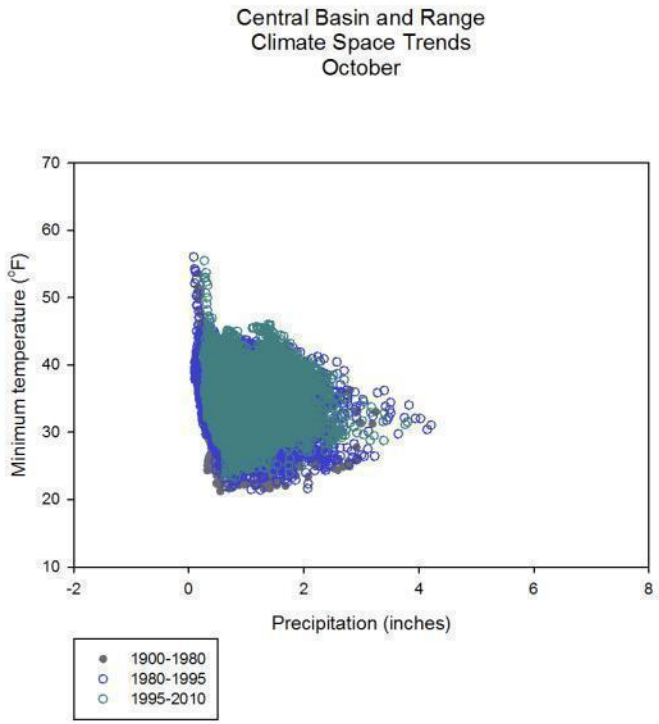
60
50
-1
0
1
2
3
4
1900-1980
1980-1995


Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
70
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40
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-2
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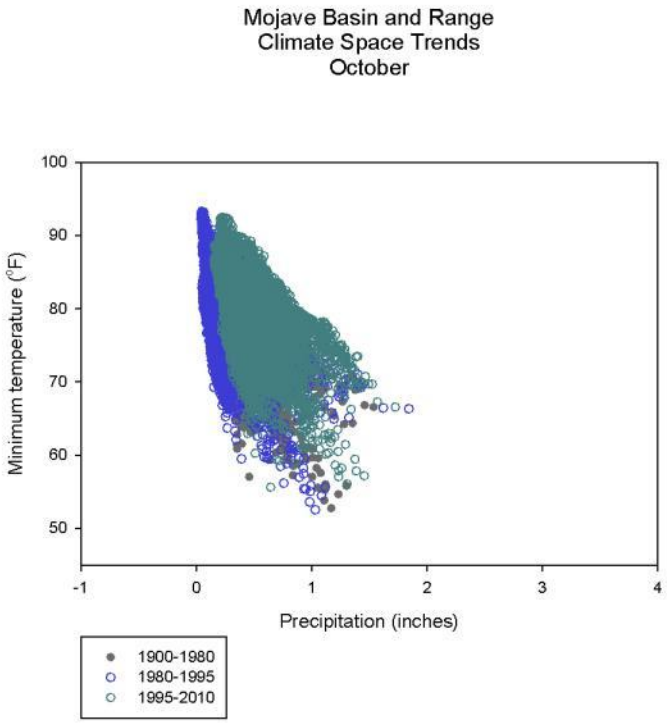
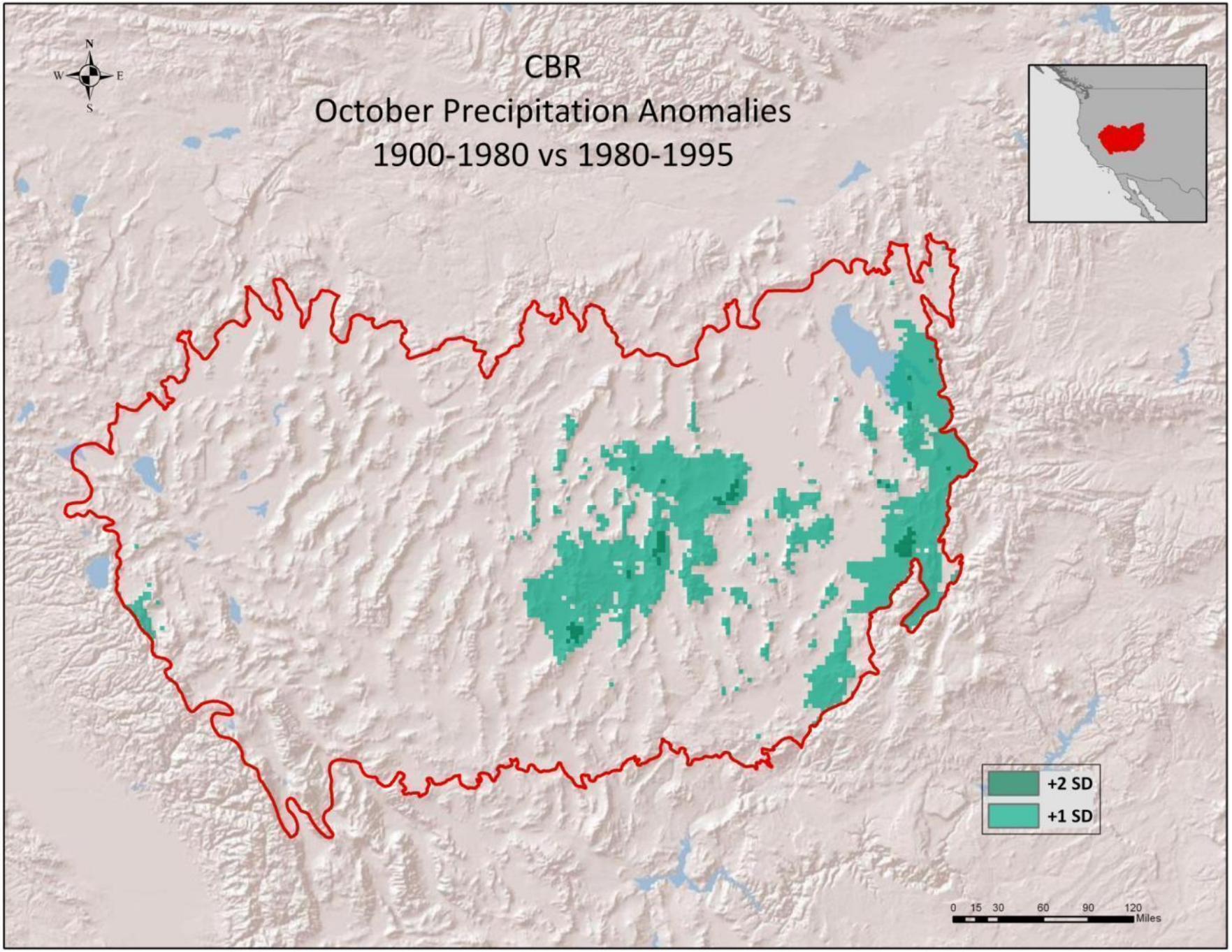
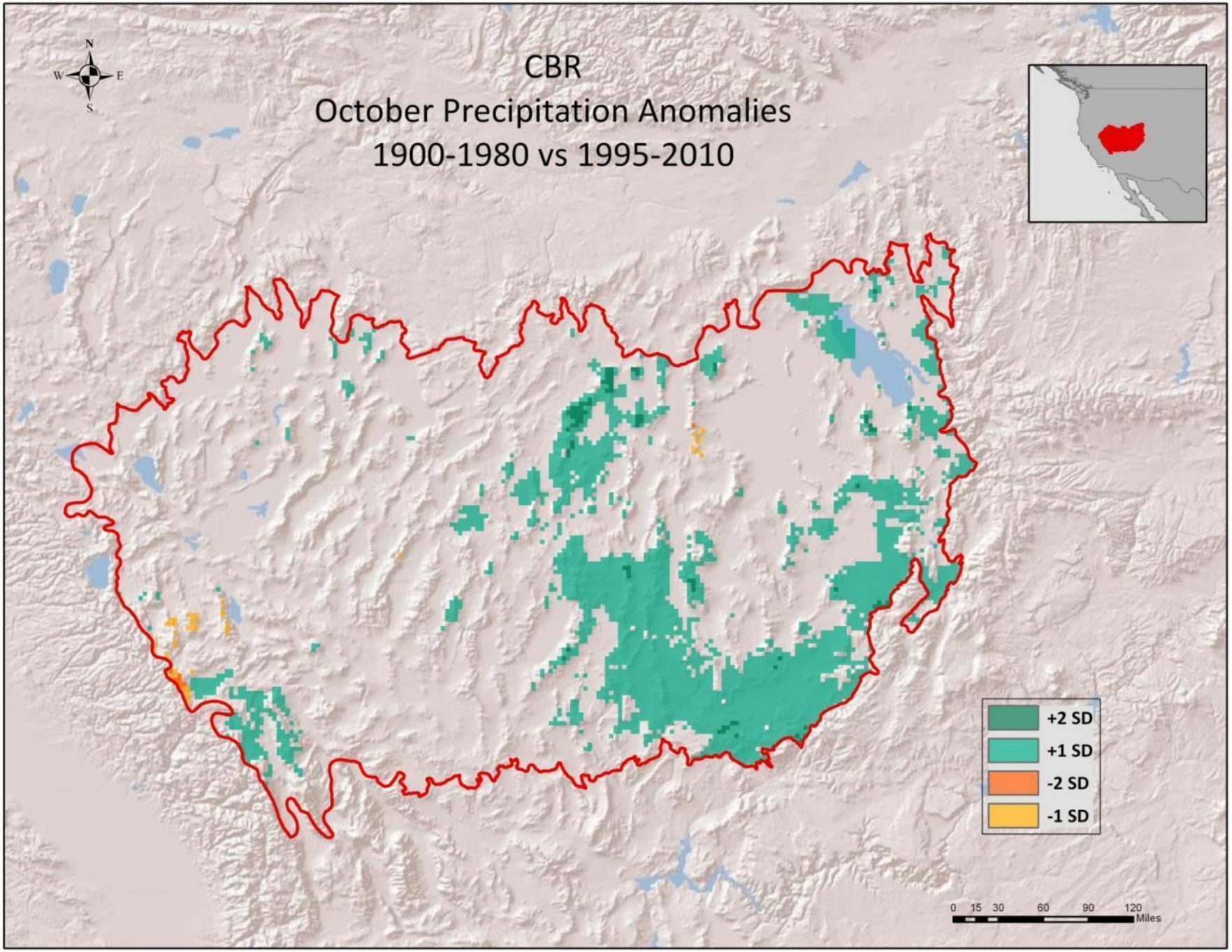
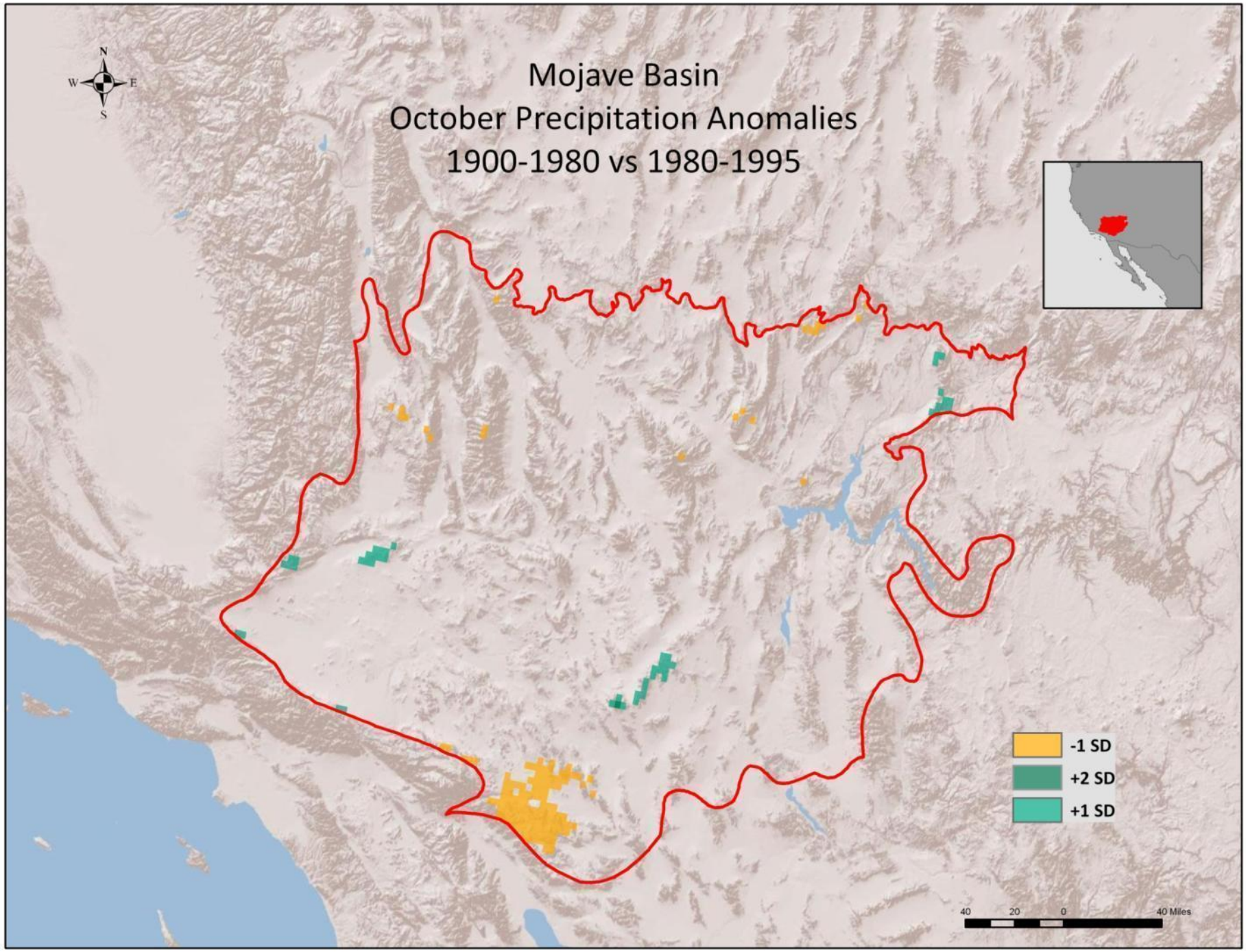
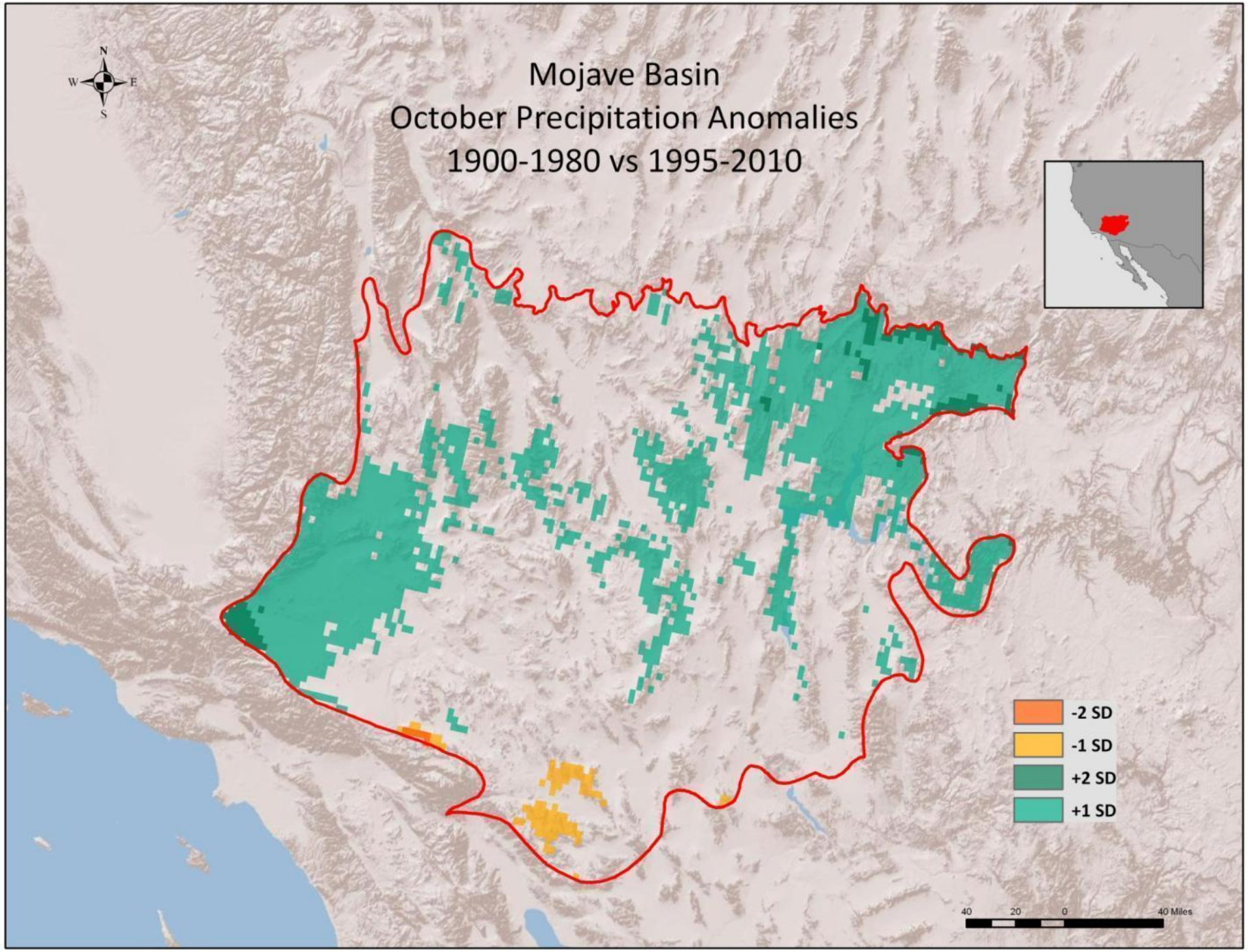
6
8
1900-1980
1980-1995
1995-2010

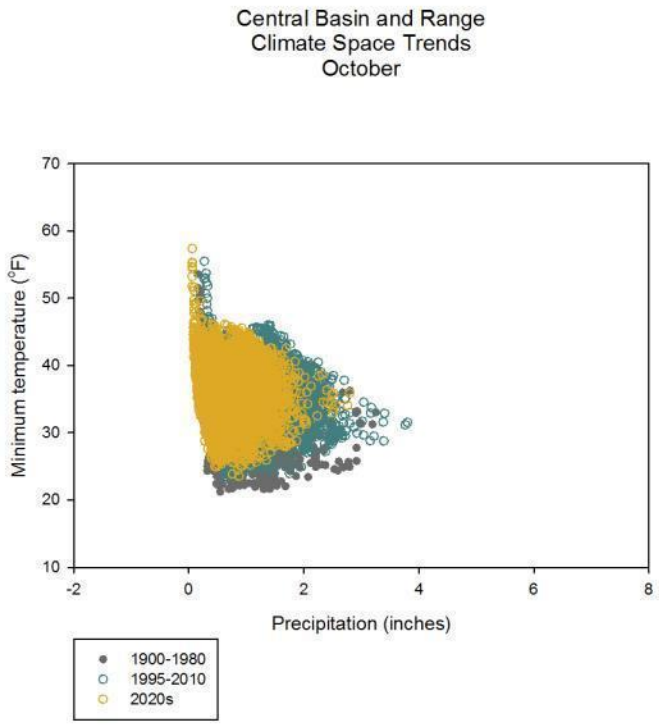

Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
100
90
80
70
60
50
-1
0
1
2
3
4
1900-1980
1980-1995
1995-2010

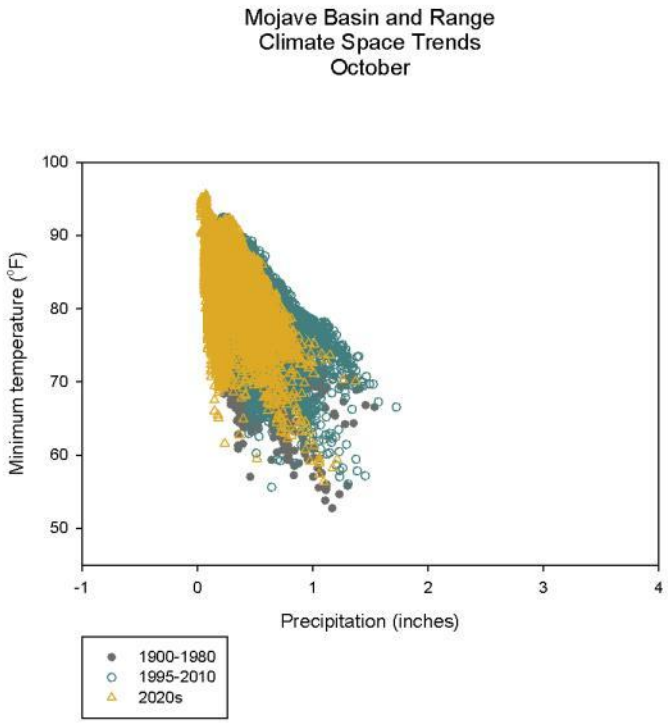

CBR
October Precipitation Anomalies
1900-1980 vs 1980-1995
N
W
E
S
+2 SD
+1 SD
0 15 30 60 90 120
Miles

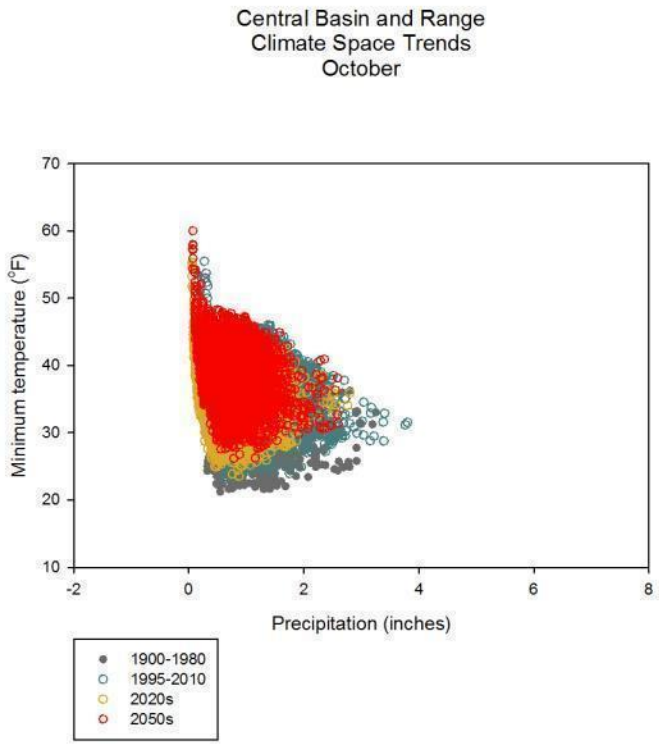

CBR
October Precipitation Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+2 SD
+1 SD
-2 SD
-1 SD
0 15 30 60 90 120
Miles

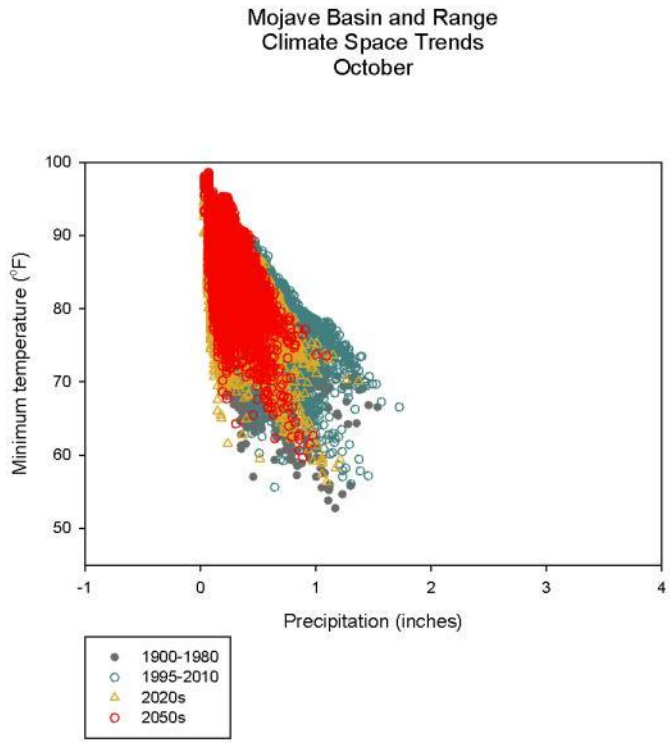

Mojave Basin
October Precipitation Anomalies
1900-1980 vs 1980-1995
N
W
E
S
-1 SD
+2 SD
+1 SD
40
20
0
40 Miles

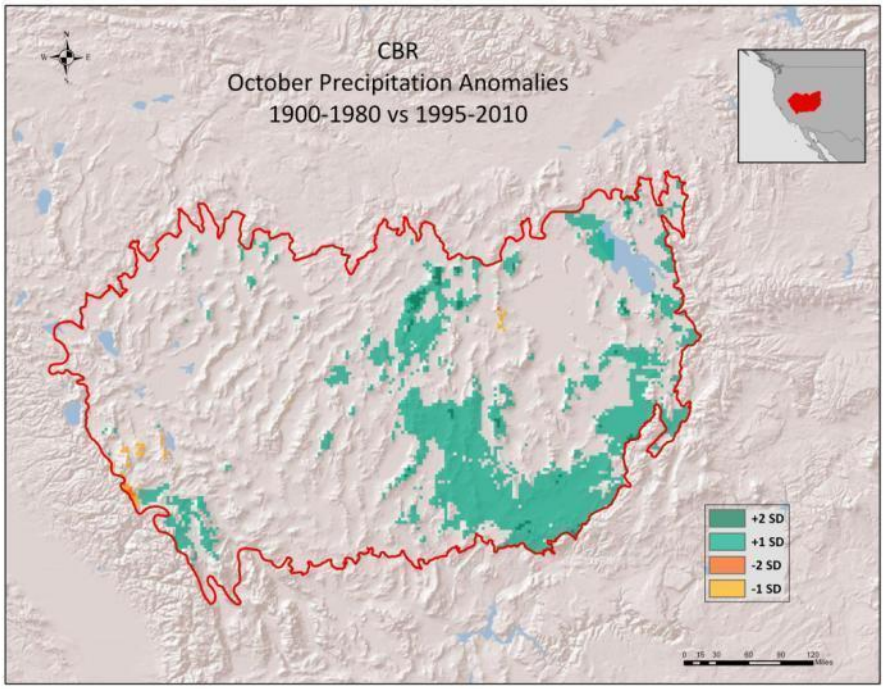

Mojave Basin
October Precipitation Anomalies
1900-1980 vs 1995-2010
N
W
E
S
-2 SD
-1 SD
+2 SD
+1 SD
40
20
0
40 Miles

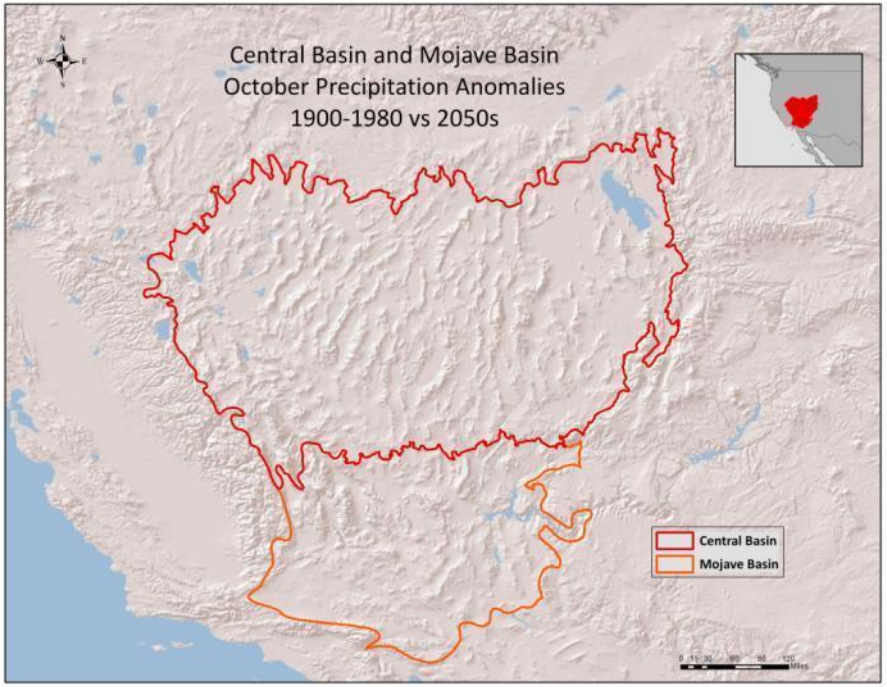

Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
70
60
50
40
30
20
10
-2
0
2
4
6
8
1900-1980
1995-2010
2020s

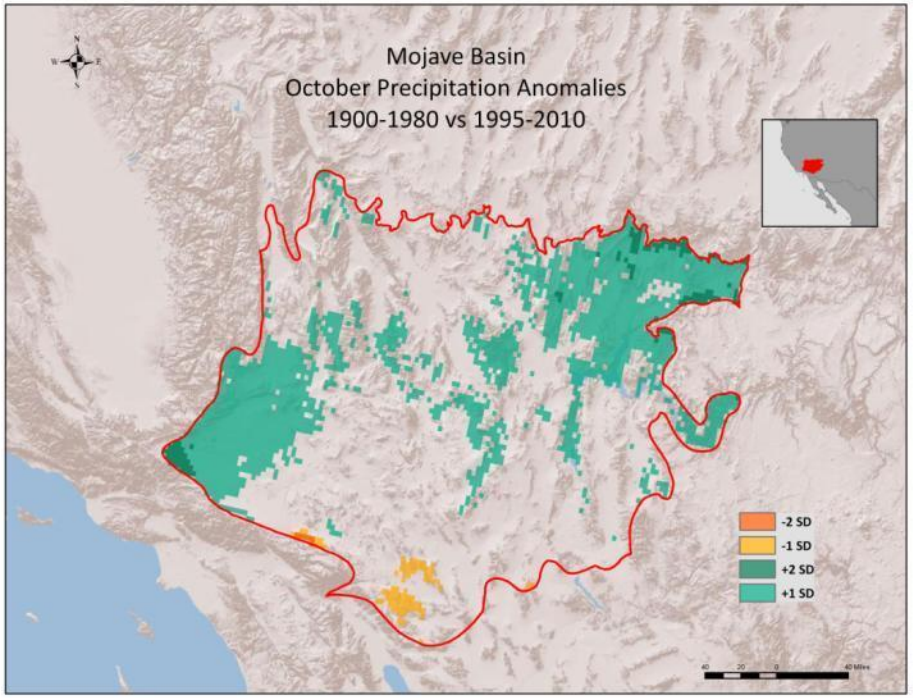

Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
100
90
80
70
60
50
-1
0
1
2
3
4
1900-1980
1995-2010
2020s

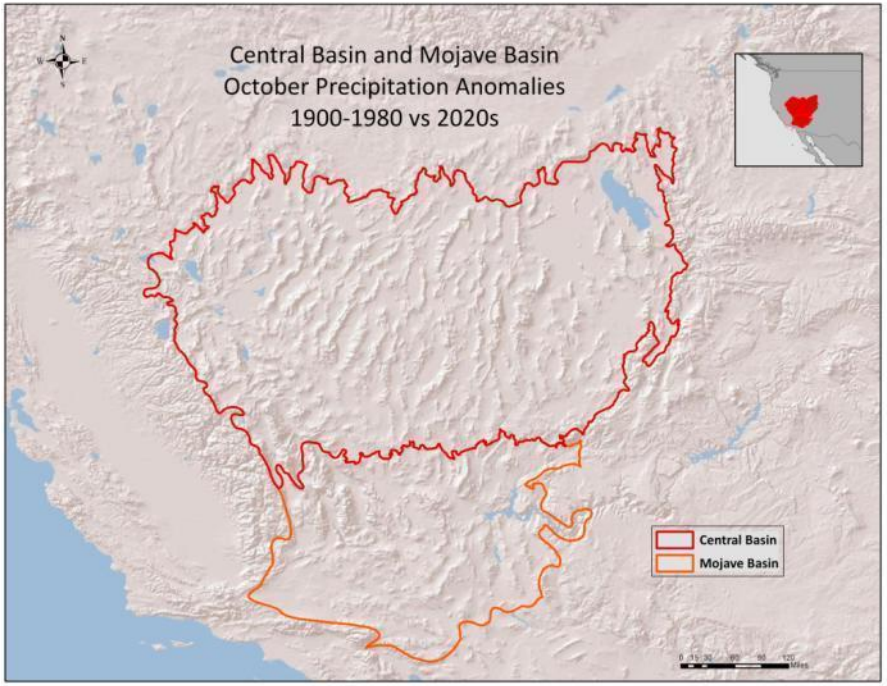

Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
70
60
50
40
30
20
10
-2
0
2
4
6
8
1900-1980
1995-2010
2020s
2050s


Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Precipitation (inches)
100
90
80
70
60
50
-1
0
1
2
3
4
1900-1980
1995-2010
2020s
2050s

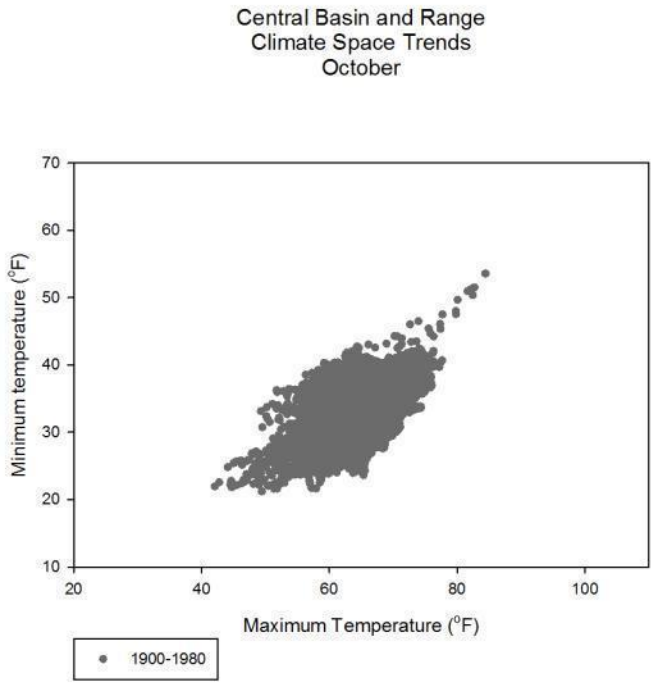

CBR
October Precipitation Anomalies
1900-1980 vs 1995-2010
+2 SD
+1 SD
-2 SD
-1 SD

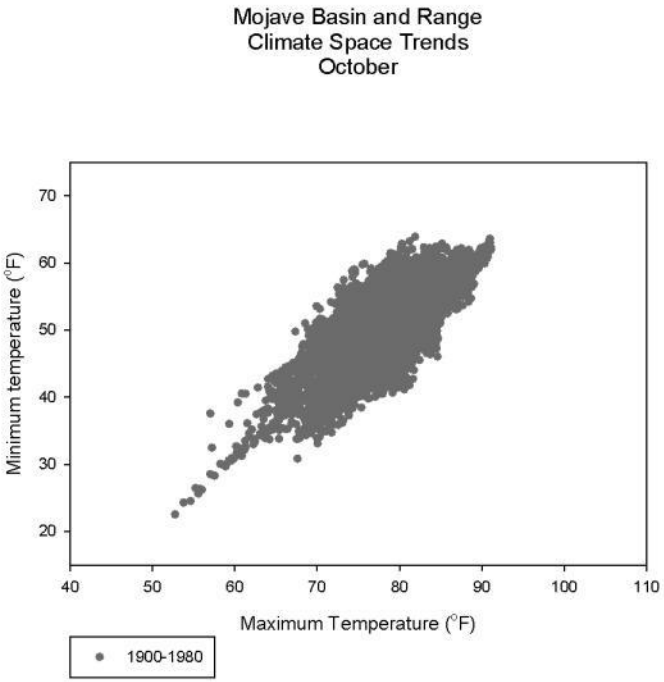

Central Basin and Mojave Basin
October Precipitation Anomalies
1900-1980 vs 2050s
Central Basin
Mojave Basin

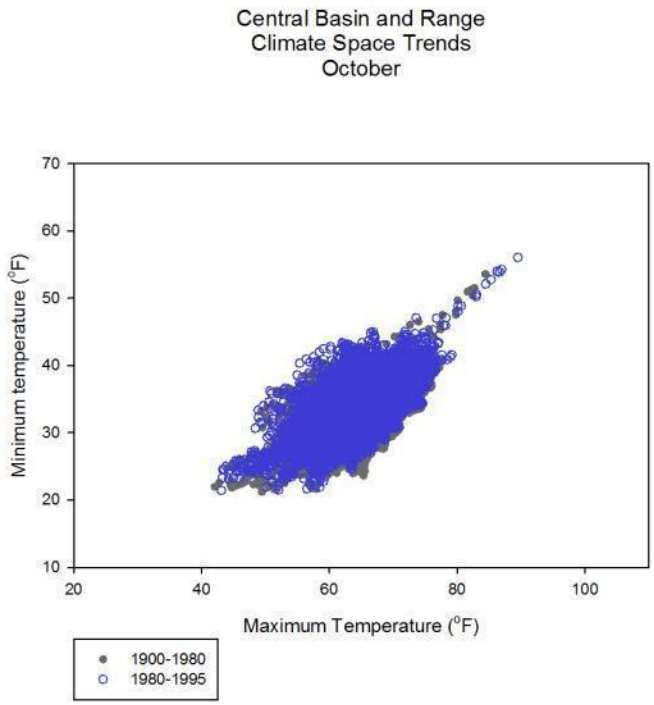

Mojave Basin
October Precipitation Anomalies
1900-1980 vs 1995-2010
-2 SD
-1 SD
+2 SD
+1 SD

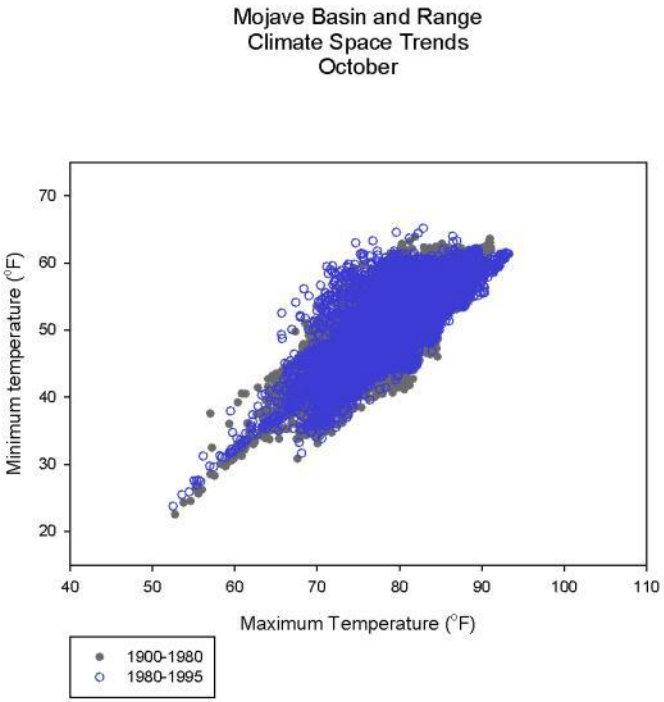

Central Basin and Mojave Basin
October Precipitation Anomalies
1900-1980 vs 2020s
Central Basin
Mojave Basin

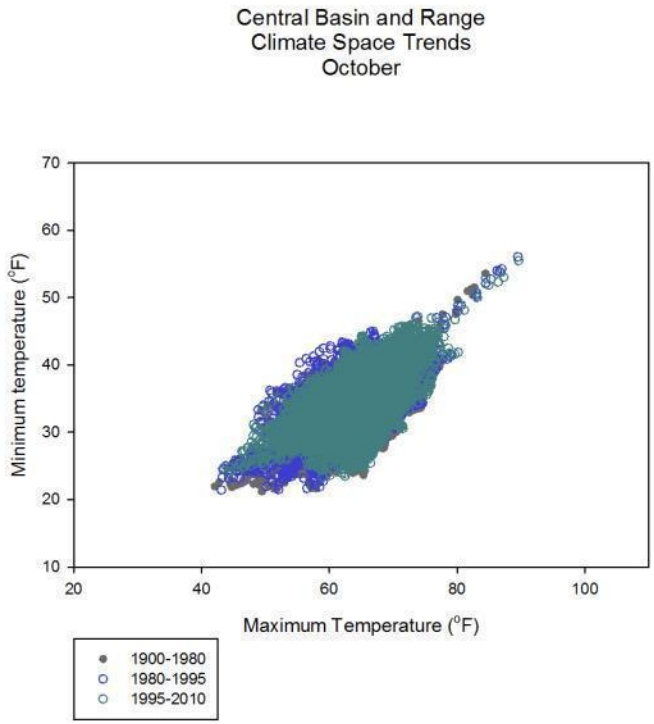
BLM

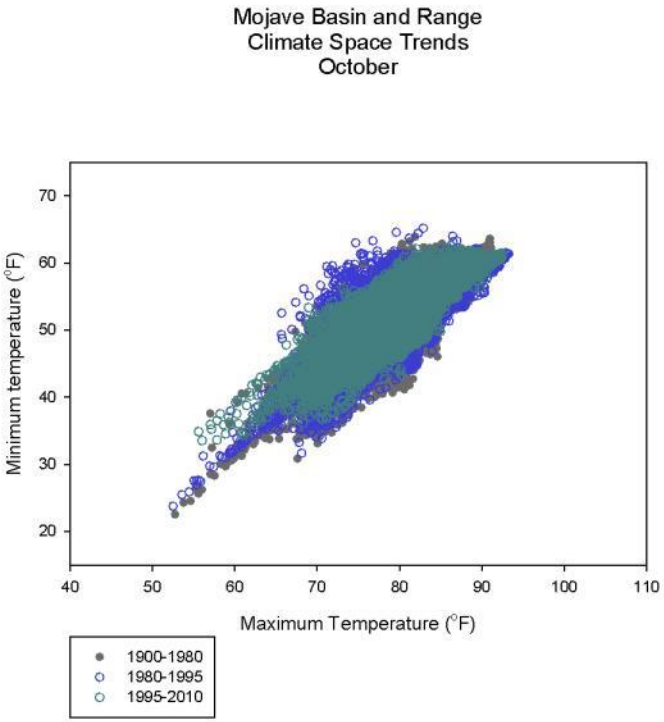

Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980

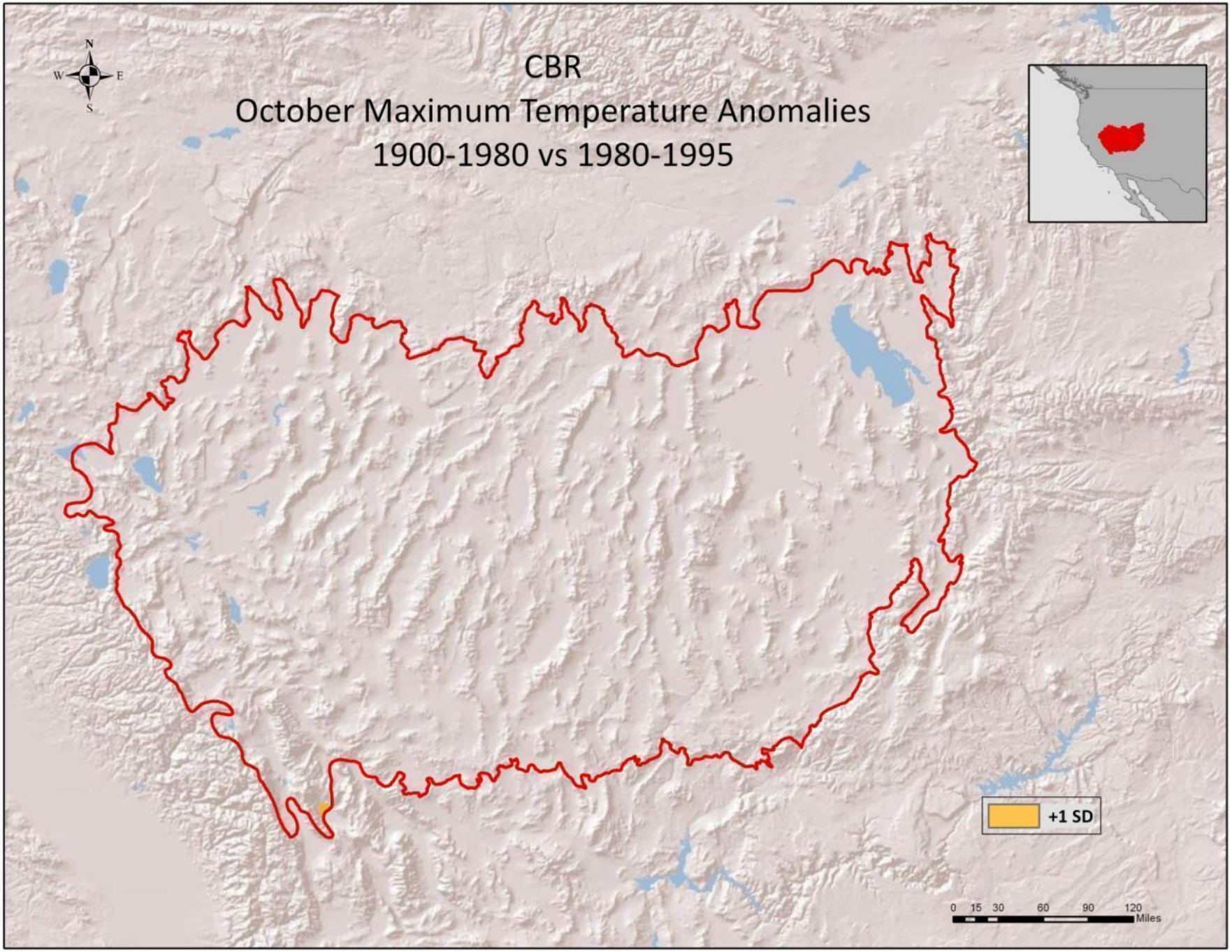

Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980

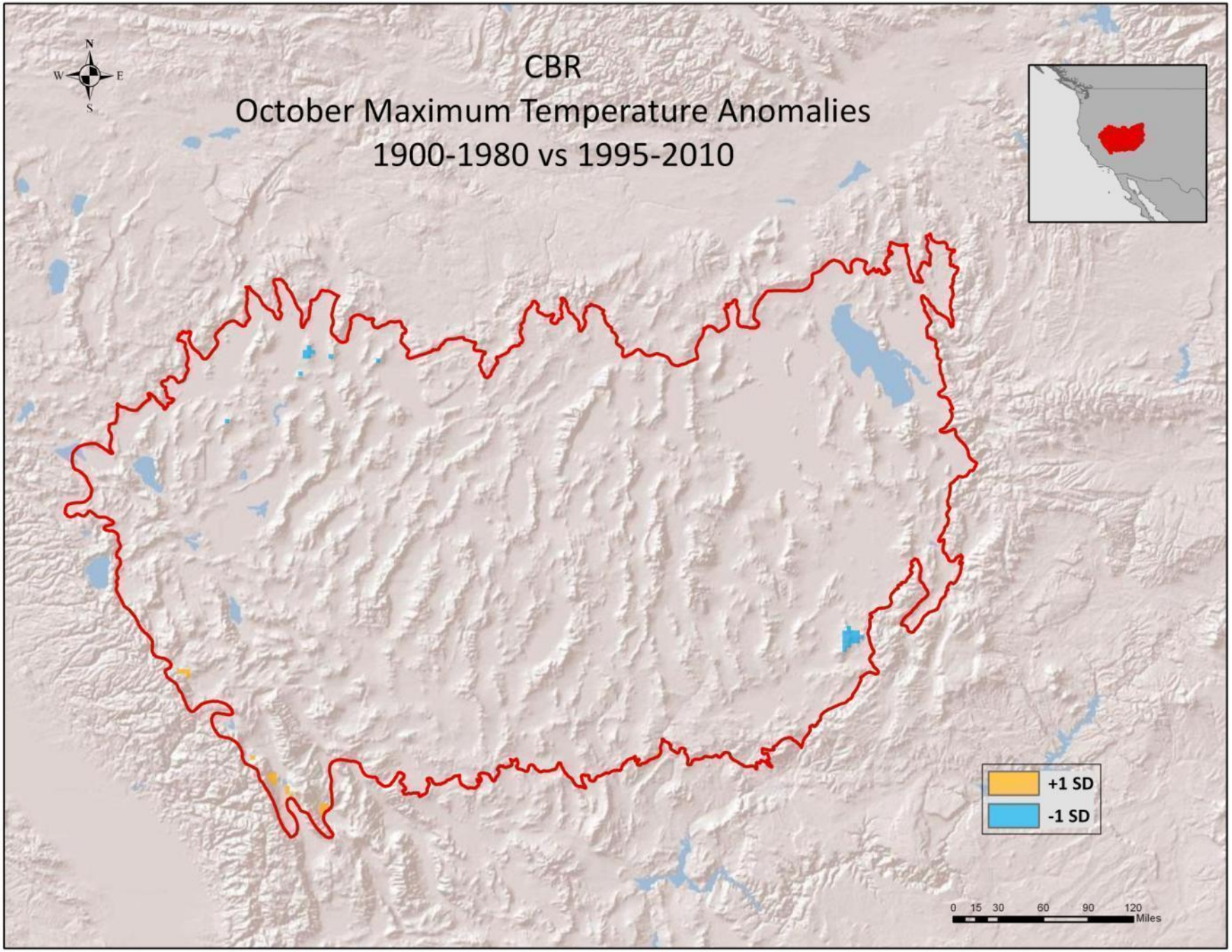

Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995

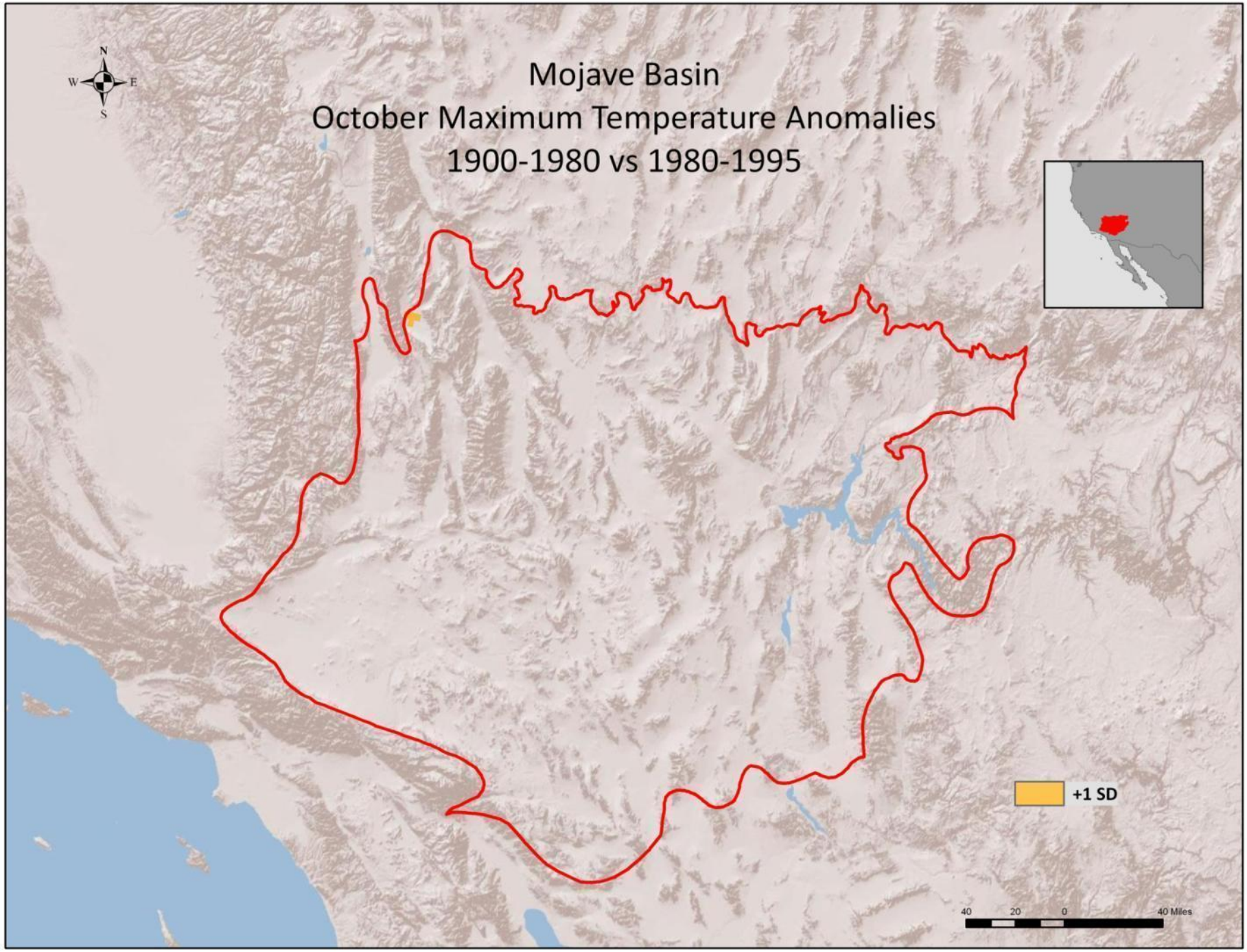

Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995

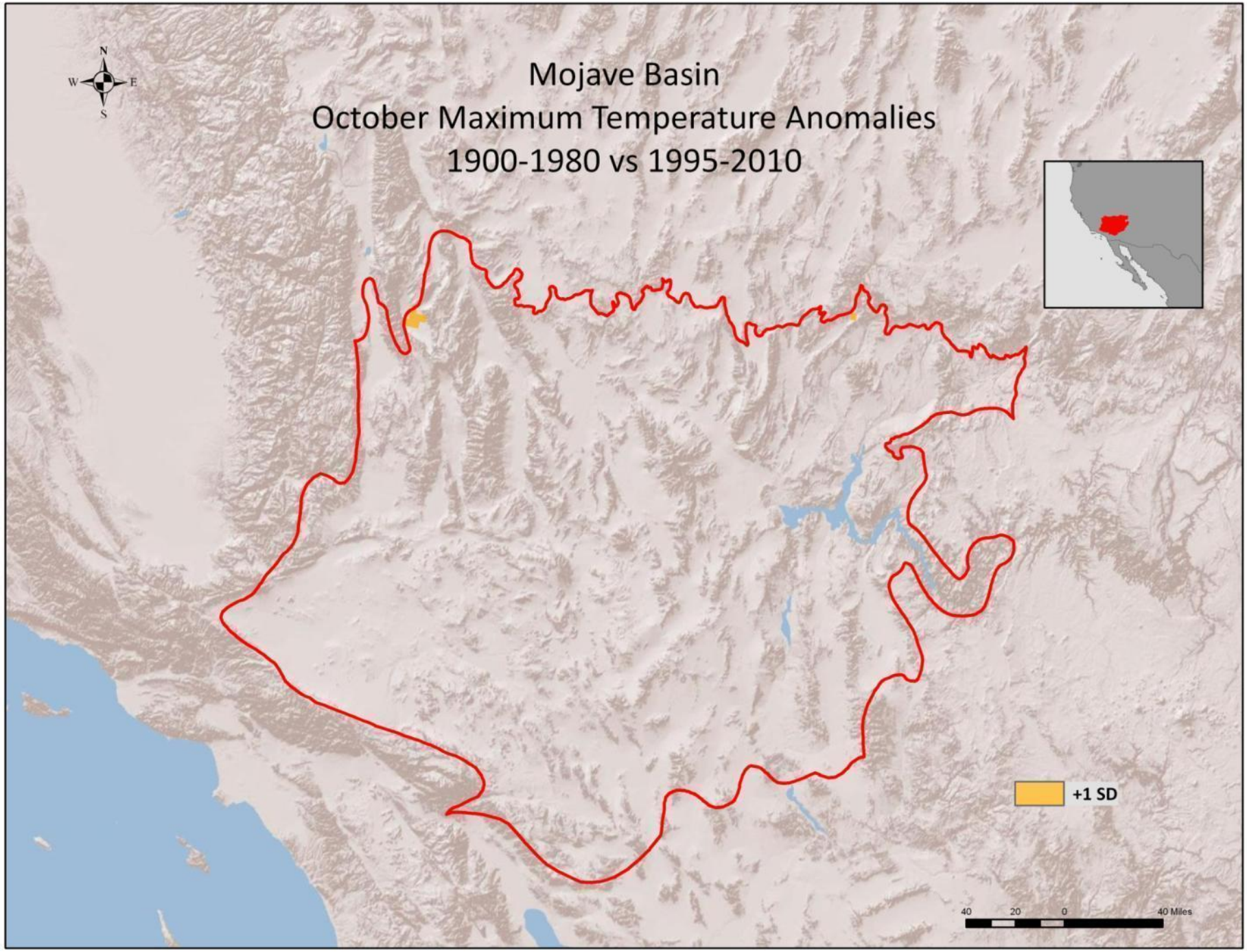

Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995
1995-2010

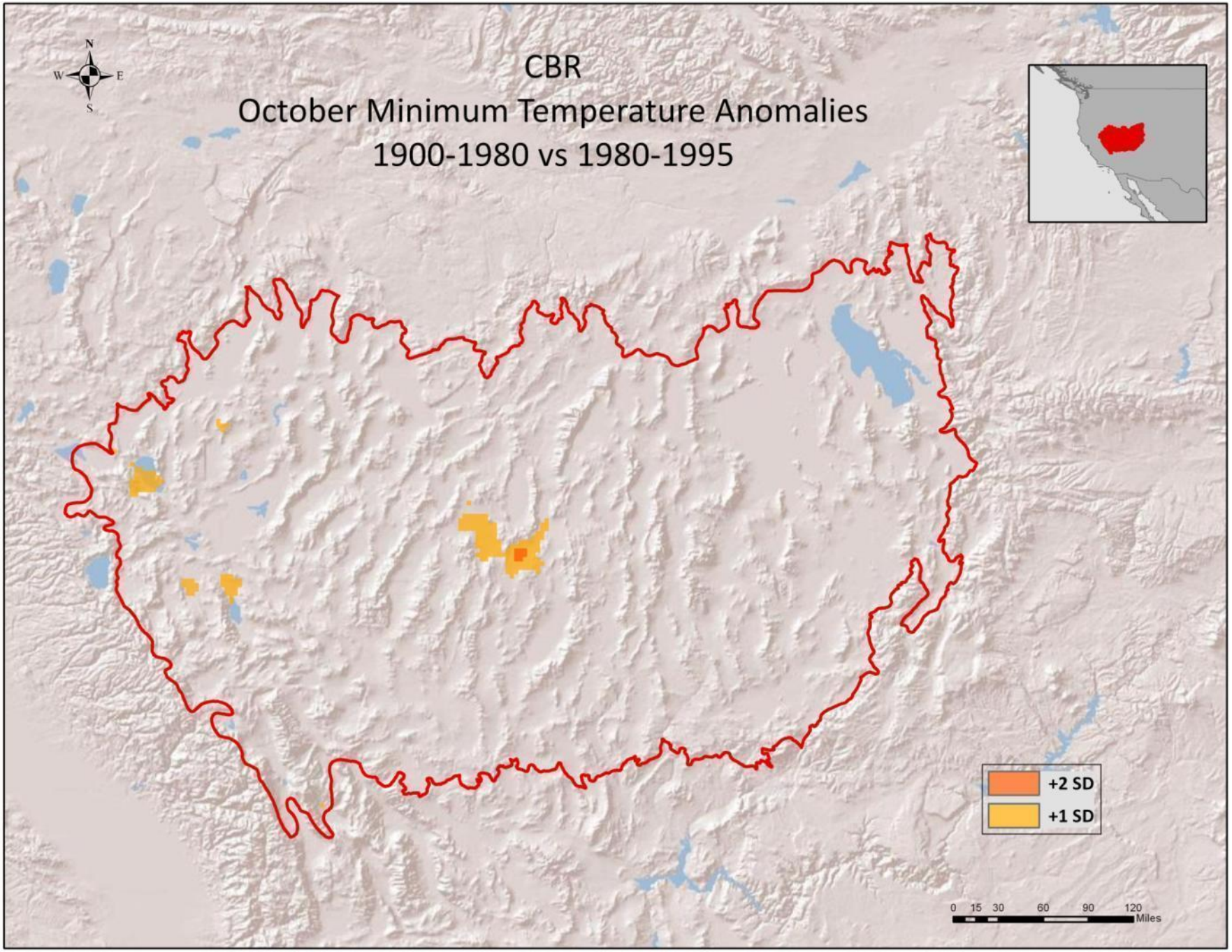

Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1980-1995
1995-2010

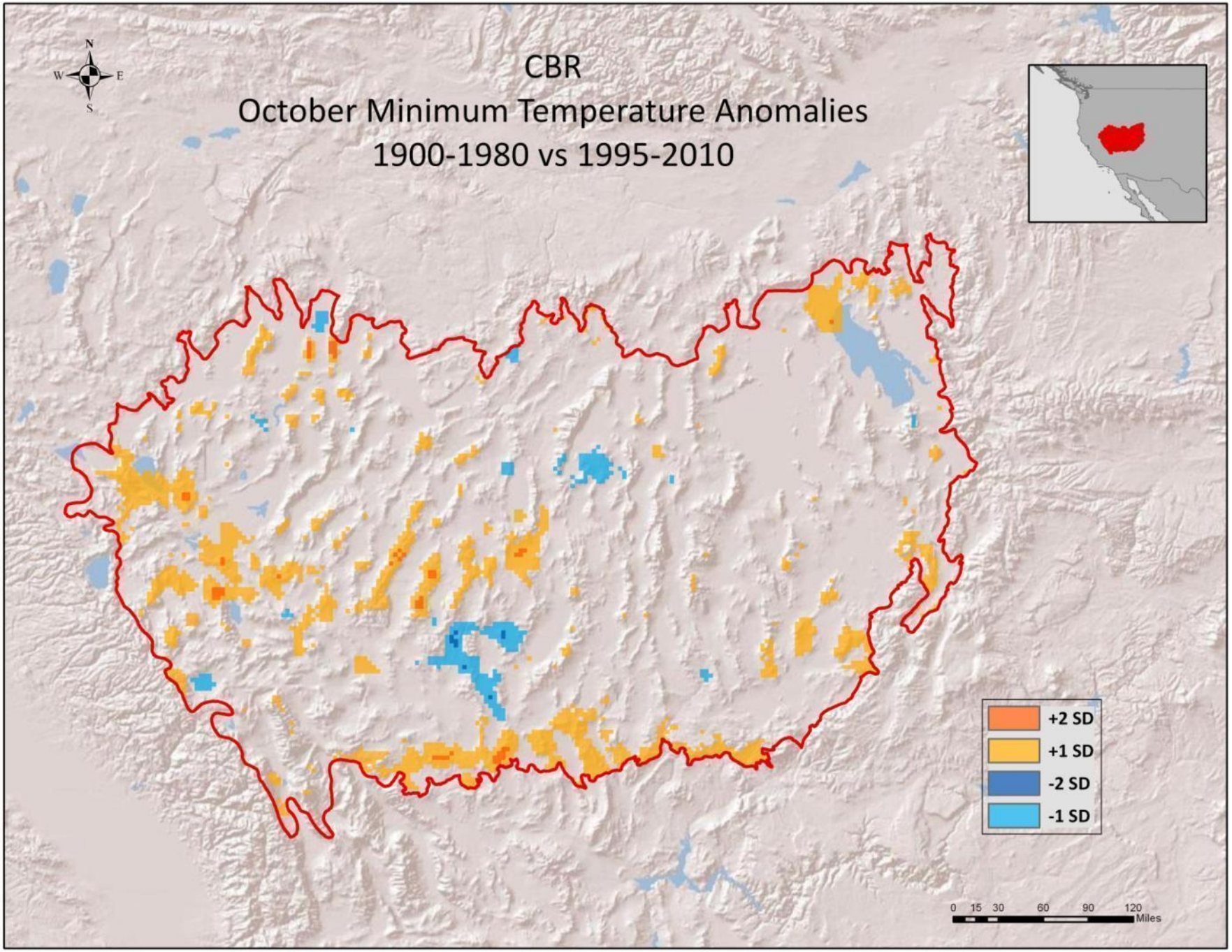

CBR
October Maximum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
+1 SD
0 15 30 60 90 120
Miles

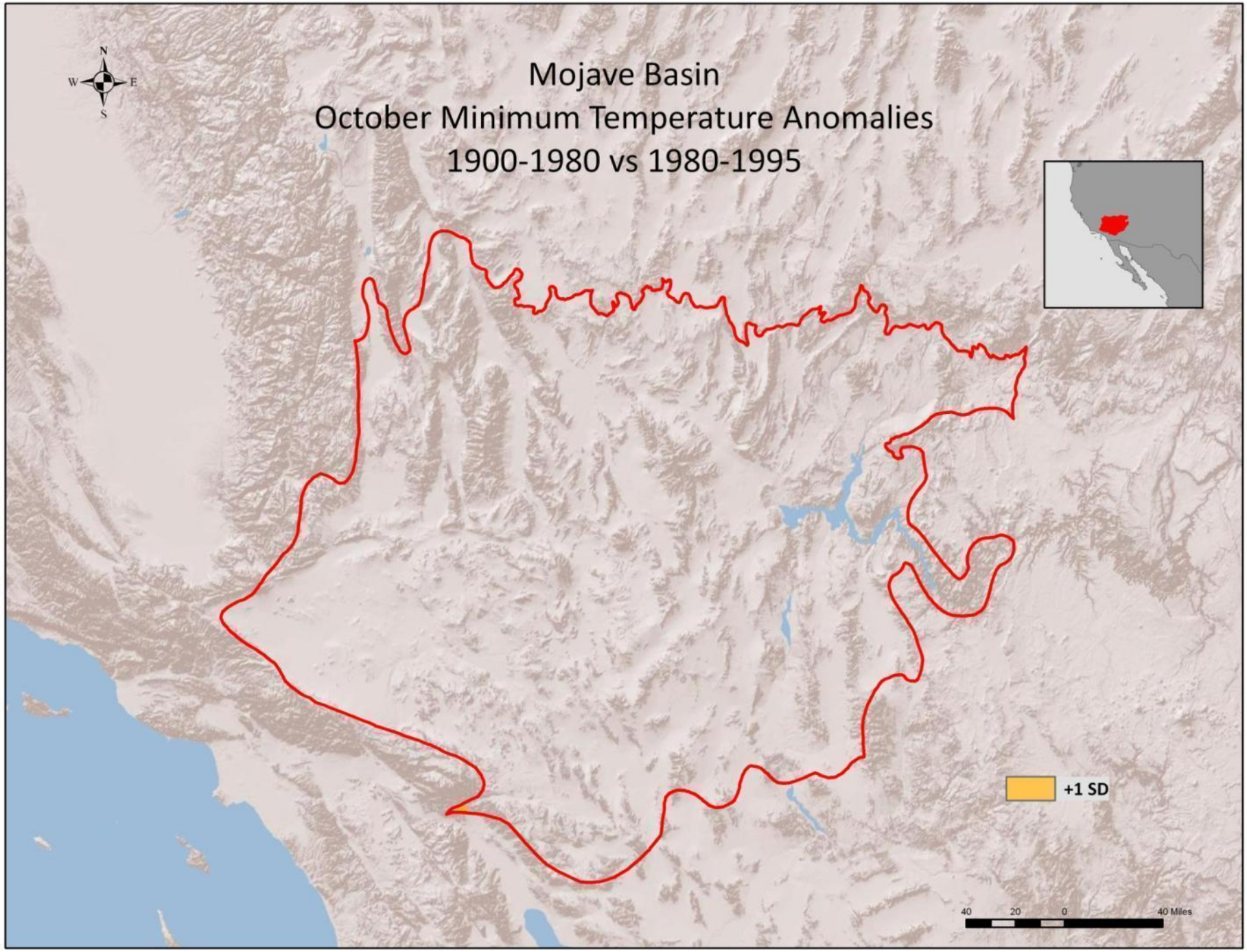

CBR
October Maximum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+1 SD
-1 SD
0 15 30 60 90 120
Miles

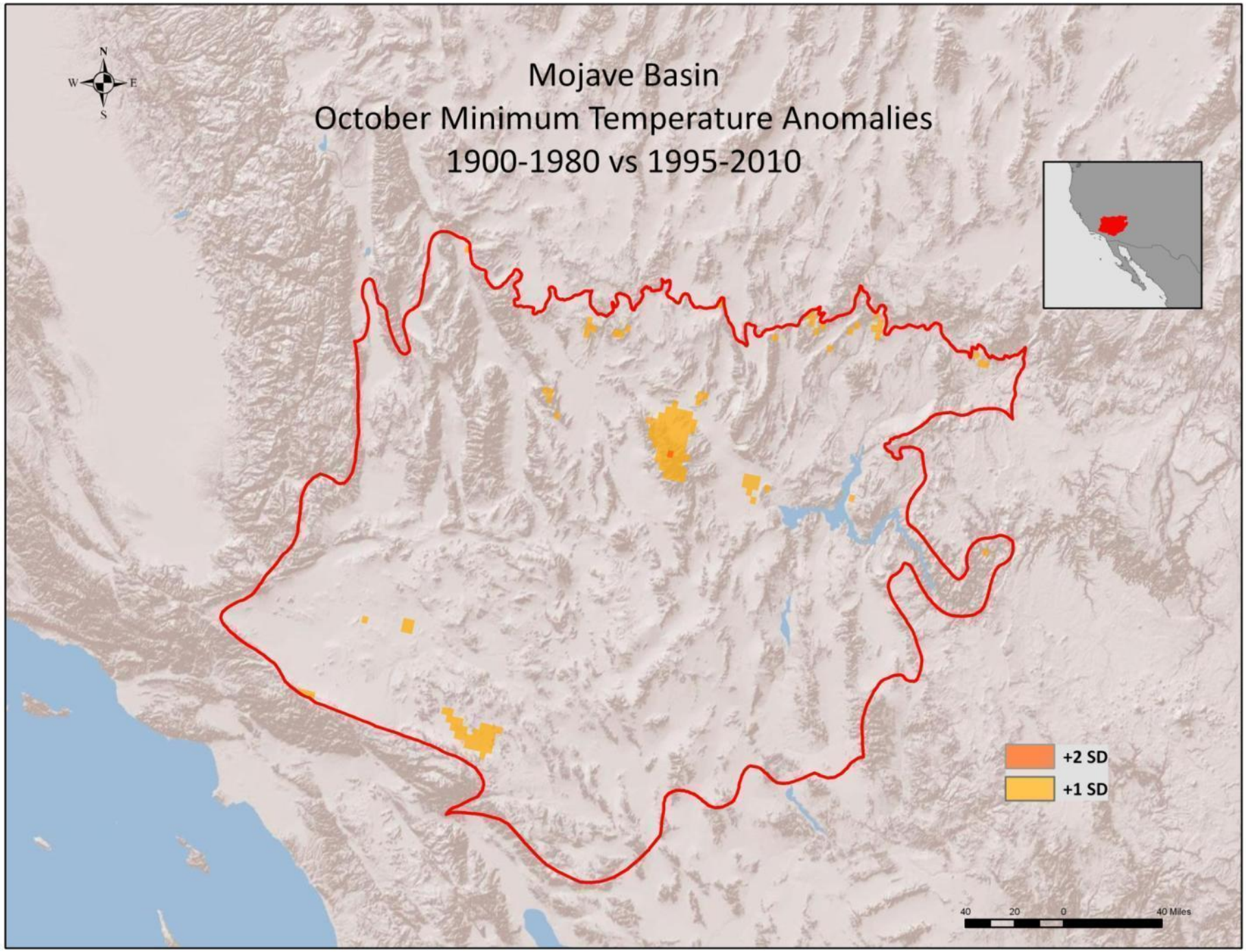

Mojave Basin
October Maximum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
+1 SD
40
20
0
40 Miles

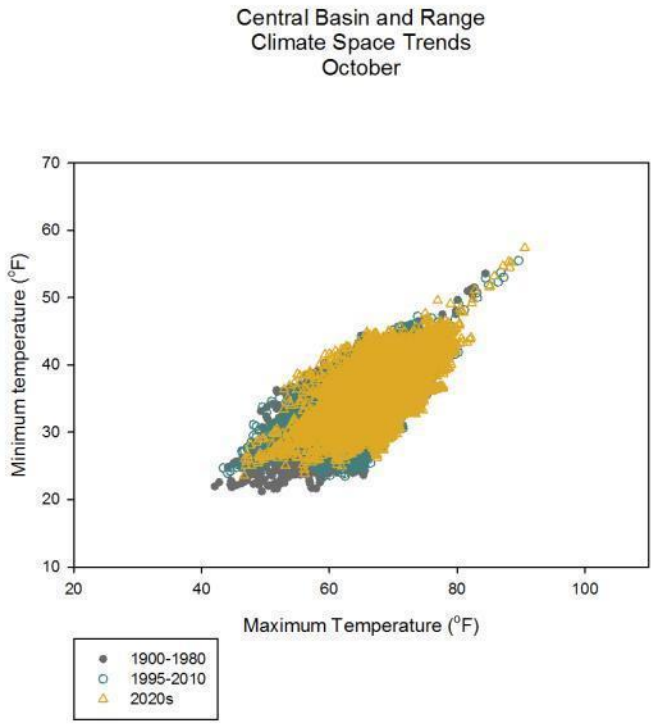

Mojave Basin
October Maximum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+1 SD
40
20
0
40 Miles

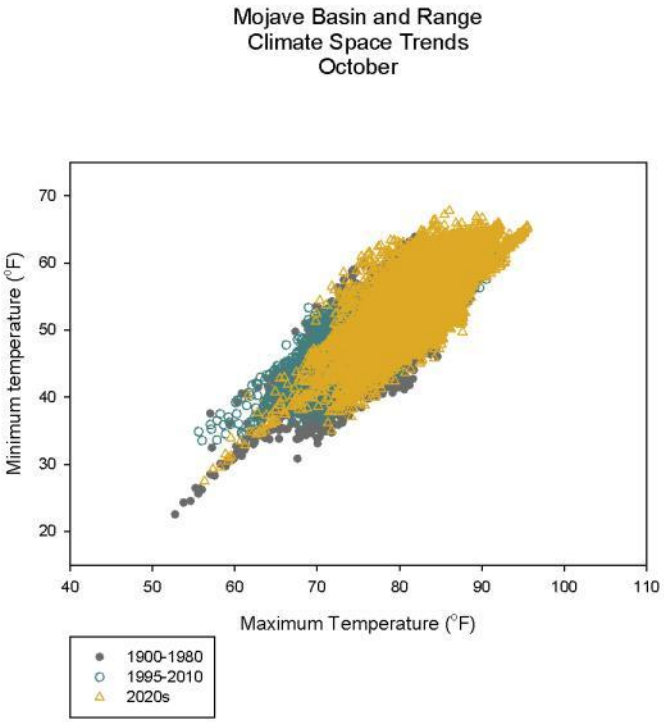

CBR
October Minimum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
+2 SD
+1 SD
0 15 30 60 90 120
Miles

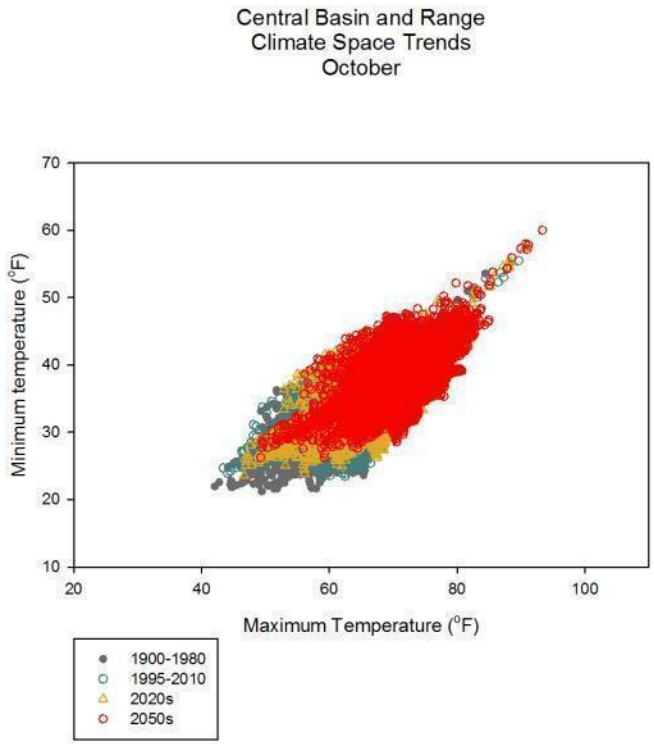

CBR
October Minimum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+2 SD
+1 SD
-2 SD
-1 SD
0 15 30 60 90 120
Miles

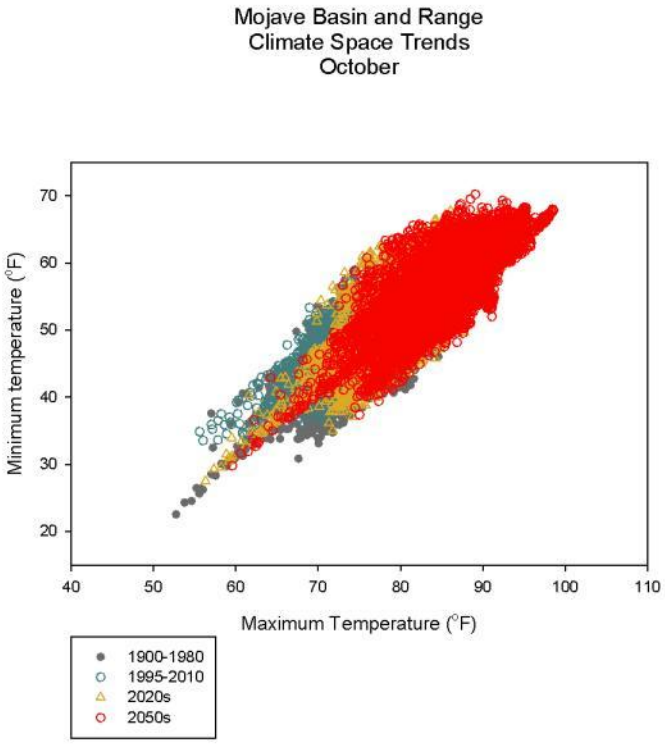

Mojave Basin
October Minimum Temperature Anomalies
1900-1980 vs 1980-1995
N
W
E
S
+1 SD
40
20
0
40 Miles

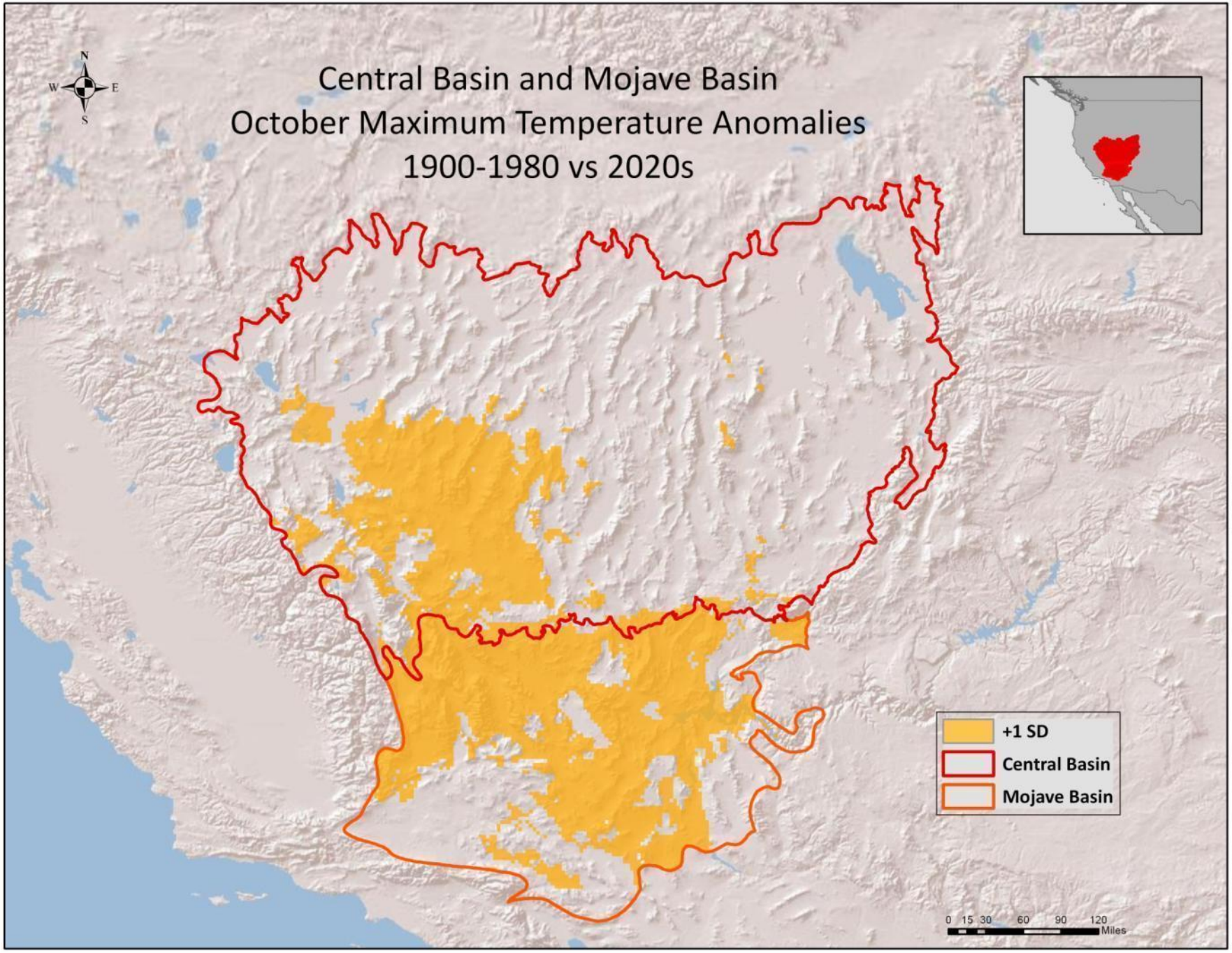

Mojave Basin
October Minimum Temperature Anomalies
1900-1980 vs 1995-2010
N
W
E
S
+2 SD
+1 SD
40
20
0
40 Miles

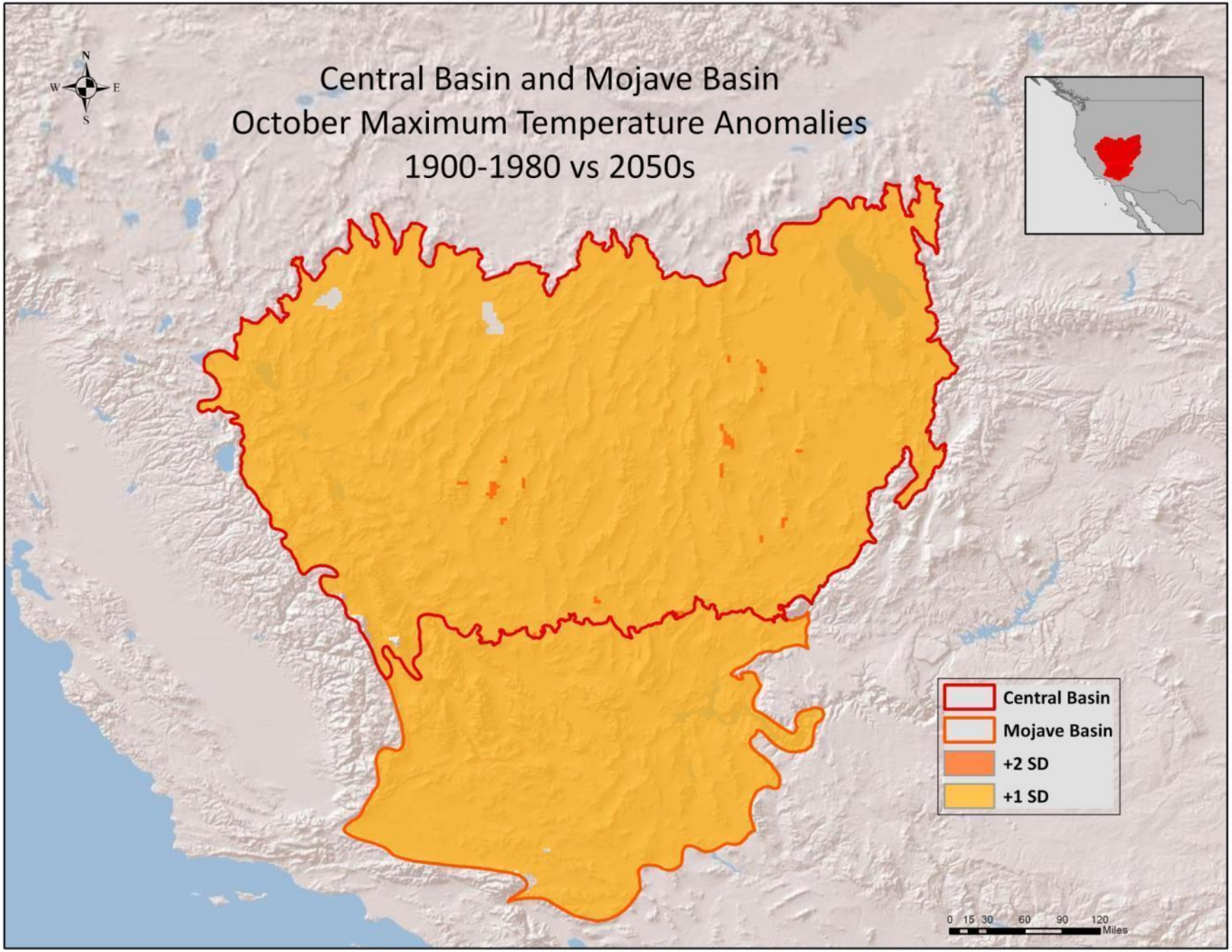

Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1995-2010
2020s

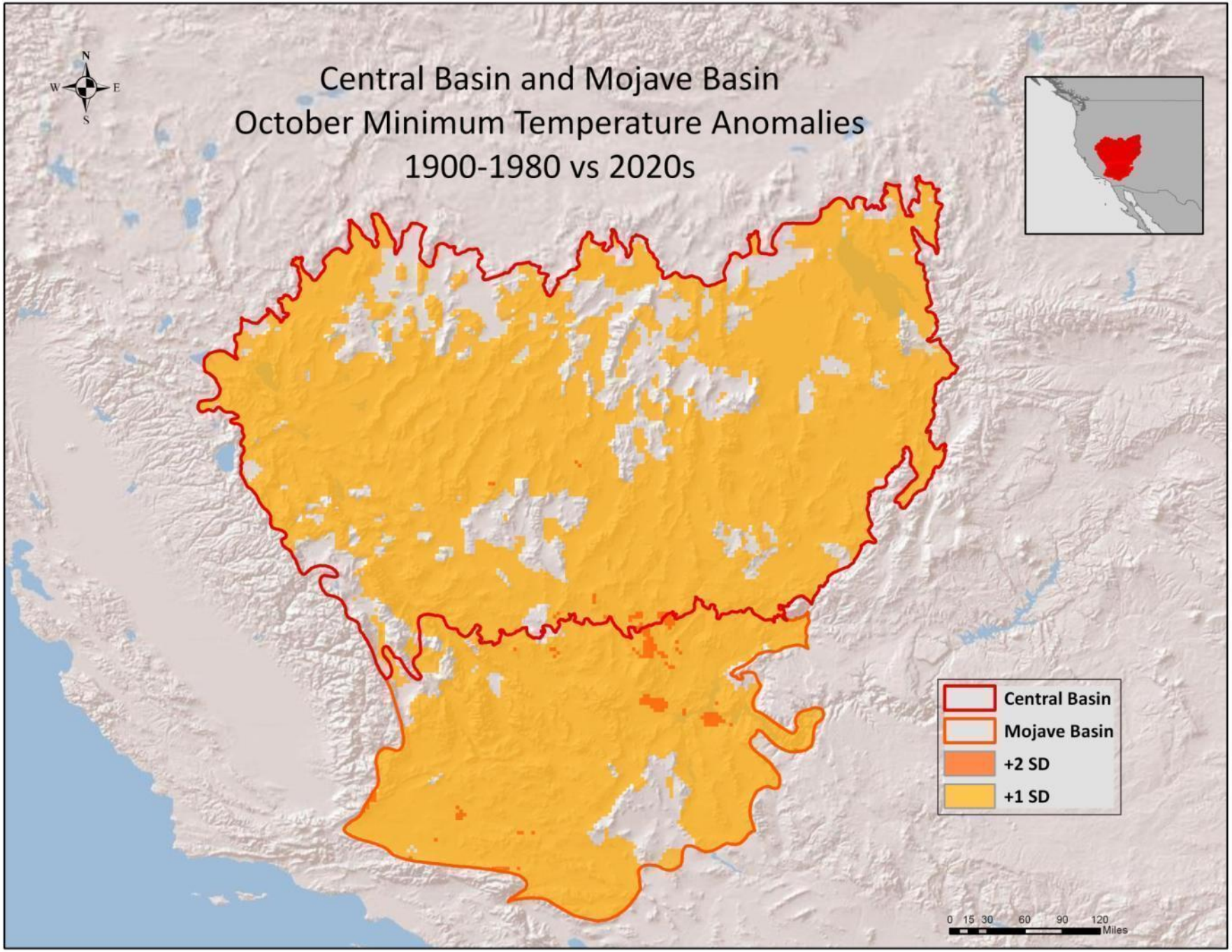

Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1995-2010
2020s

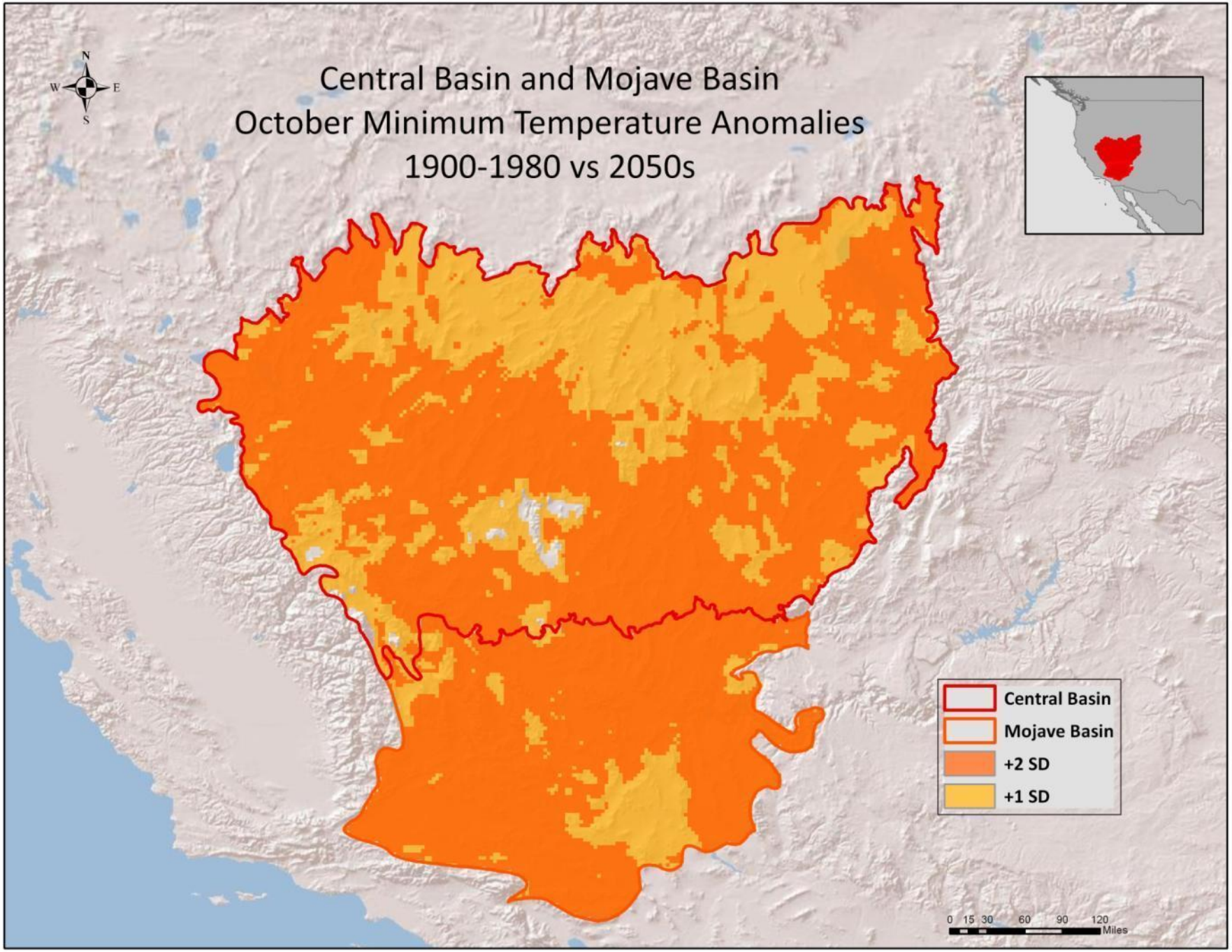

Central Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1995-2010
2020s
2050s

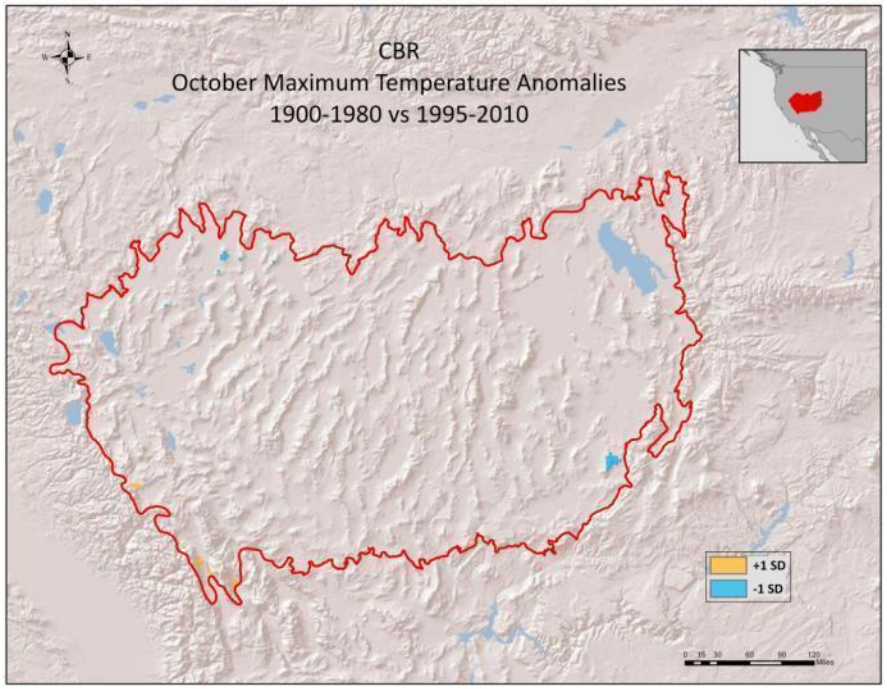

Mojave Basin and Range
Climate Space Trends
October
Minimum temperature (°F)
Maximum Temperature (°F)
1900-1980
1995-2010
2020s
2050s

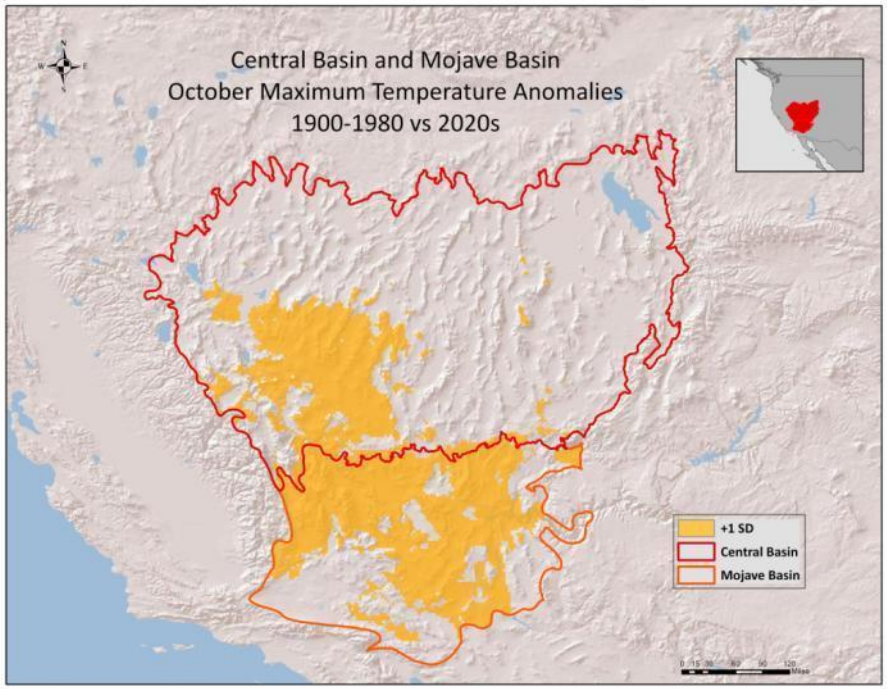

Central Basin and Mojave Basin
October Maximum Temperature Anomalies
1900-1980 vs 2020s
N
W
E
S
+1 SD
Central Basin
Mojave Basin
0 15 30 60 90 120
Miles

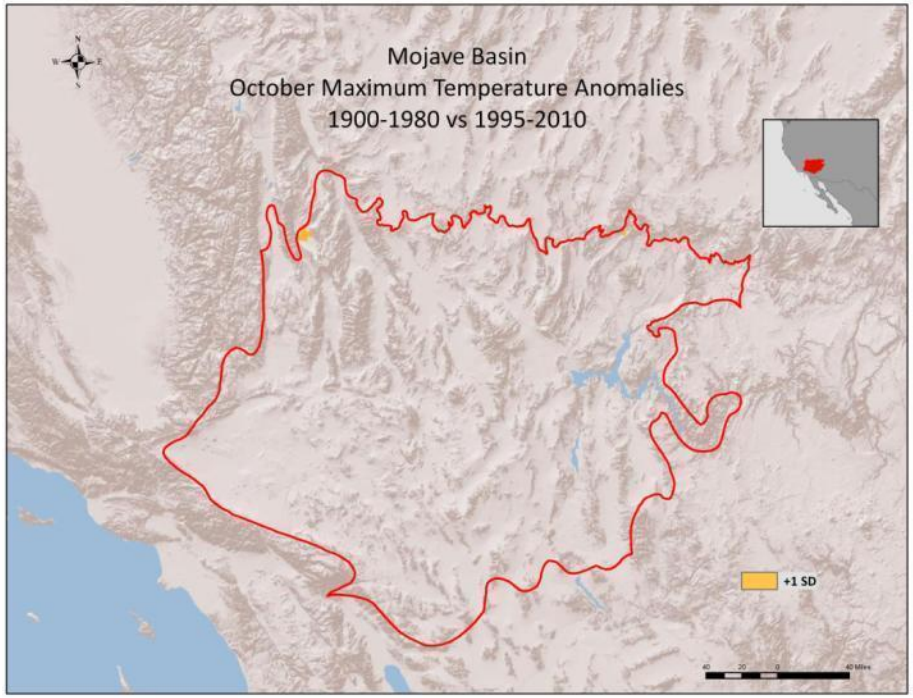

Central Basin and Mojave Basin
October Maximum Temperature Anomalies
1900-1980 vs 2050s
N
W
E
S
Central Basin
Mojave Basin
+2 SD
+1 SD
0 15 30 60 90 120
Miles

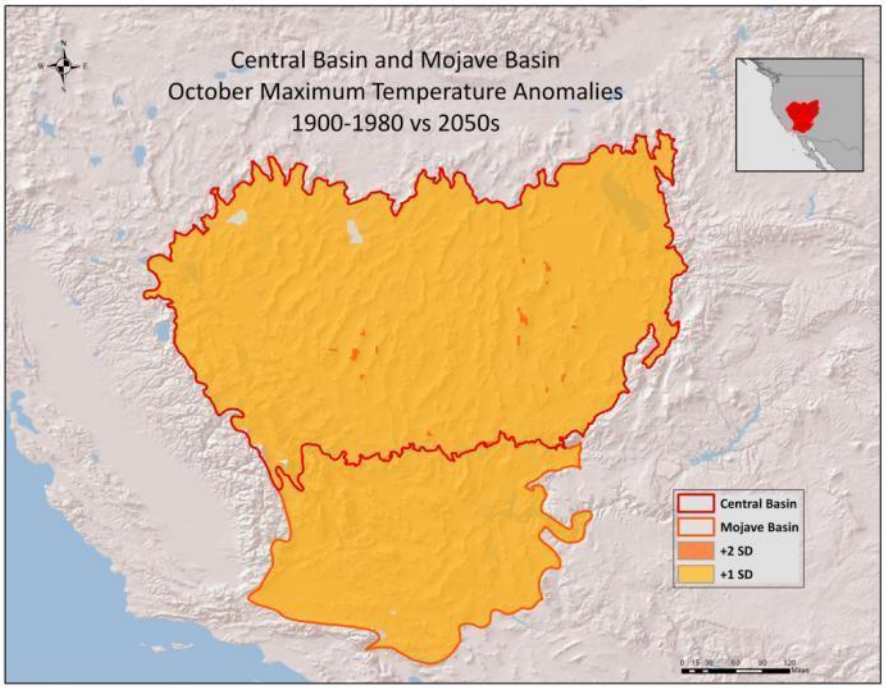

Central Basin and Mojave Basin
October Minimum Temperature Anomalies
1900-1980 vs 2020s
N
W
E
S
Central Basin
Mojave Basin
+2 SD
+1 SD
0 15 30 60 90 120
Miles


Central Basin and Mojave Basin
October Minimum Temperature Anomalies
1900-1980 vs 2050s
N
W
E
S
Central Basin
Mojave Basin
+2 SD
+1 SD
0 15 30 60 90 120
Miles


CBR
October Maximum Temperature Anomalies
1900-1980 vs 1995-2010
+1 SD
-1 SD


Central Basin and Mojave Basin
October Maximum Temperature Anomalies
1900-1980 vs 2020s
+1 SD
Central Basin
Mojave Basin


Mojave Basin
October Maximum Temperature Anomalies
1900-1980 vs 1995-2010
+1 SD


Central Basin and Mojave Basin
October Maximum Temperature Anomalies
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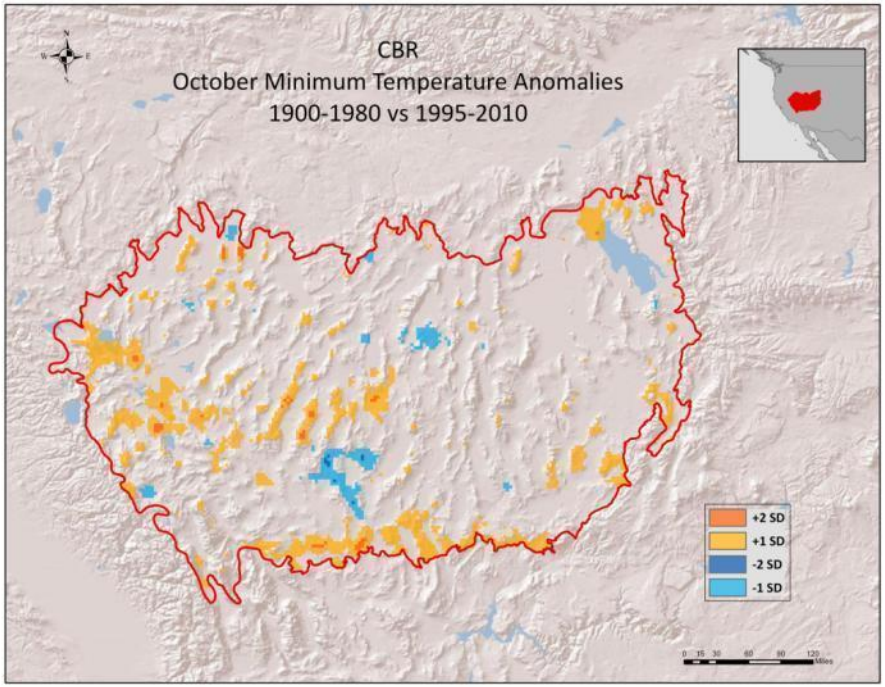
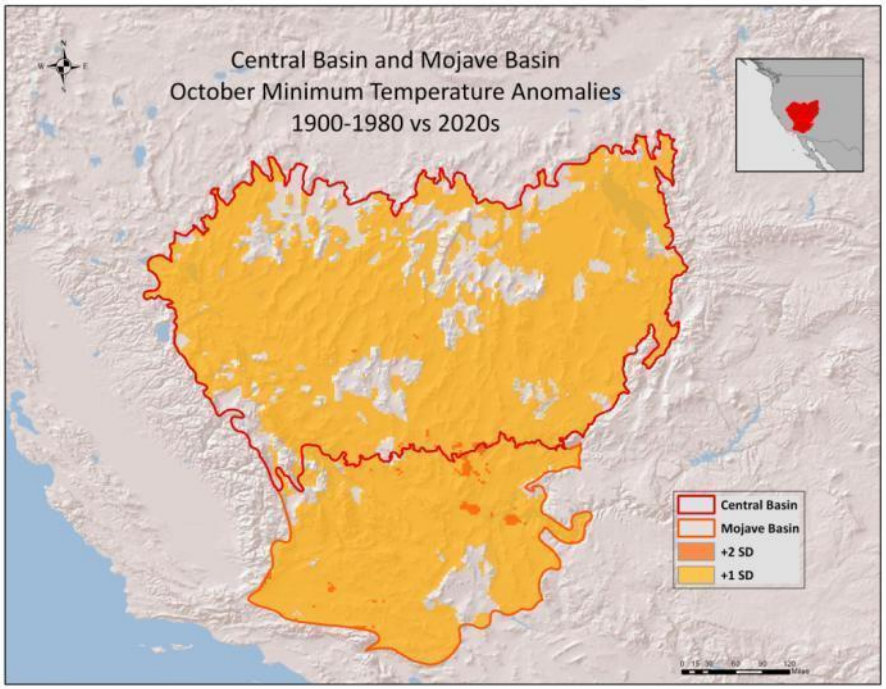
Central Basin
Mojave Basin
+2 SD
+1 SD


CBR
October Minimum Temperature Anomalies
1900-1980 vs 1995-2010
+2 SD
+1 SD
-2 SD
-1 SD


Central Basin and Mojave Basin
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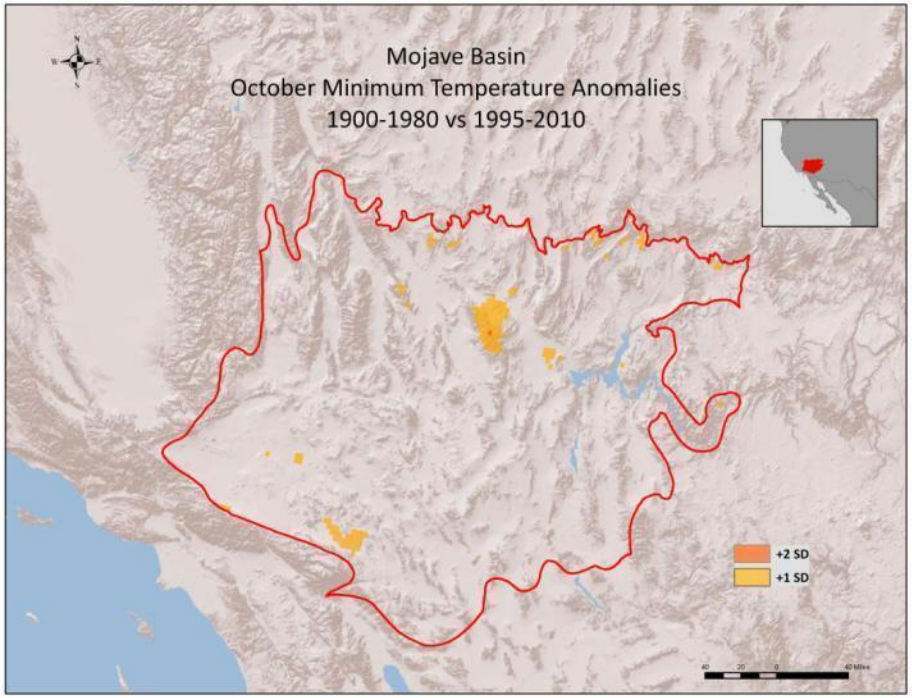
Central Basin
Mojave Basin
+2 SD
+1 SD


Mojave Basin
October Minimum Temperature Anomalies
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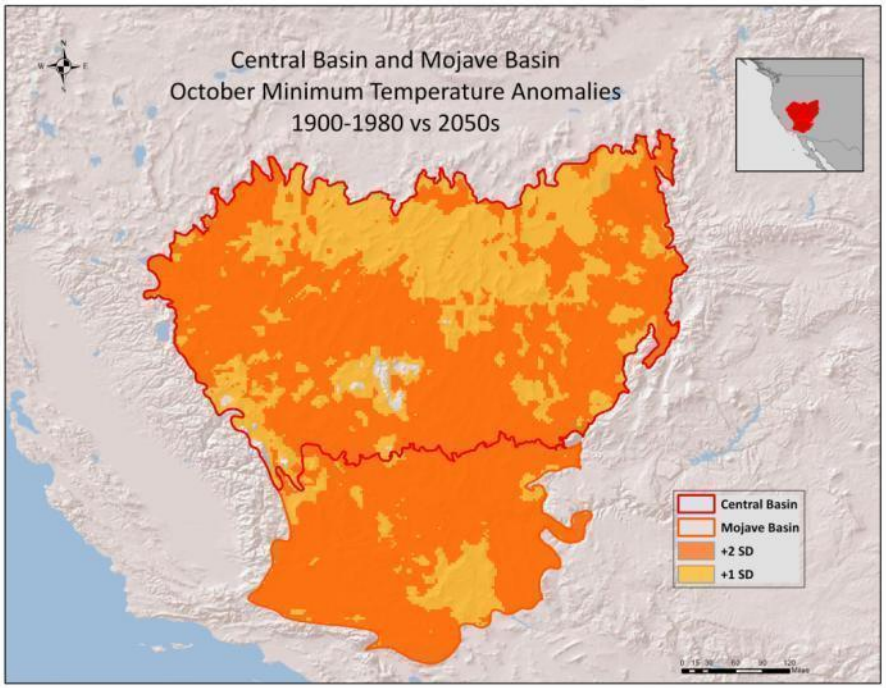
+2 SD
+1 SD


Central Basin and Mojave Basin
October Minimum Temperature Anomalies
1900-1980 vs 2050s
Central Basin
Mojave Basin
+2 SD
+1 SD

Climate Drivers for Aquatic CEs

- Monthly watershed water budget components
  - Precipitation, runoff, recharge, evapotranspiration, snowpack/snowmelt
- Climate drivers of monthly watershed water budget
  - *Monthly Precipitation*
  - *Monthly Tmin*
  - *Monthly Tmax*
- Climate driver of Spring snowmelt pulse (where applicable)
  - *April 1 Snowpack (as Snow Water Equivalent)*

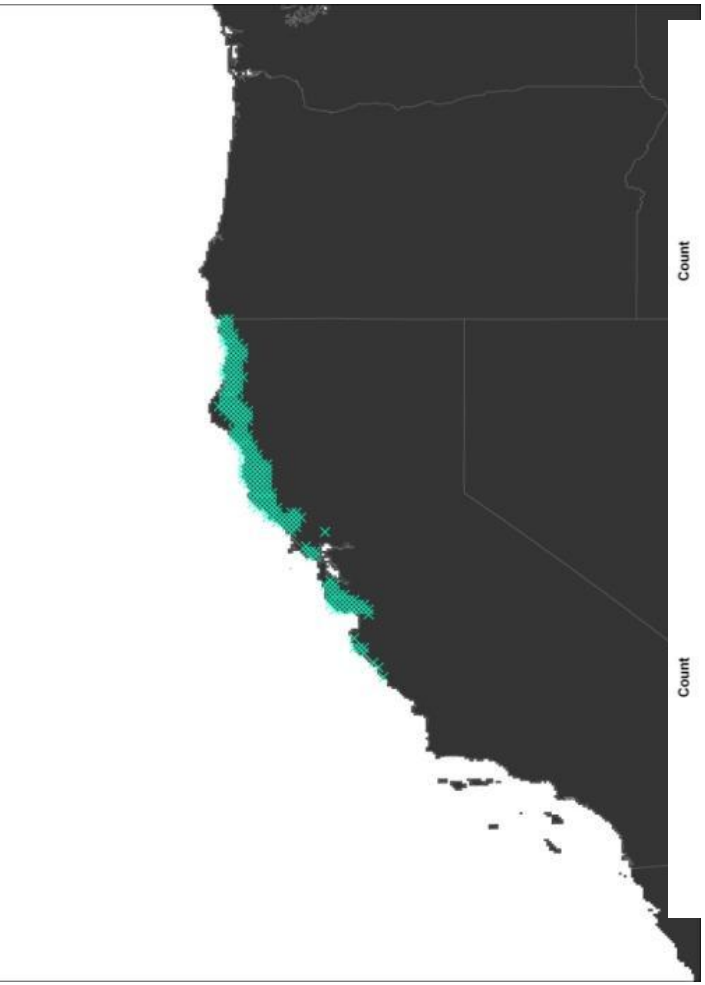
Lunch break on your own

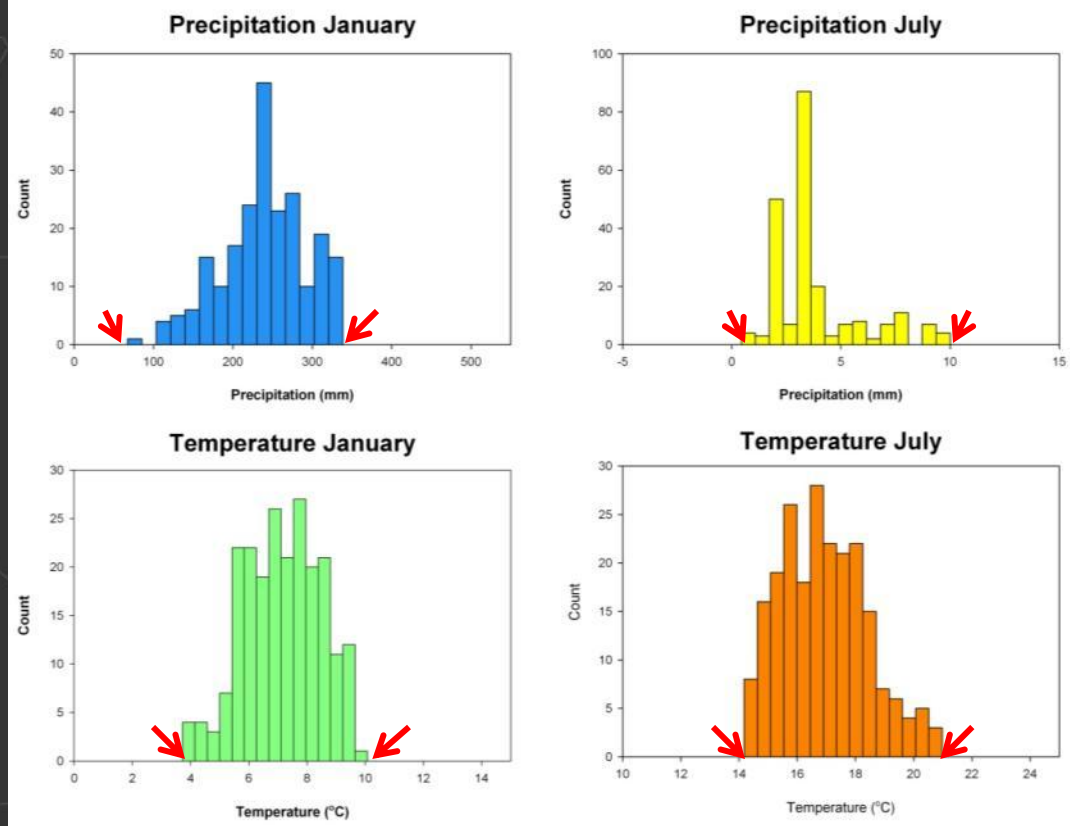
Climate change effects (how are CEs changing?)

Bioclimatic Niche Modeling – comparison of two future climate datasets

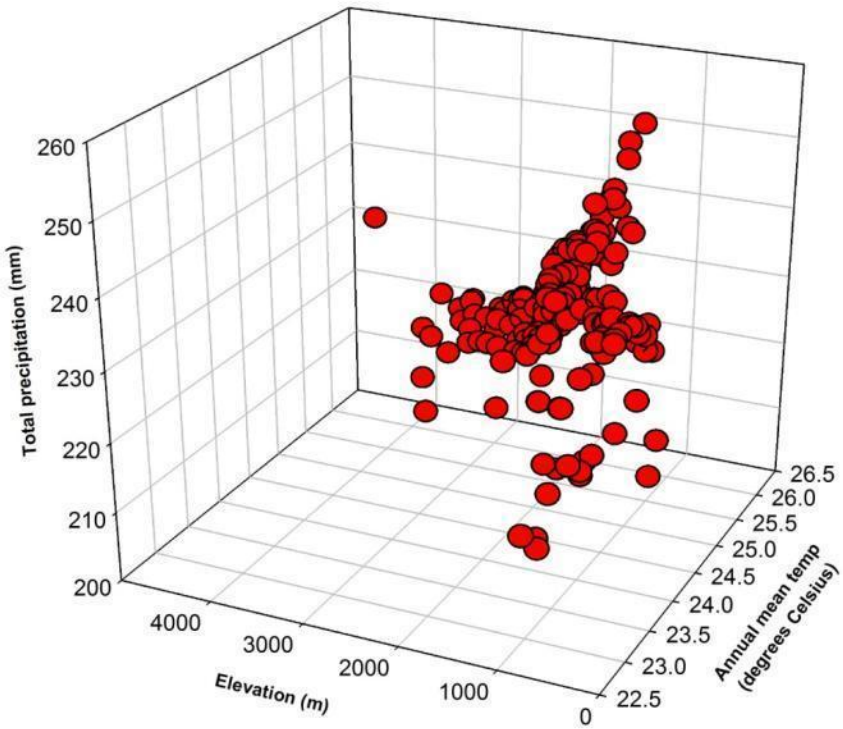
- PRISM 4km^2, 36 variables: monthly Tmax, Tmin, and precip
- EcoClim, 6 GCMs, 4km^2 resolution, 36 variables: monthly Tmax, Tmin, and precip
- USGS/Hostetler data, 2 GCMs,15km^2 resolution
- 88 monthly and/or annual climate/environmental variables

Tools for investigating relationships of species and climate: Ecological niche modeling algorithms

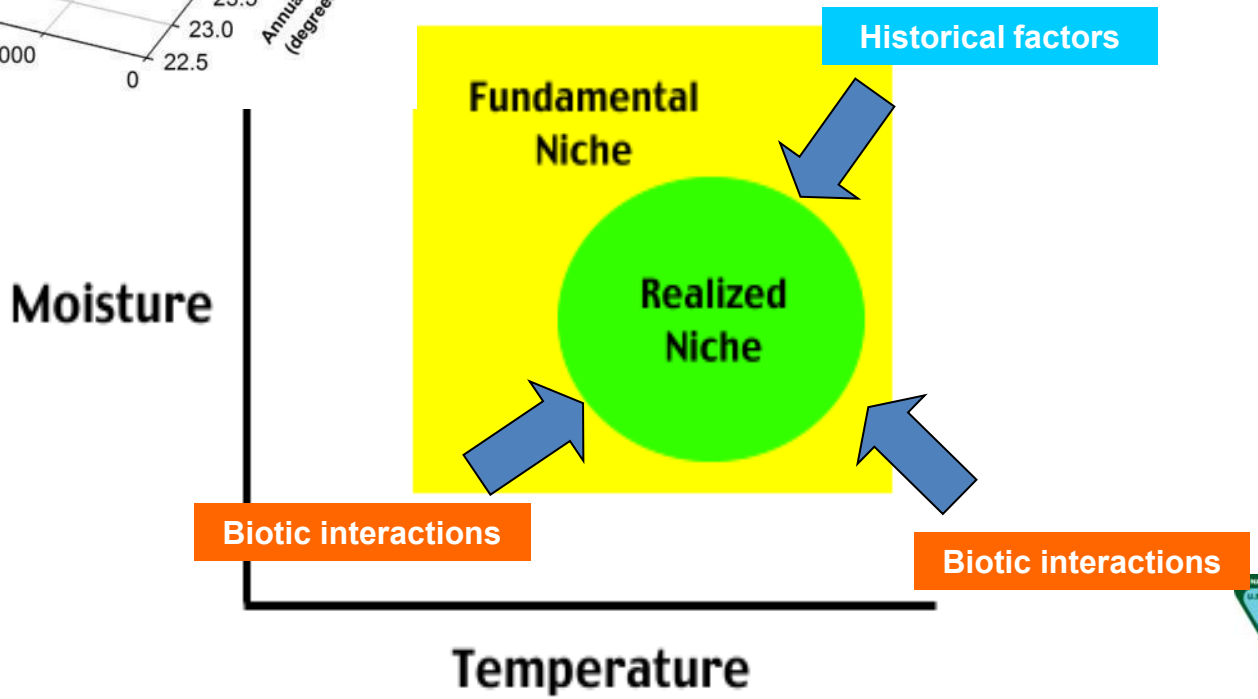




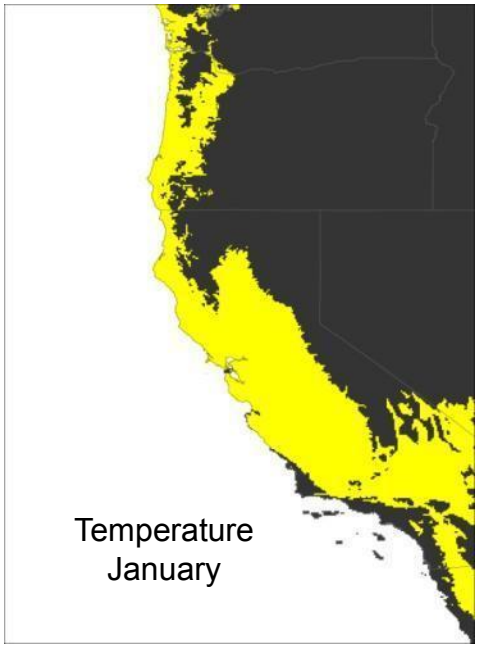
Coast redwood (Sequoia sempervirens) occurences

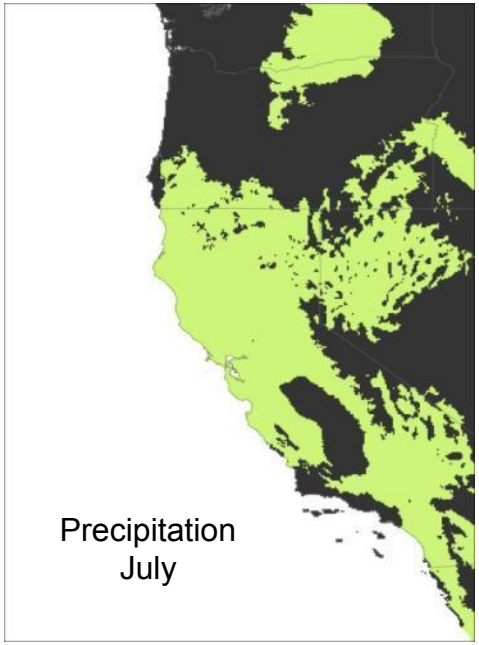


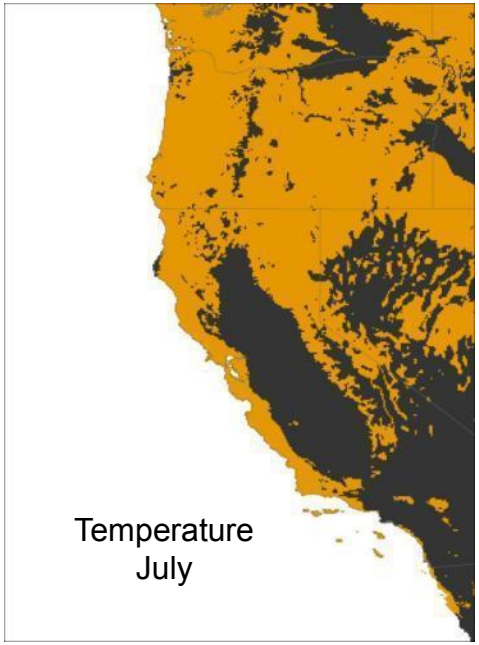
G. Evelyn Hutchinson 1903-1991

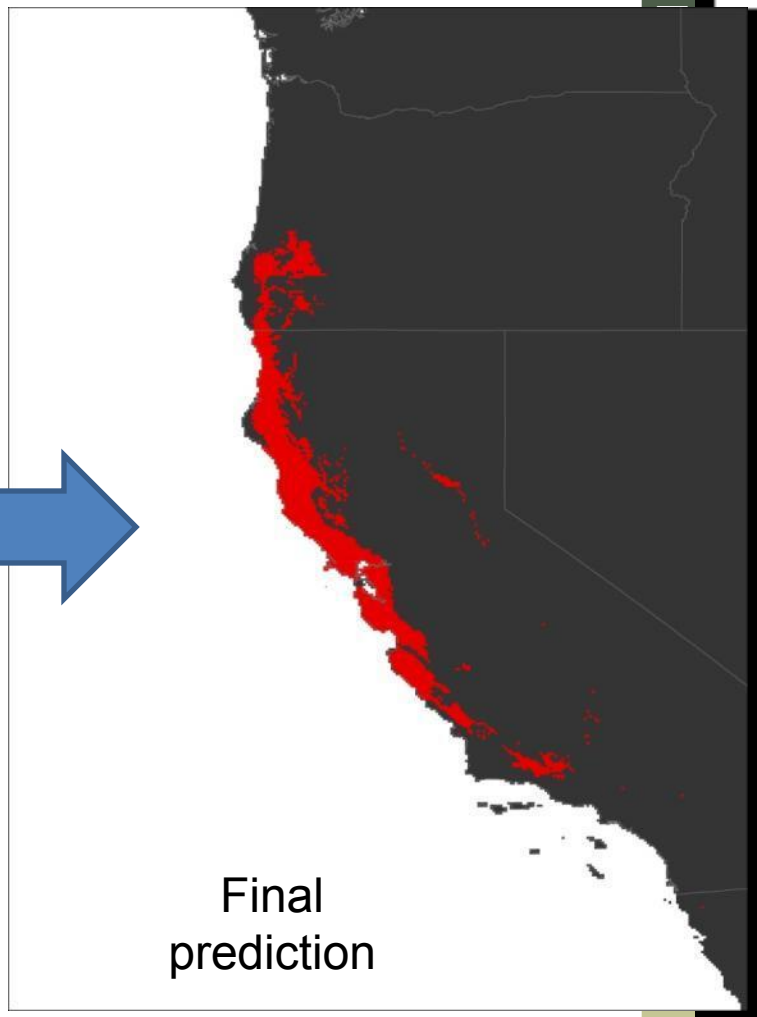


Precipitation
January


Temperature
January


Precipitation
July

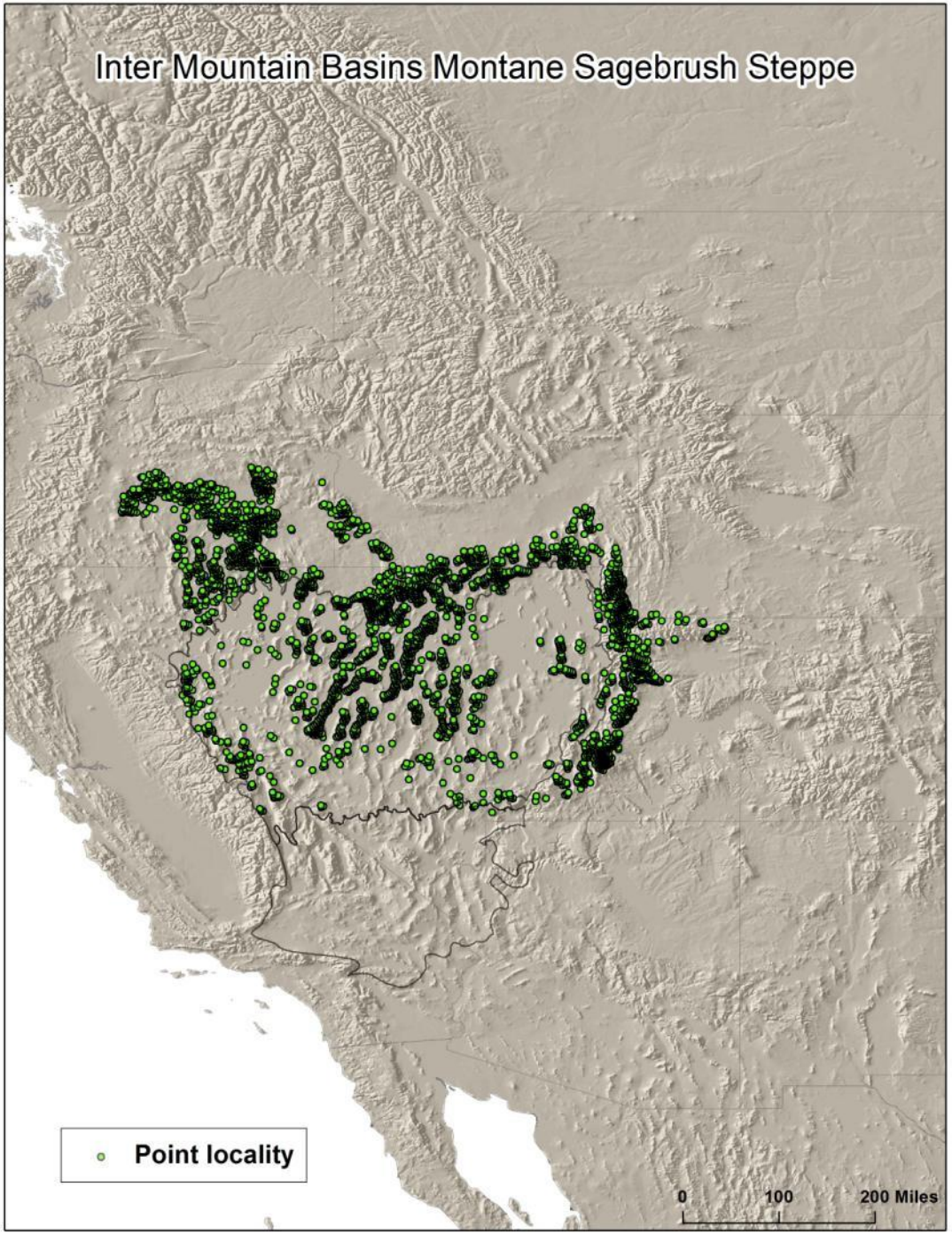

Temperature
July

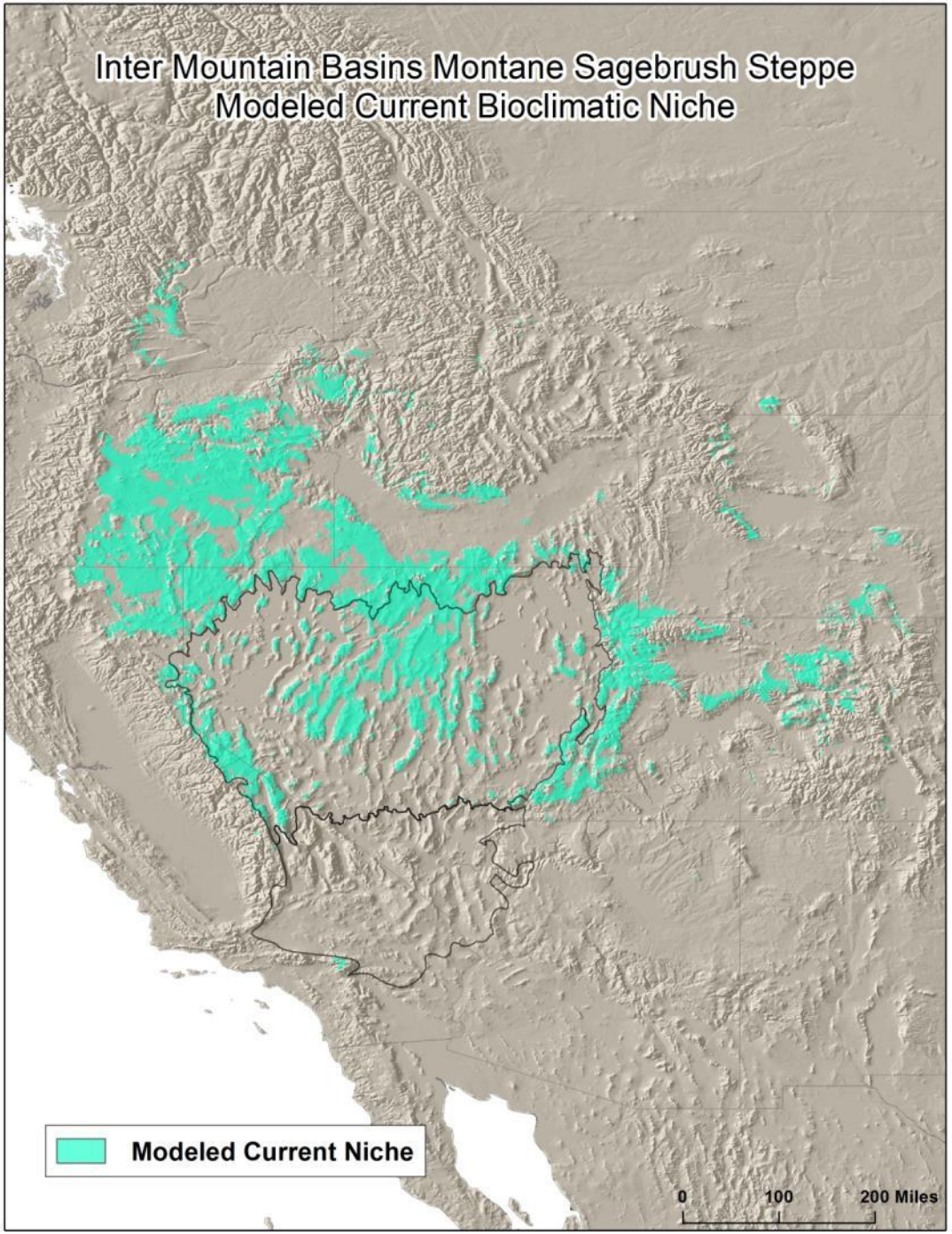

Final
prediction

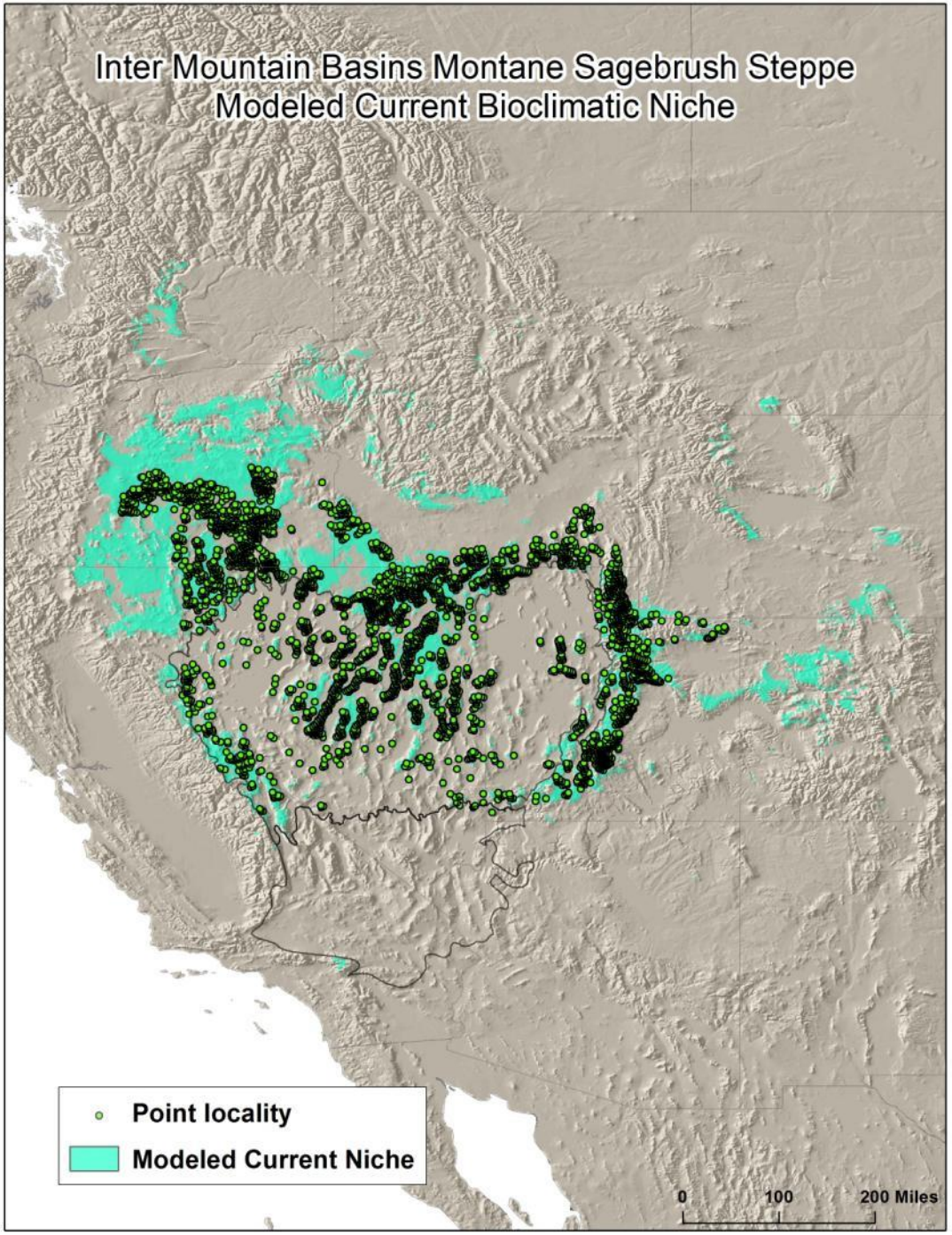
BLM Rapid

EcoClim
4km^2

36
climate
variables

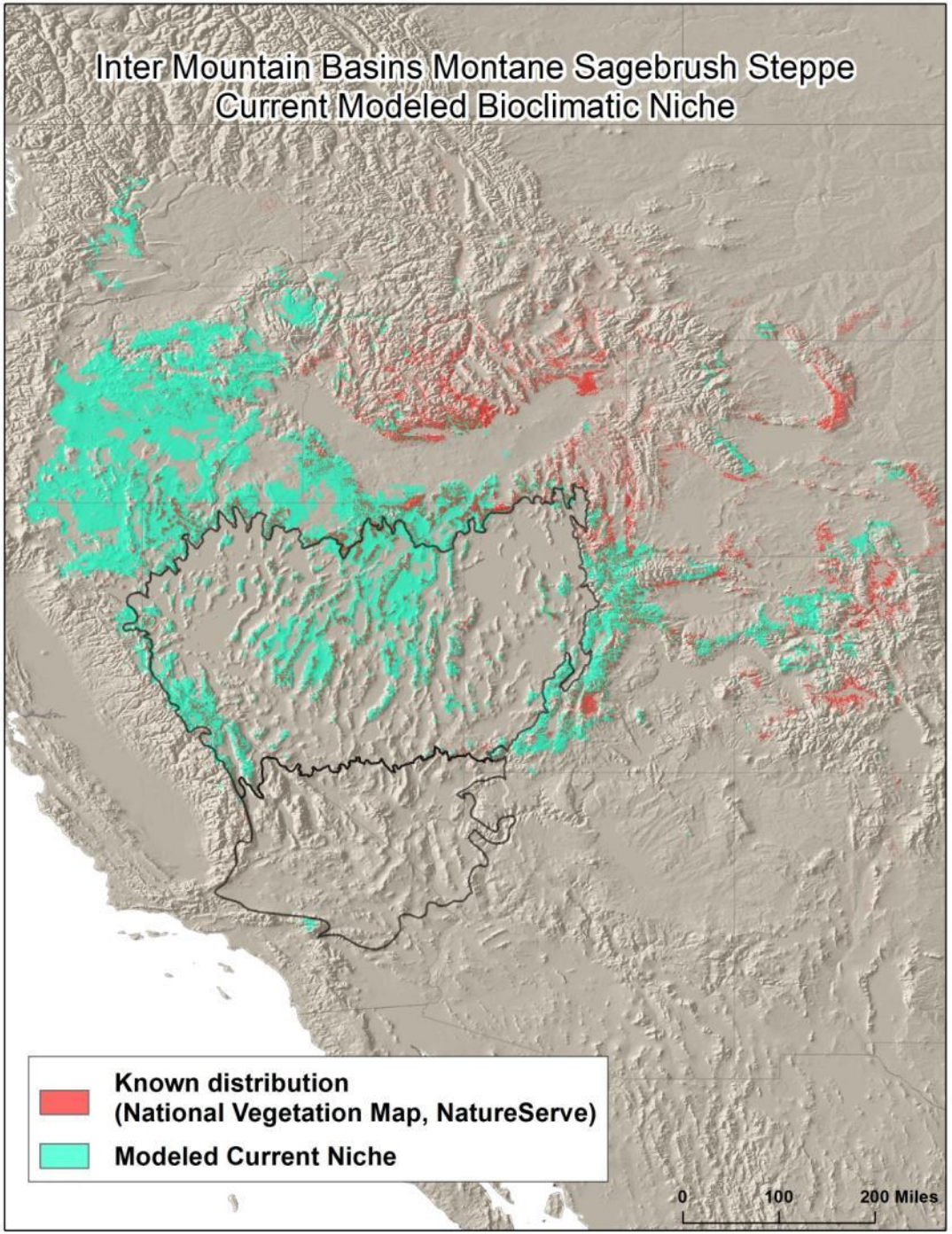



Inter Mountain Basins Montane Sagebrush Steppe
Modeled Current Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles



BLM

Rapid Ecoregional Assessment



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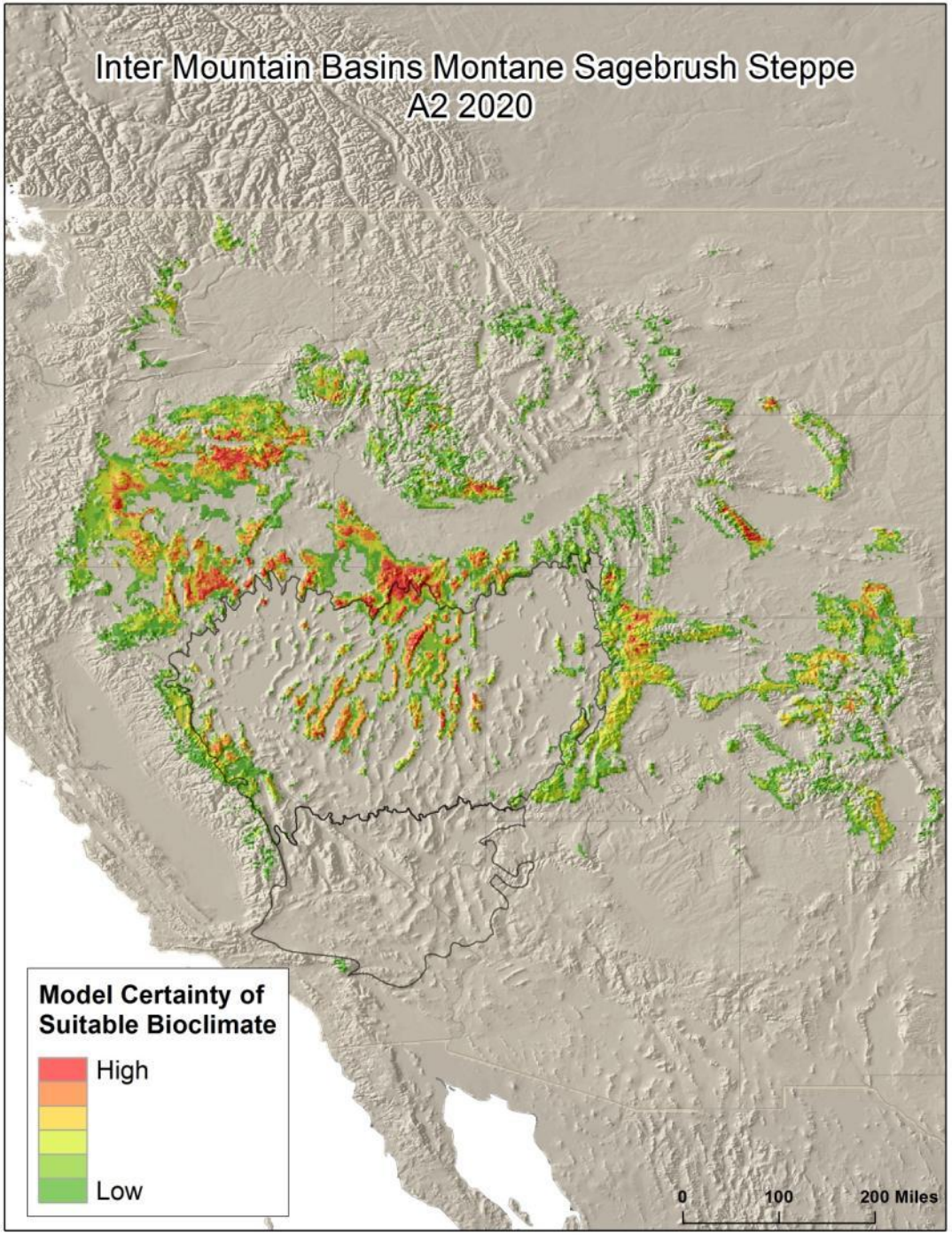
Rapid Ecoregional Assessment



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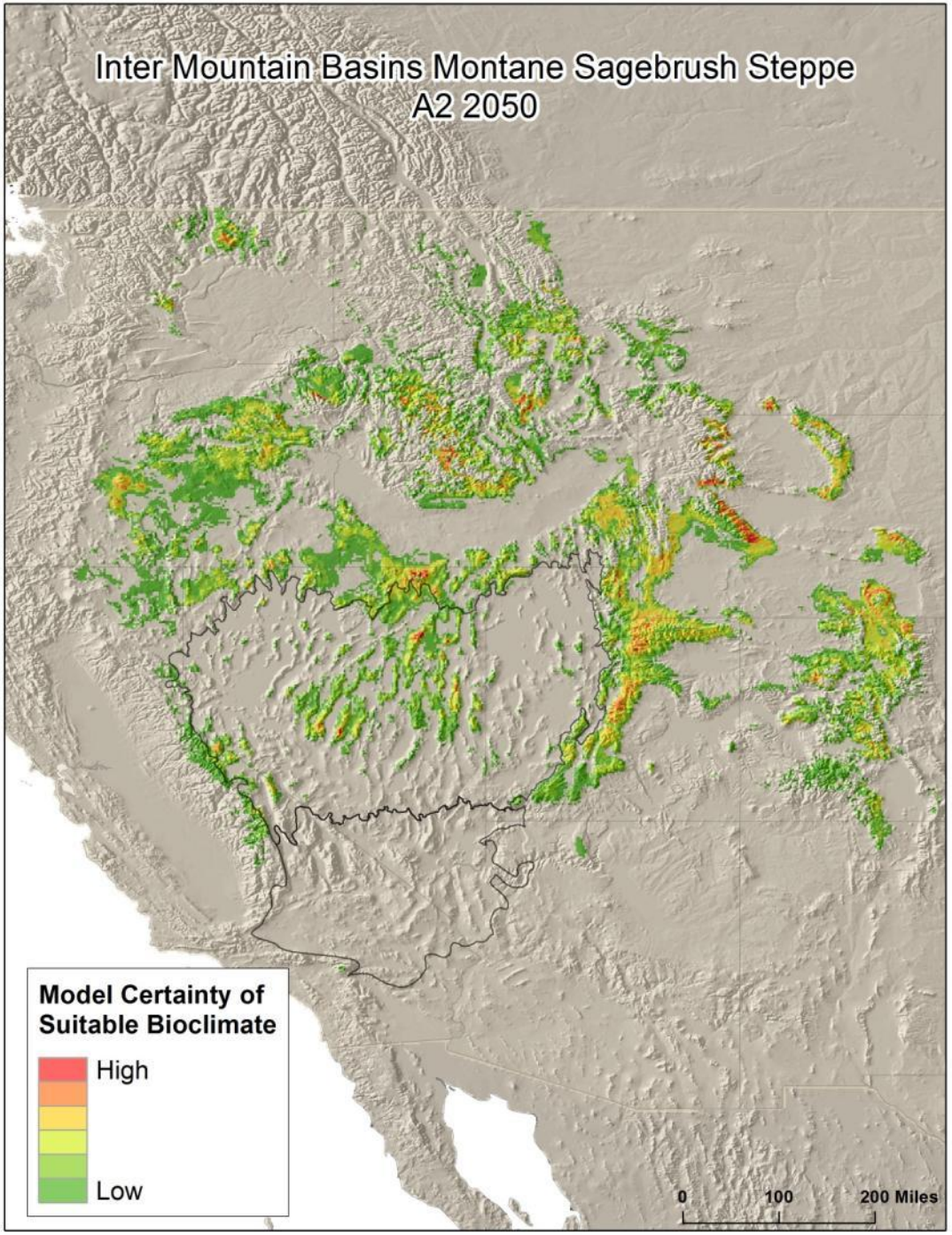
Rapid Ecoregional Assessment

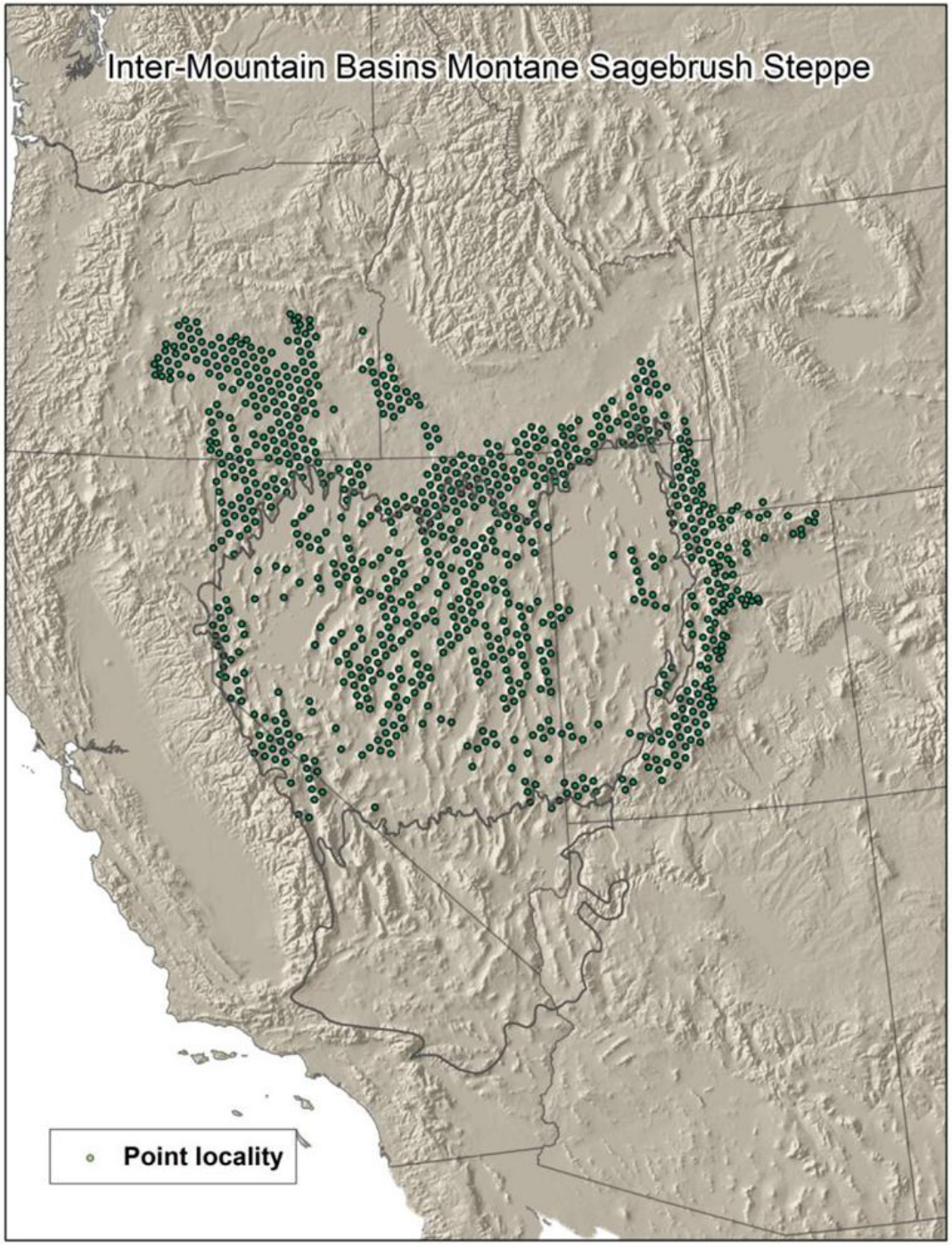


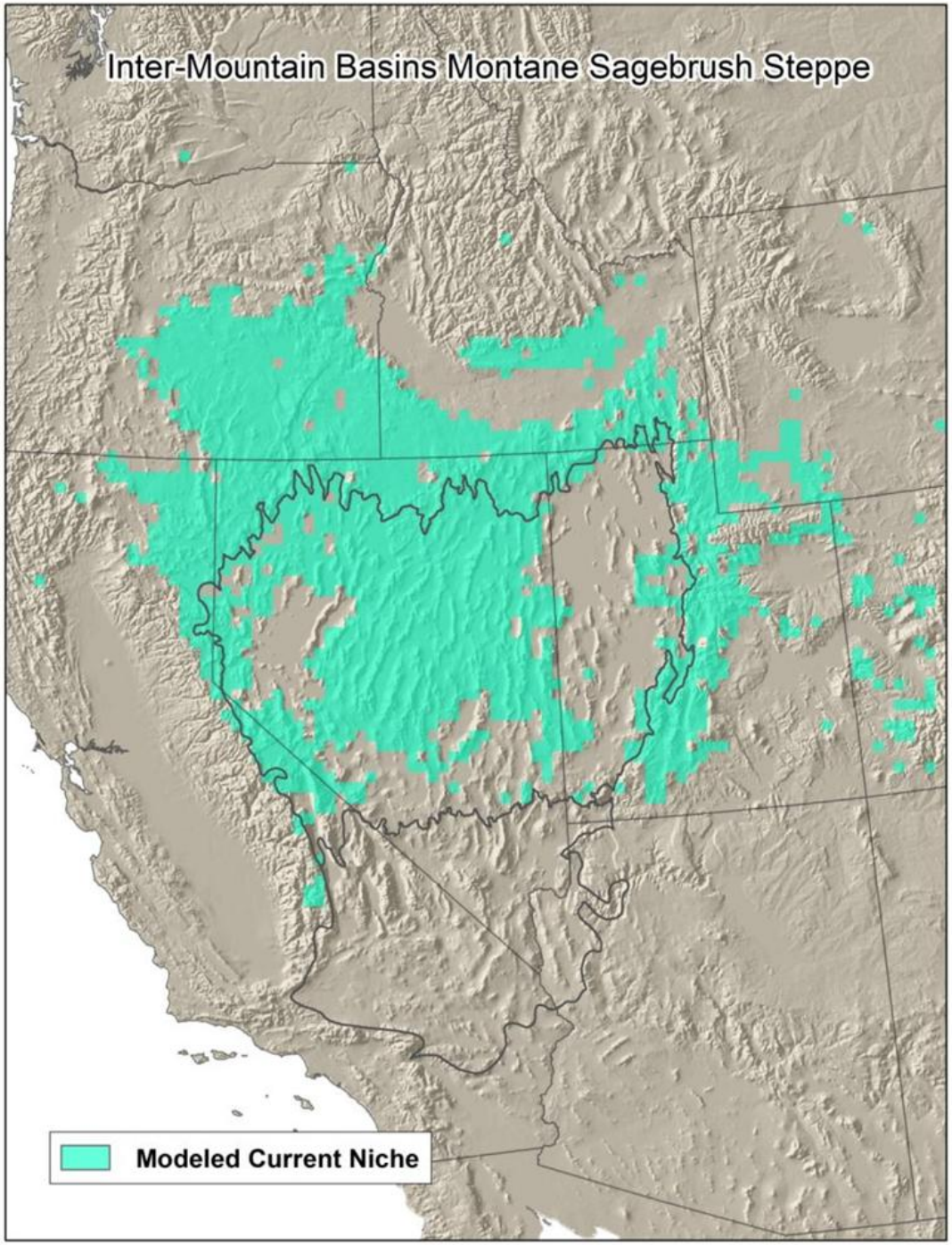
BLM

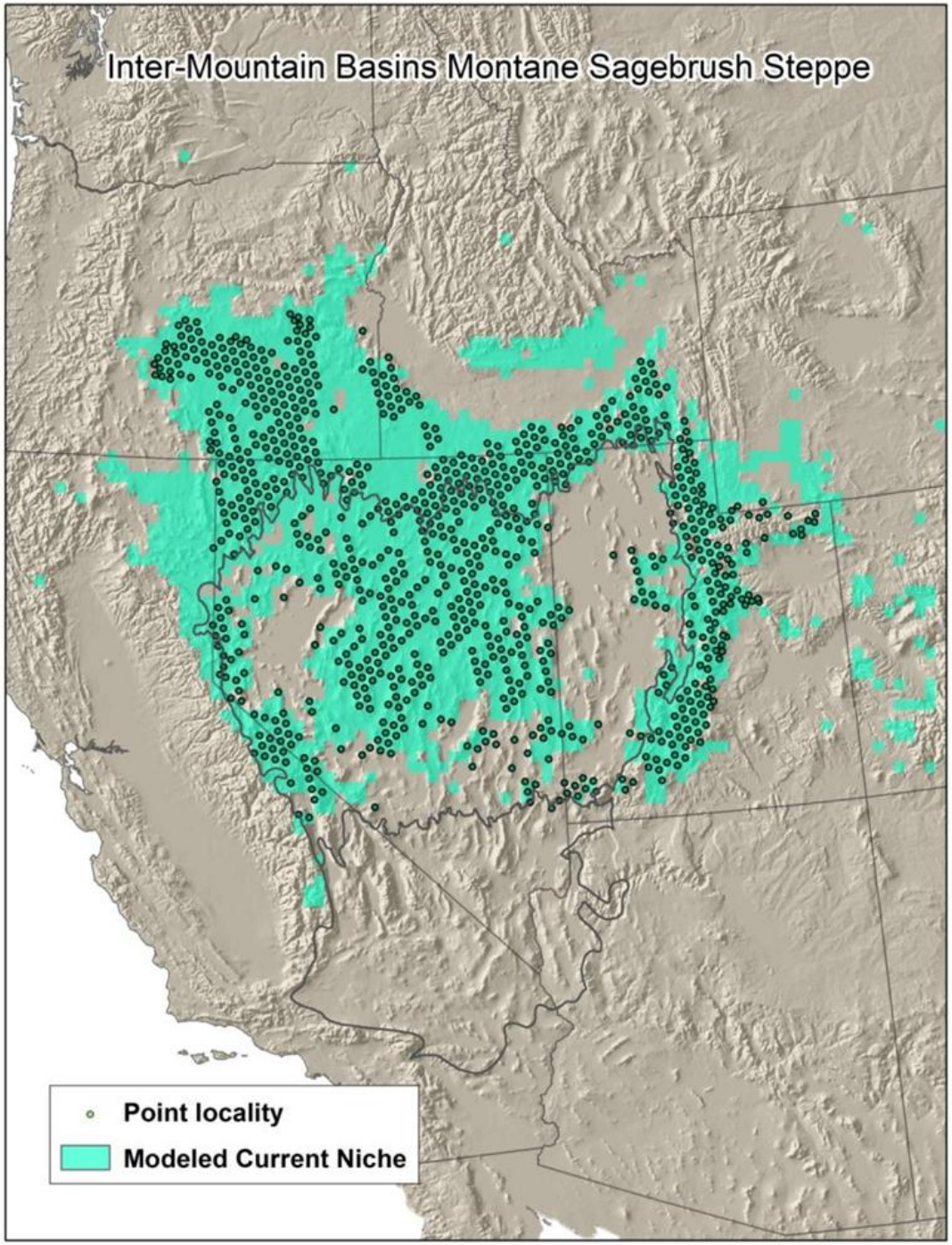
Rapid Ecoregional Assessment

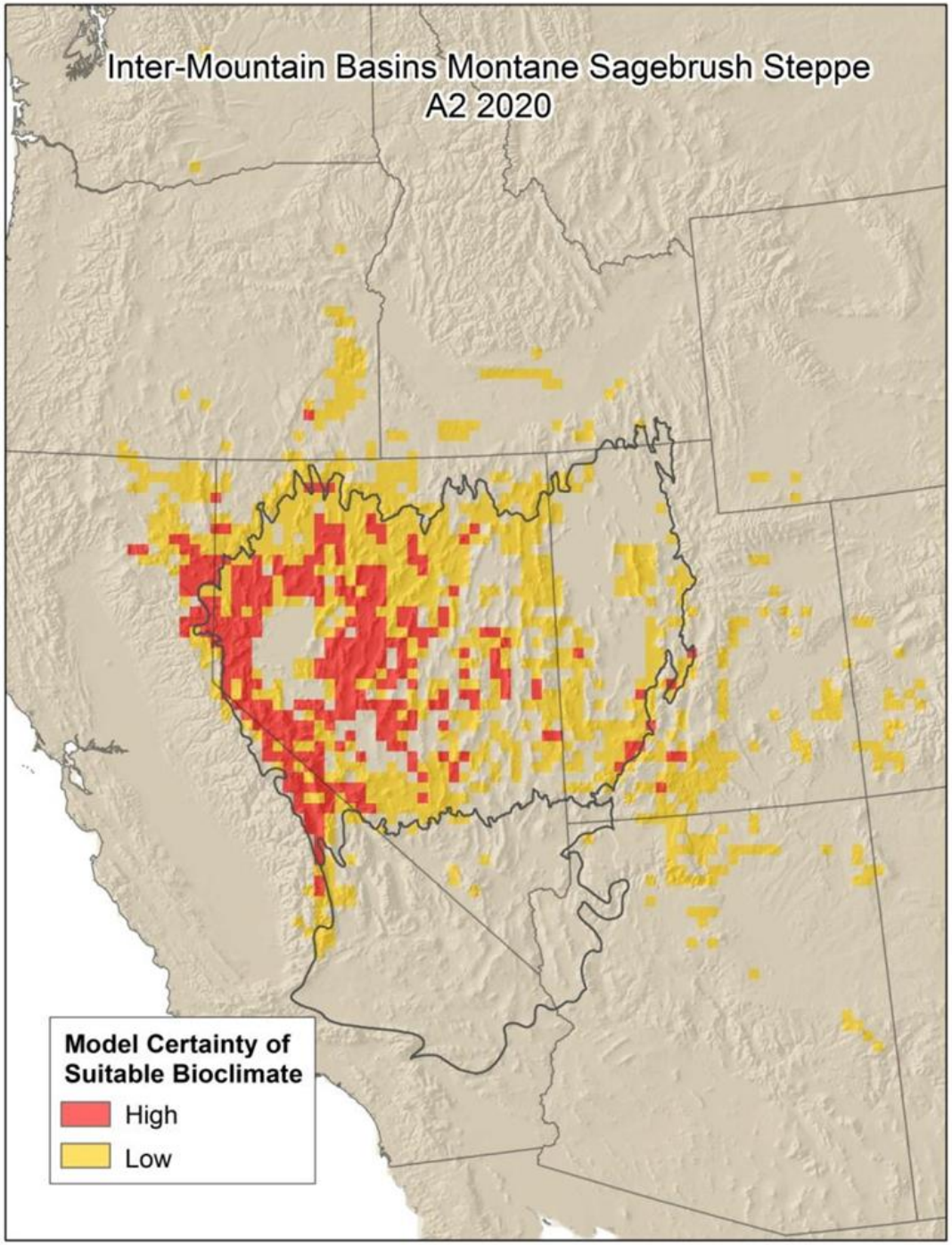
Hostetler/ USGS
15 km^2

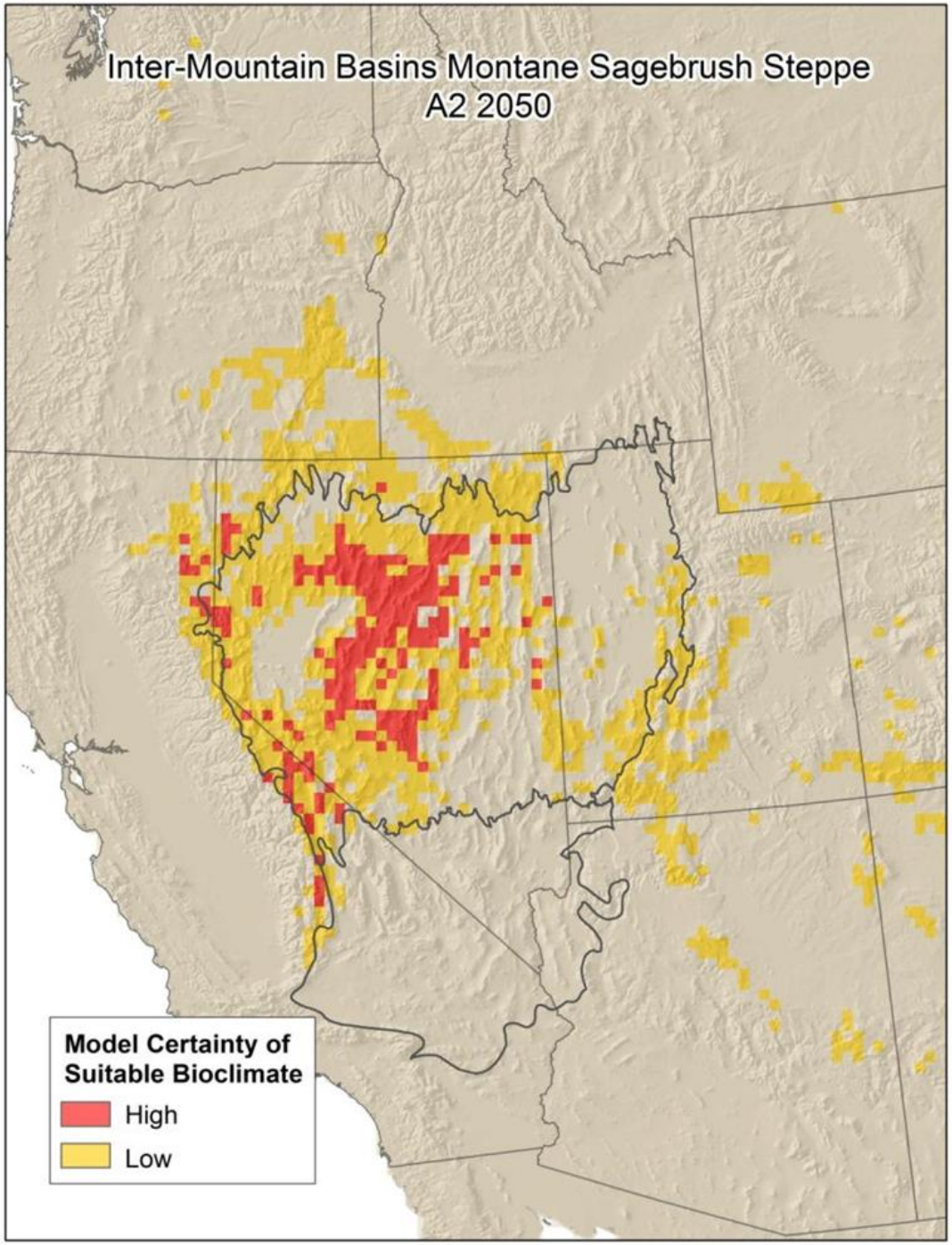
88 climate variables

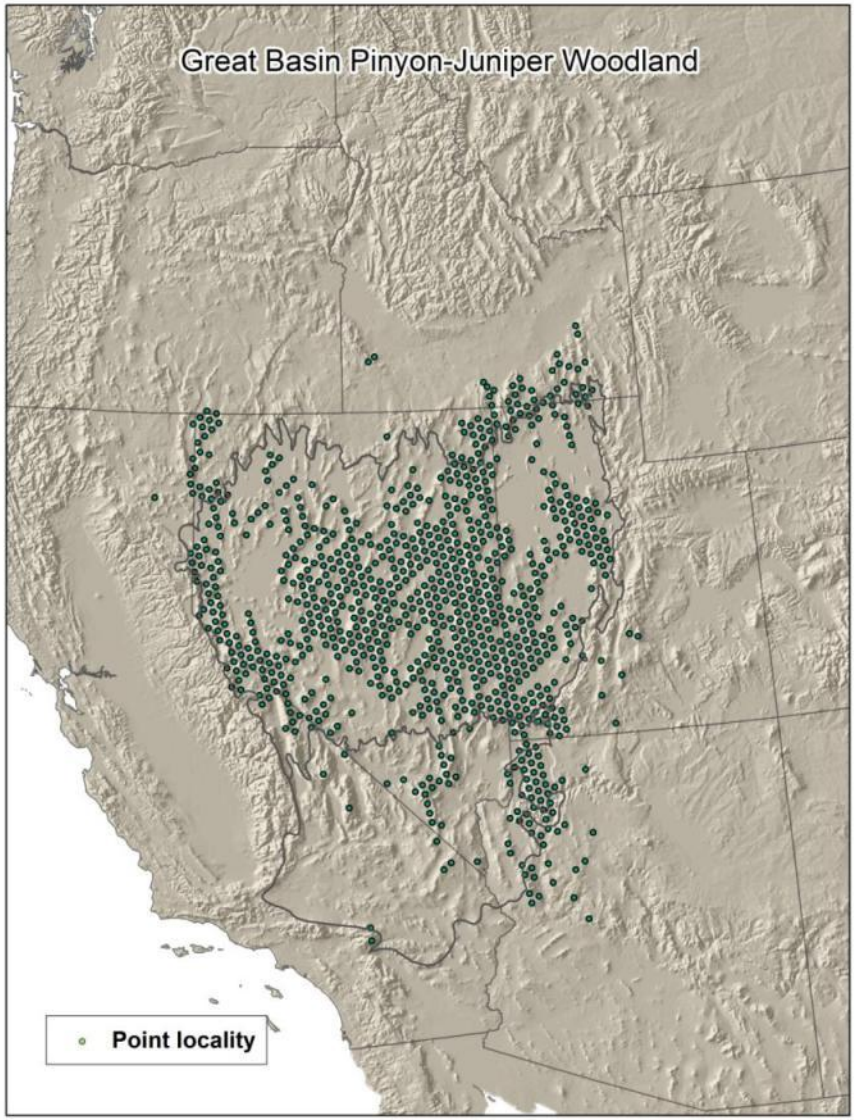


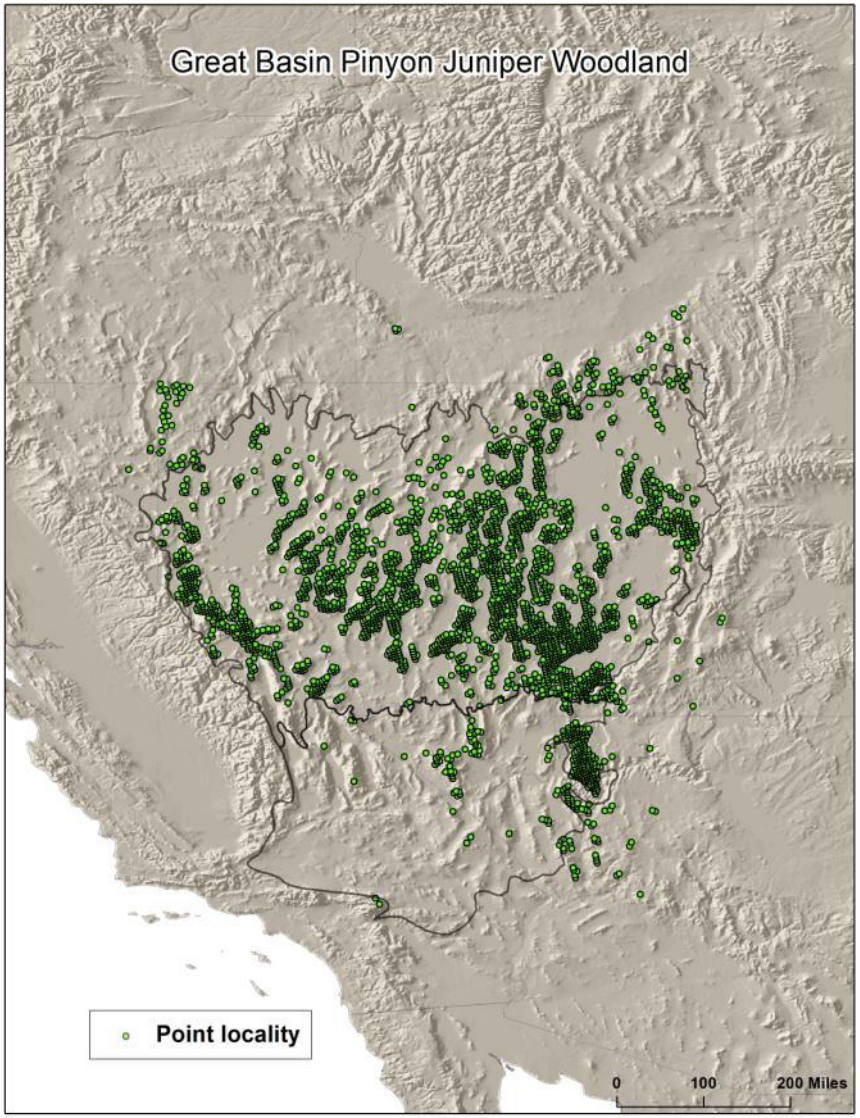

Inter-Mountain Basins Montane Sagebrush Steppe
Modeled Current Niche

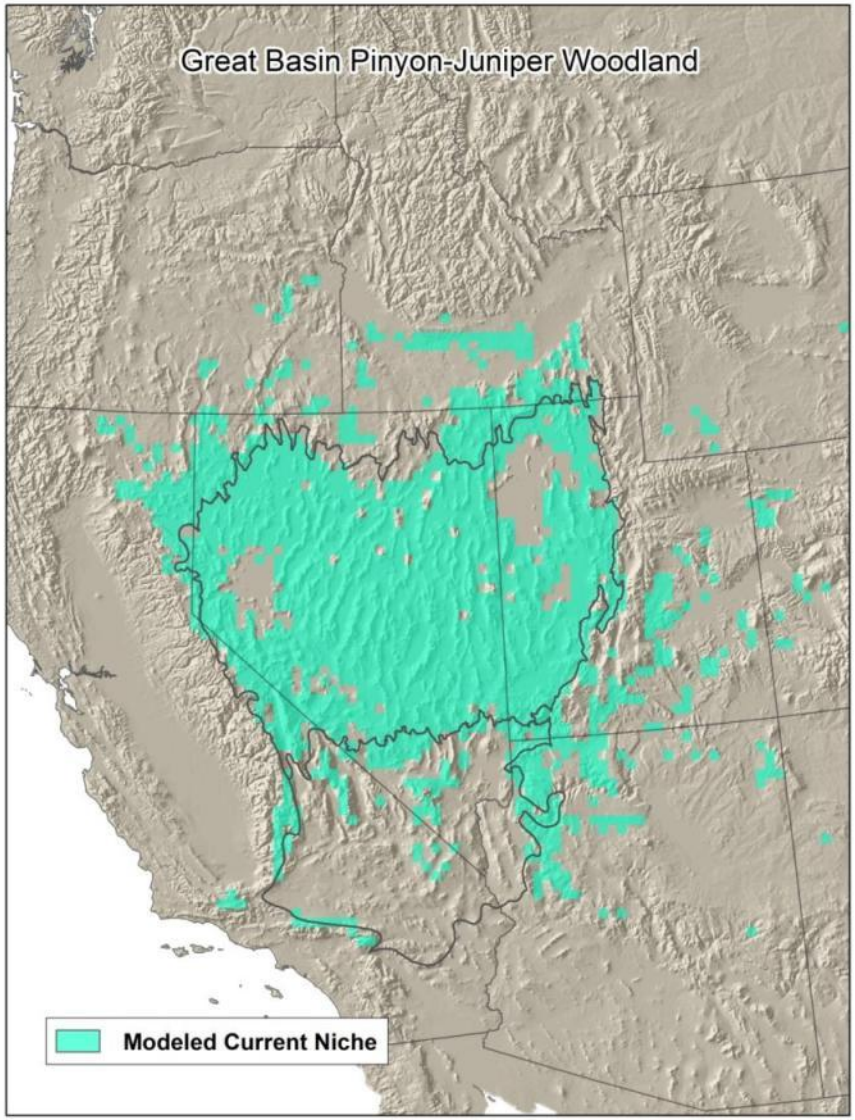

Inter-Mountain Basins Montane Sagebrush Steppe
Point locality
Modeled Current Niche

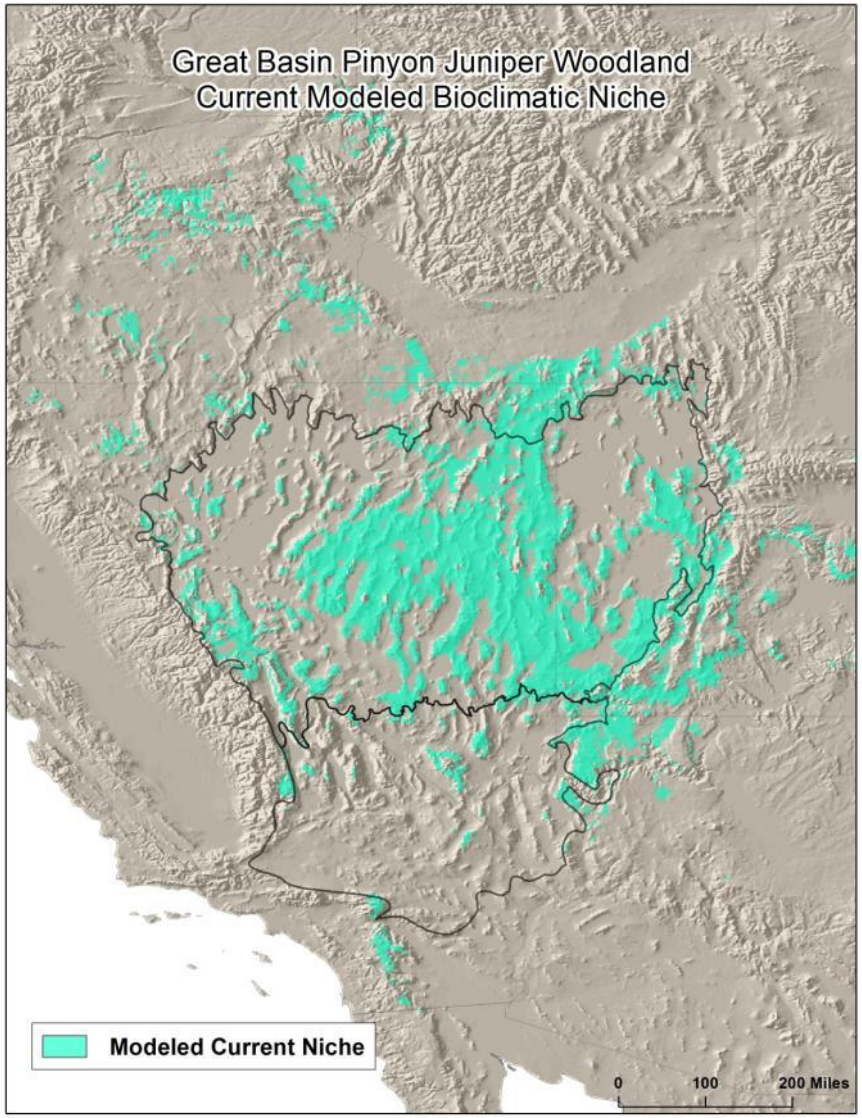

Inter-Mountain Basins Montane Sagebrush Steppe
A2 2020
Model Certainty of Suitable Bioclimate
High
Low

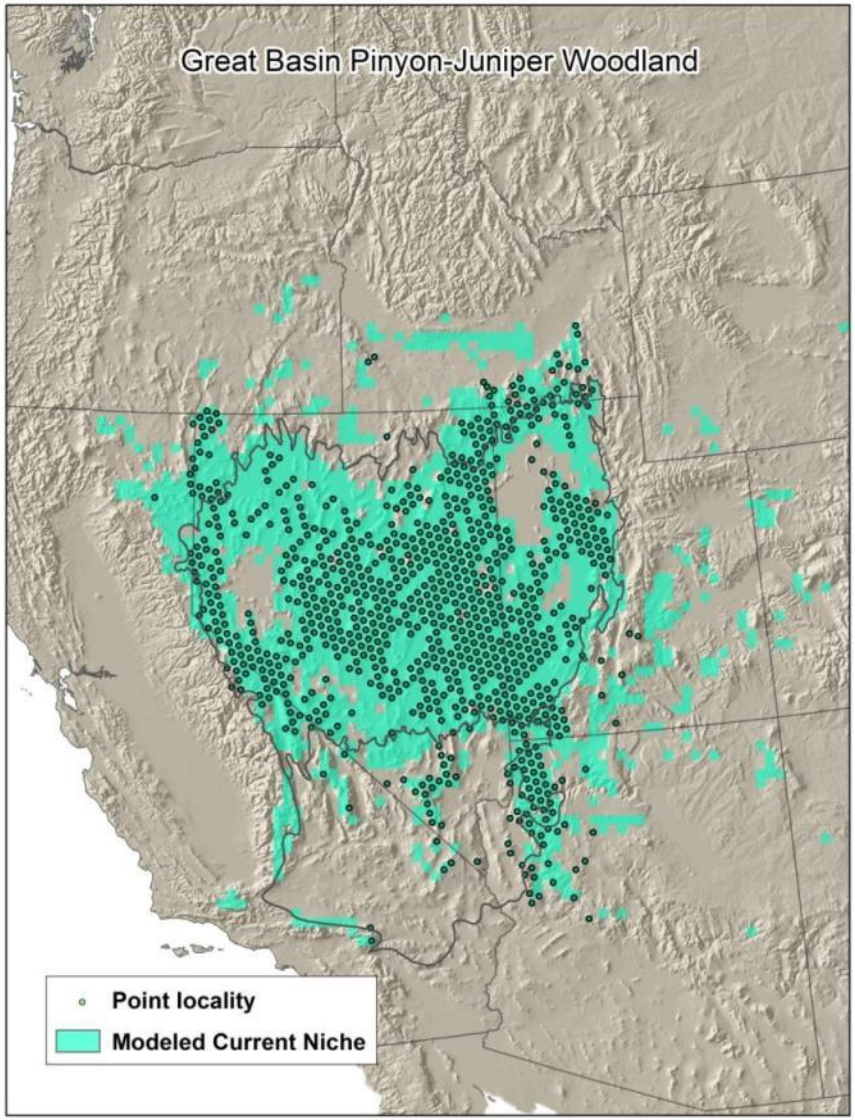

Inter-Mountain Basins Montane Sagebrush Steppe
A2 2050
Model Certainty of Suitable Bioclimate
High
Low

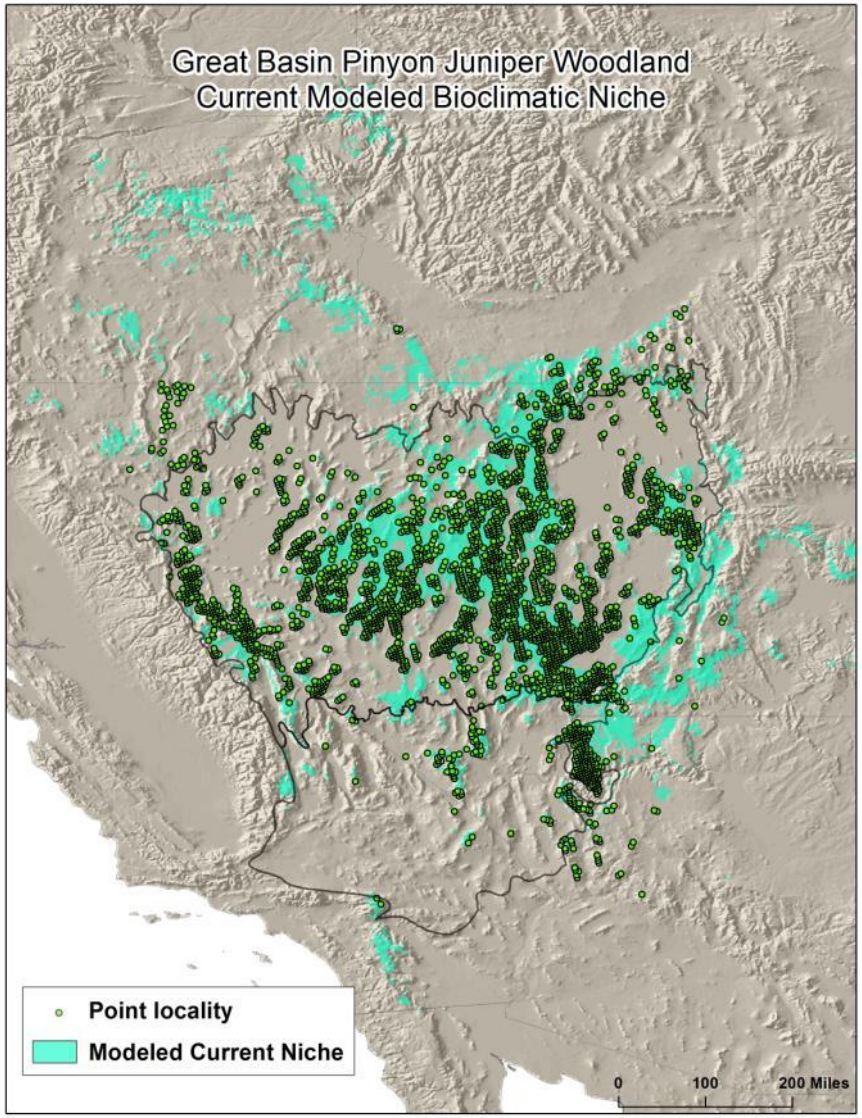

Great Basin Pinyon-Juniper Woodland
Point locality

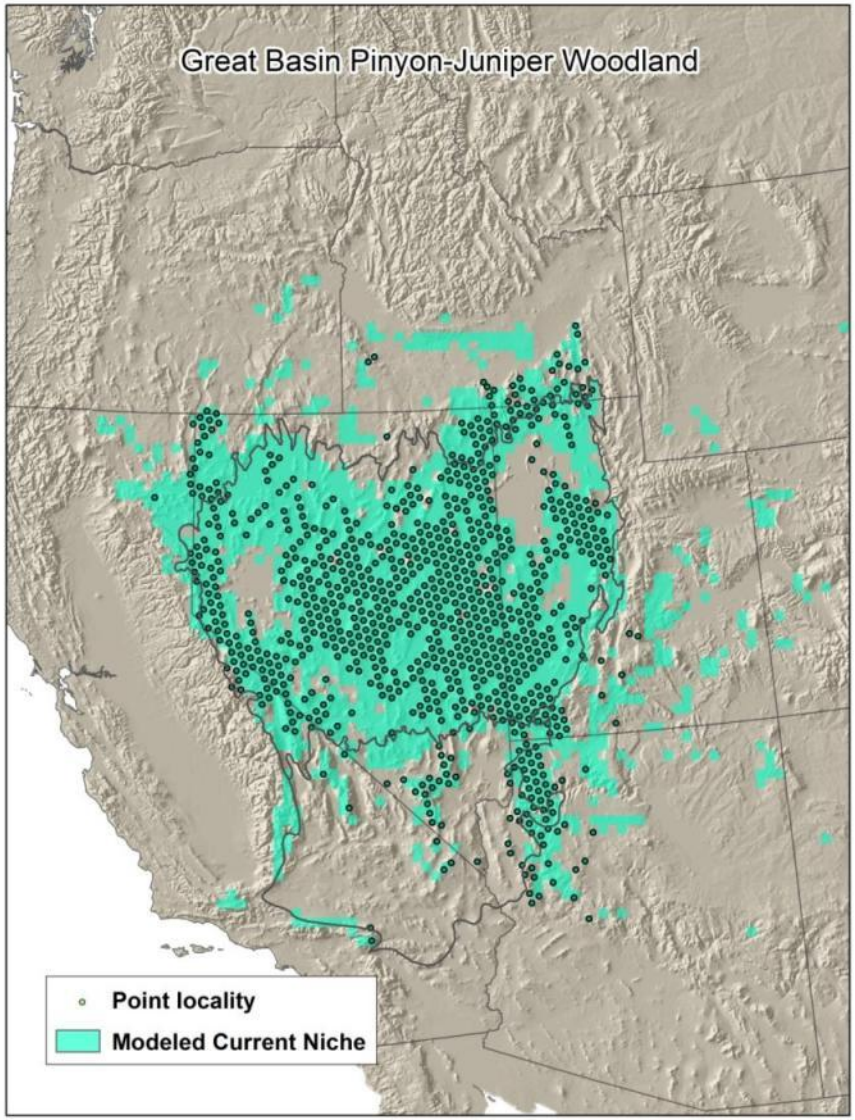

Great Basin Pinyon Juniper Woodland
Point locality
0
100
200 Miles

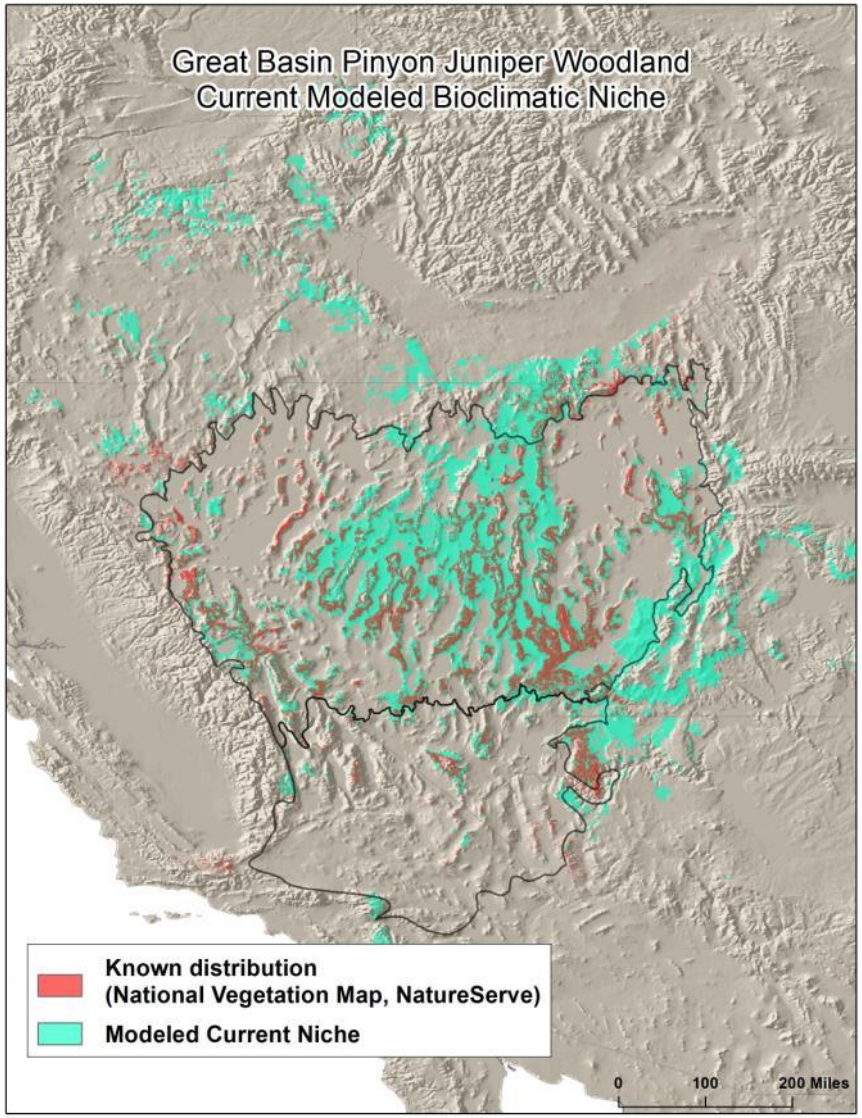

Great Basin Pinyon-Juniper Woodland
Modeled Current Niche

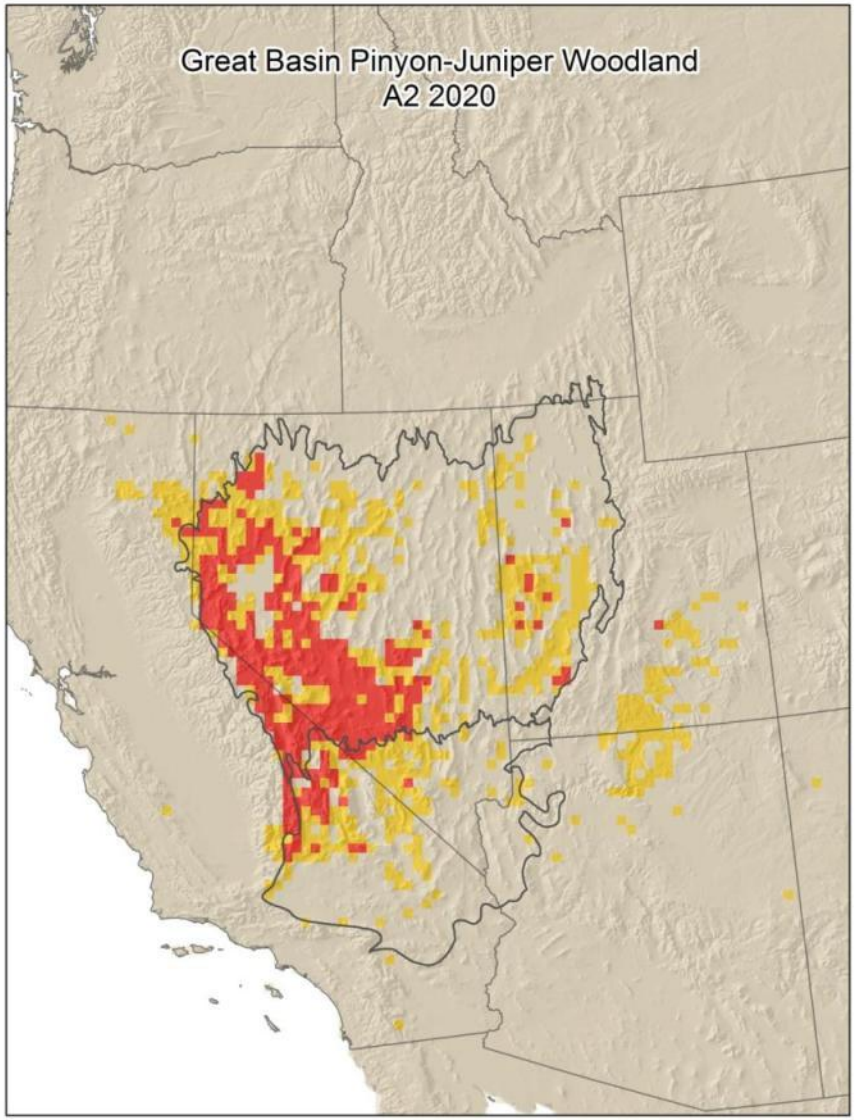

Great Basin Pinyon Juniper Woodland
Current Modeled Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles

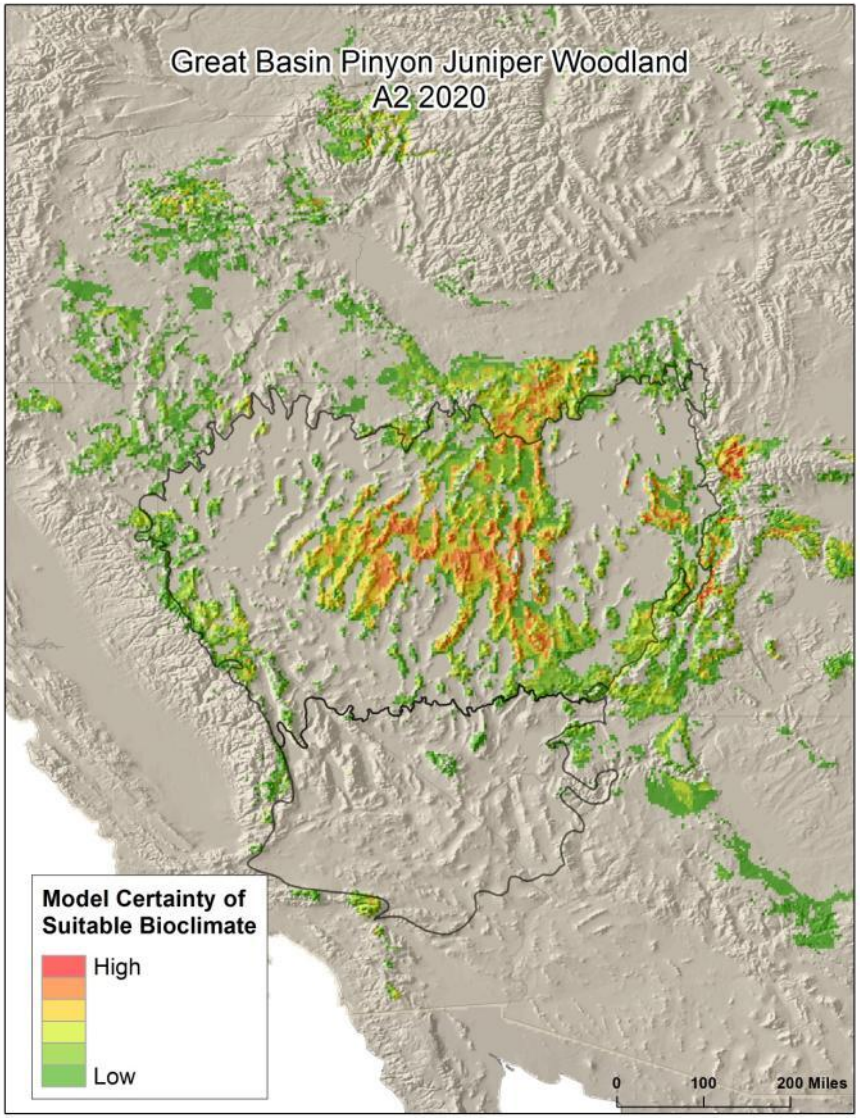

Great Basin Pinyon-Juniper Woodland
Point locality
Modeled Current Niche


Great Basin Pinyon Juniper Woodland
Current Modeled Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles


Great Basin Pinyon-Juniper Woodland
Point locality
Modeled Current Niche


Great Basin Pinyon Juniper Woodland
Current Modeled Bioclimatic Niche
Known distribution
(National Vegetation Map, NatureServe)
Modeled Current Niche
0
100
200 Miles





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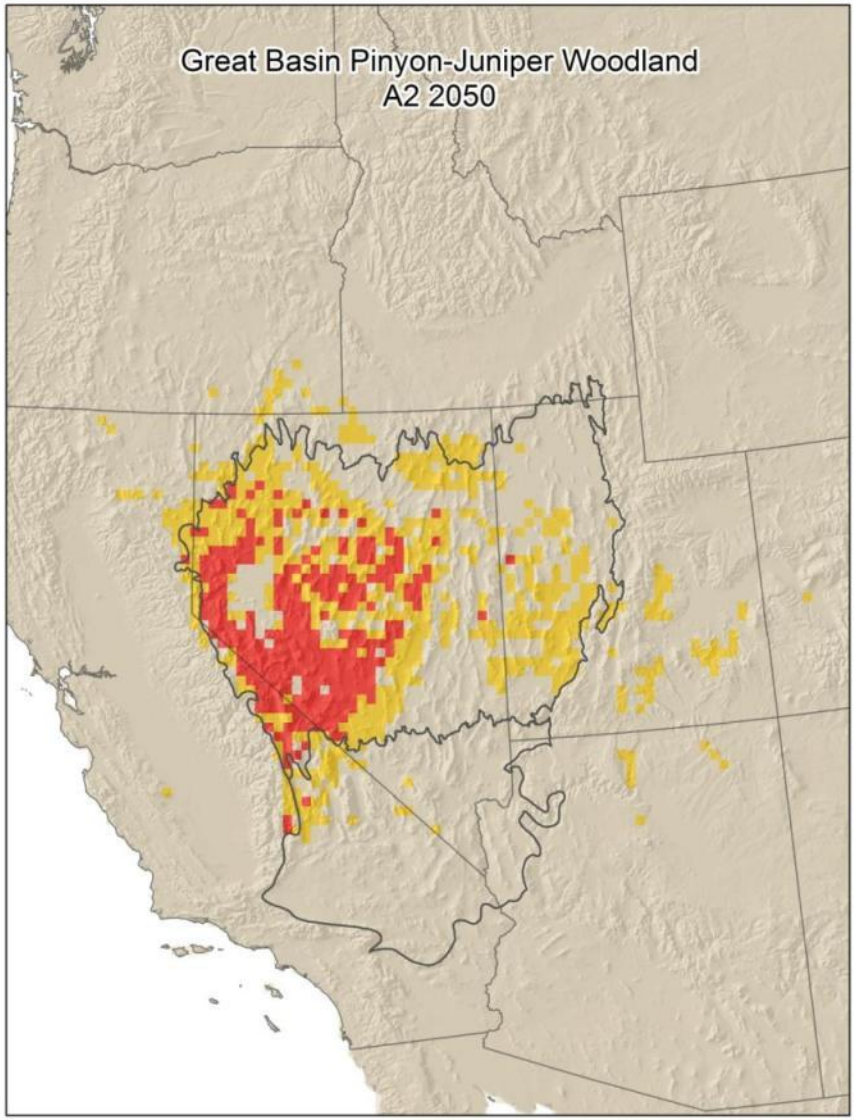
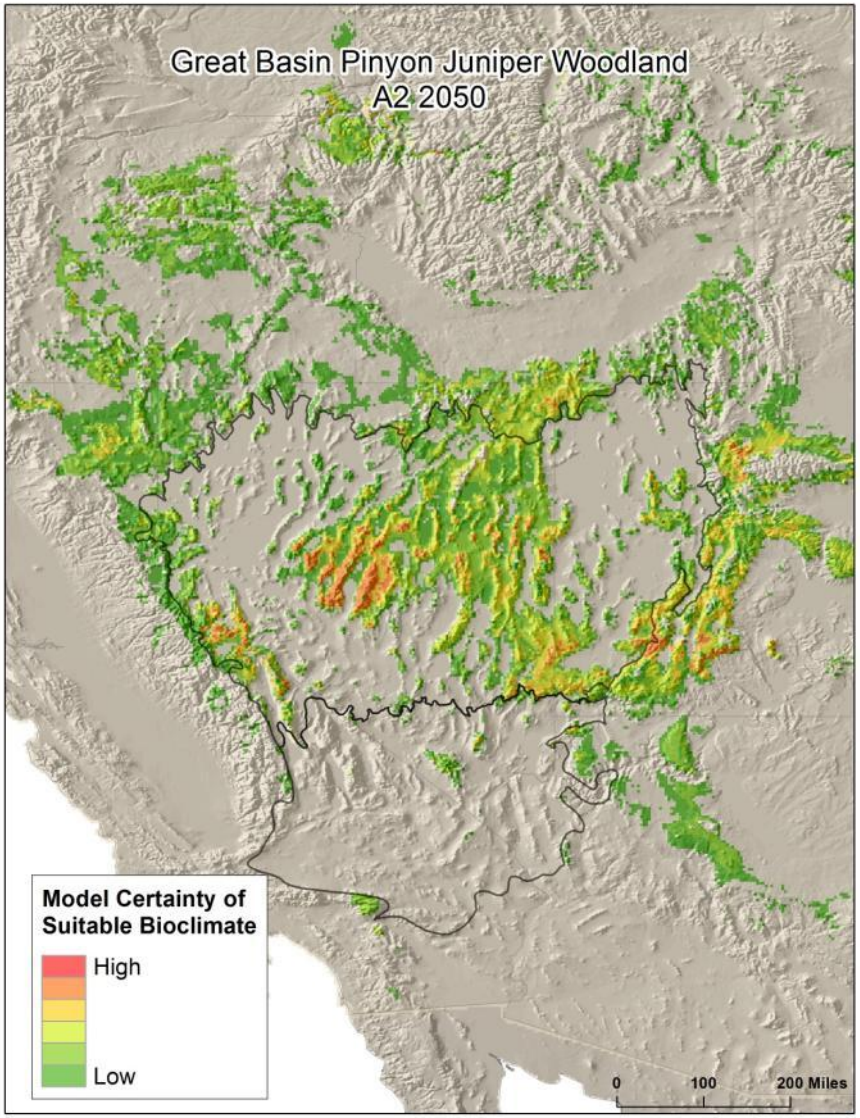
Rapid Ecoregional Assessment





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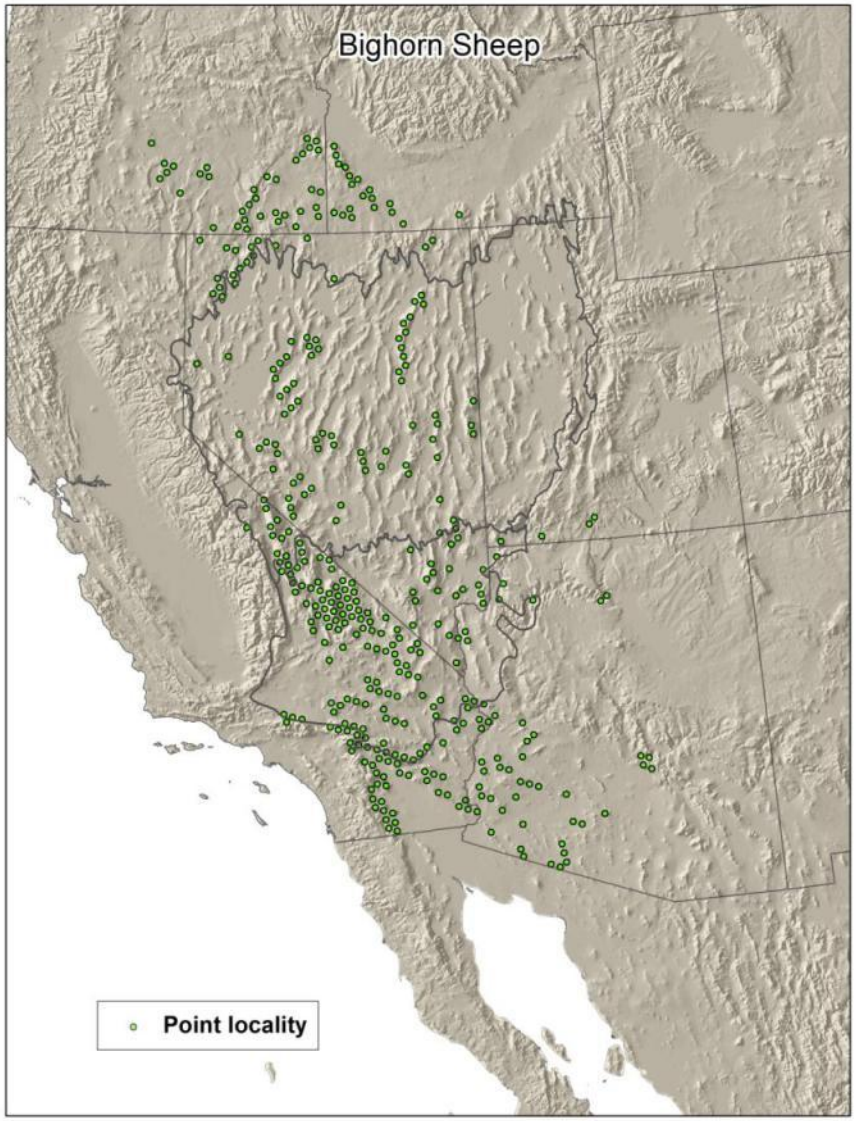
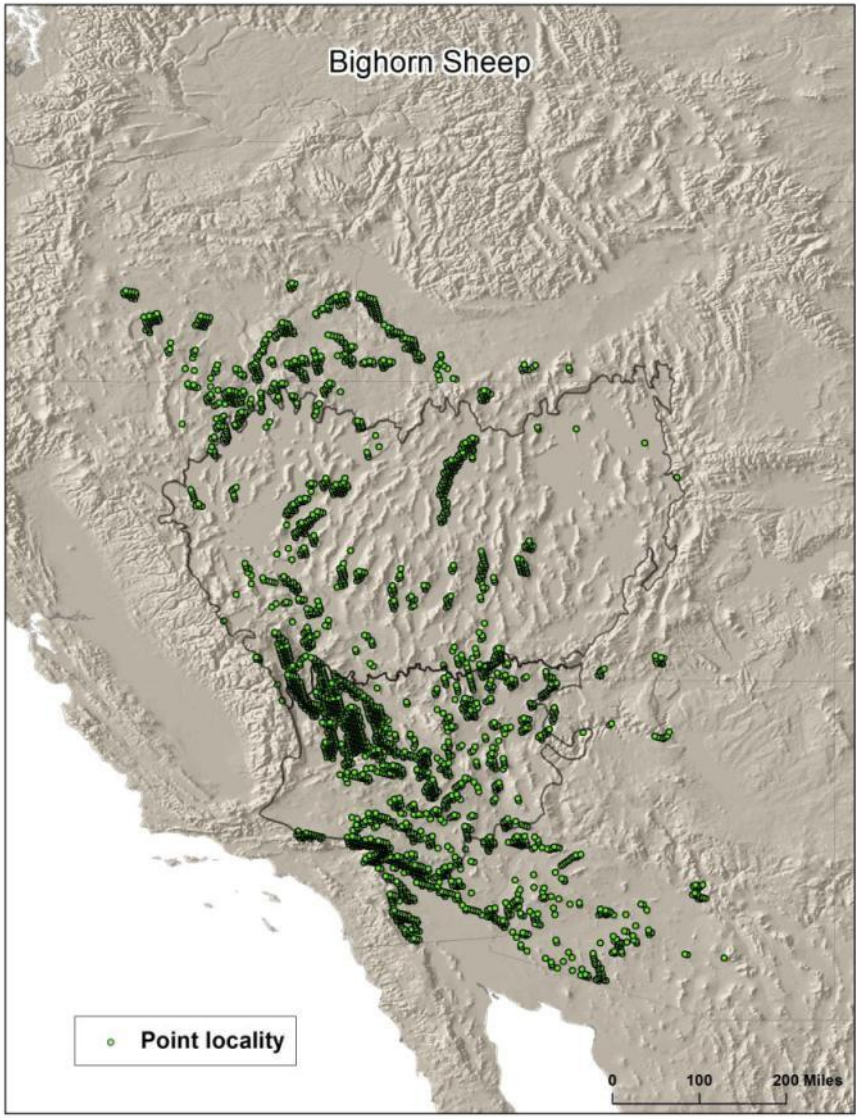
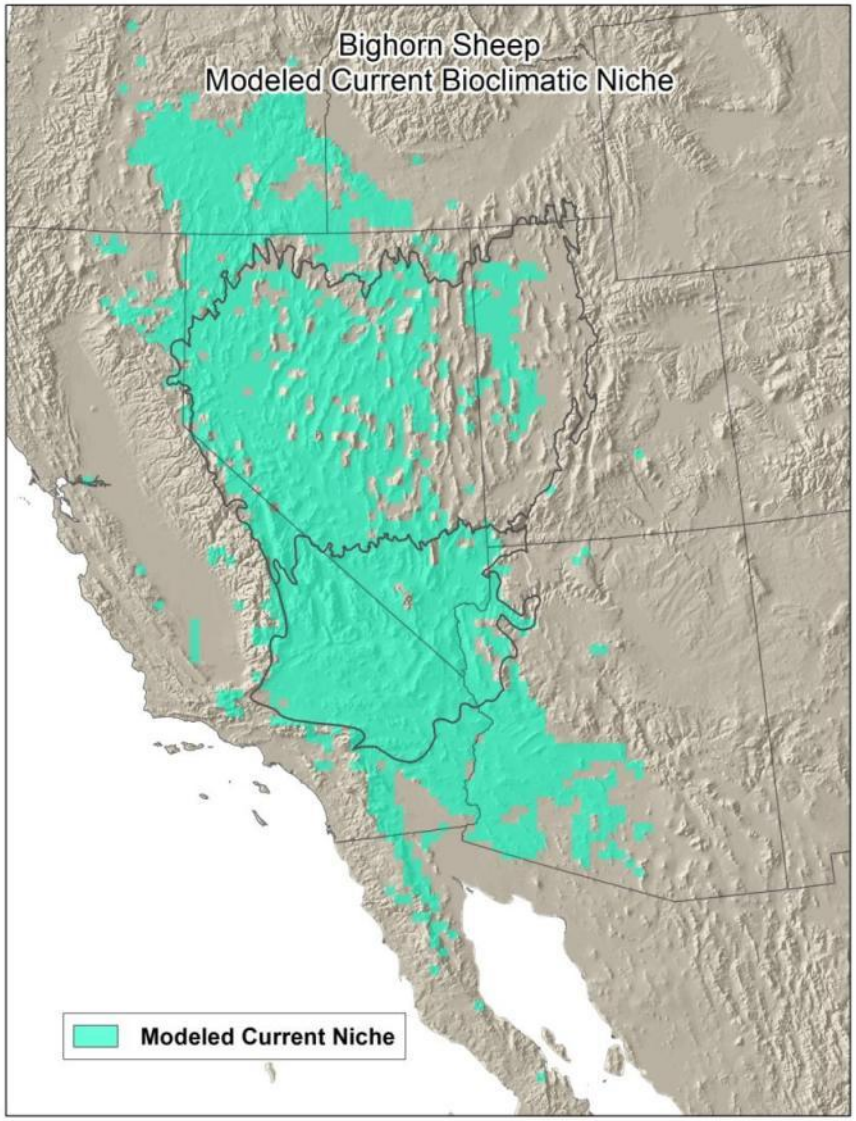
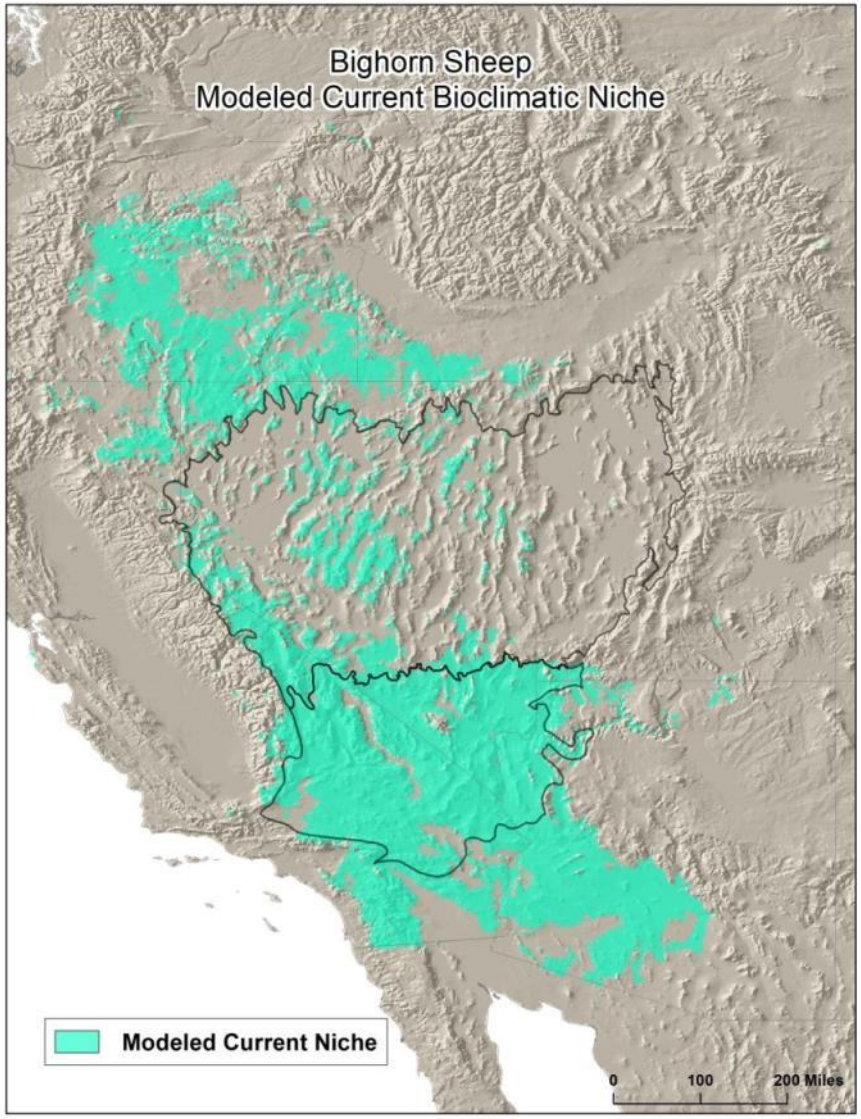
Rapid Ecoregional Assessment


Bighorn Sheep
Point locality


Bighorn Sheep
Point locality
0
100
200 Miles


Bighorn Sheep
Modeled Current Bioclimatic Niche
Modeled Current Niche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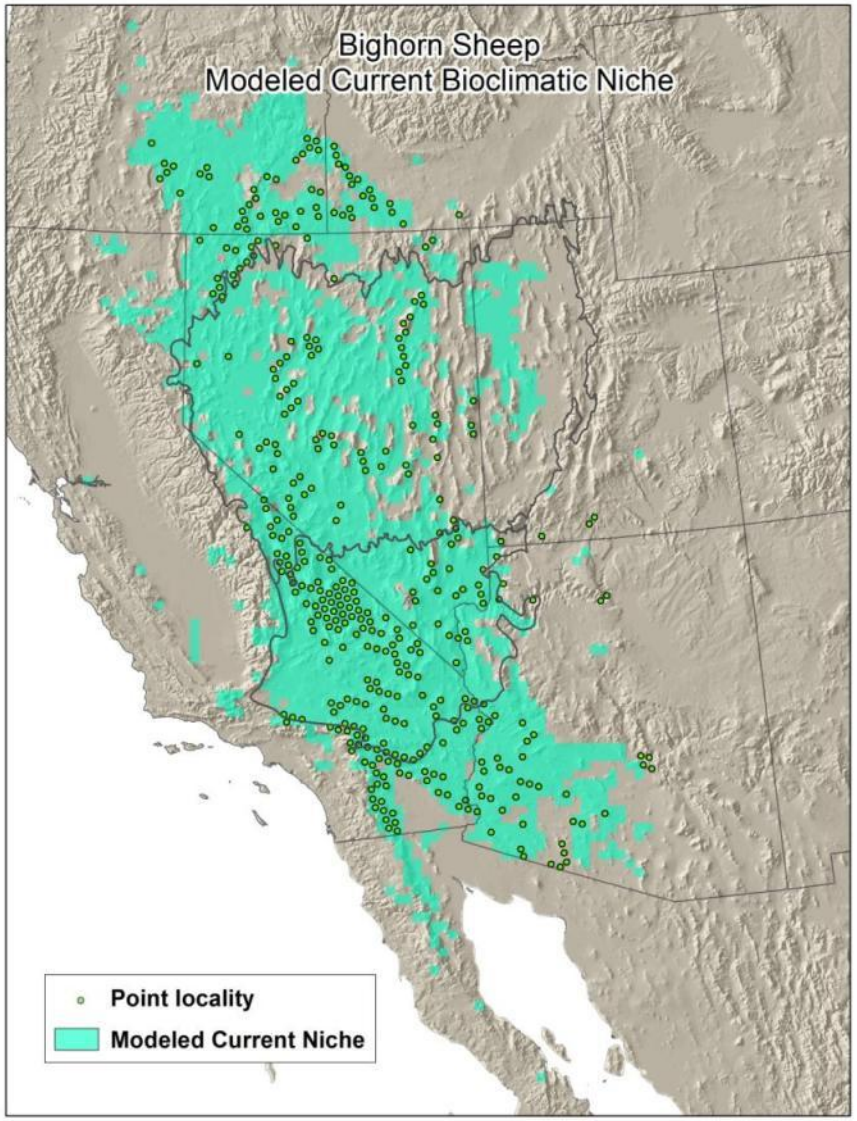
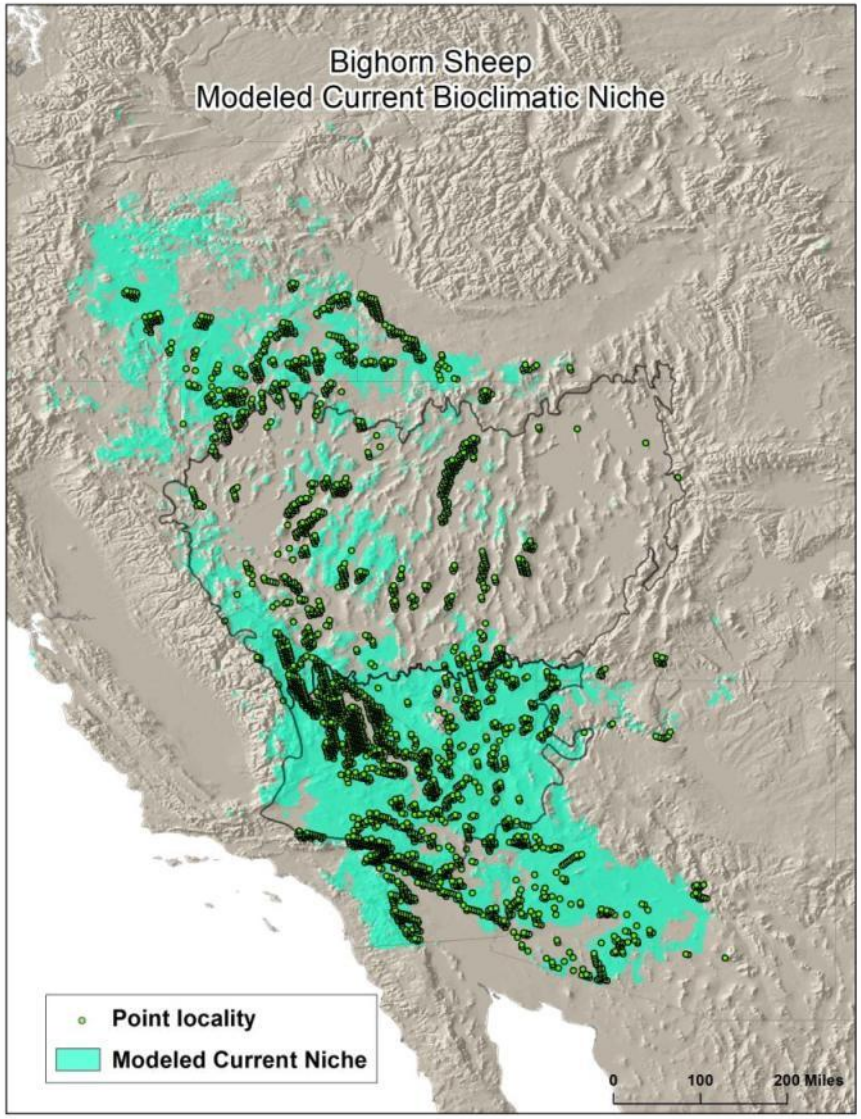
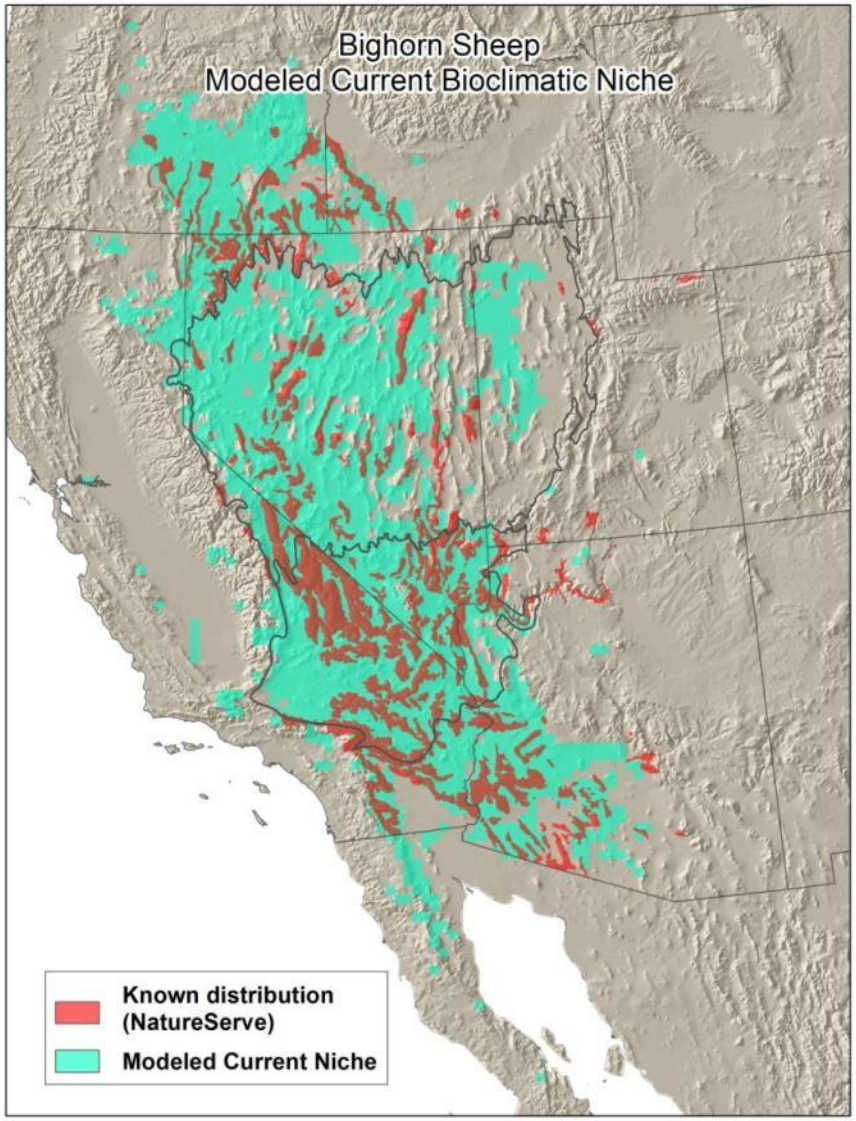
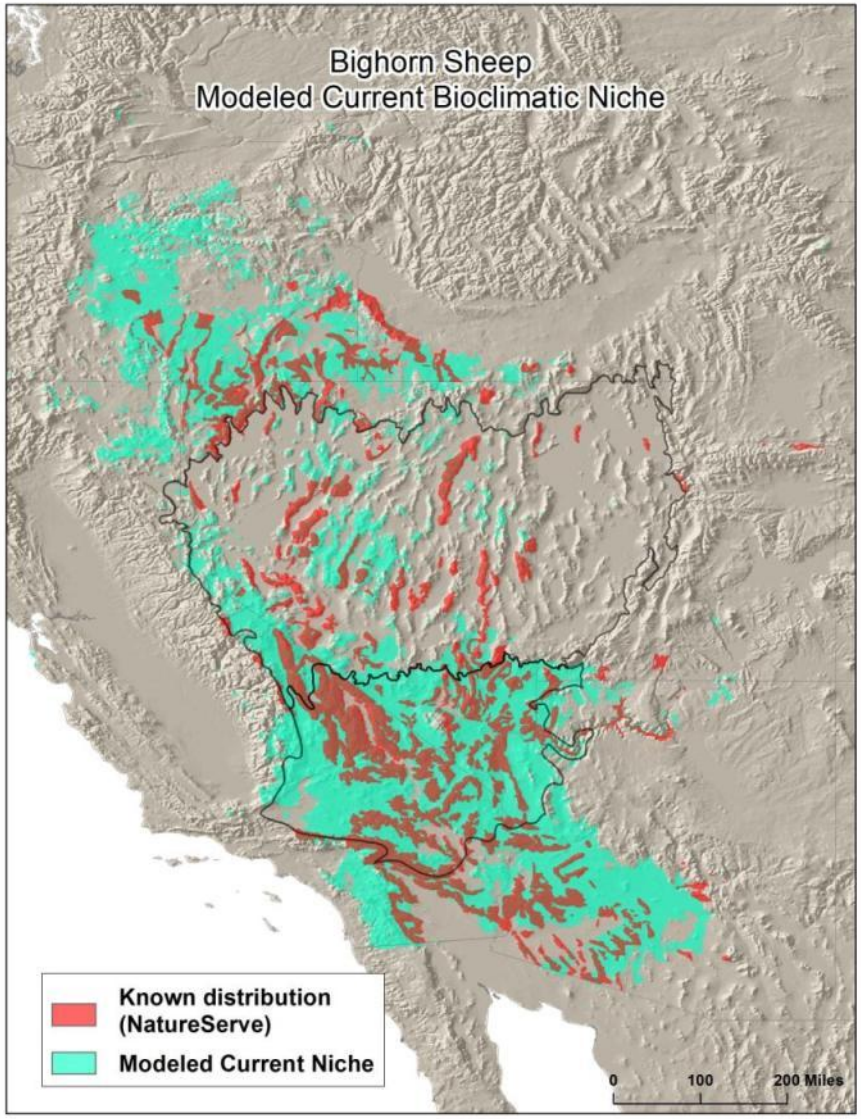
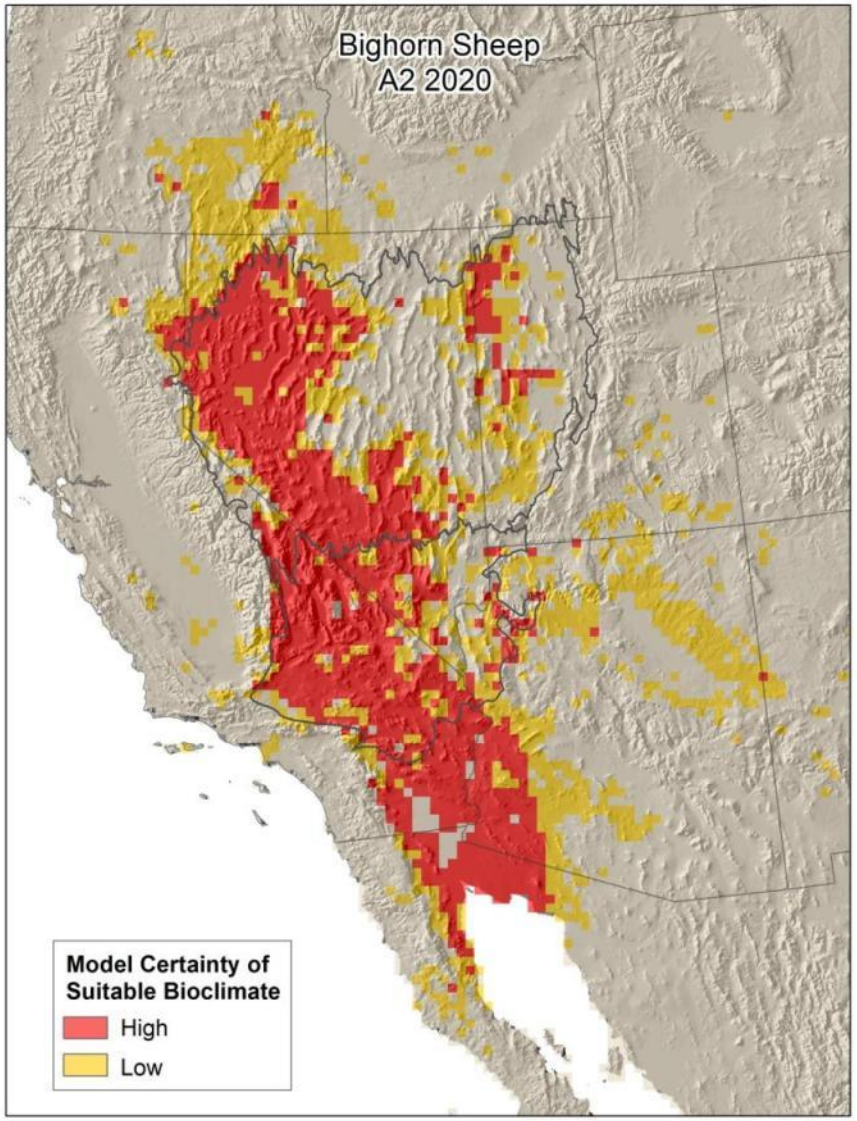
Modeled Current Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles

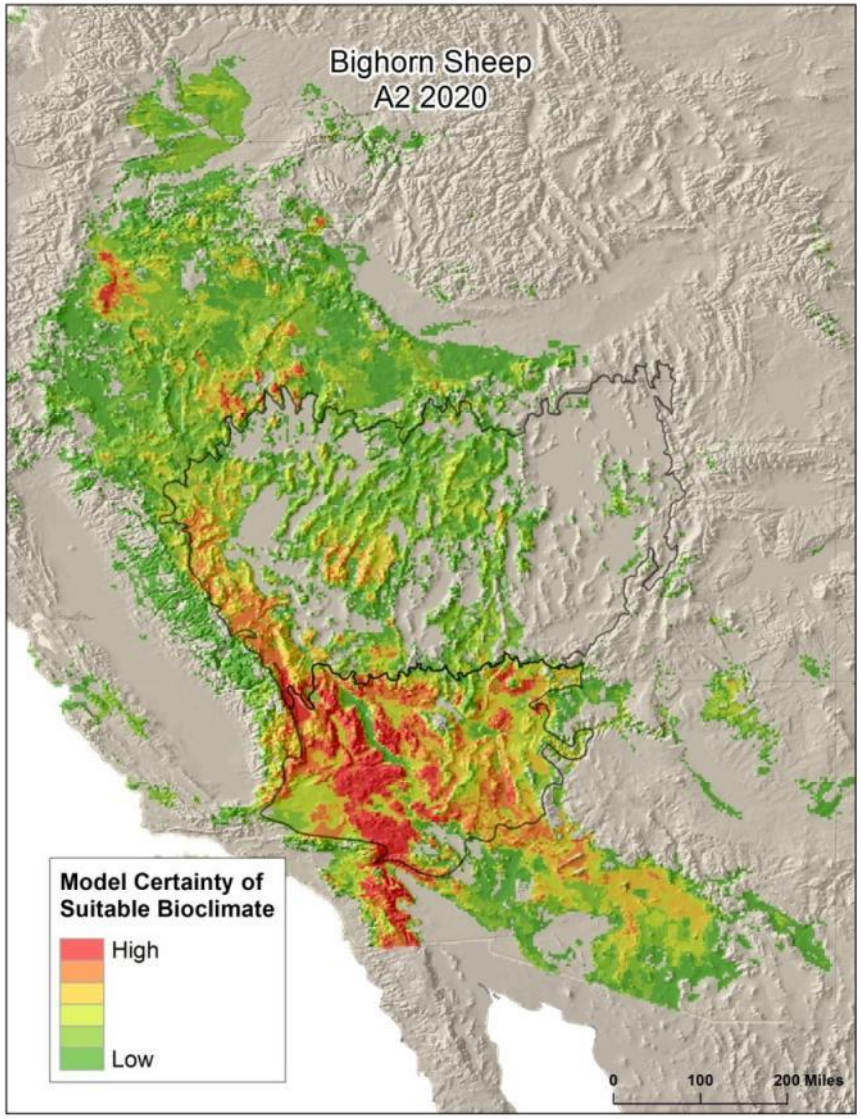

Bighorn Sheep
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche

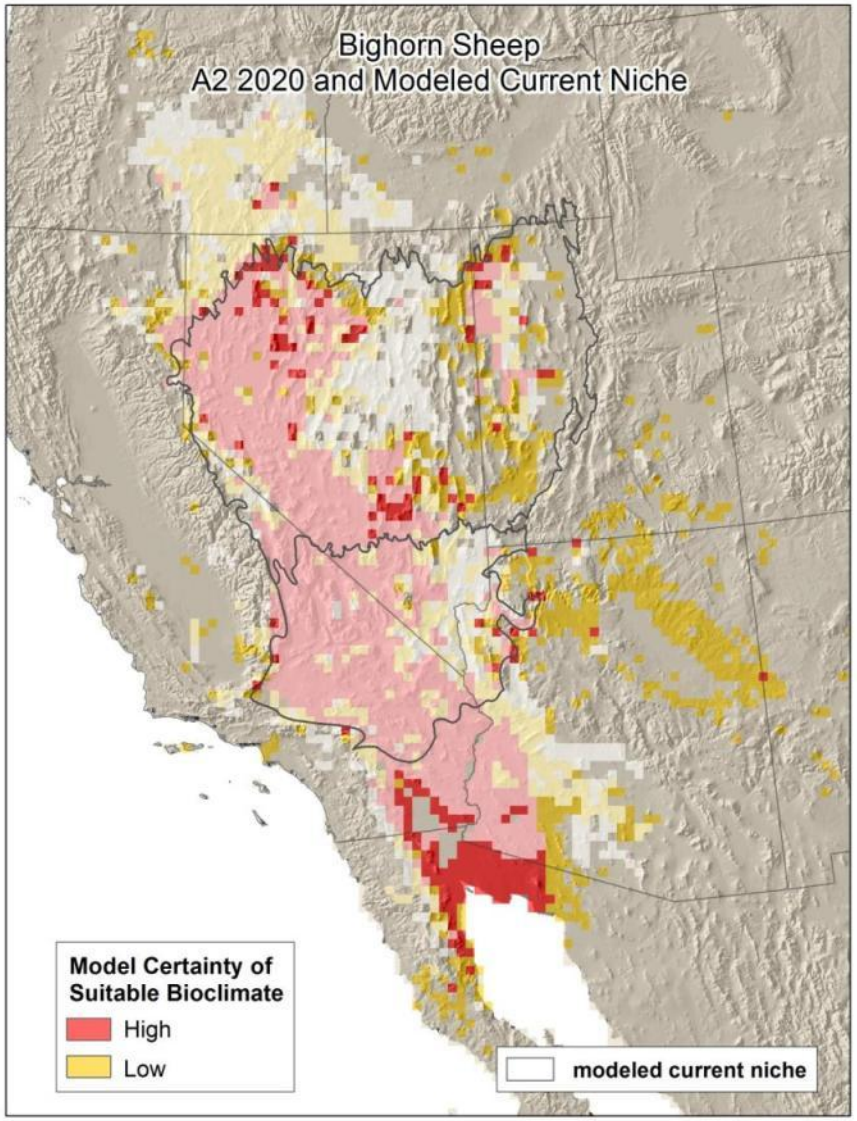

Bighorn Sheep
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles

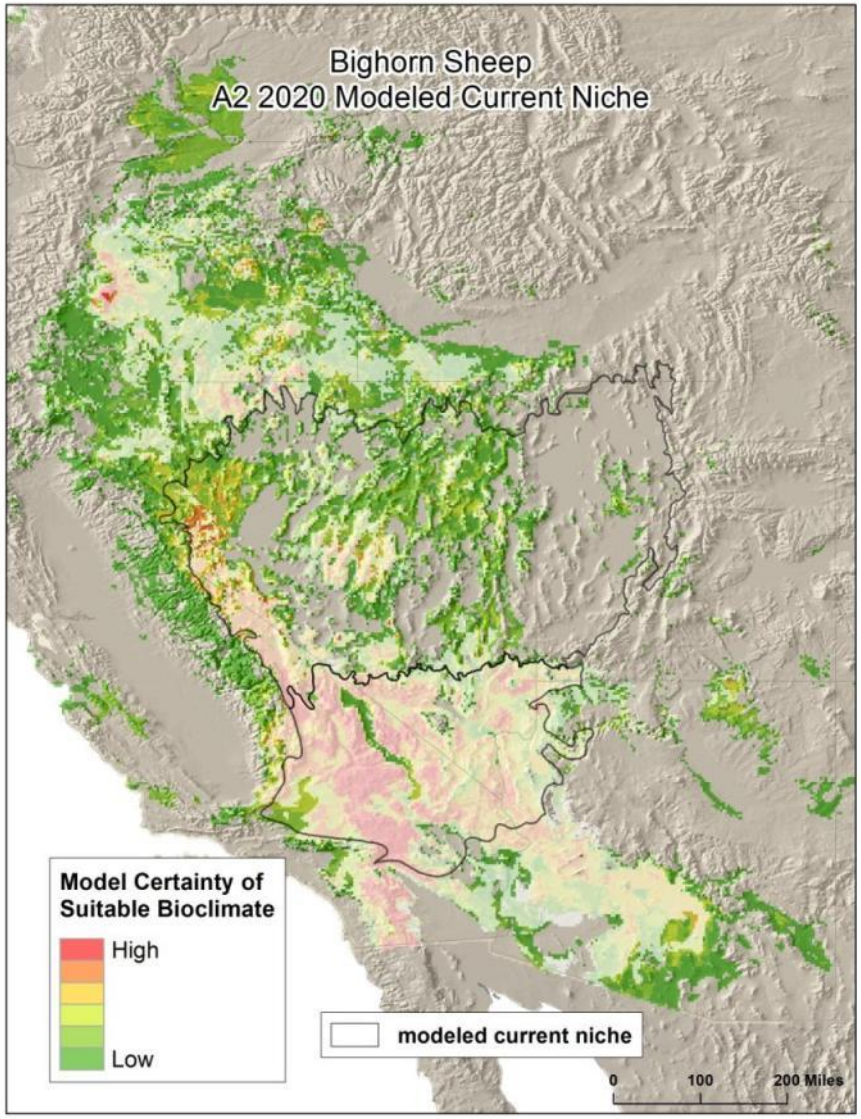

Bighorn Sheep
Modeled Current Bioclimatic Niche
Known distribution (NatureServe)
Modeled Current Niche

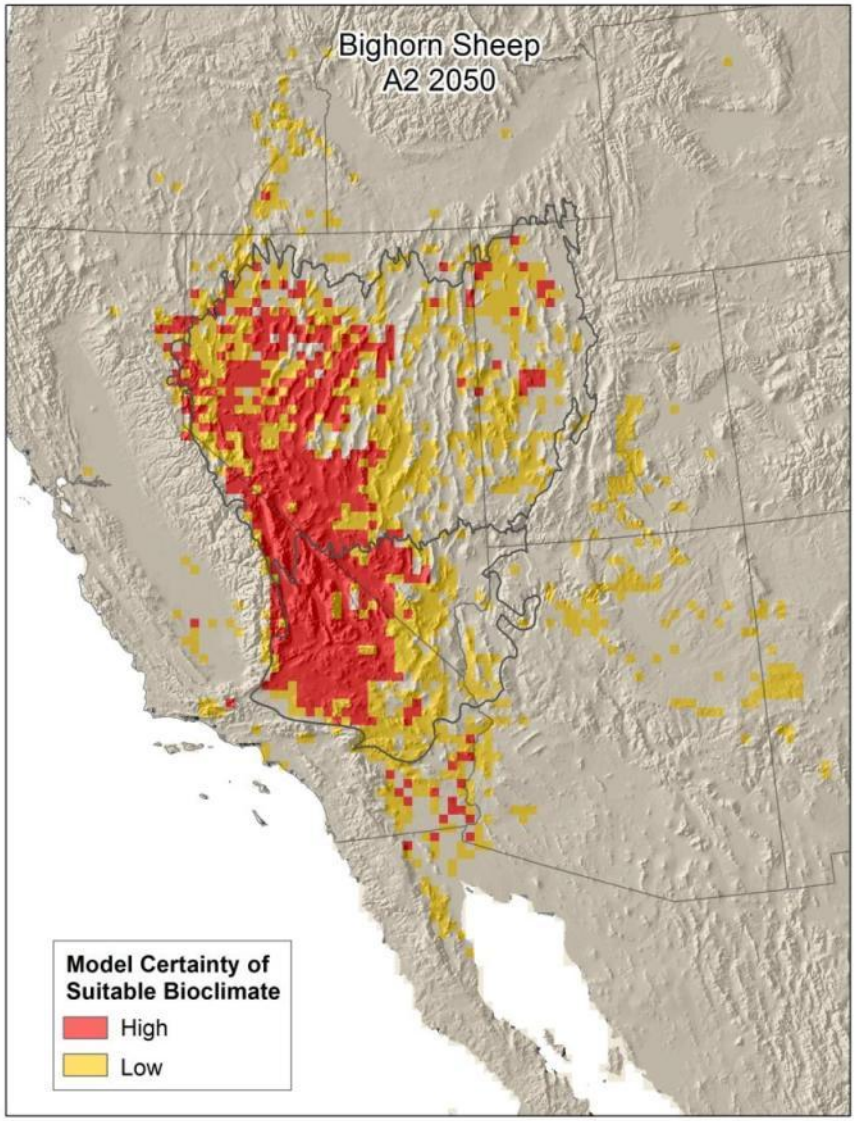

Bighorn Sheep
Modeled Current Bioclimatic Niche
Known distribution (NatureServe)
Modeled Current Niche
0
100
200 Miles

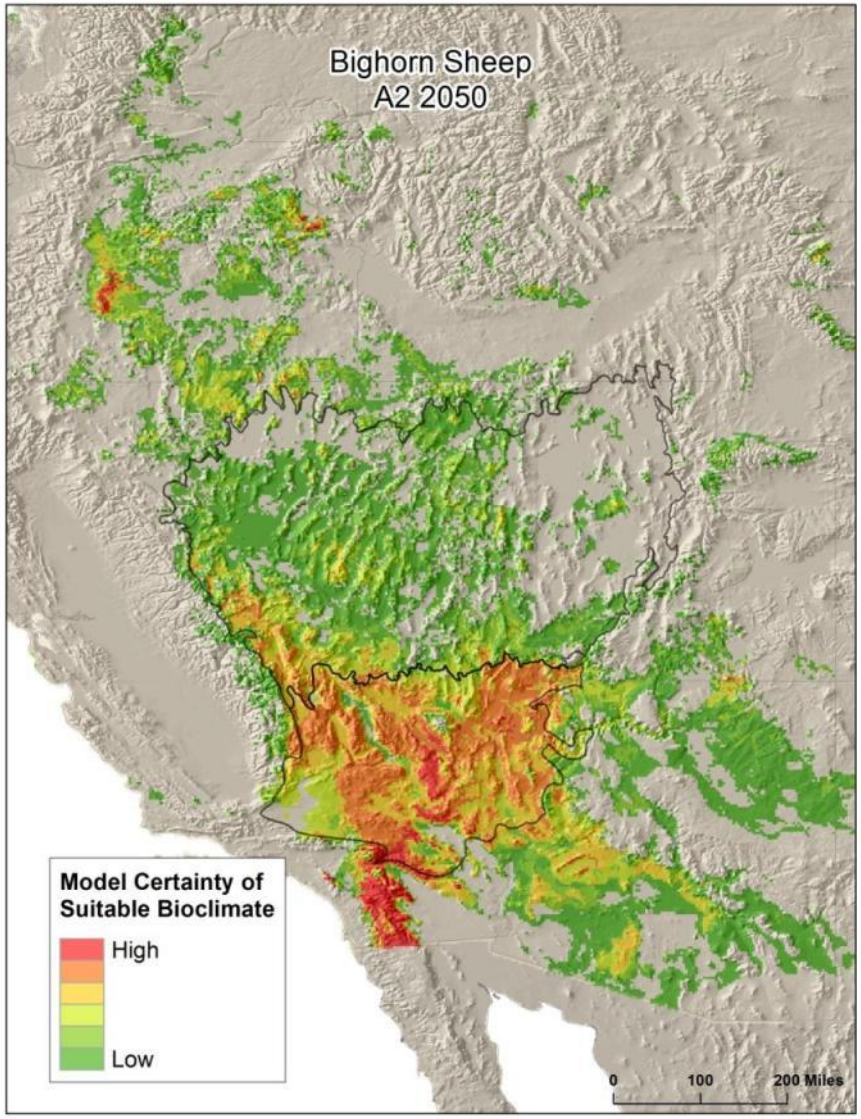

Bighorn Sheep
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low

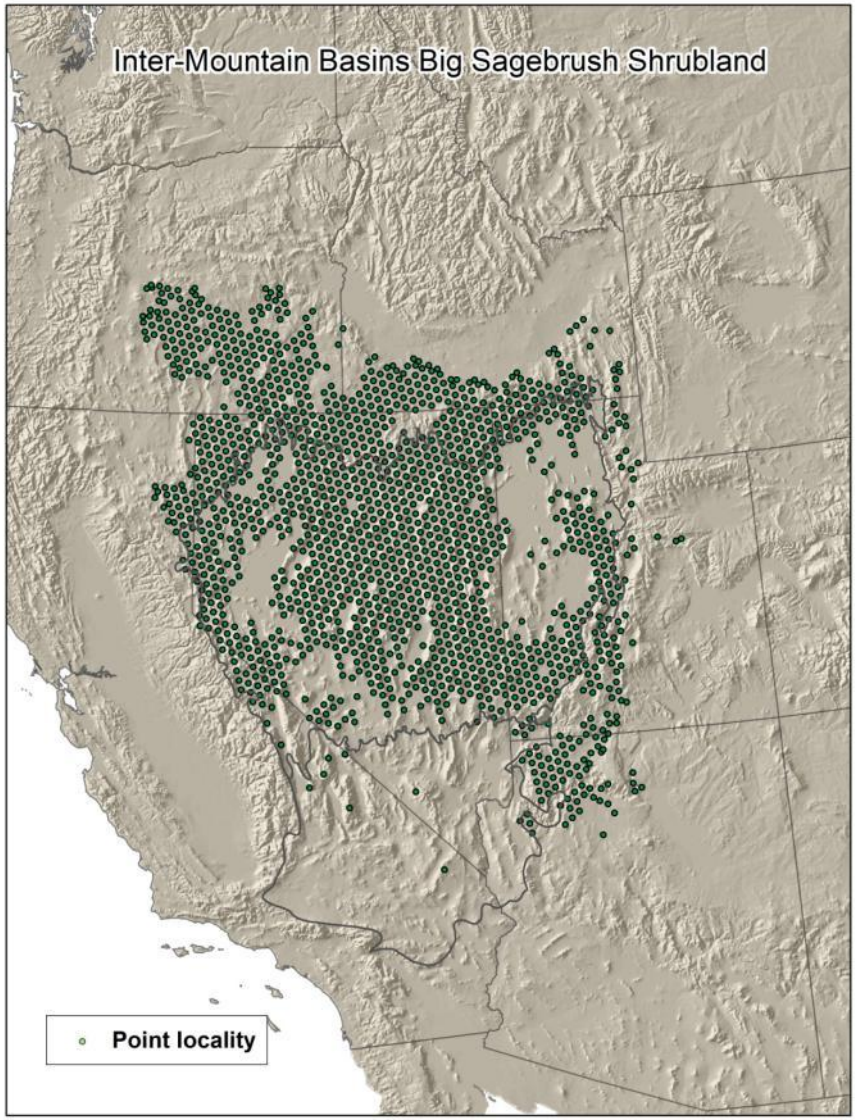

Bighorn Sheep
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles

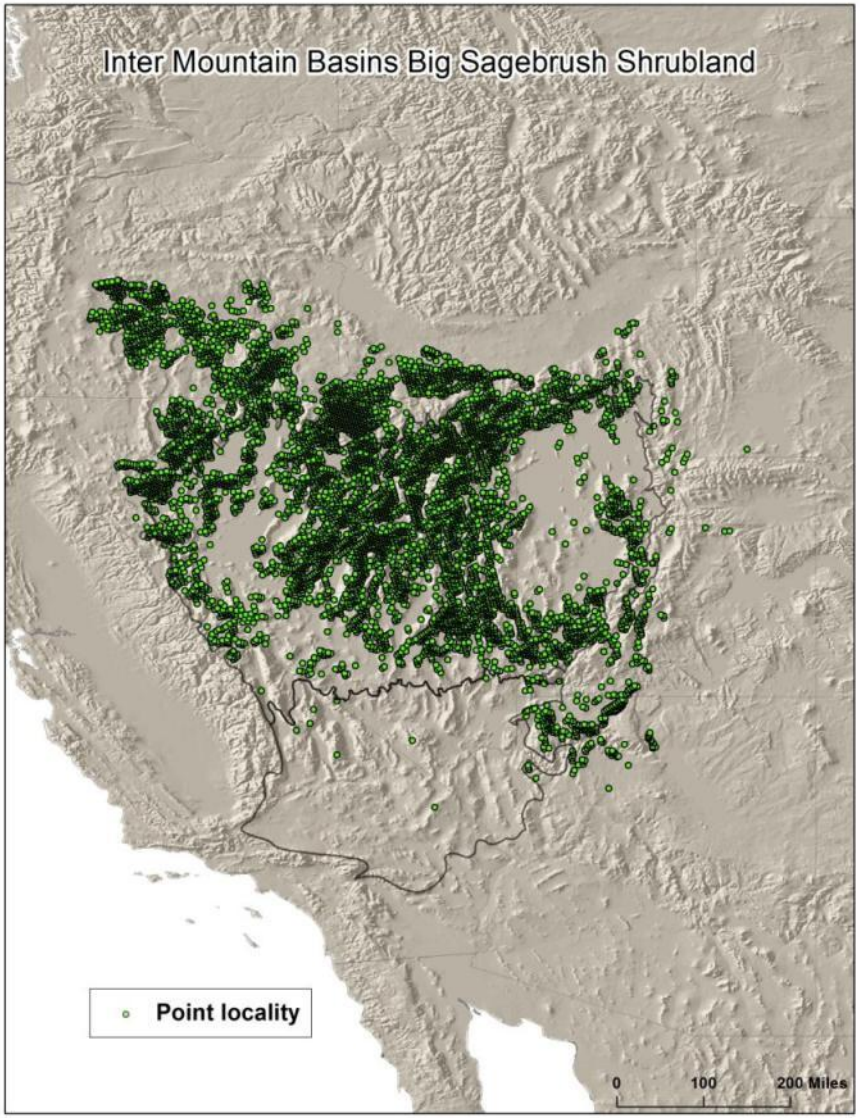

Bighorn Sheep
A2 2020 and Modeled Current Niche
Model Certainty of Suitable Bioclimate
High
Low
modeled current niche

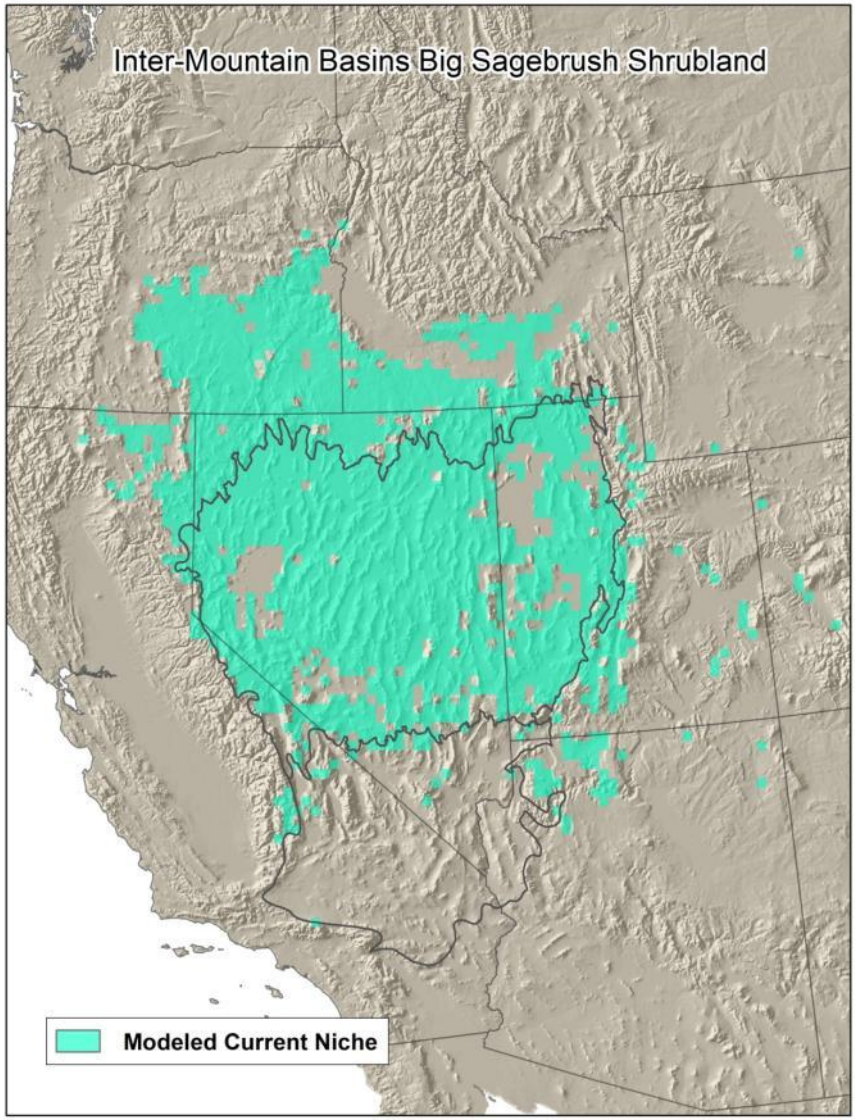

Bighorn Sheep
A2 2020 Modeled Current Niche
Model Certainty of Suitable Bioclimate
High
Low
modeled current niche
0
100
200 Miles

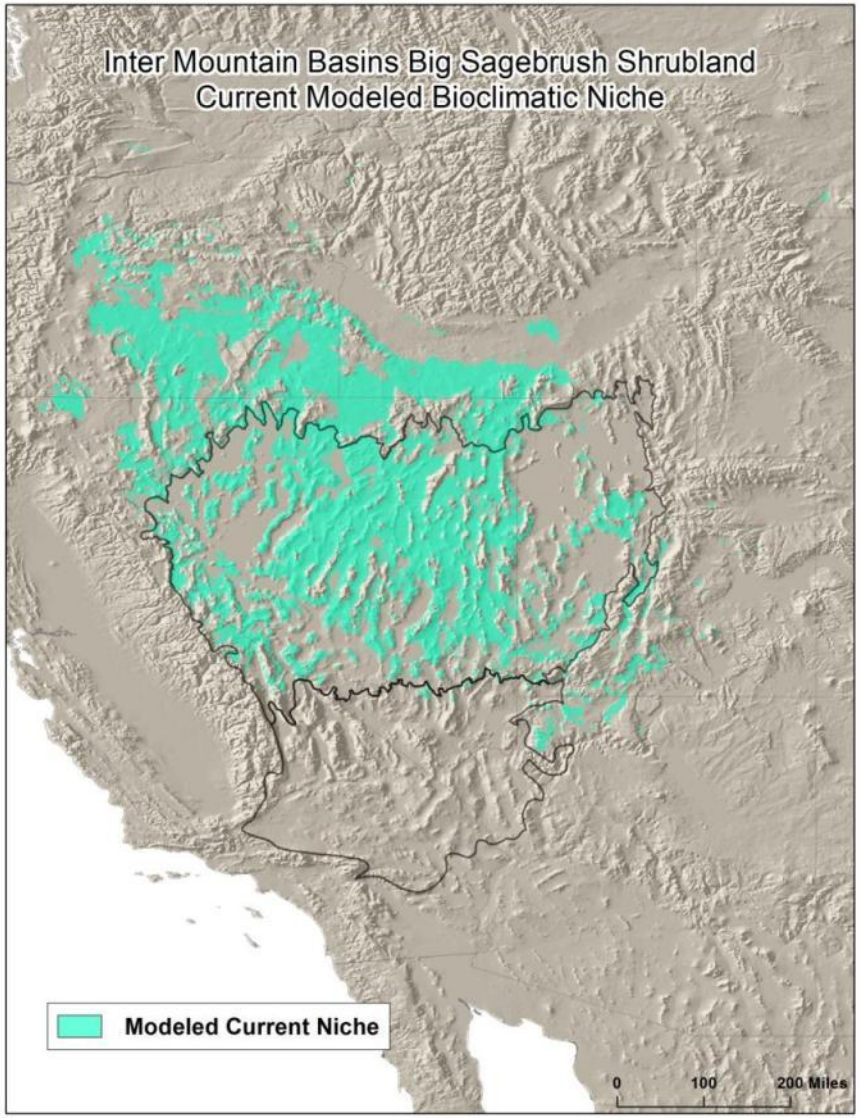

Bighorn Sheep
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low


Bighorn Sheep
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles


Inter-Mountain Basins Big Sagebrush Shrubland
Point locality

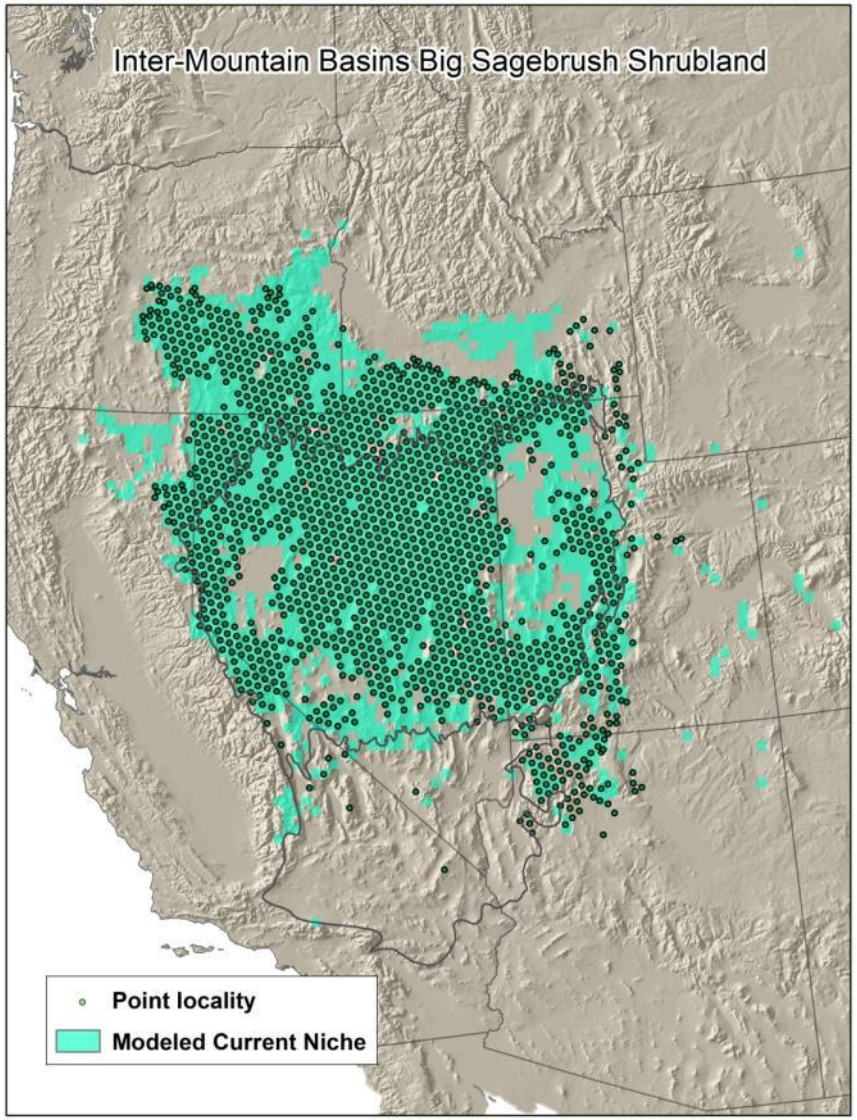

Inter Mountain Basins Big Sagebrush Shrubland
Point locality
0
100
200 Miles

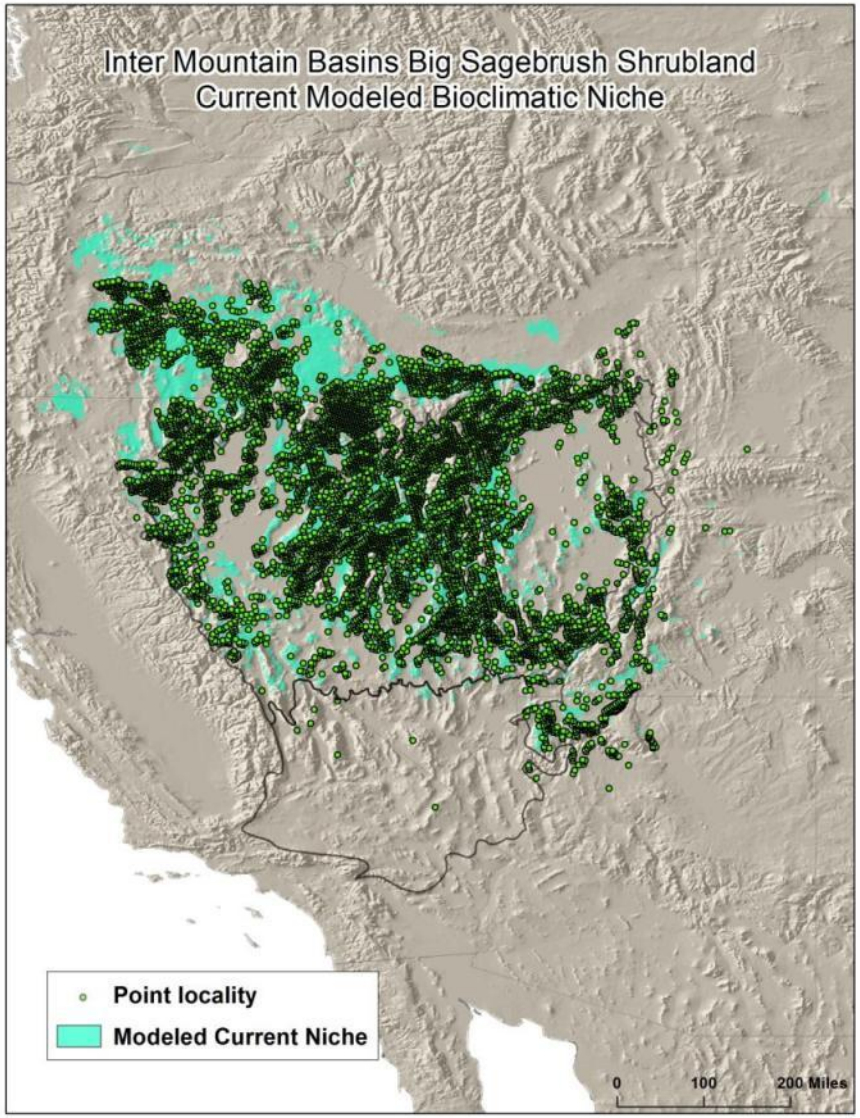


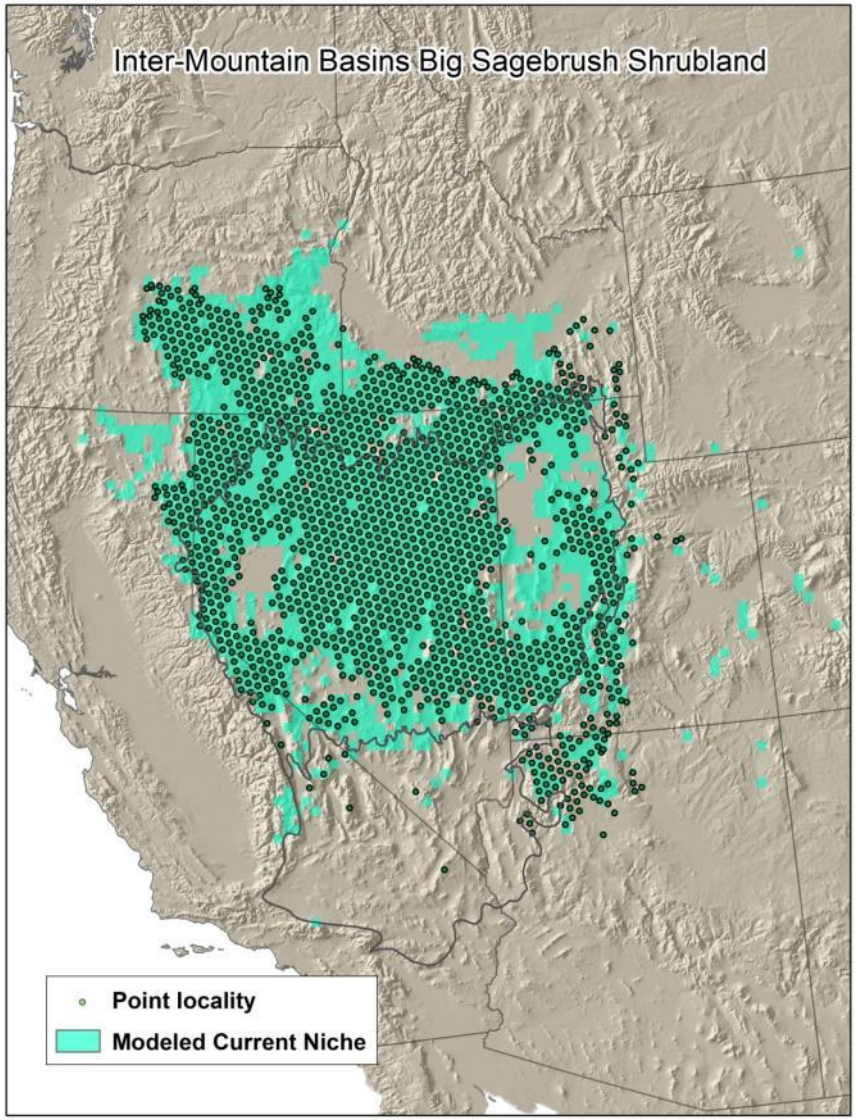


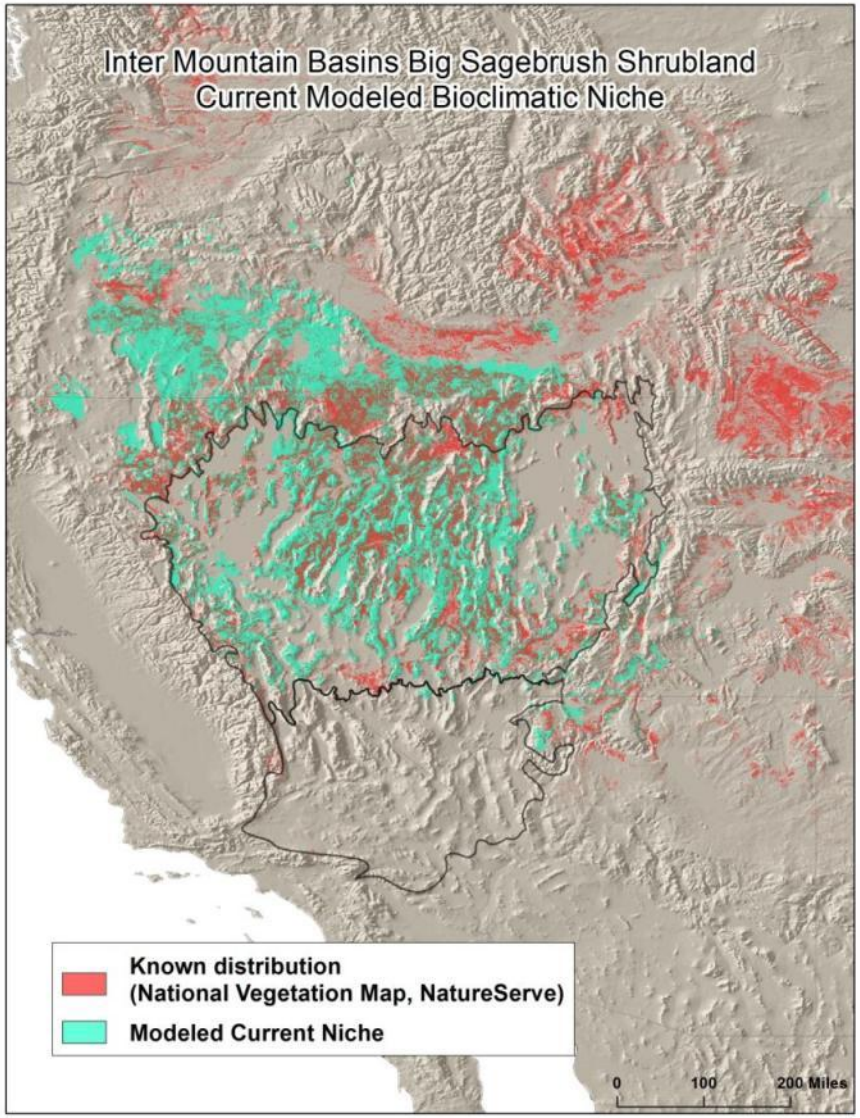
BLM

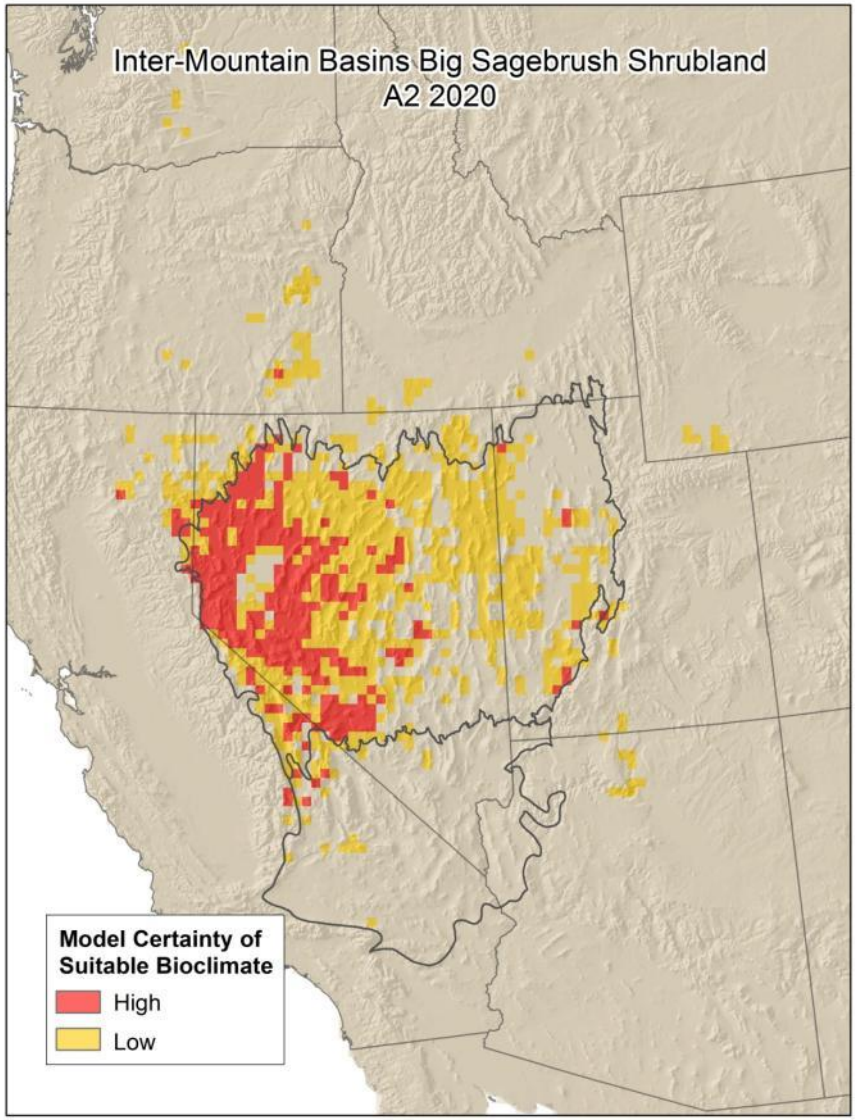
Rapid Ecoregional Assessment

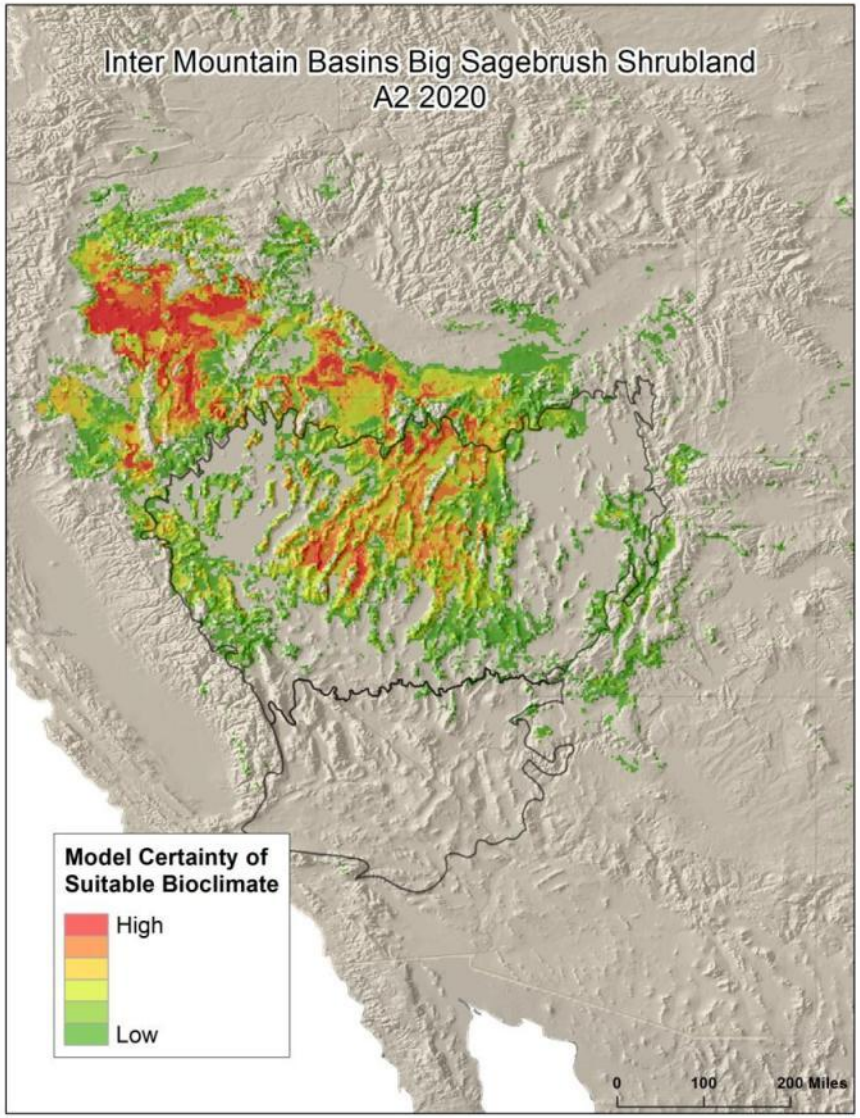

Inter-Mountain Basins Big Sagebrush Shrubland
Point locality
Modeled Current Niche


Inter Mountain Basins Big Sagebrush Shrubland
Current Modeled Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles

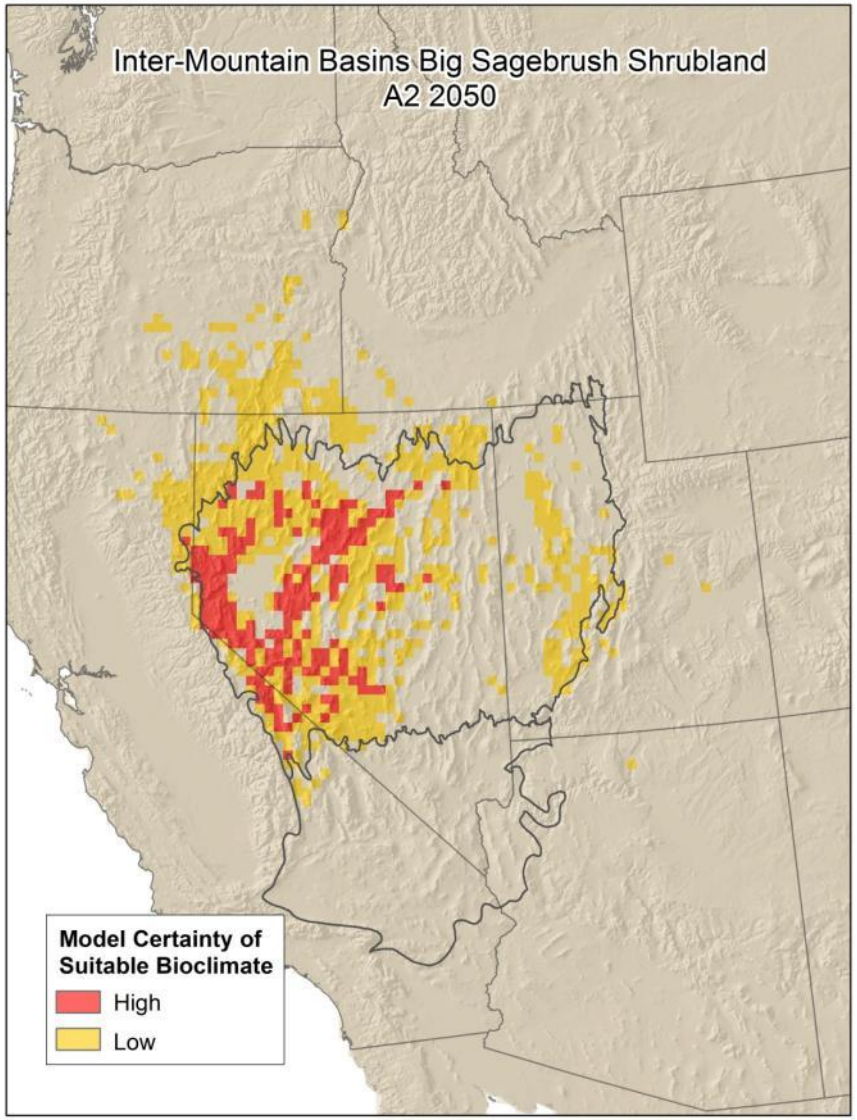

Inter-Mountain Basins Big Sagebrush Shrubland
Point locality
Modeled Current Niche

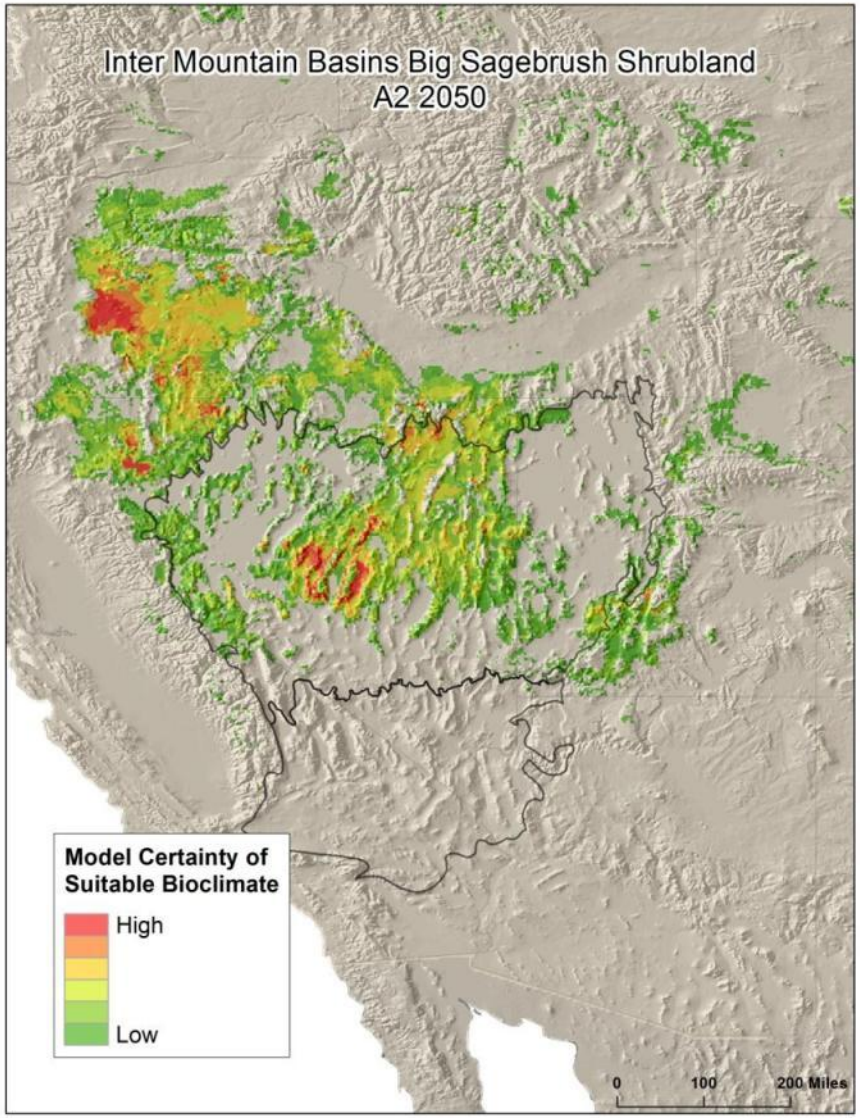

Inter Mountain Basins Big Sagebrush Shrubland
Current Modeled Bioclimatic Niche
Known distribution
(National Vegetation Map, NatureServe)
Modeled Current Niche
0
100
200 Miles





BLM
Rapid Ecoregional Assessment





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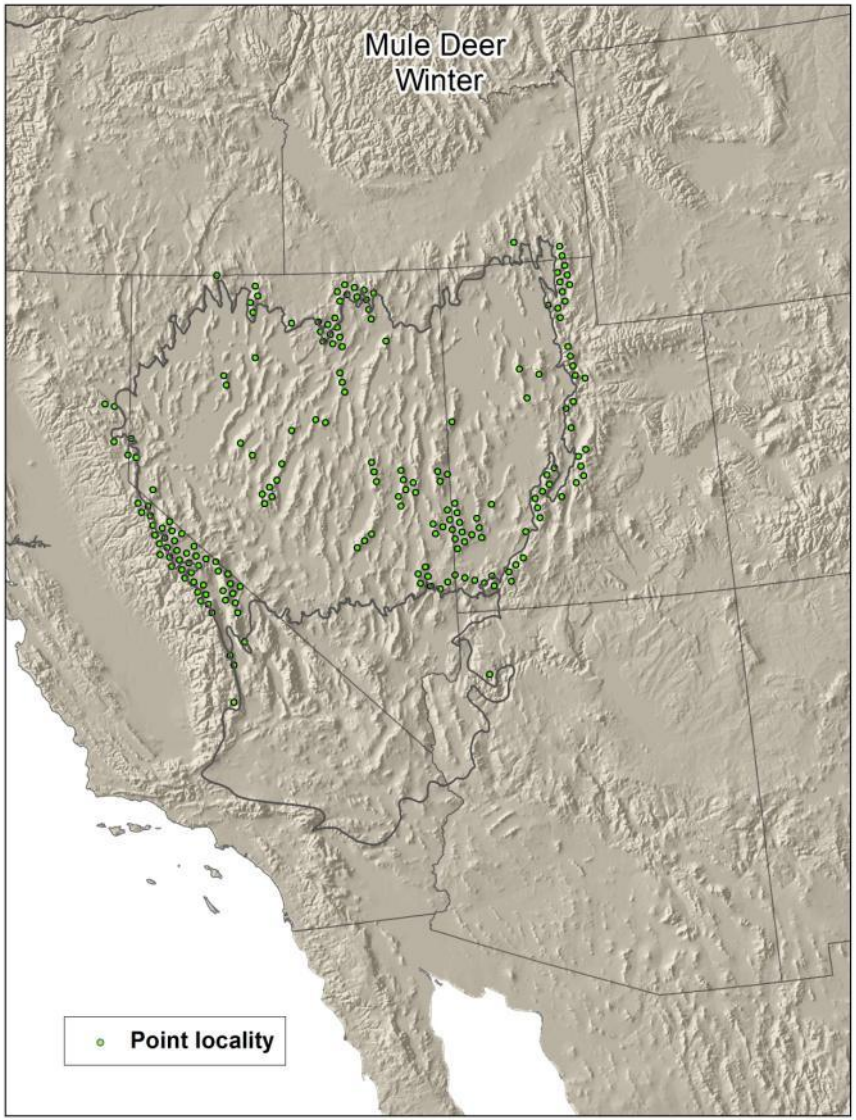
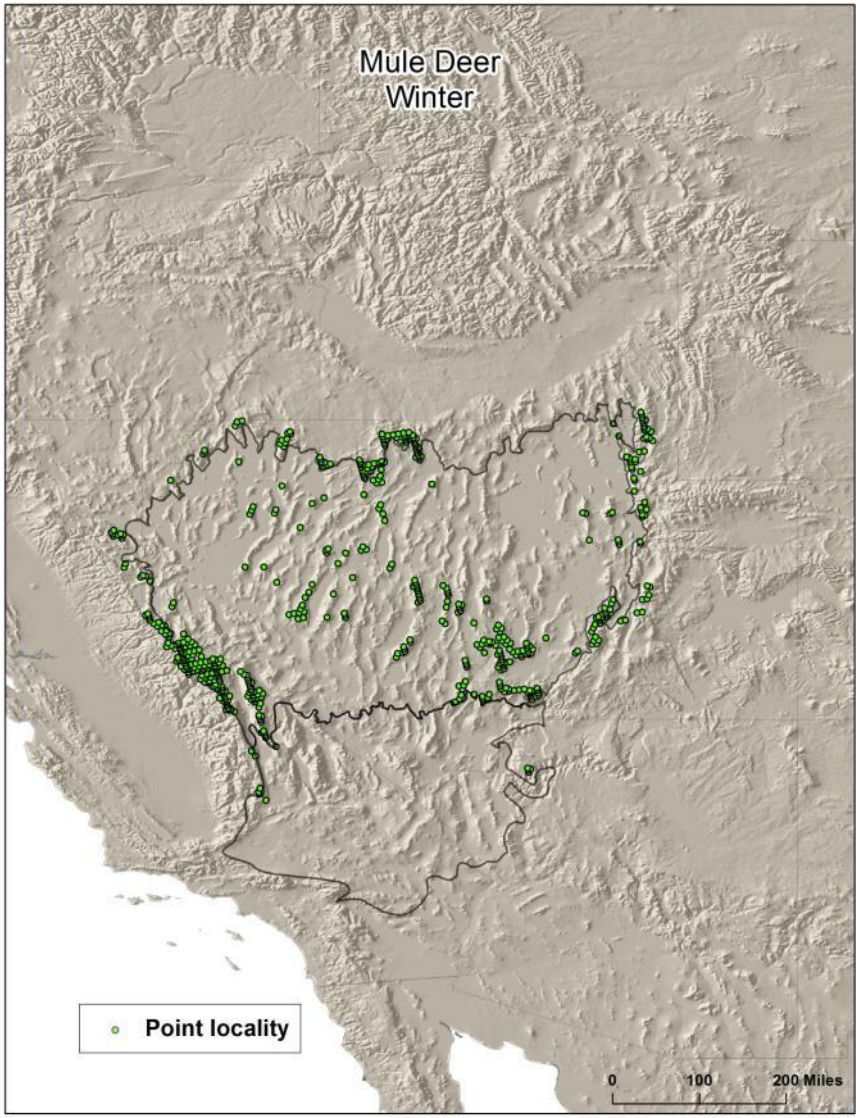
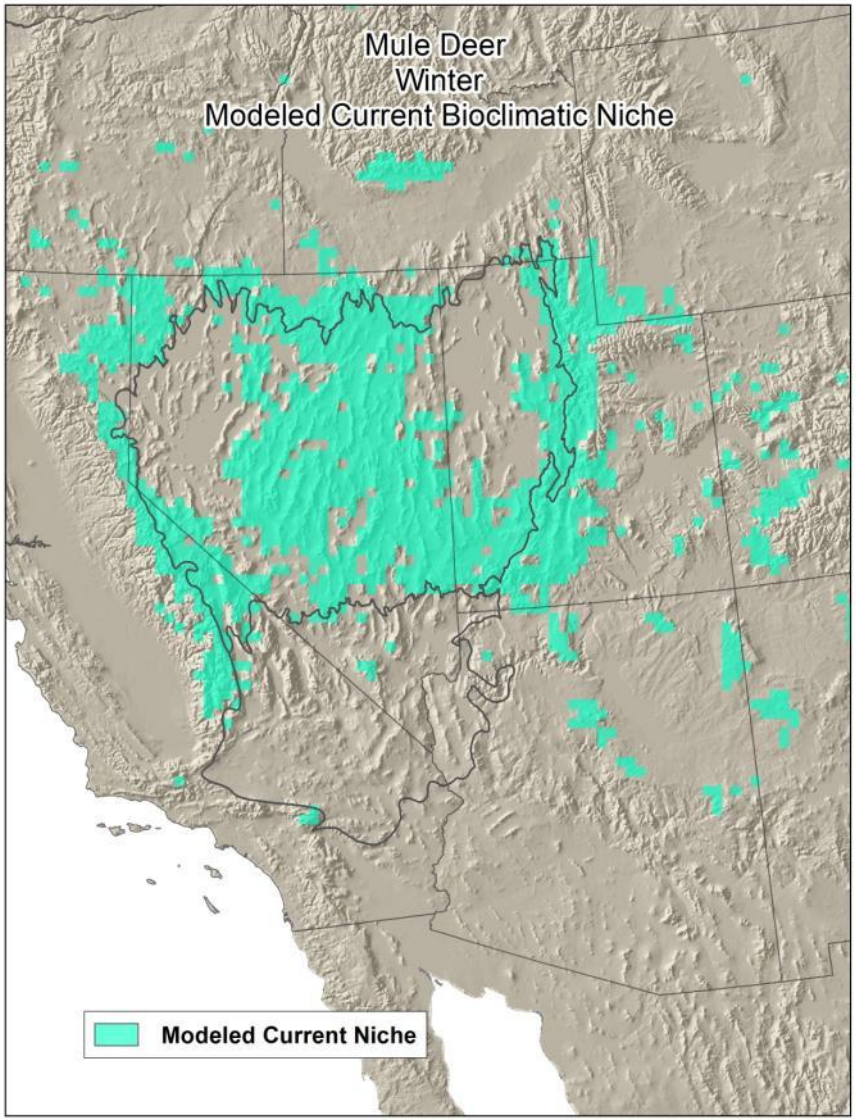
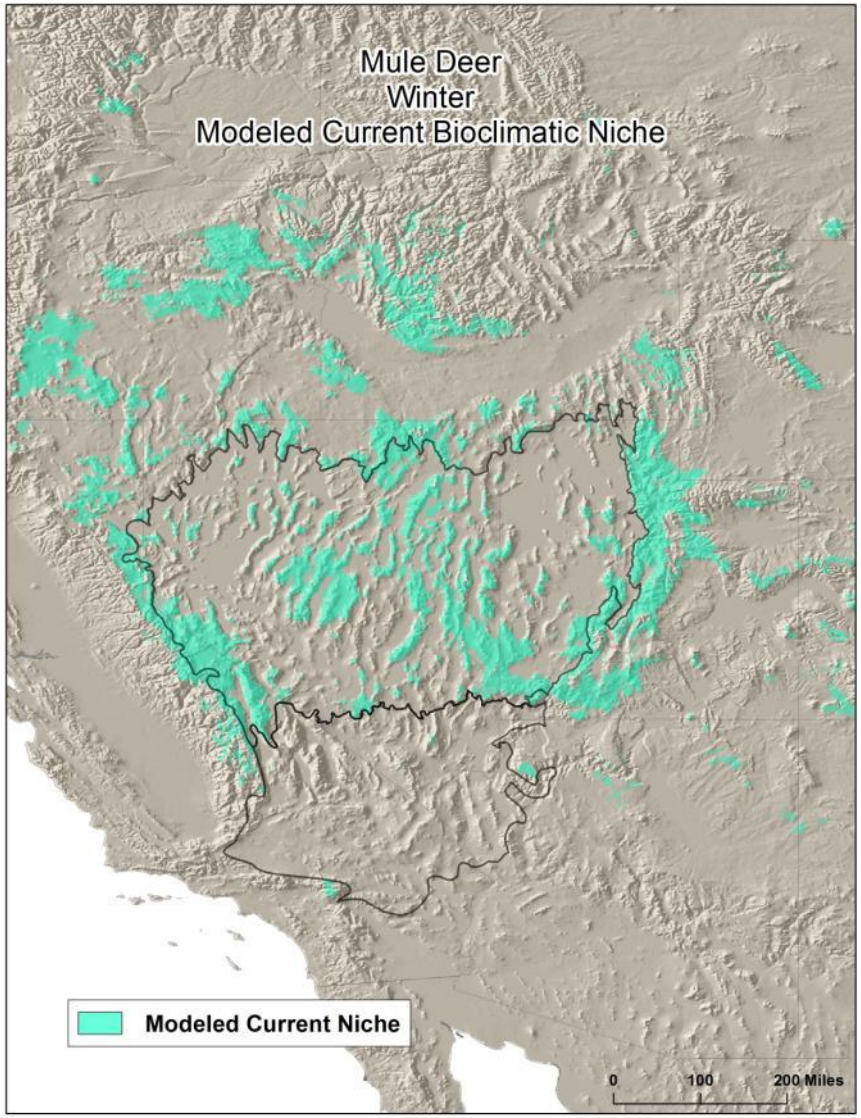
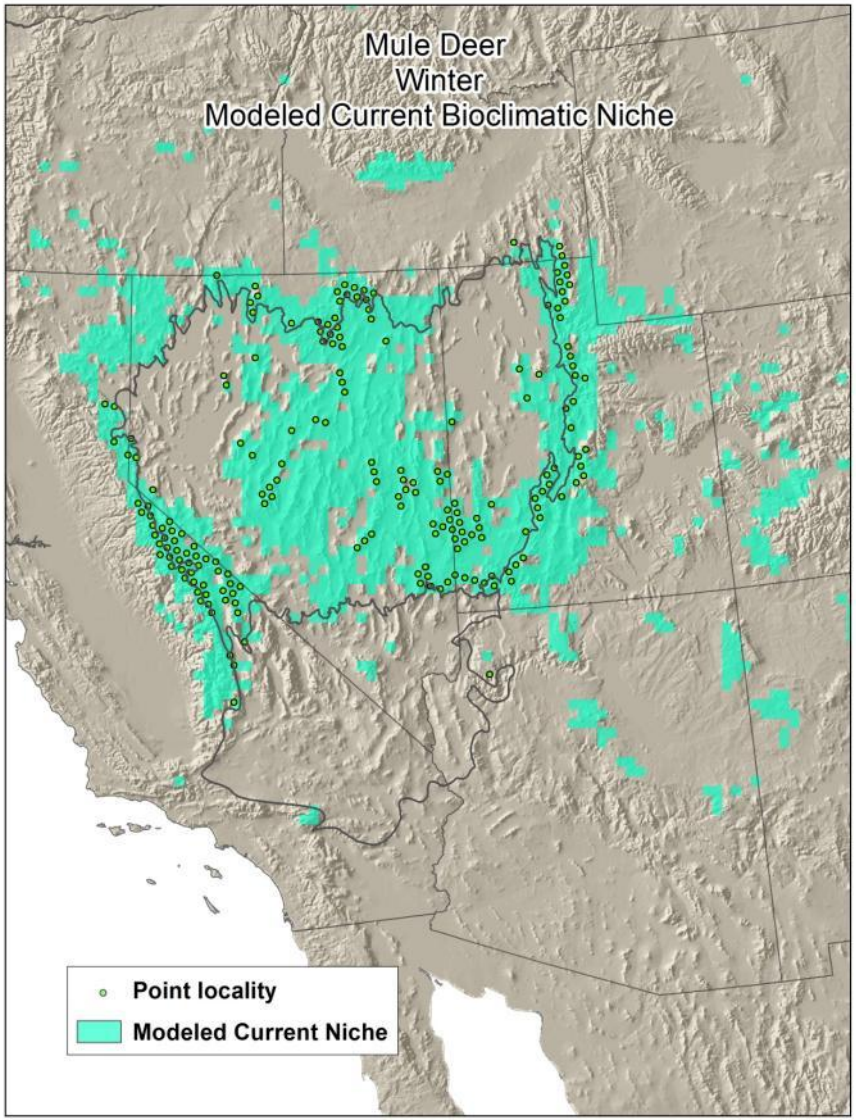
Rapid Ecoregional Assessment

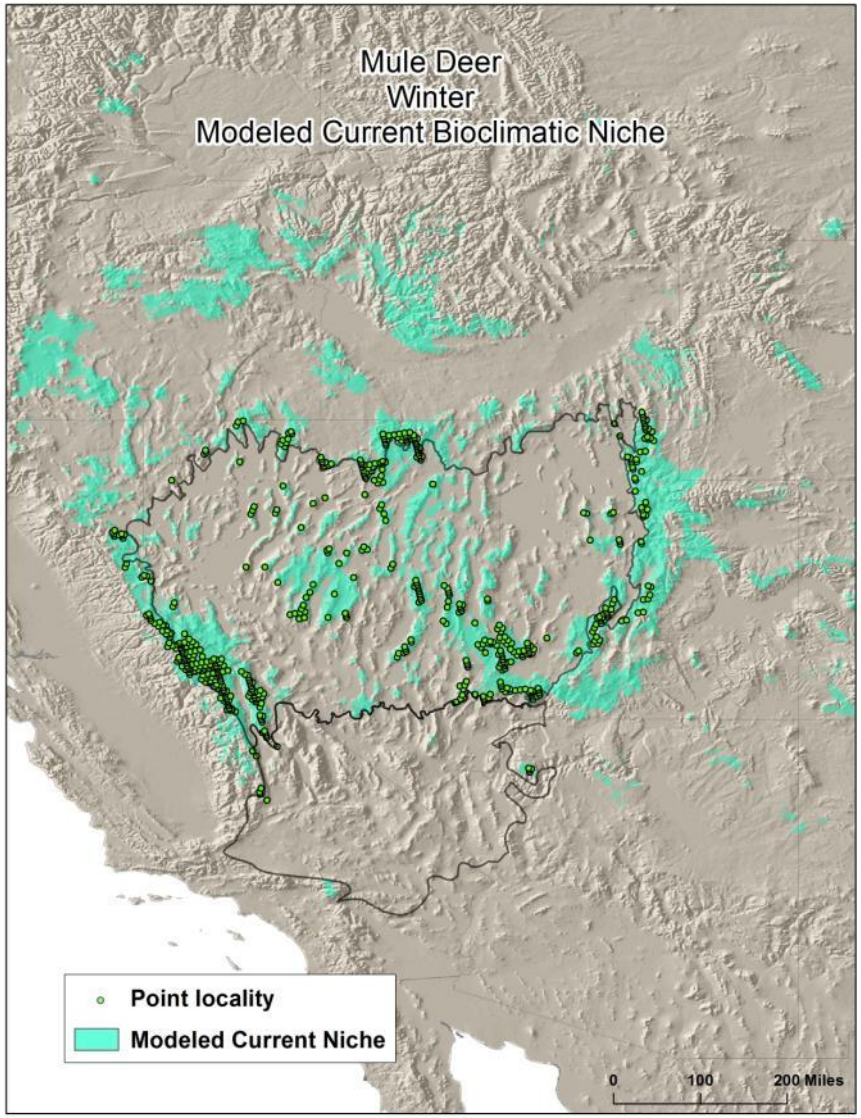

Mule Deer
Winter
Point locality

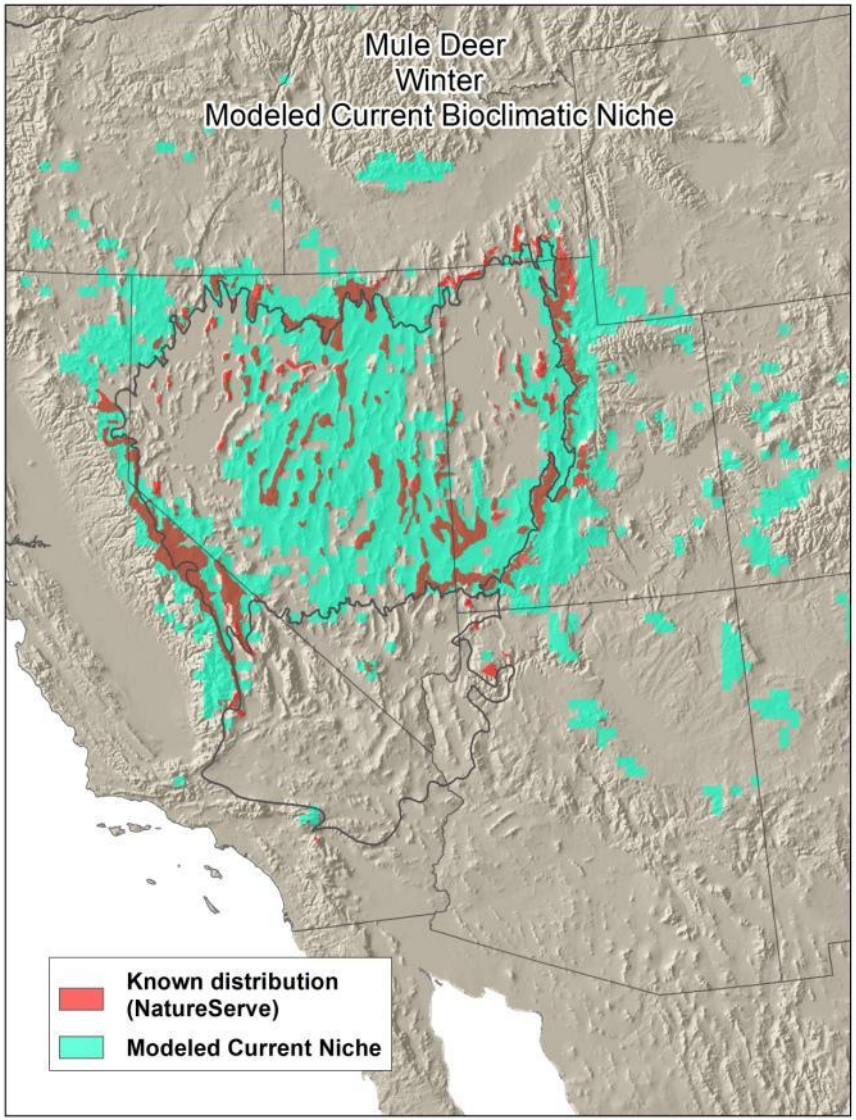

Mule Deer
Winter
Point locality
0
100
200 Miles

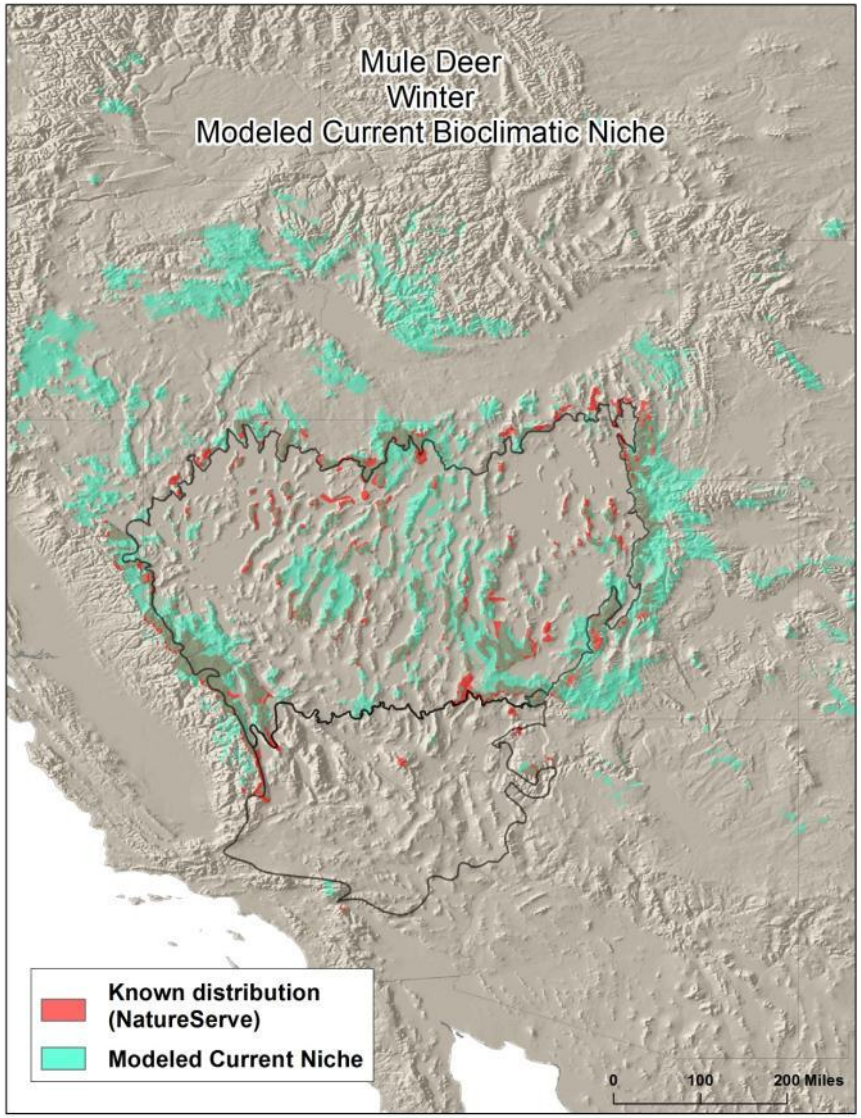

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Modeled Current Niche

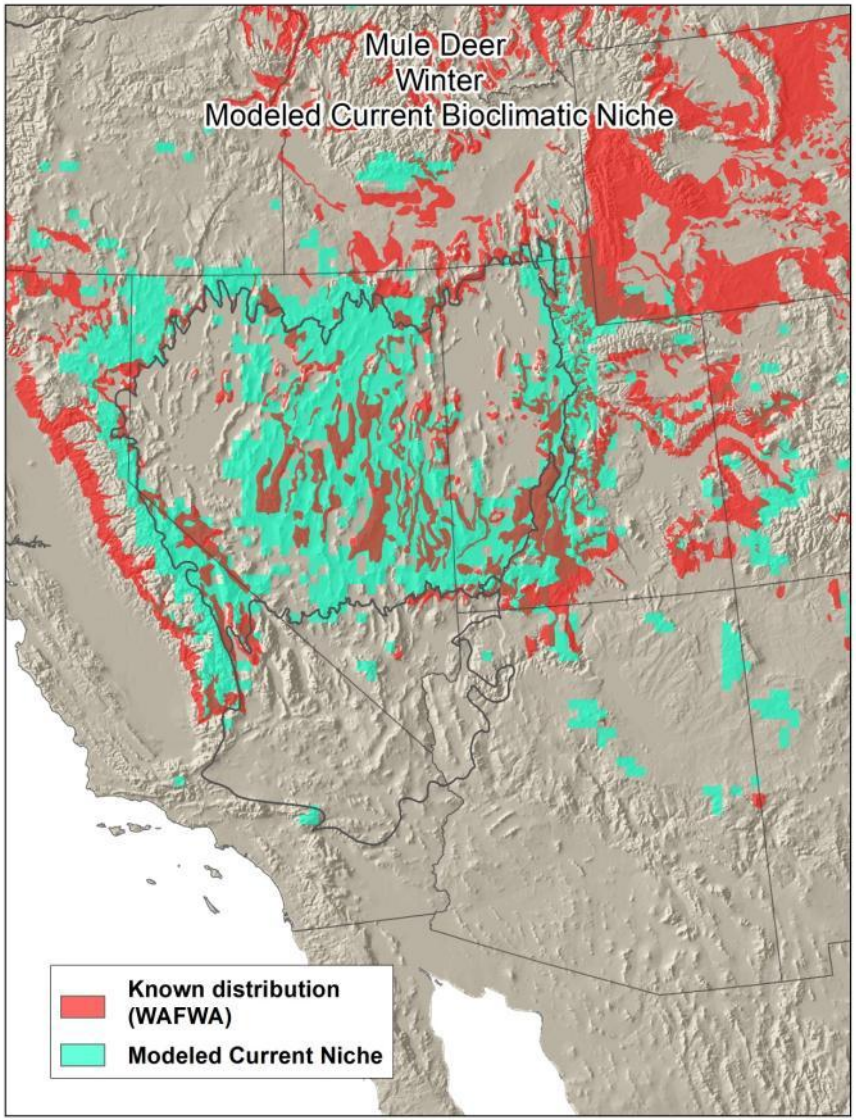

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles

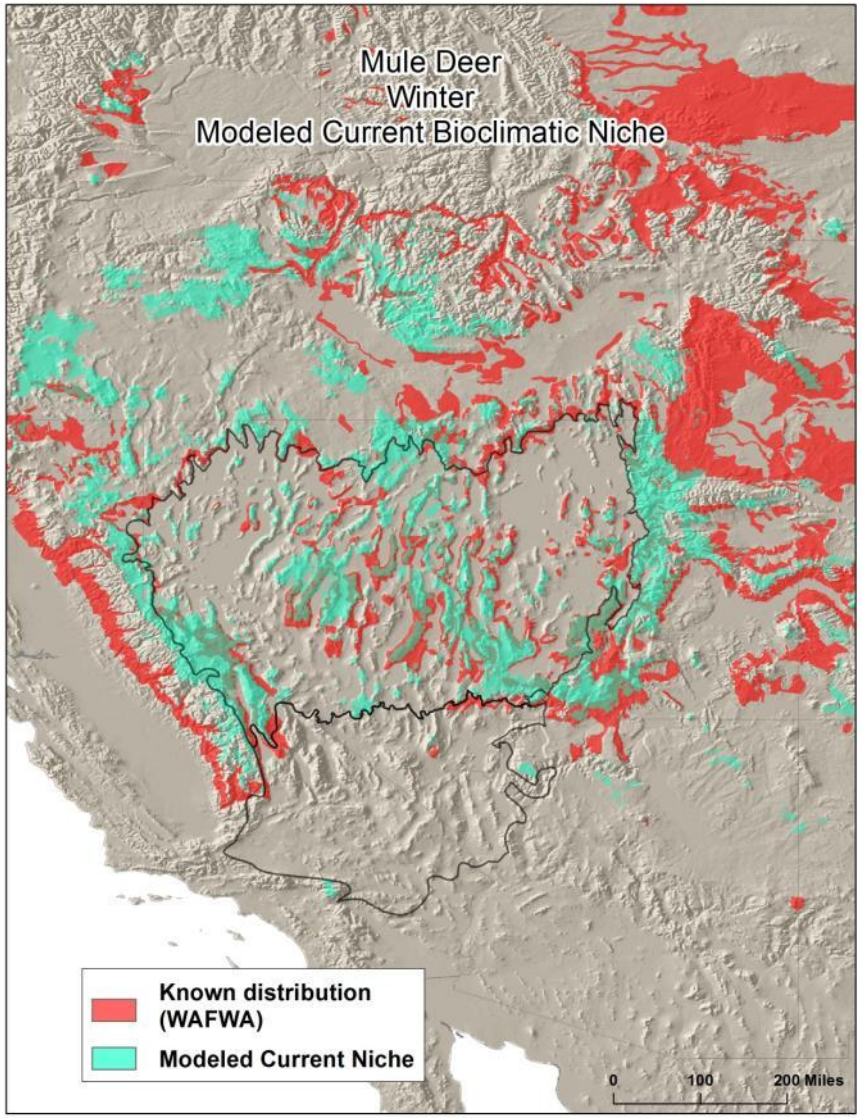

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche

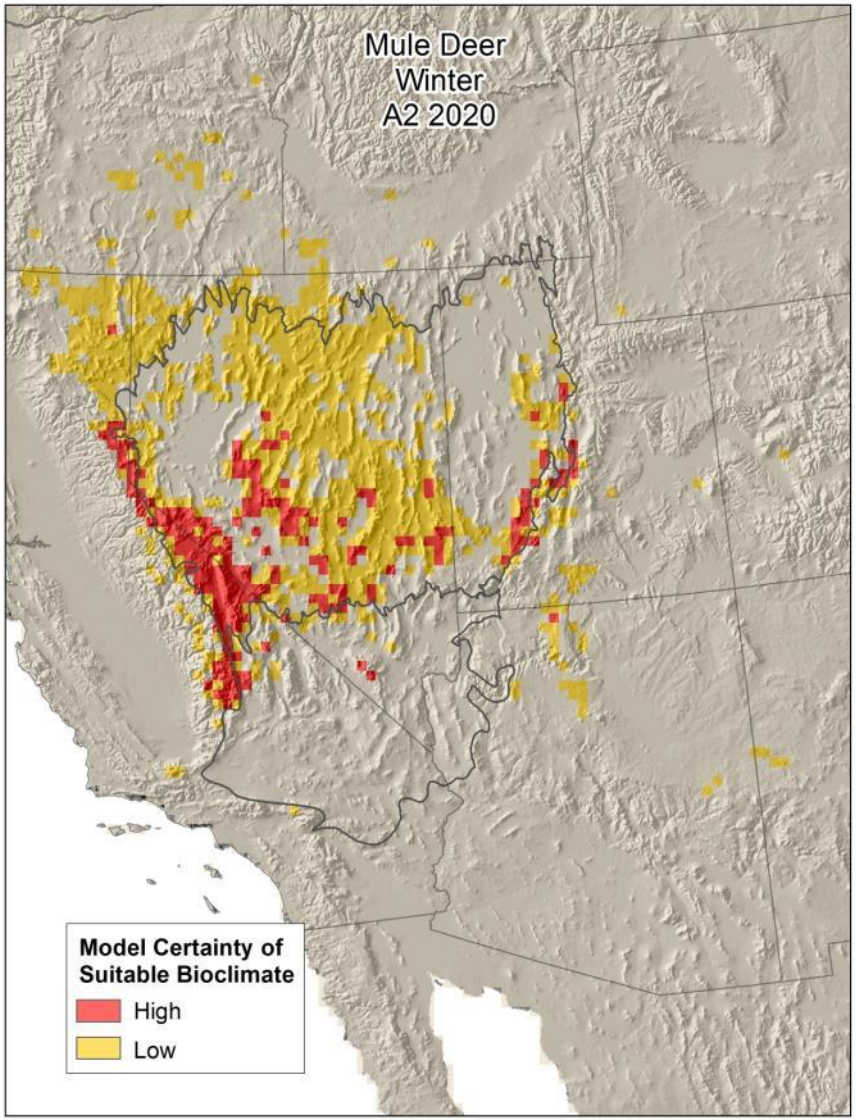

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles

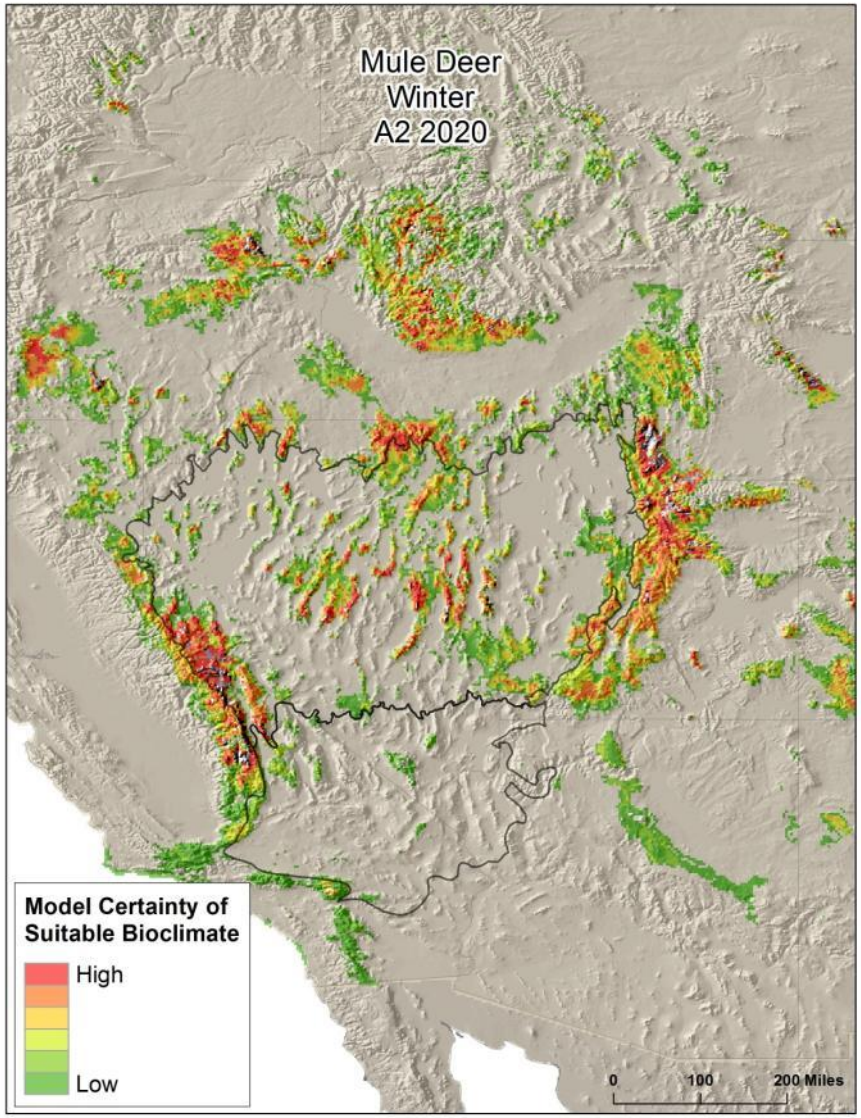

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Known distribution
(NatureServe)
Modeled Current Niche

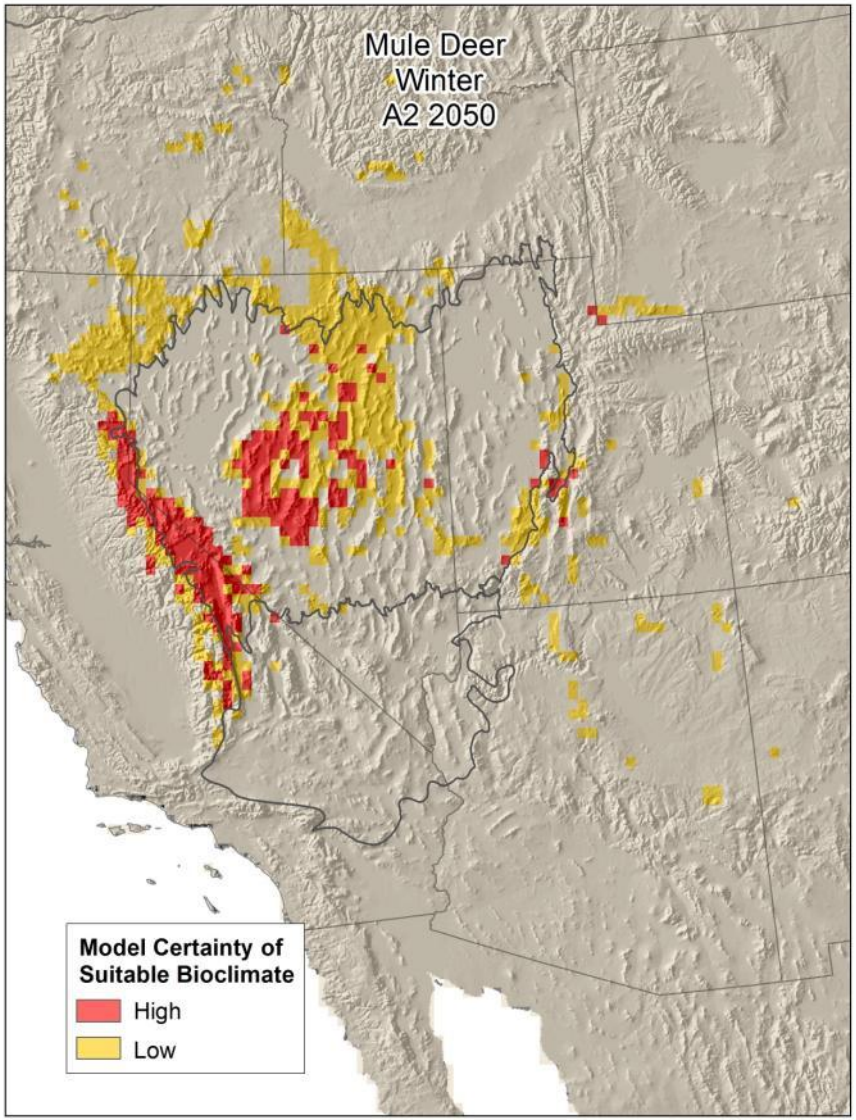

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Known distribution
(NatureServe)
Modeled Current Niche
0
100
200 Miles

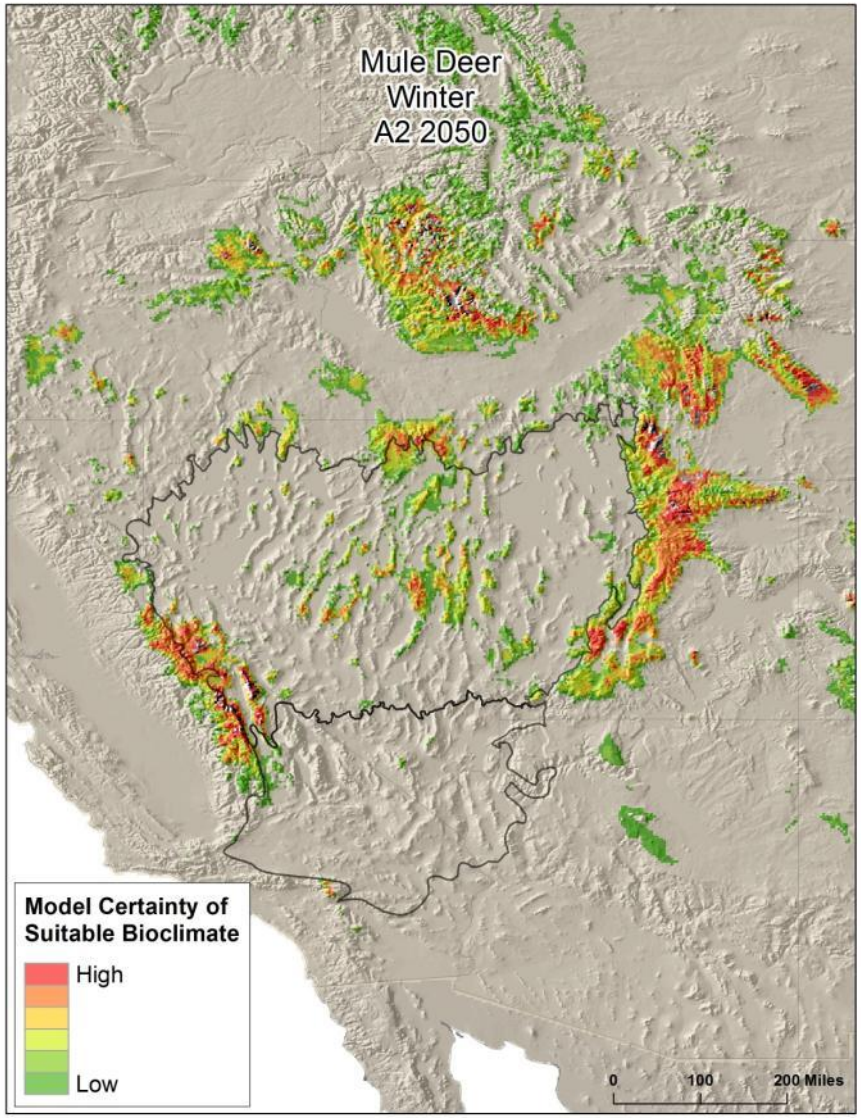

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Known distribution (WAFWA)
Modeled Current Niche

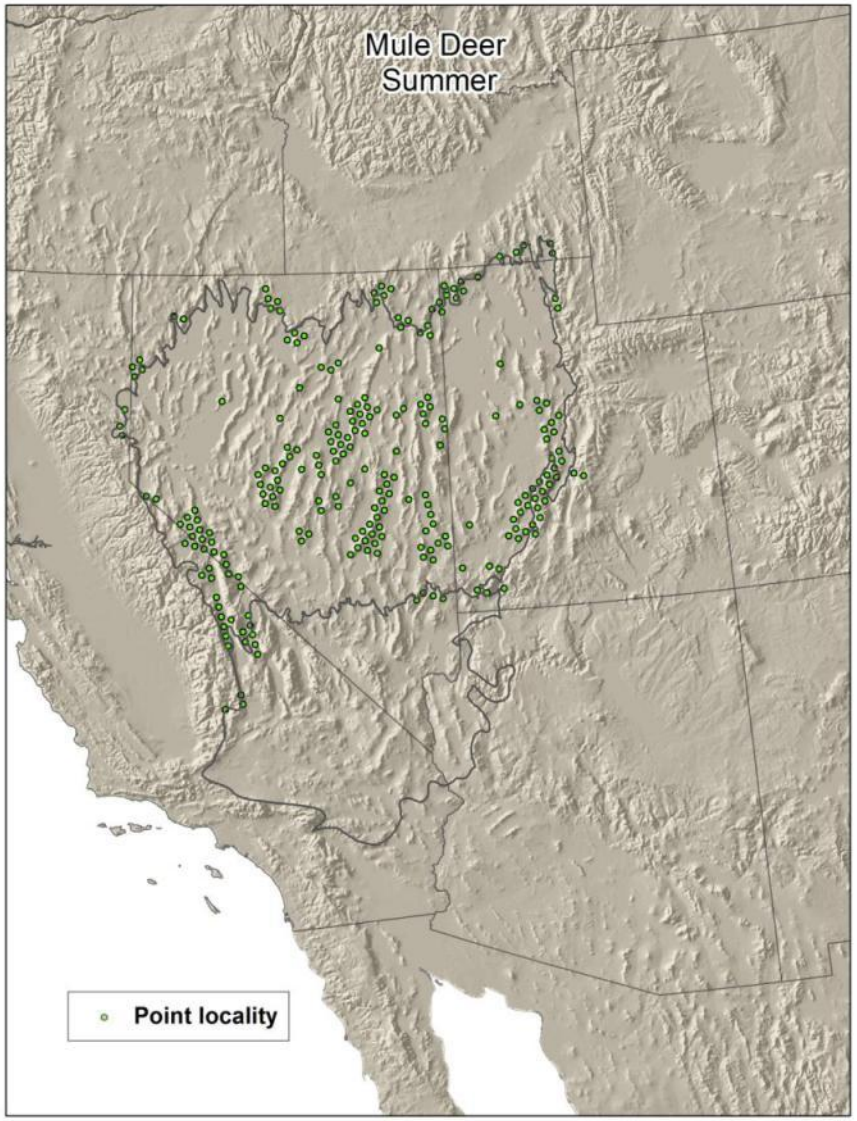

Mule Deer
Winter
Modeled Current Bioclimatic Niche
Known distribution (WAFWA)
Modeled Current Niche
0
100
200 Miles

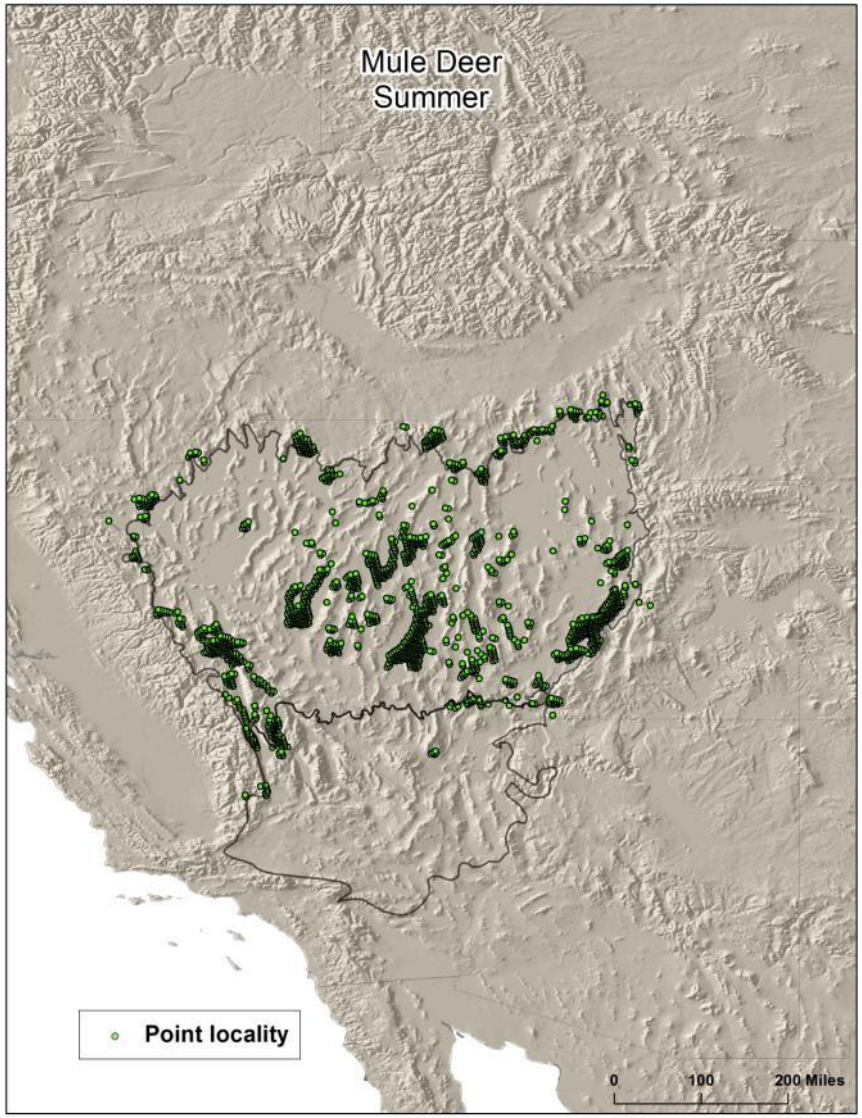

Mule Deer
Winter
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low

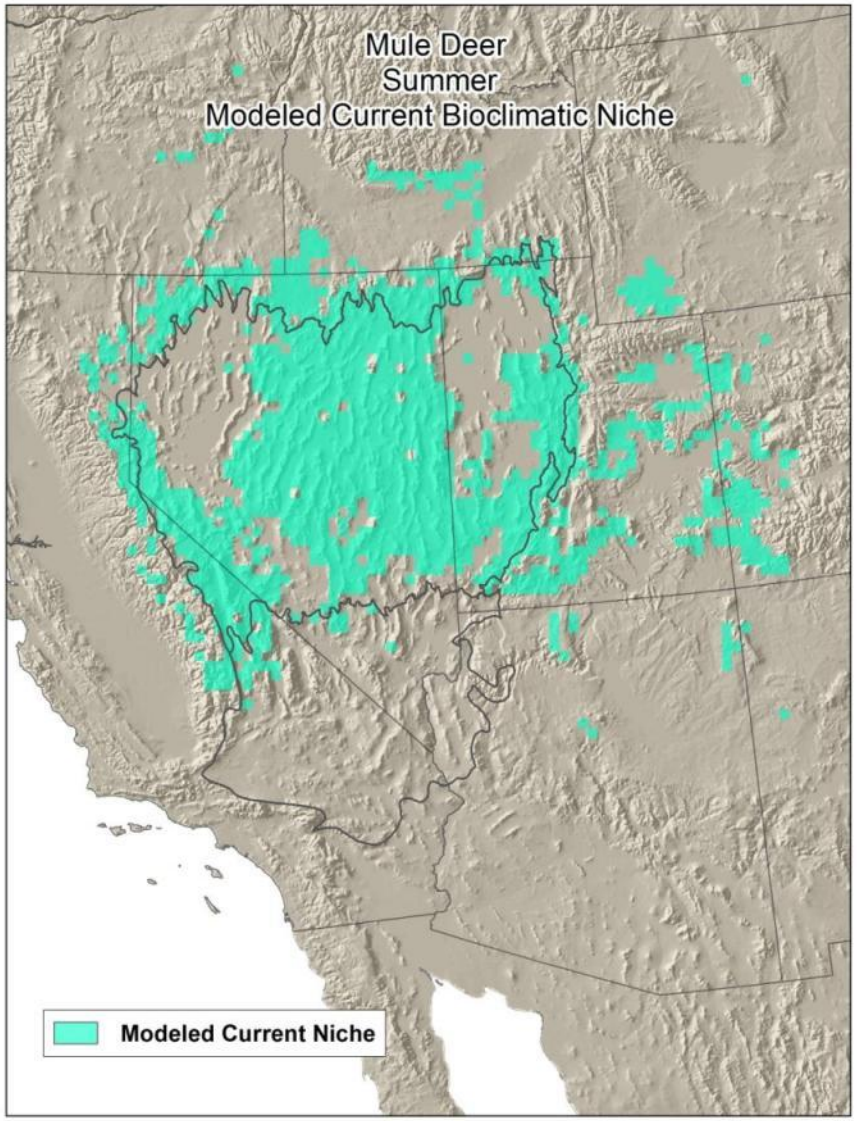

Mule Deer
Winter
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles

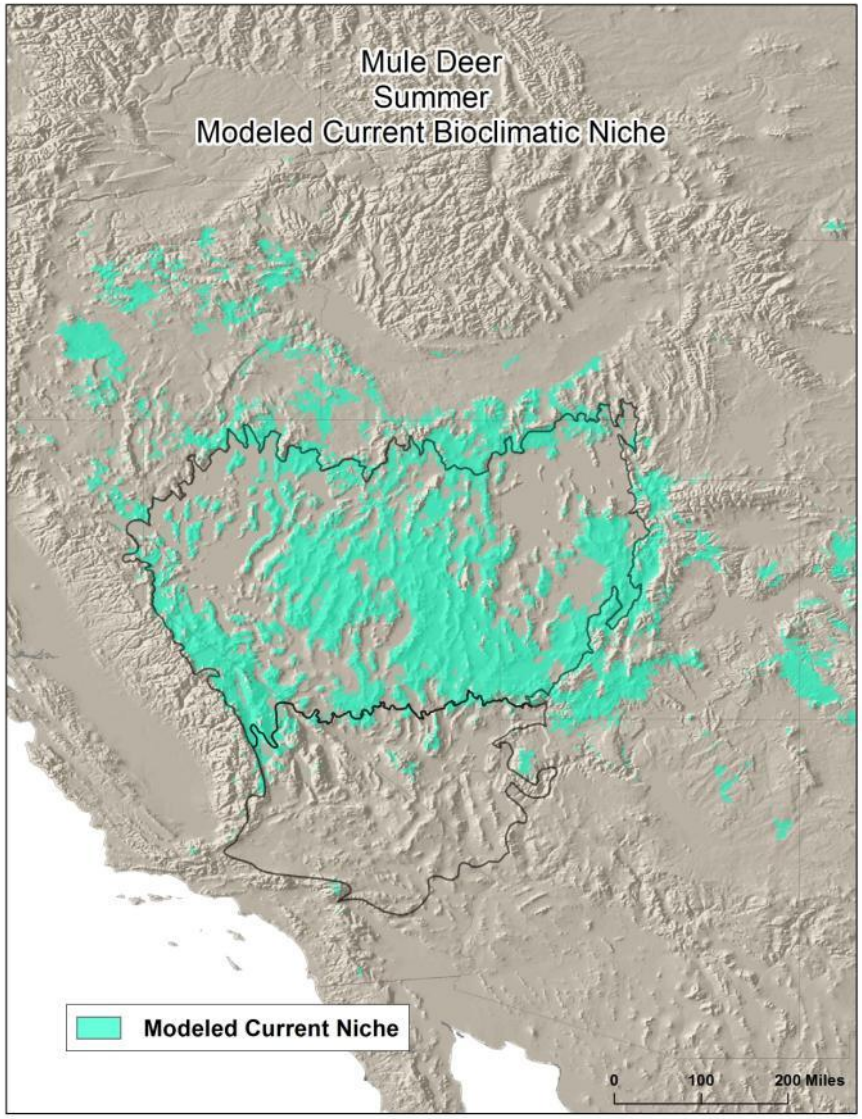

Mule Deer
Winter
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low

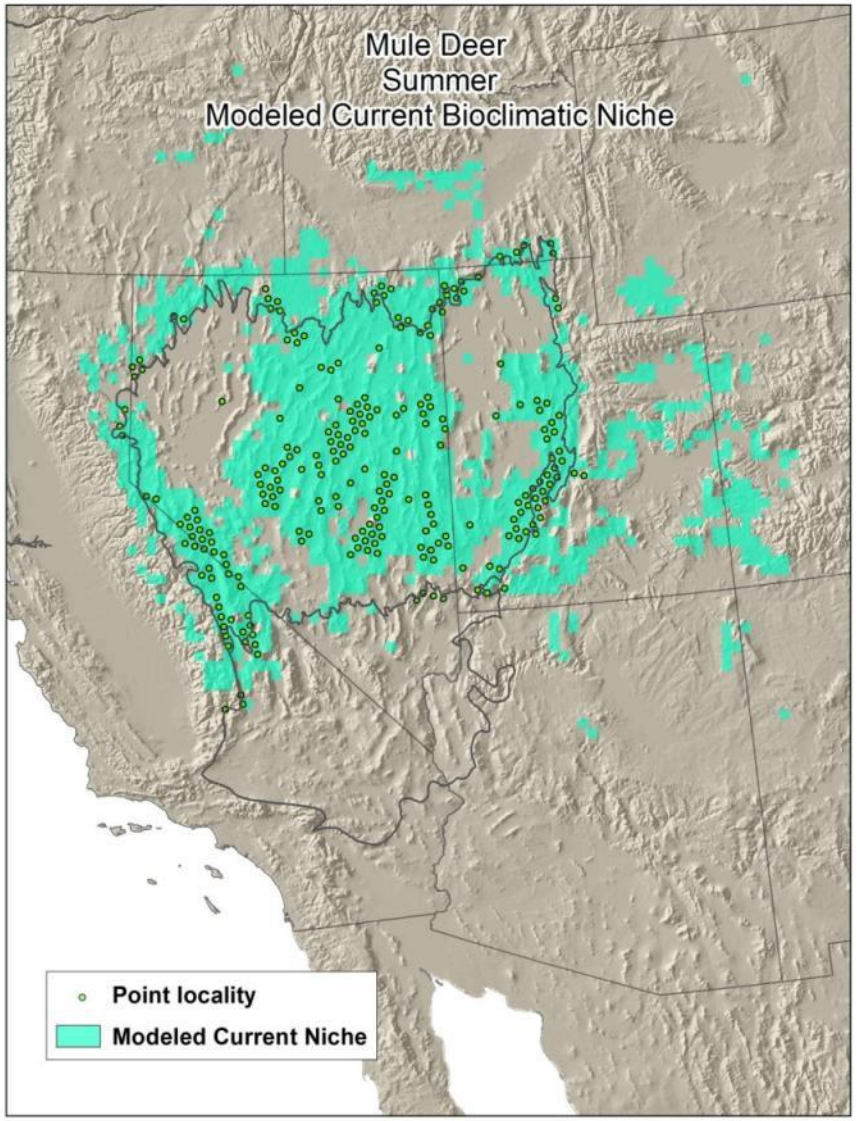

Mule Deer
Winter
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles

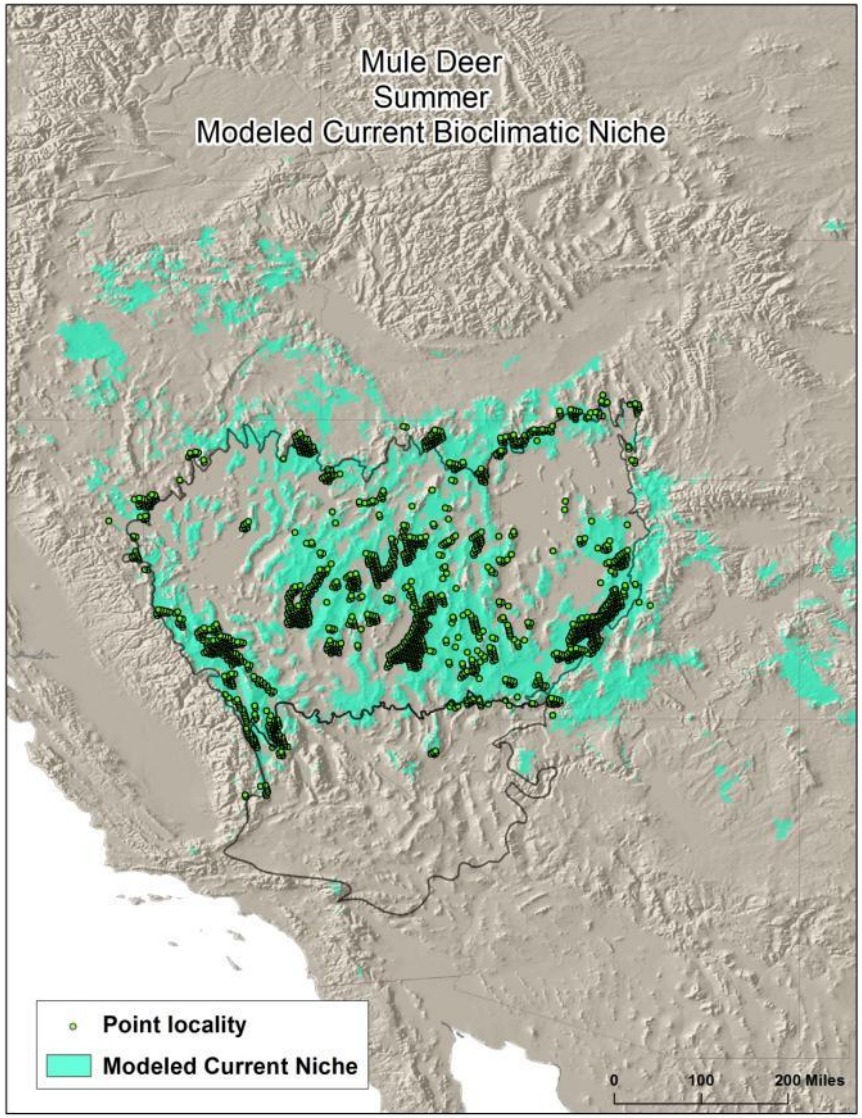

Mule Deer
Summer
Point locality

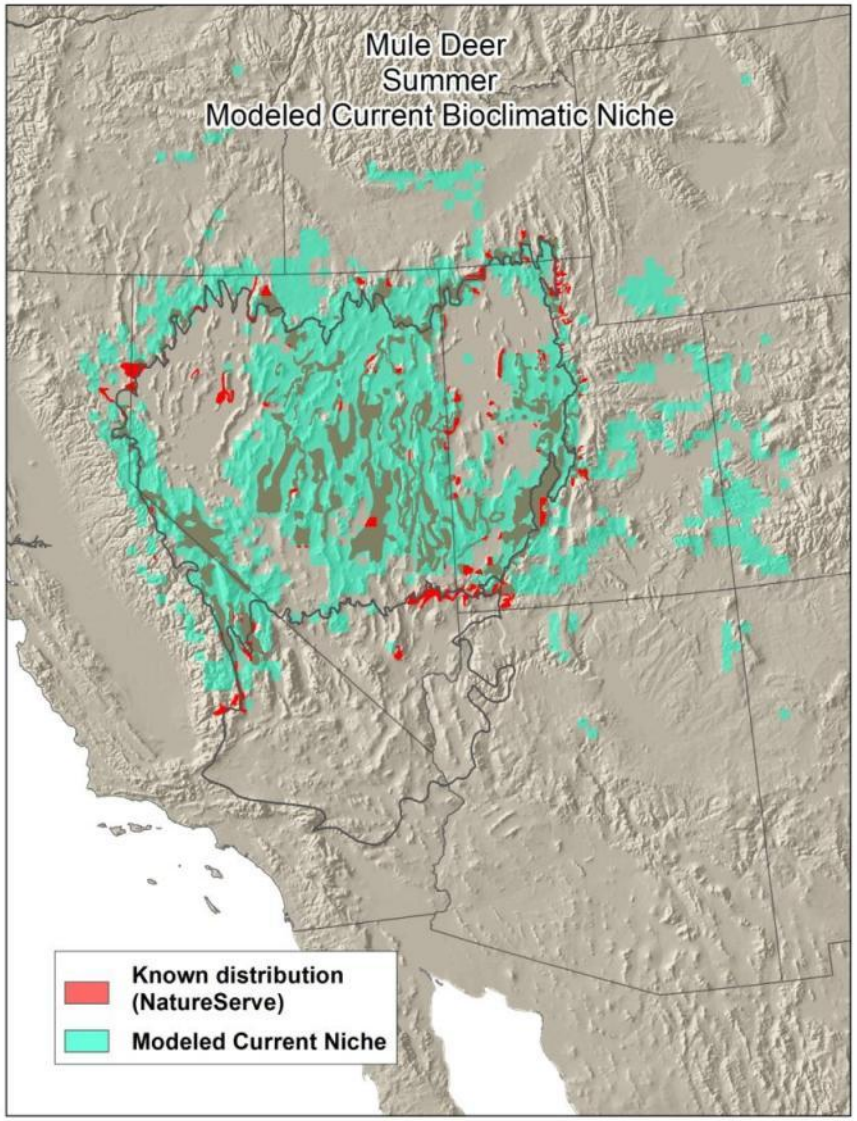

Mule Deer
Summer
Point locality
0
100
200 Miles

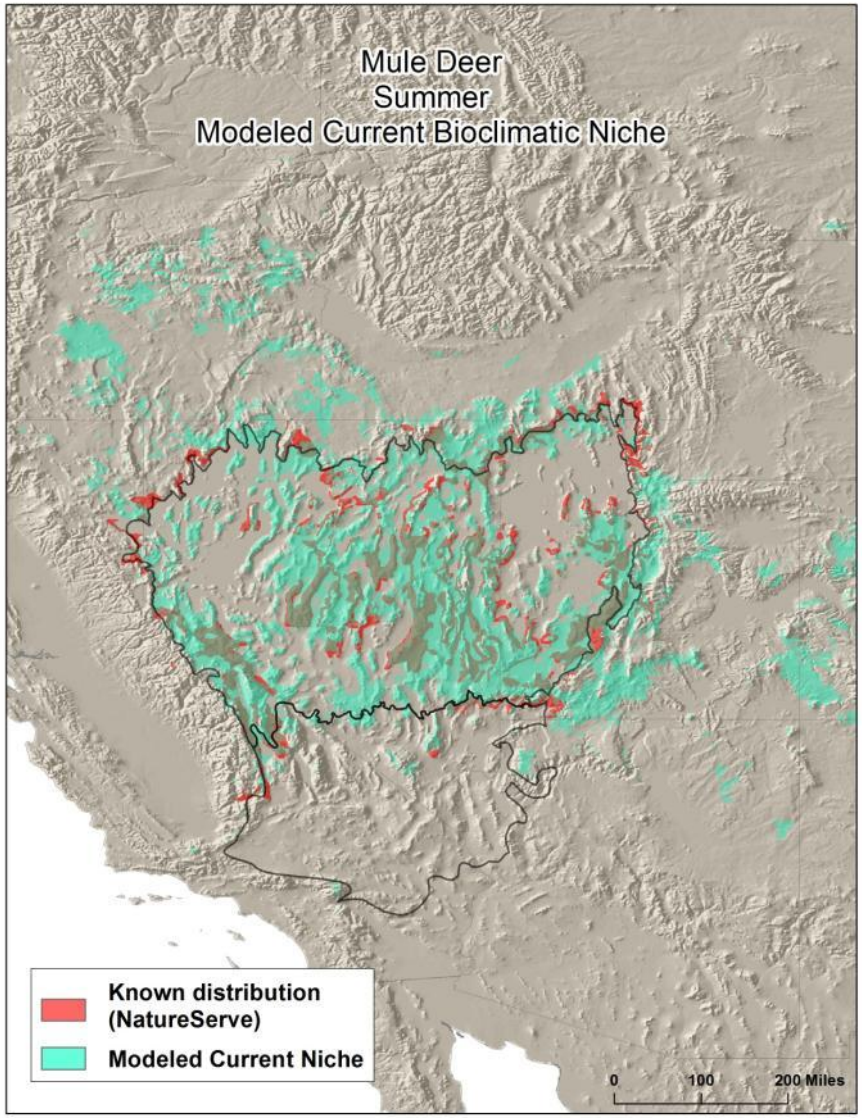

Mule Deer
Summer
Modeled Current Bioclimatic Niche
Modeled Current Niche

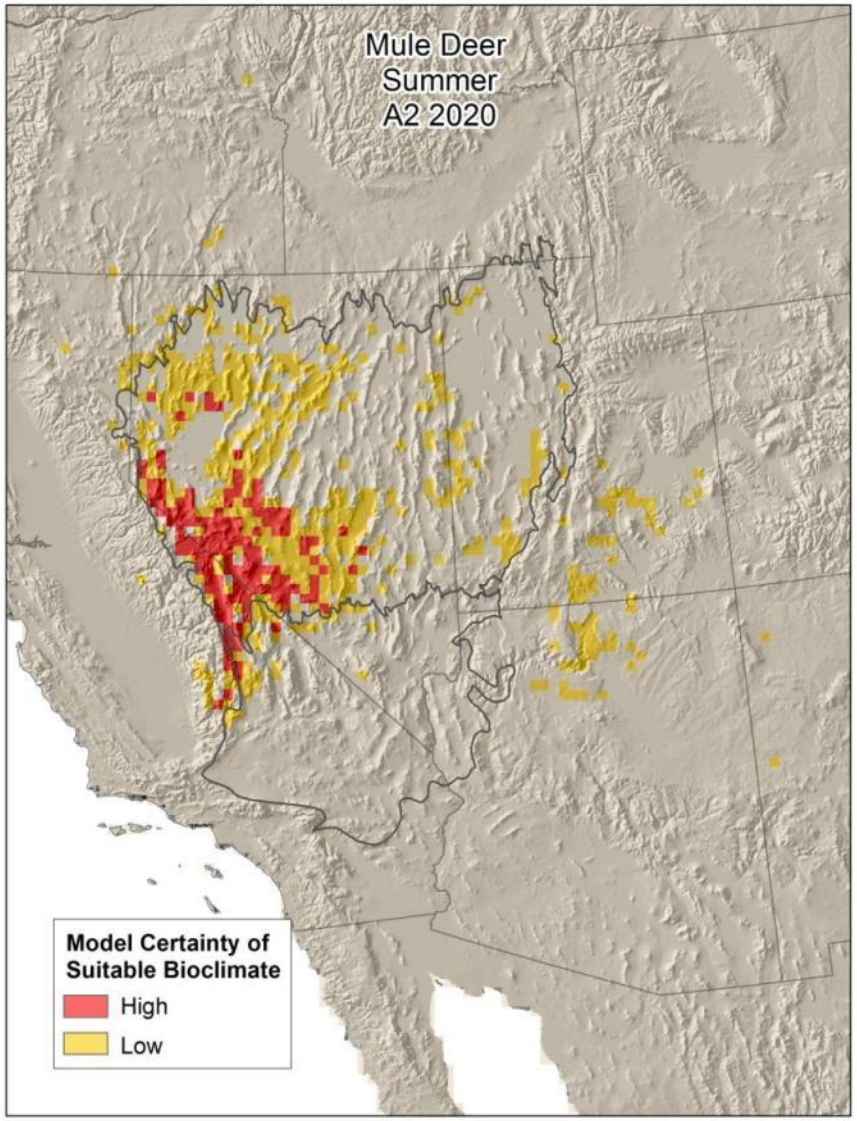

Mule Deer
Summer
Modeled Current Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles

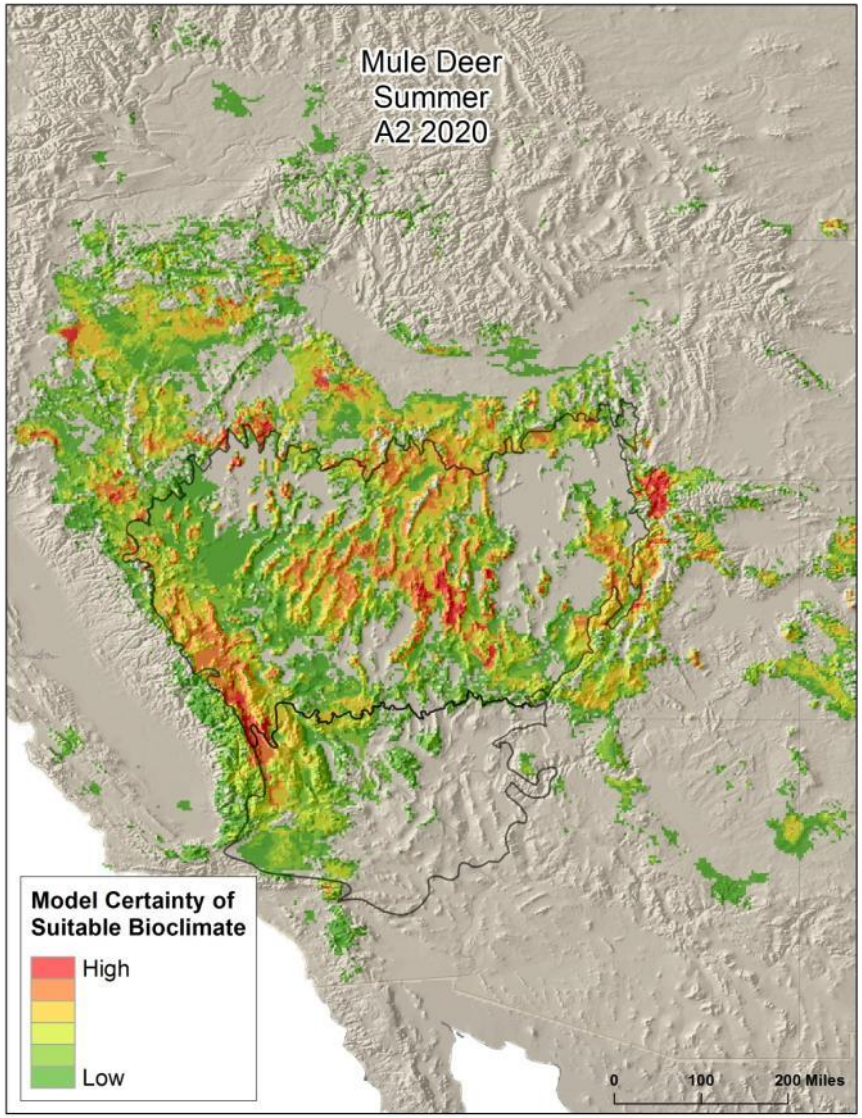

Mule Deer
Summer
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche

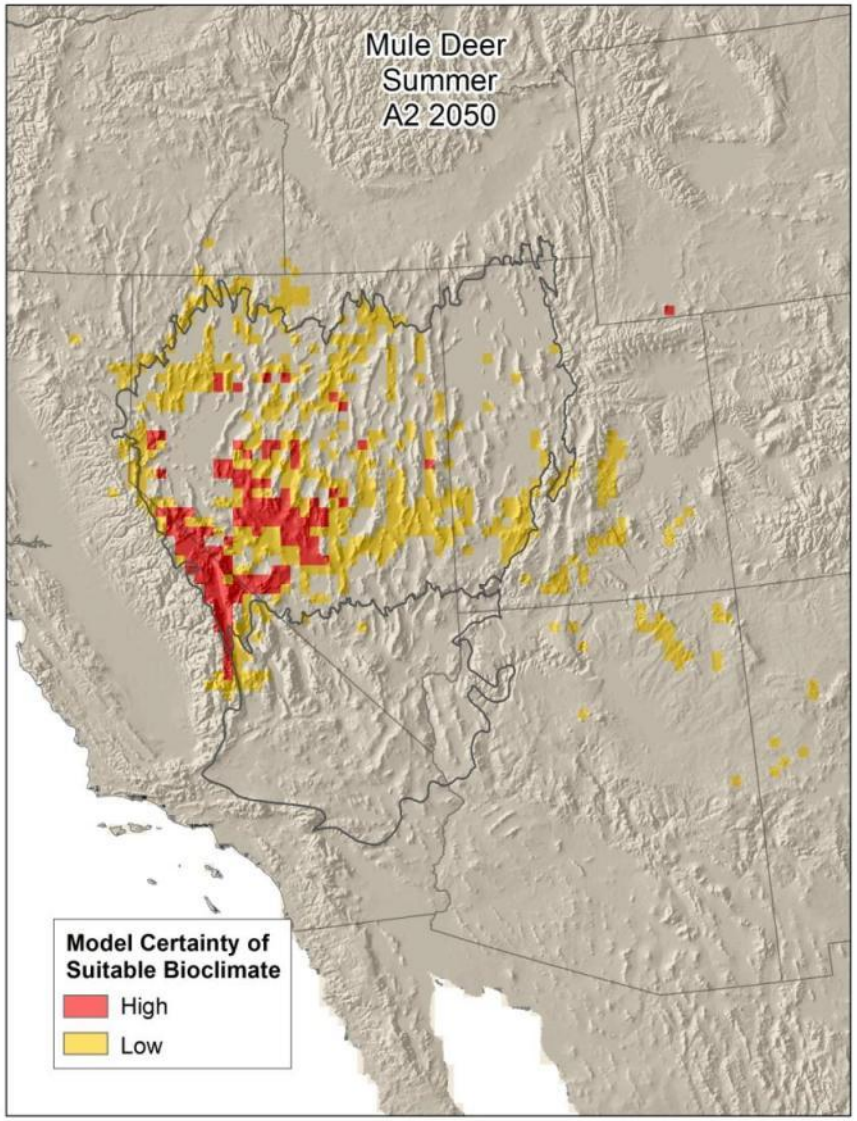

Mule Deer
Summer
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles

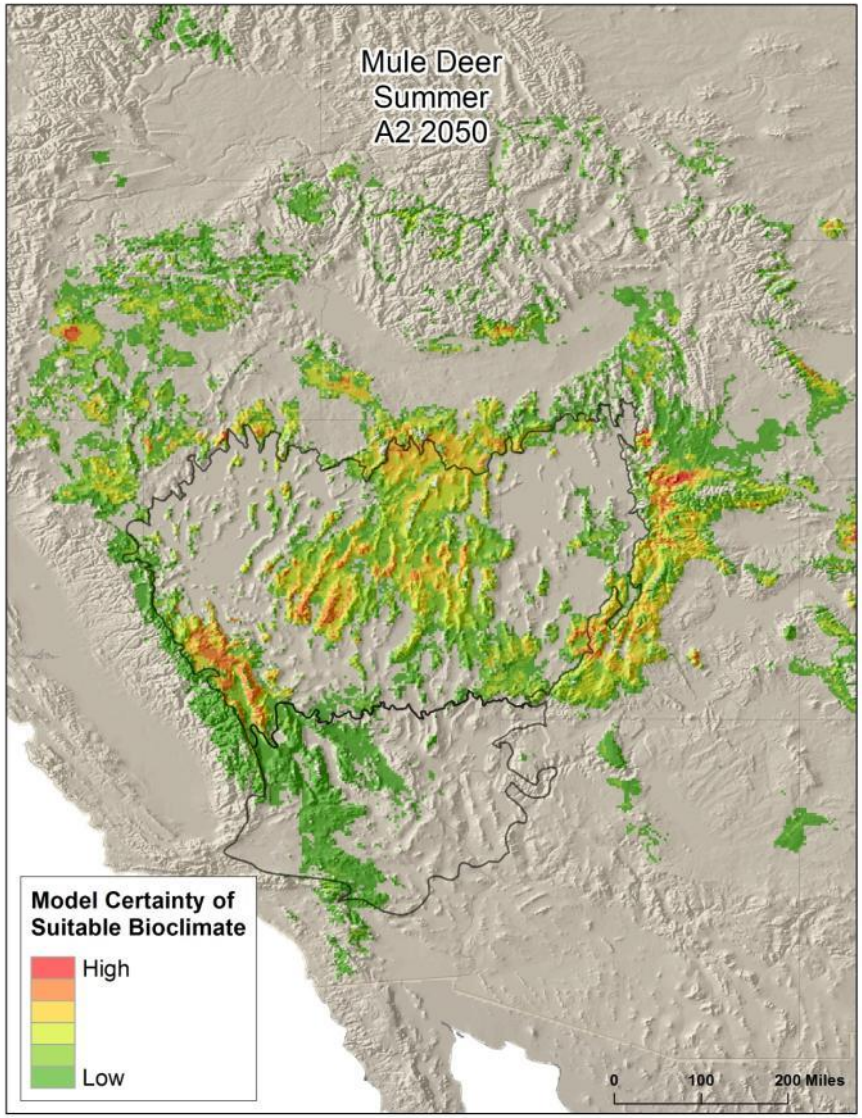

Mule Deer
Summer
Modeled Current Bioclimatic Niche
Known distribution
(NatureServe)
Modeled Current Niche

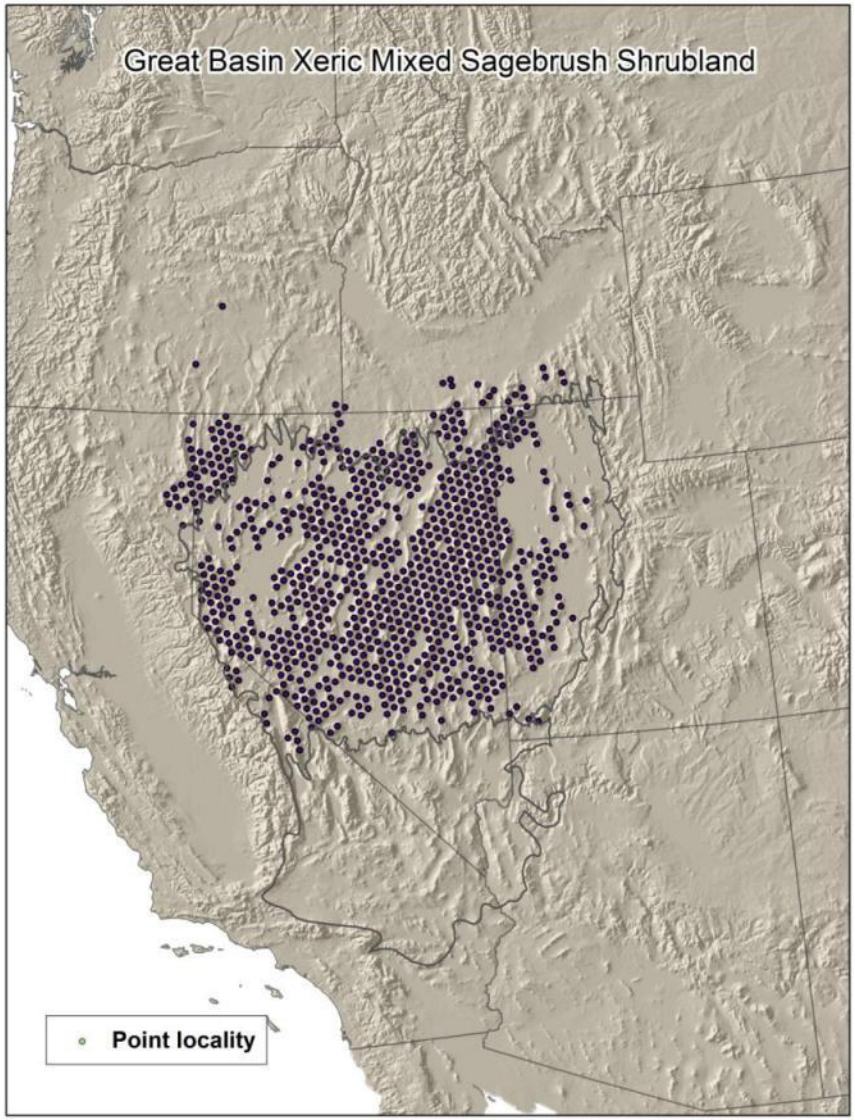

Mule Deer
Summer
Modeled Current Bioclimatic Niche
Known distribution
(NatureServe)
Modeled Current Niche
0
100
200 Miles

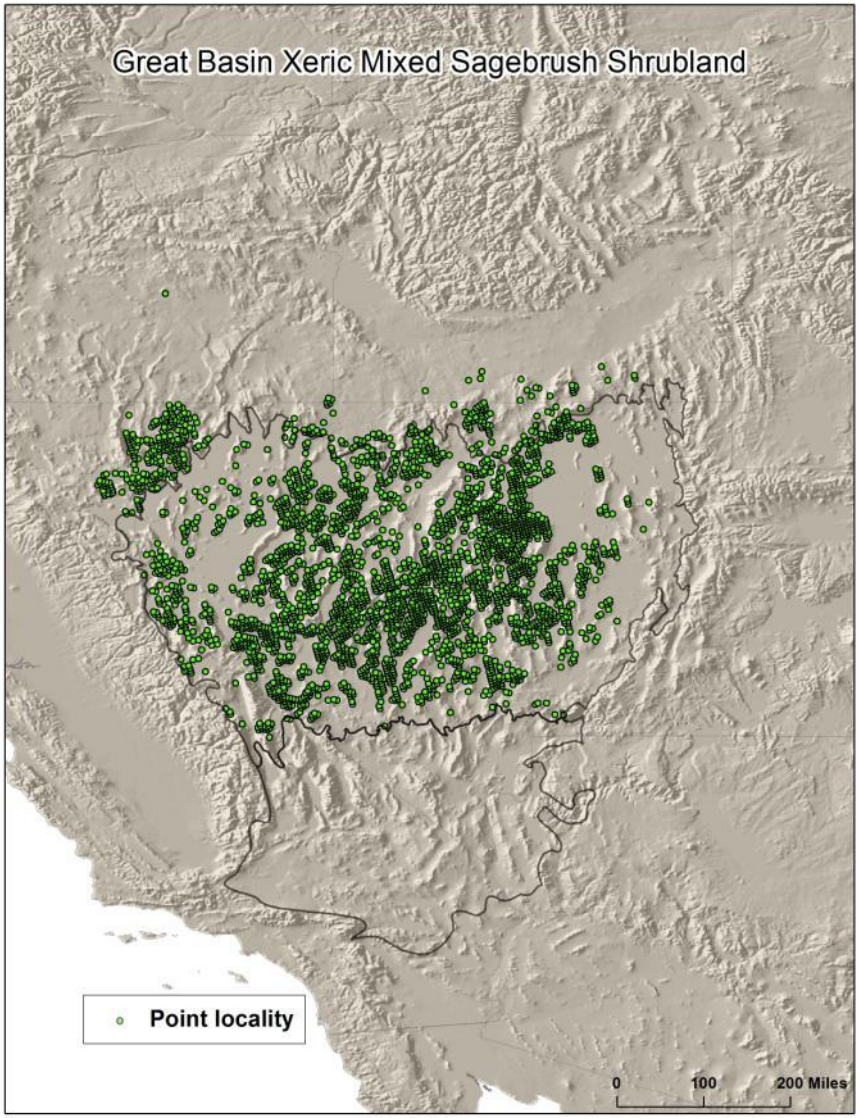

Mule Deer
Summer
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low

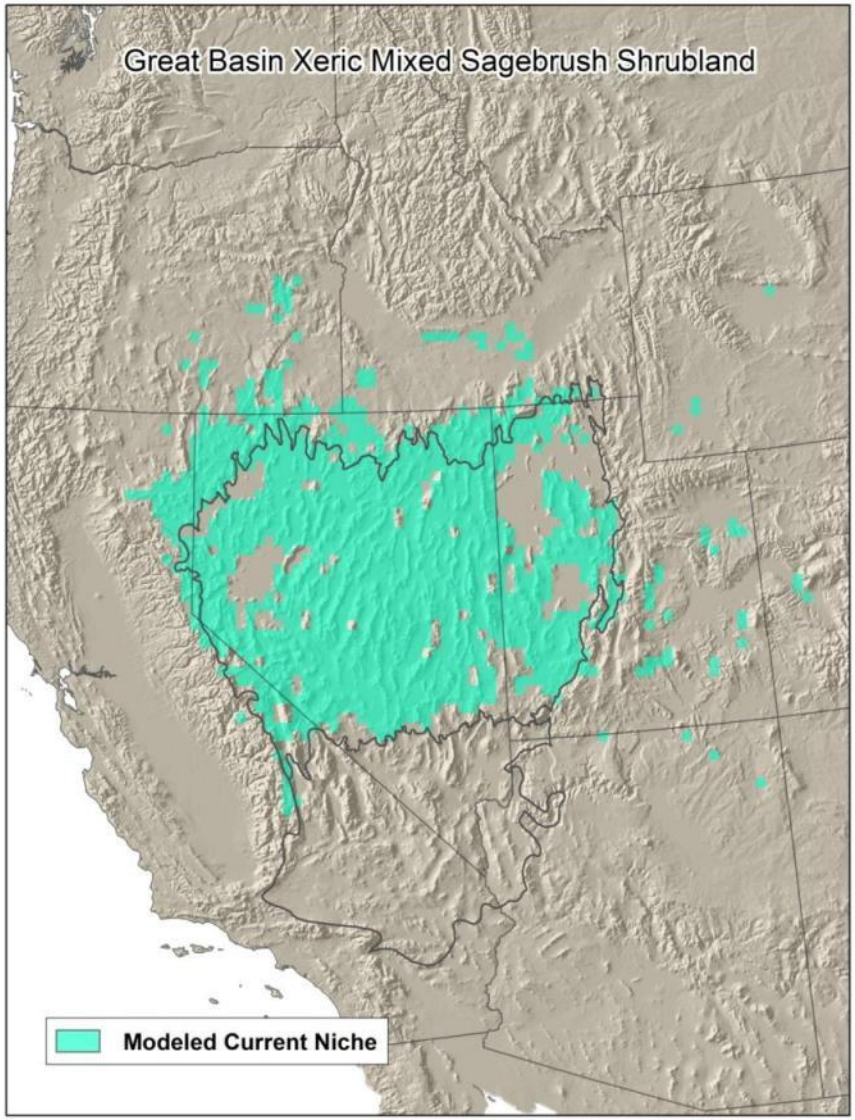

Mule Deer
Summer
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles

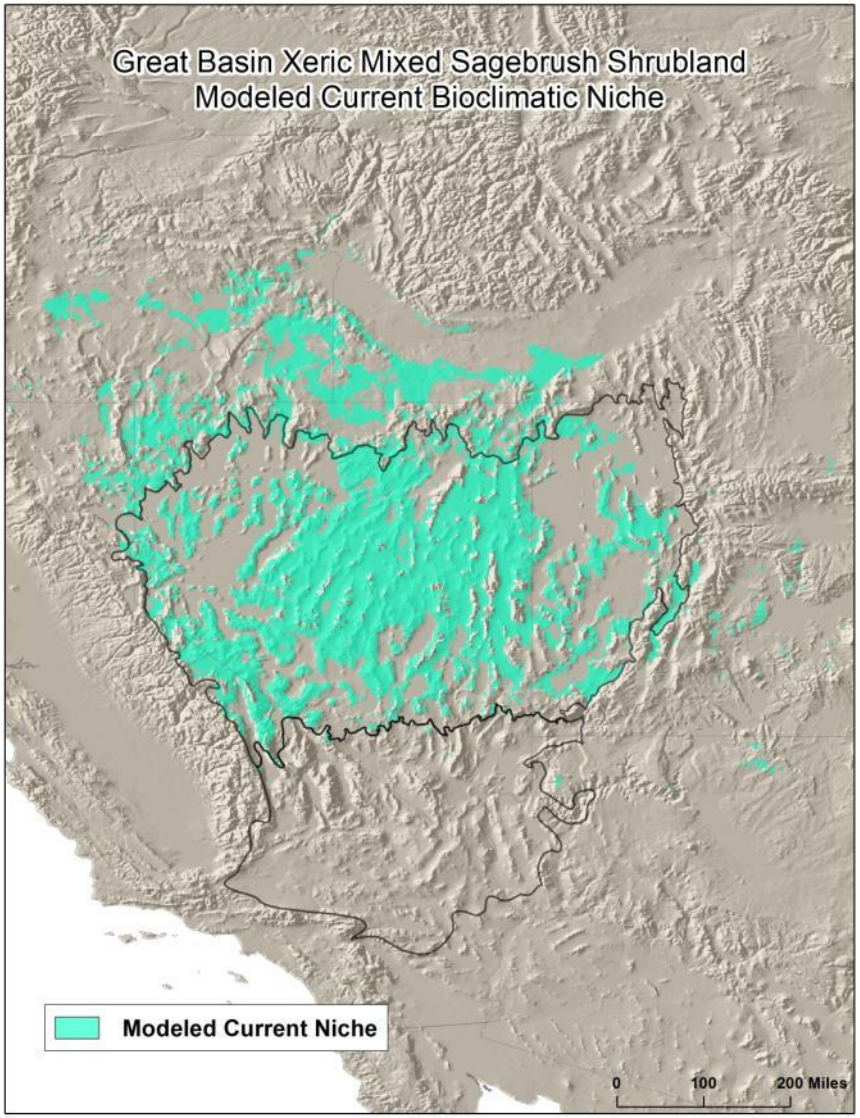

Mule Deer
Summer
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low


Mule Deer
Summer
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles


Great Basin Xeric Mixed Sagebrush Shrubland
Point locality

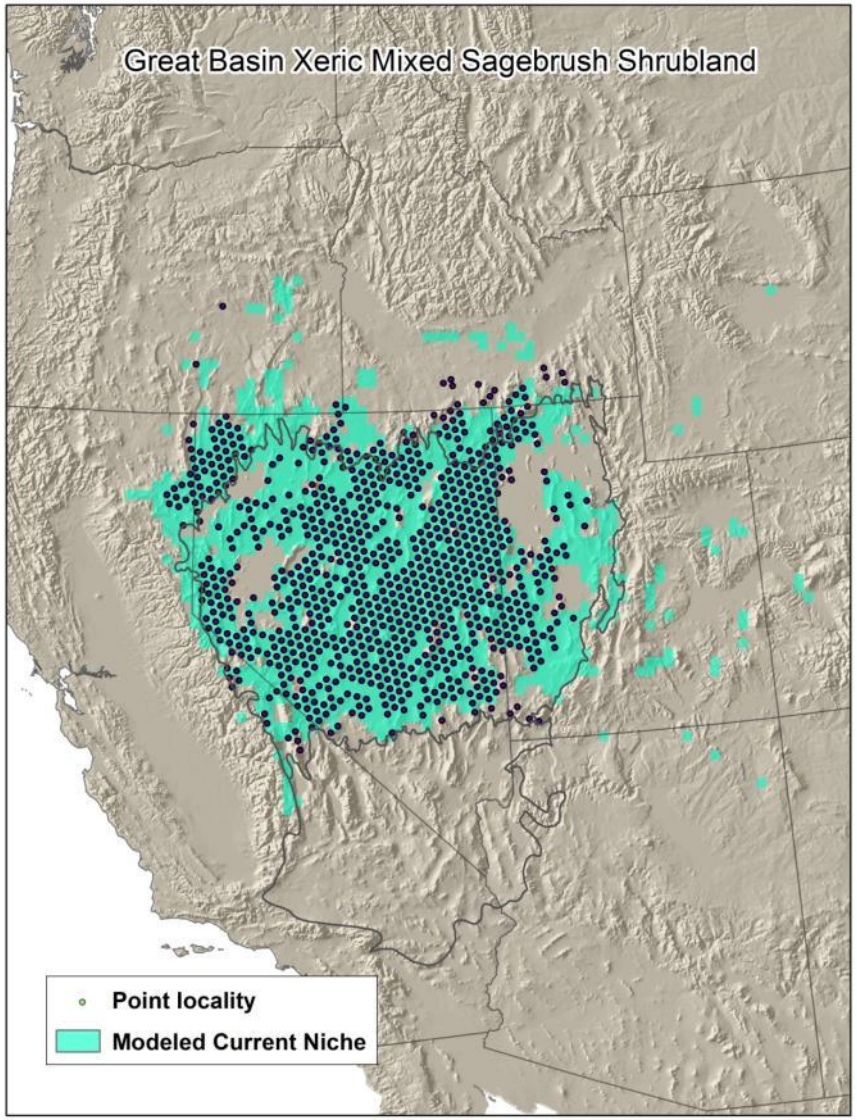

Great Basin Xeric Mixed Sagebrush Shrubland
Point locality
0
100
200 Miles

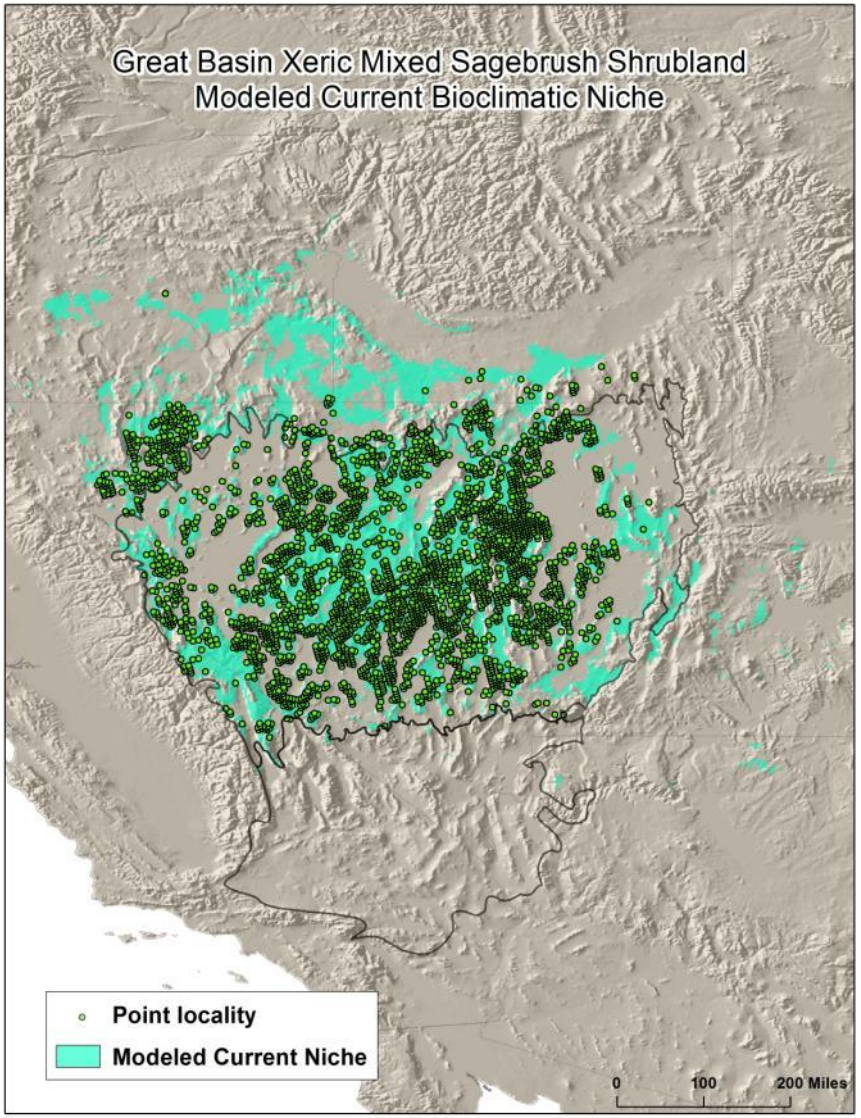


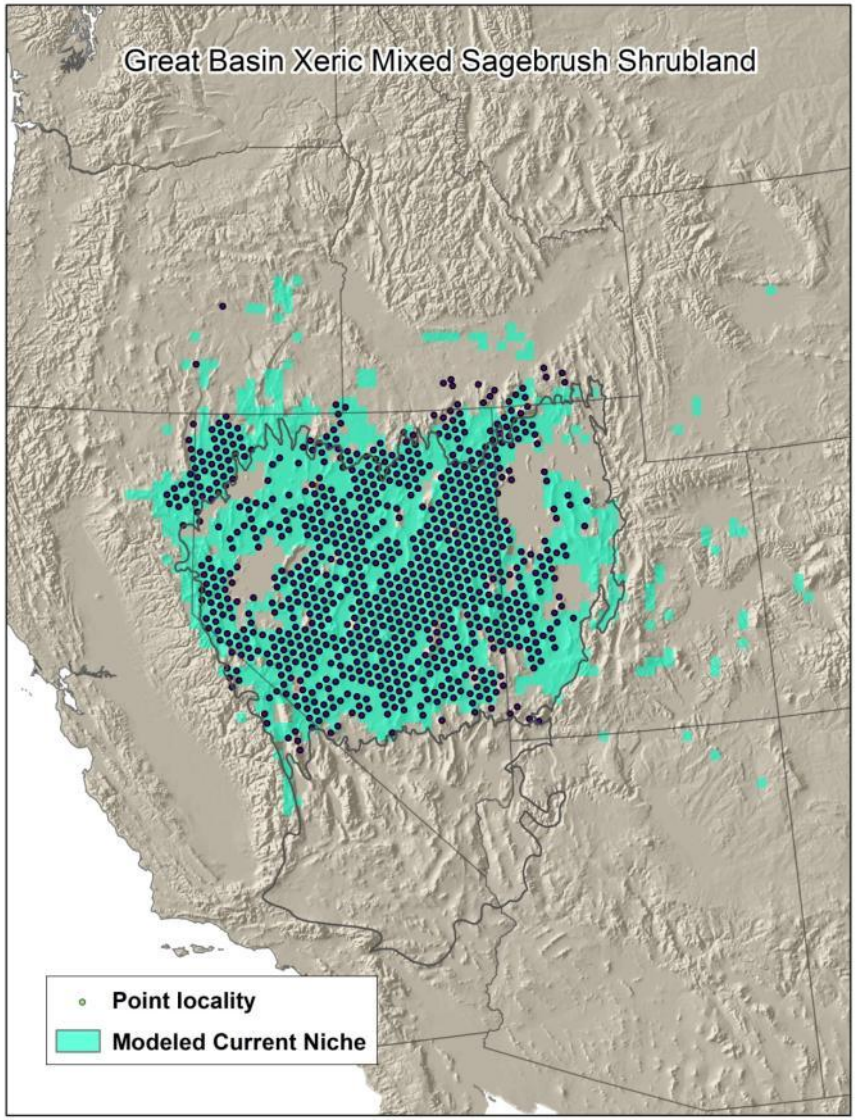


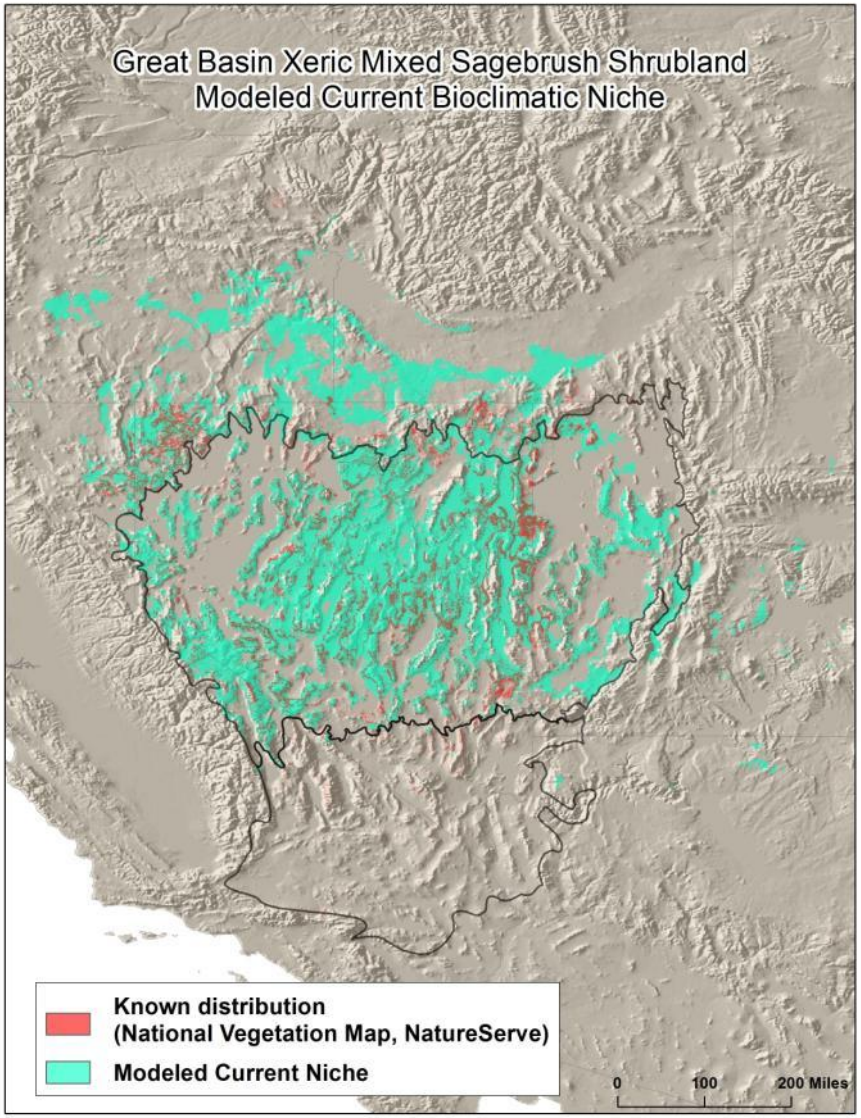
BLM

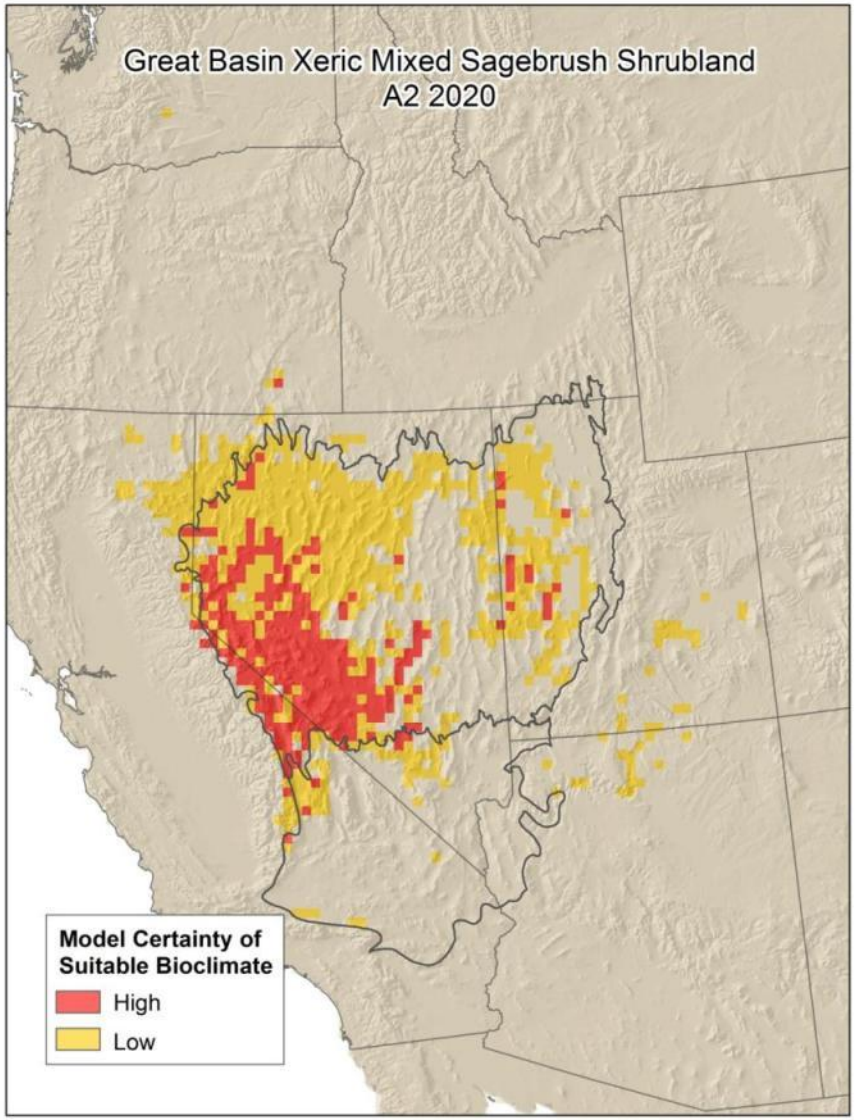
Rapid Ecoregional Assessment

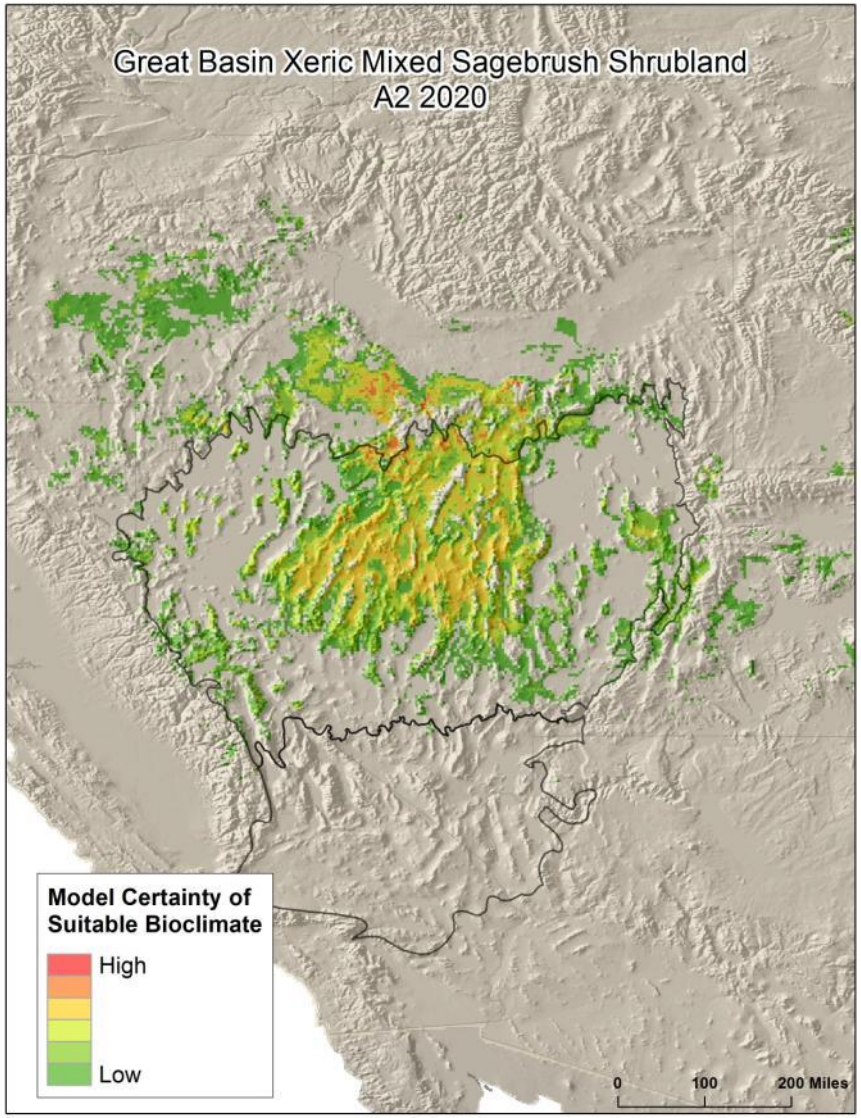

Great Basin Xeric Mixed Sagebrush Shrubland
Point locality
Modeled Current Niche

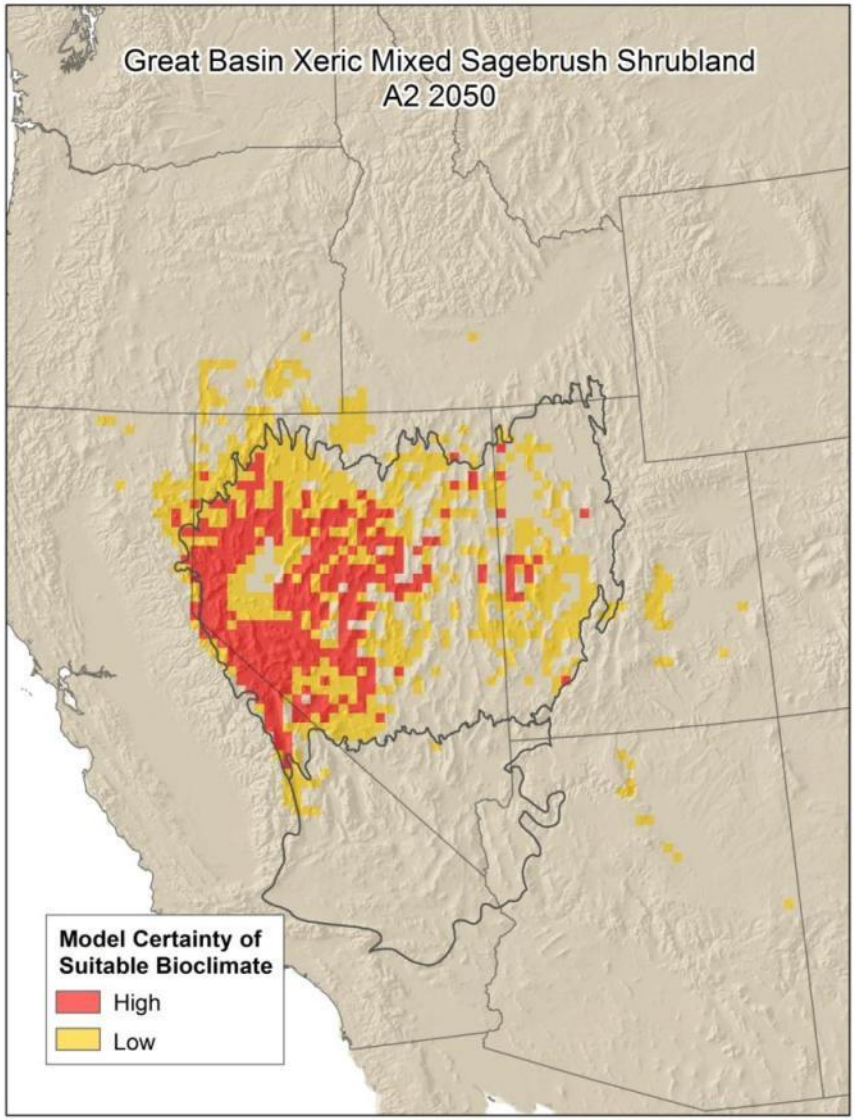

Great Basin Xeric Mixed Sagebrush Shrubland
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles

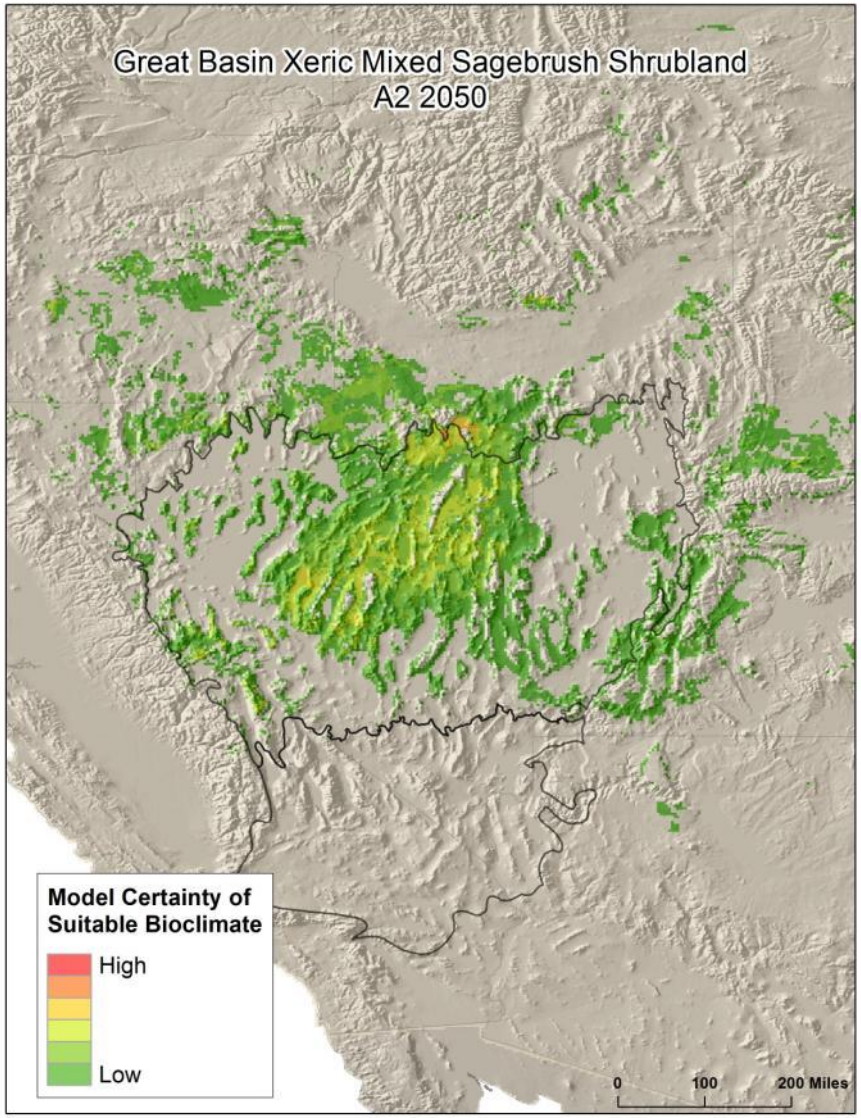

Great Basin Xeric Mixed Sagebrush Shrubland
Point locality
Modeled Current Niche


Great Basin Xeric Mixed Sagebrush Shrubland
Modeled Current Bioclimatic Niche
Known distribution
(National Vegetation Map, NatureServe)
Modeled Current Niche
0
100
200 Miles

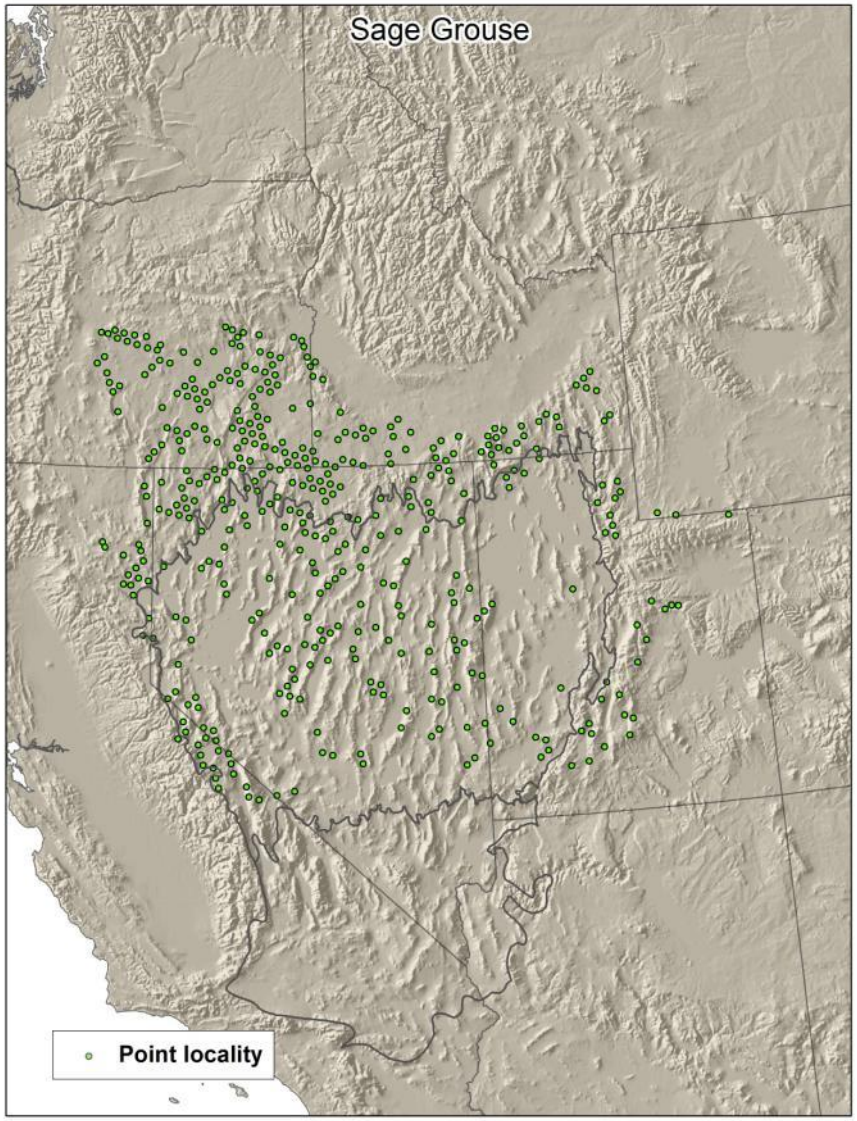

Great Basin Xeric Mixed Sagebrush Shrubland
A2 2020
Model Certainty of Suitable Bioclimate
High
Low

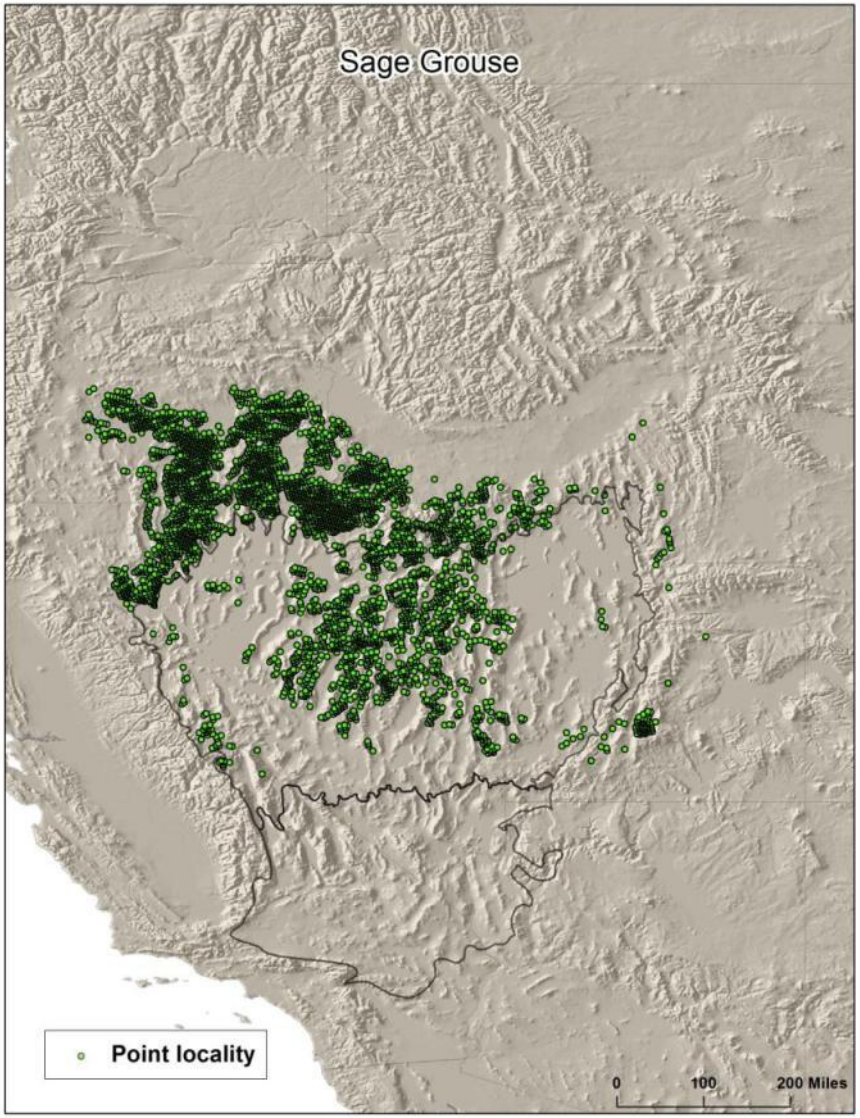

Great Basin Xeric Mixed Sagebrush Shrubland
A2 2020
Model Certainty of Suitable Bioclimate
High
Low
0
100
200 Miles

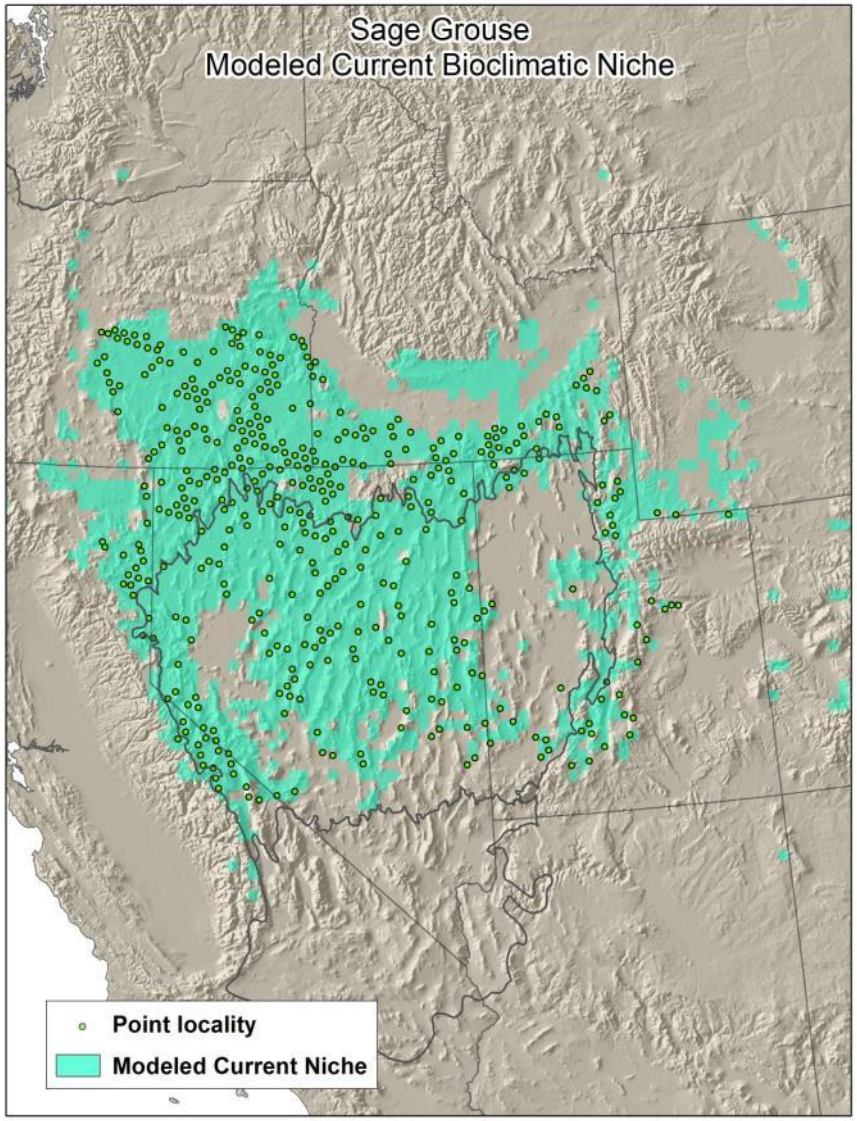


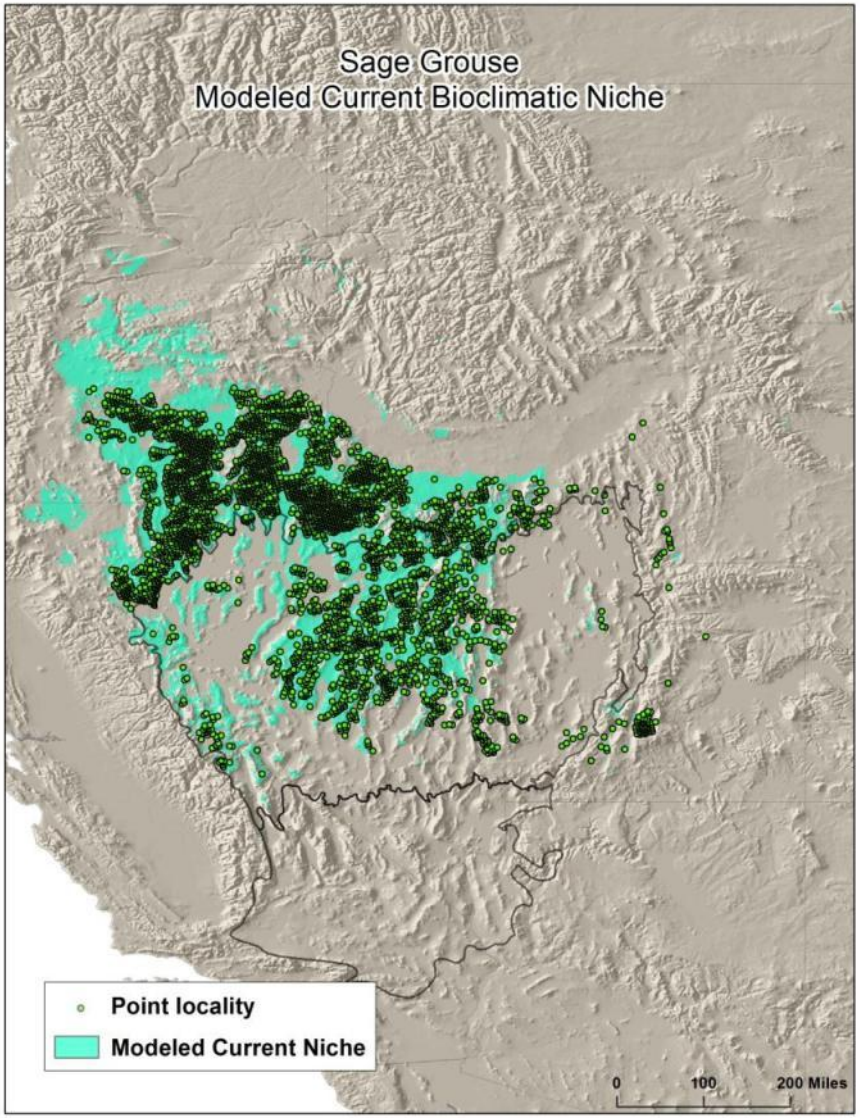


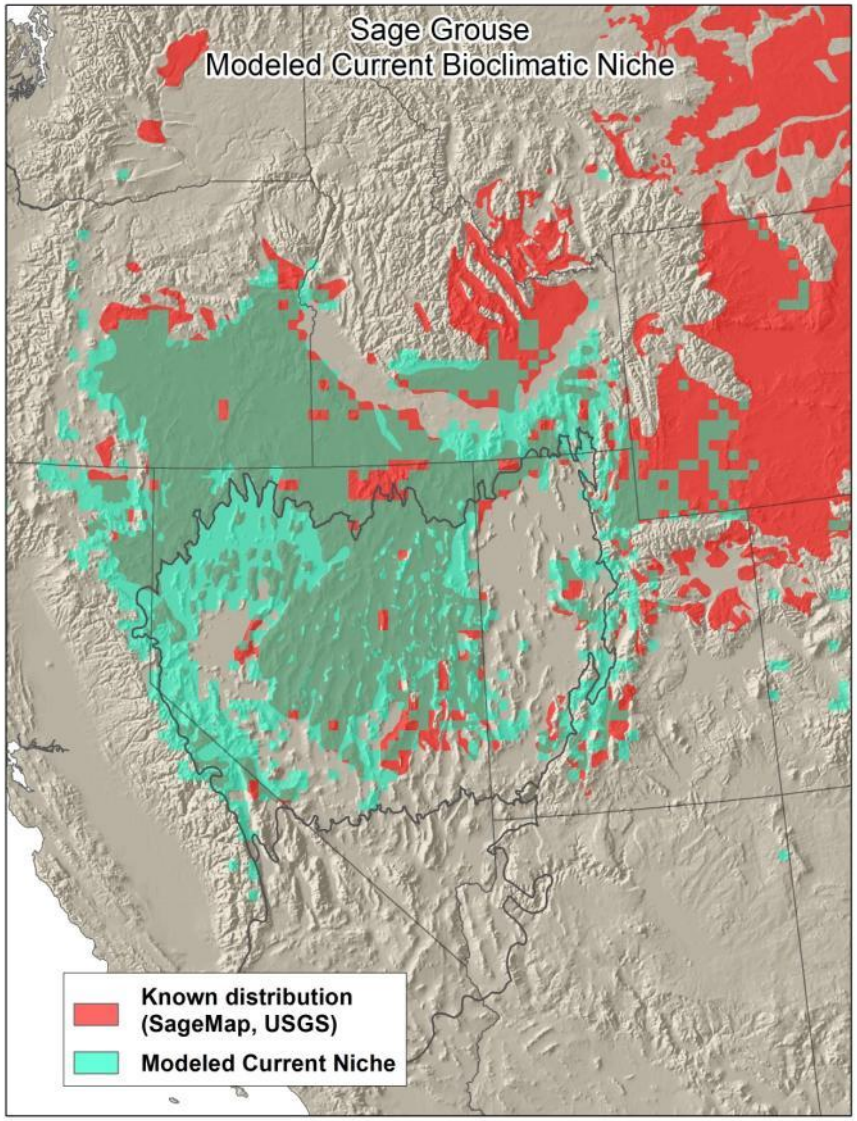
BLM
Rapid Ecoregional Assessment

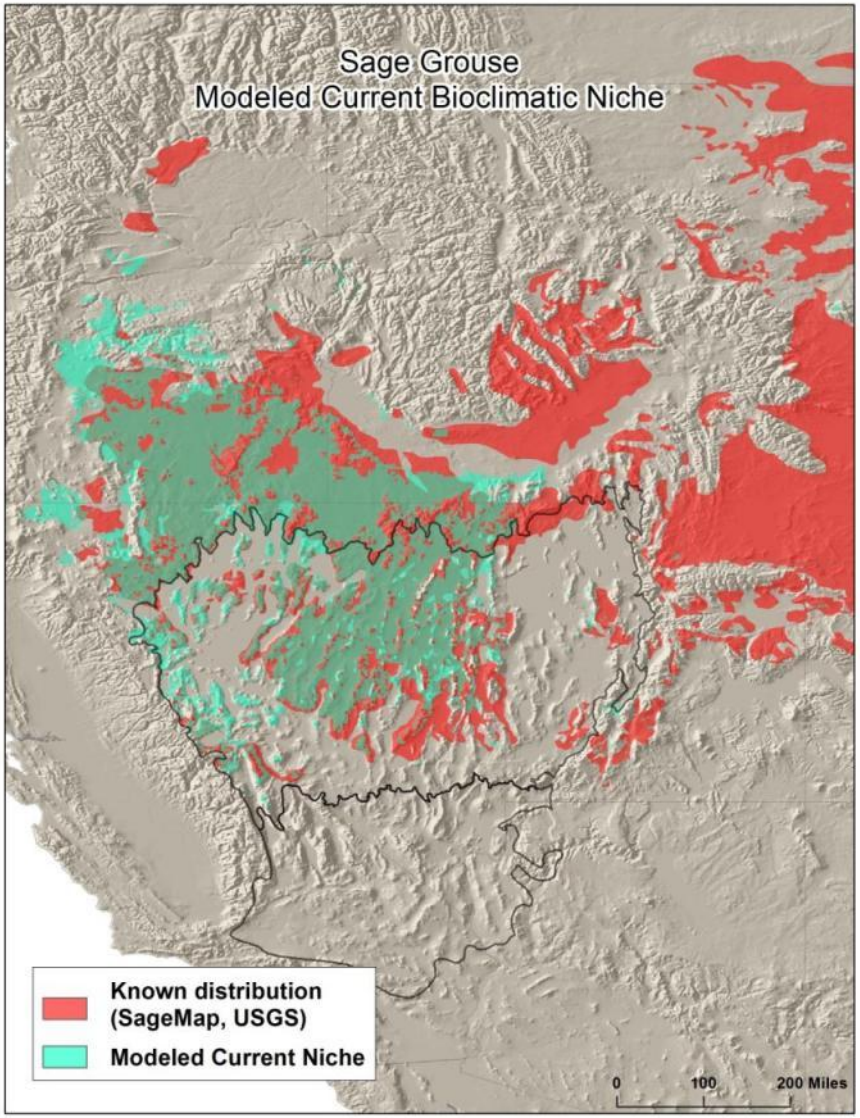

Sage Grouse
Point locality

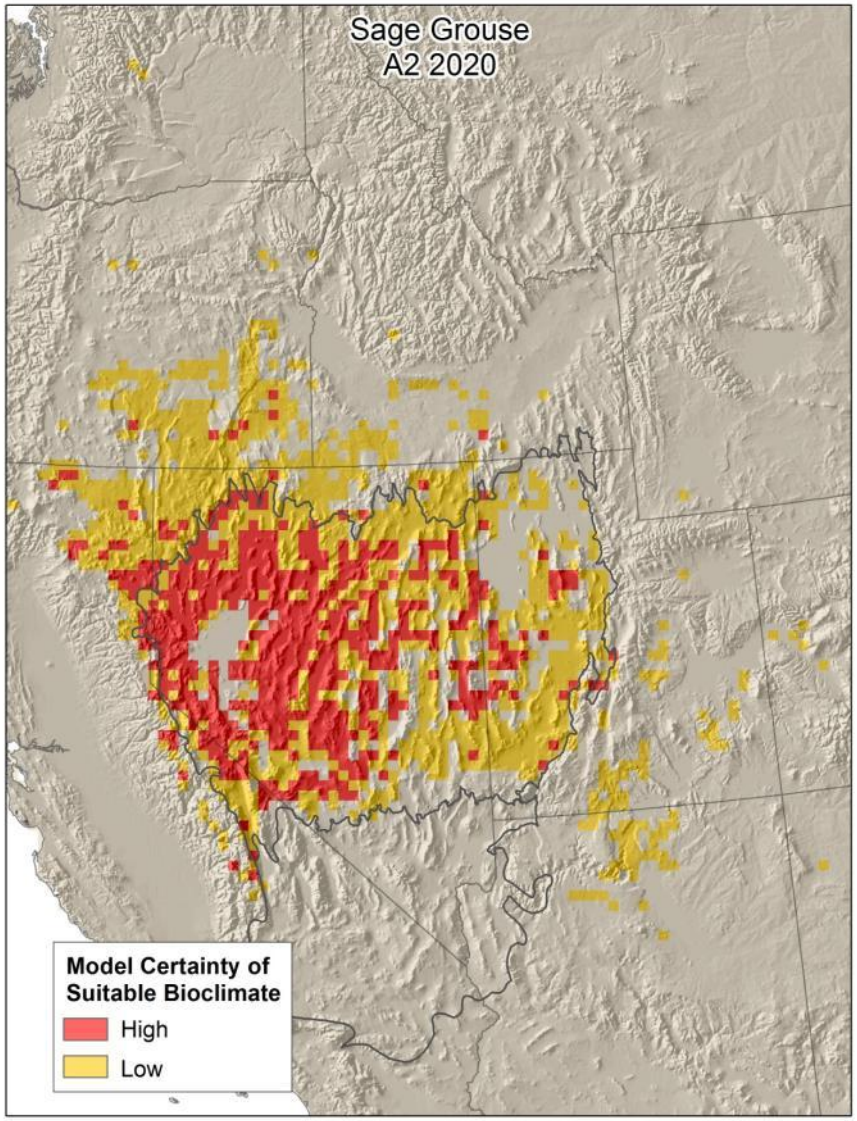

Sage Grouse
Point locality
0
100
200 Miles

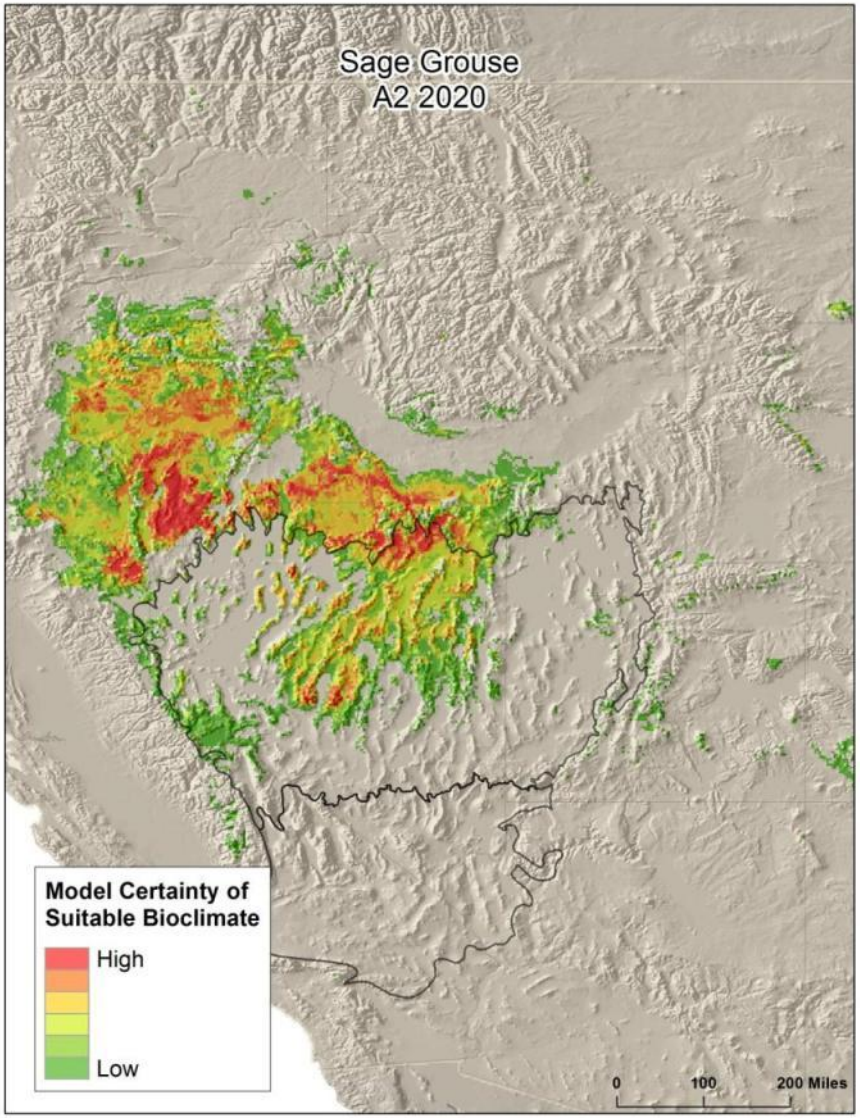

Sage Grouse
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche

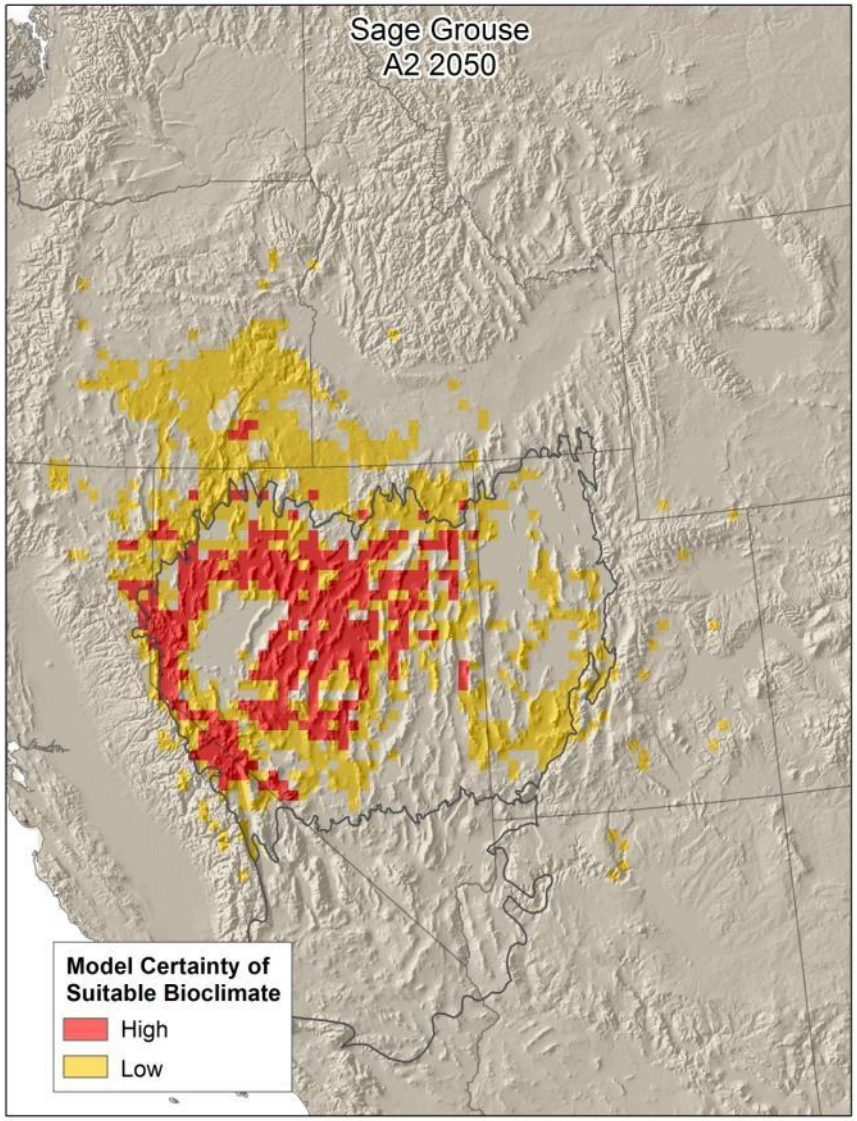

Sage Grouse
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles

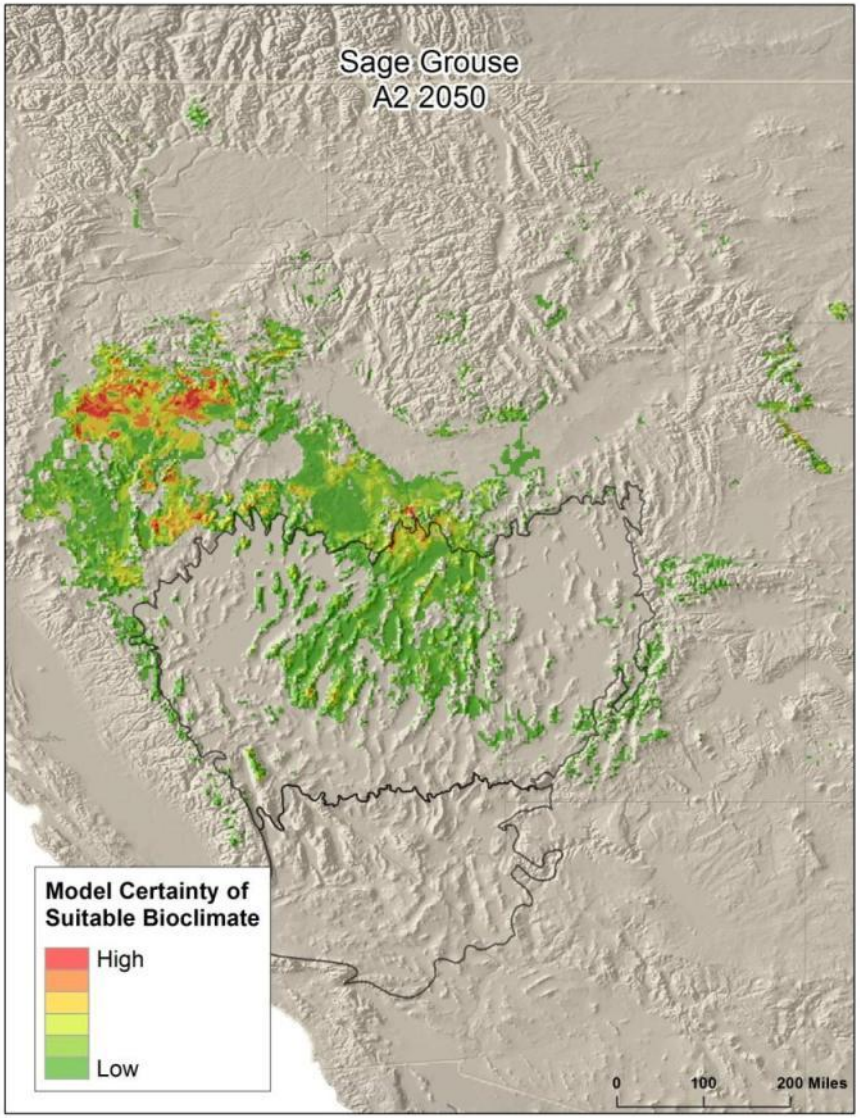

Sage Grouse
Modeled Current Bioclimatic Niche
Known distribution
(SageMap, USGS)
Modeled Current Niche

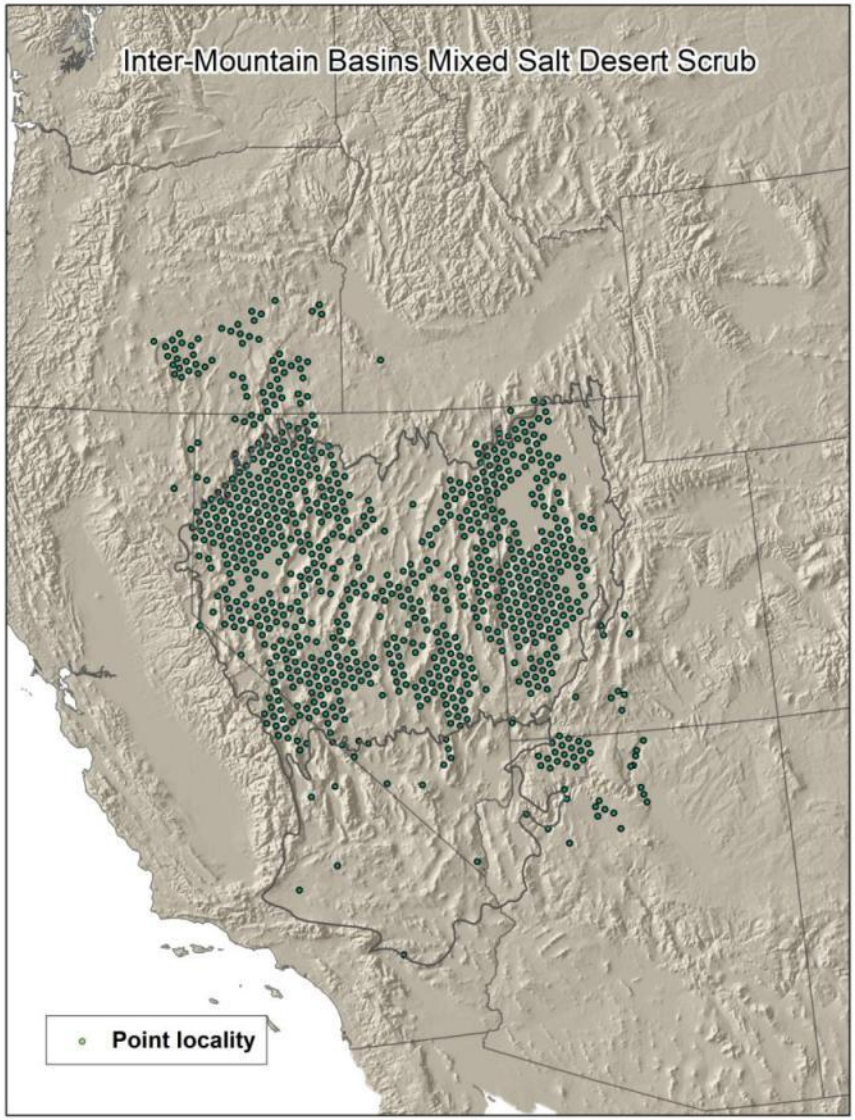

Sage Grouse
Modeled Current Bioclimatic Niche
Known distribution
(SageMap, USGS)
Modeled Current Niche
0
100
200 Miles

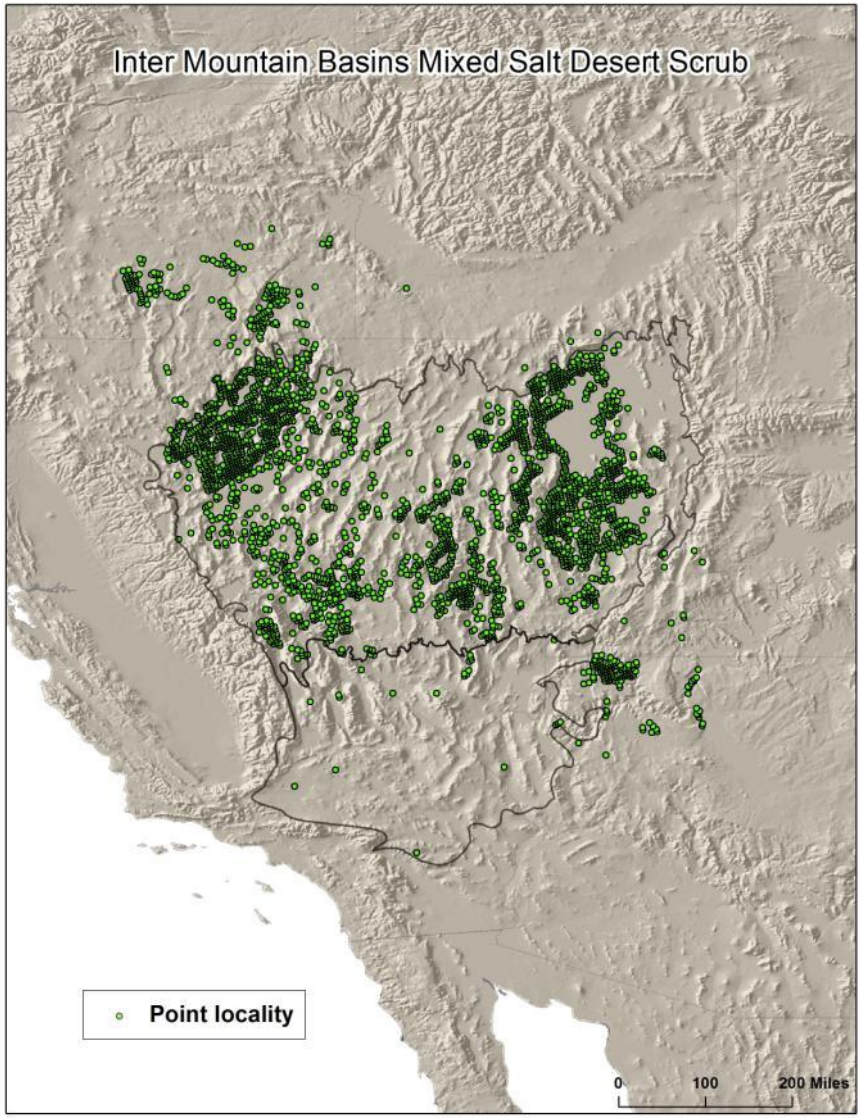

Sage Grouse
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low

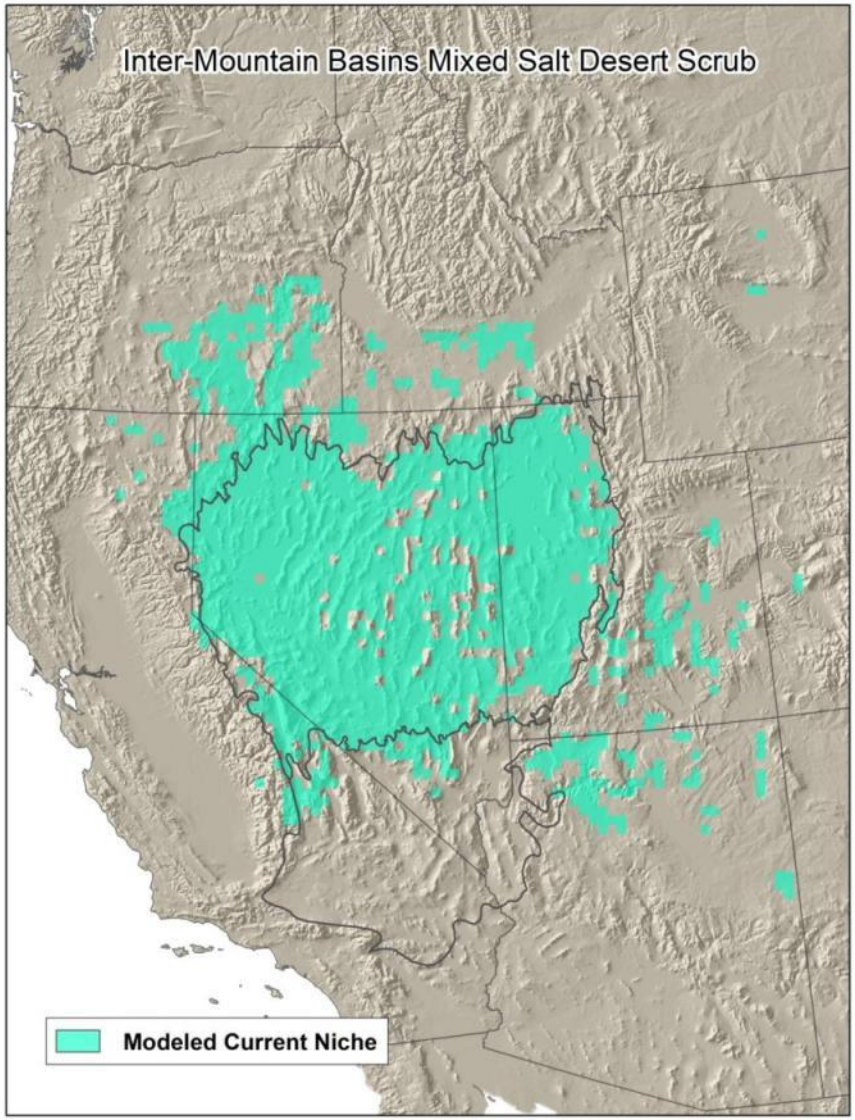

Sage Grouse
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles

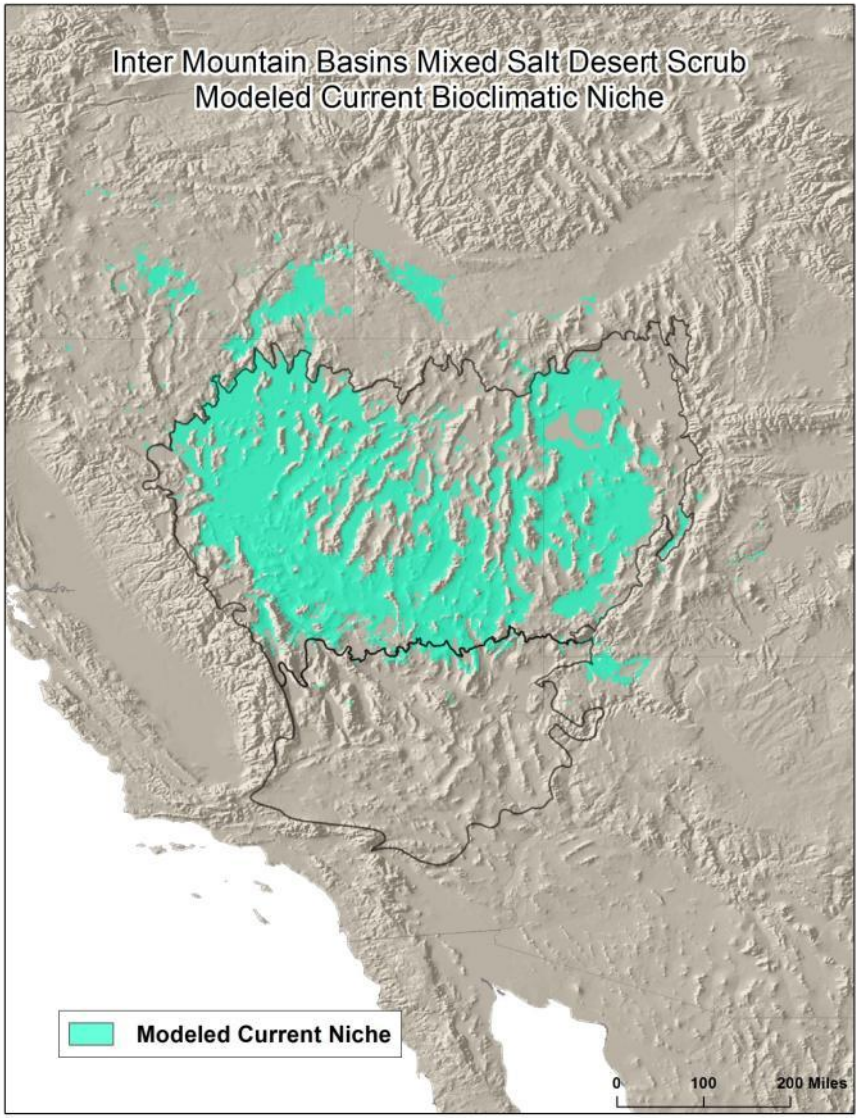

Sage Grouse
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low

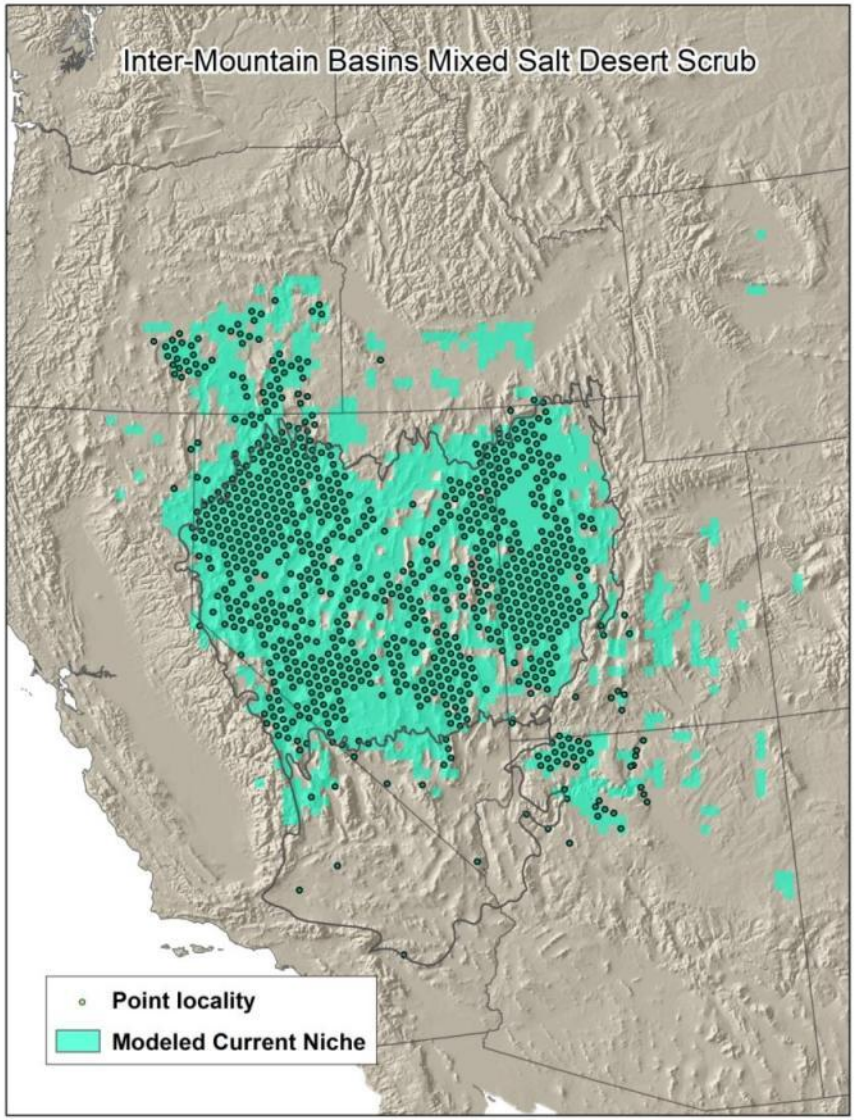

Sage Grouse
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles

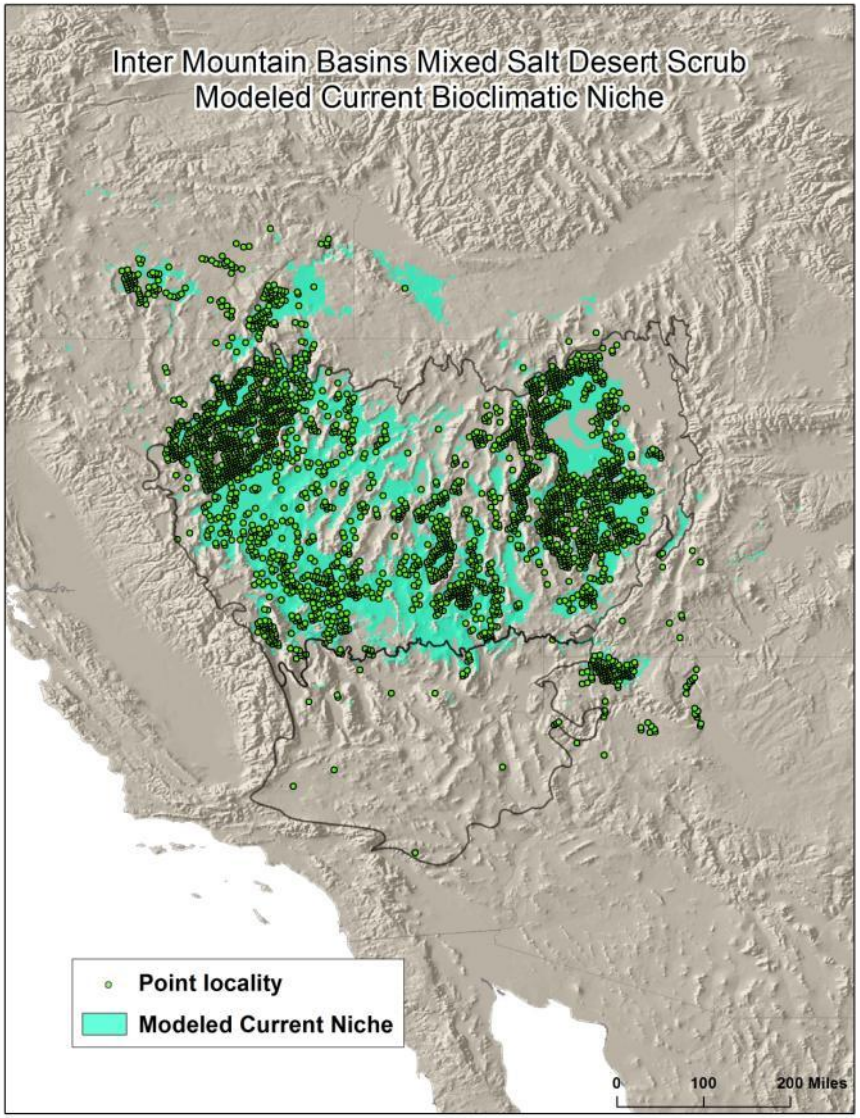

Inter-Mountain Basins Mixed Salt Desert Scrub
Point locality

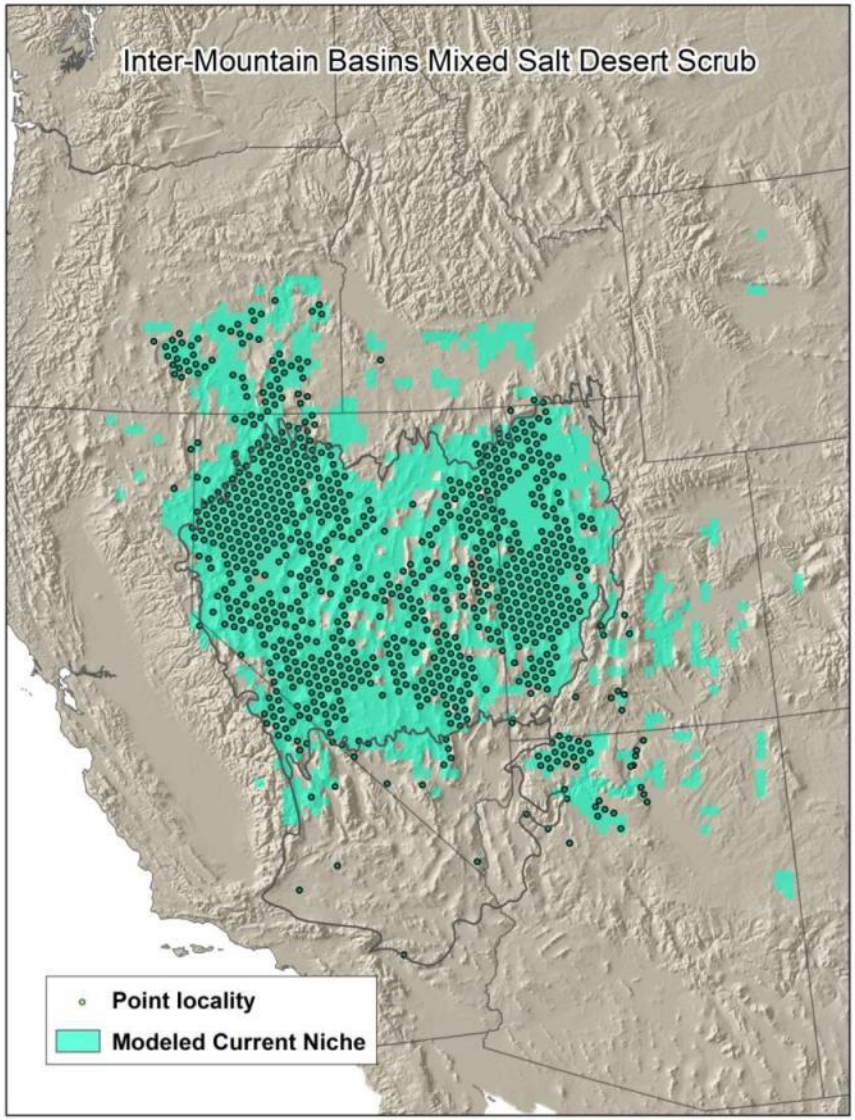

Inter Mountain Basins Mixed Salt Desert Scrub
Point locality
0
100
200 Miles

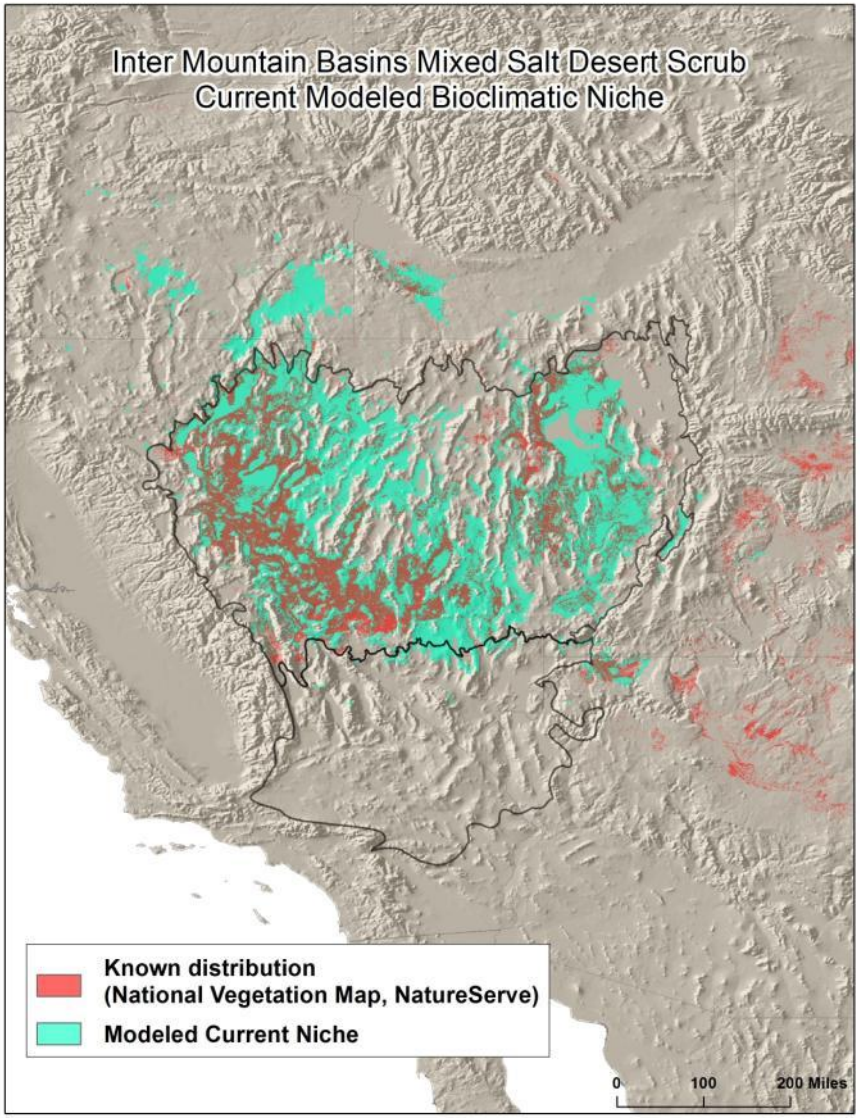

Inter-Mountain Basins Mixed Salt Desert Scrub
Modeled Current Niche

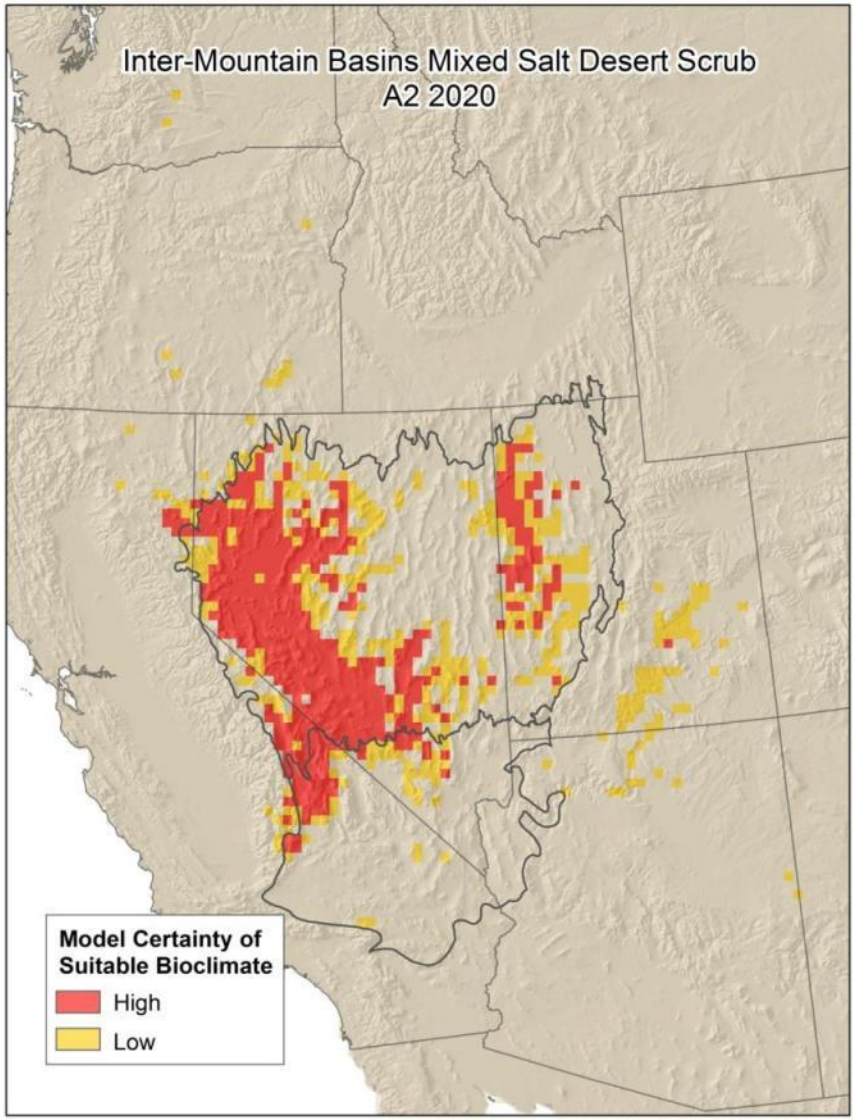

Inter Mountain Basins Mixed Salt Desert Scrub
Modeled Current Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles

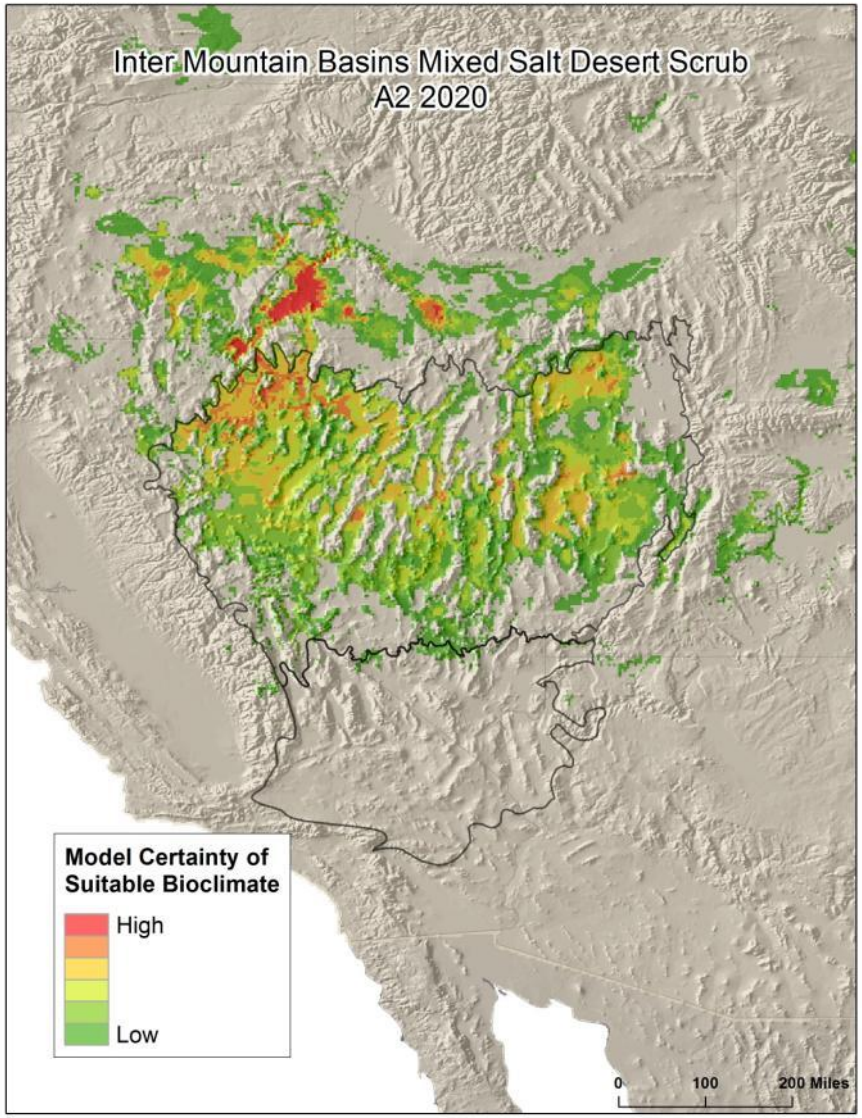

Inter-Mountain Basins Mixed Salt Desert Scrub
Point locality
Modeled Current Niche


Inter Mountain Basins Mixed Salt Desert Scrub
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles


Inter-Mountain Basins Mixed Salt Desert Scrub
Point locality
Modeled Current Niche


Inter Mountain Basins Mixed Salt Desert Scrub
Current Modeled Bioclimatic Niche
Known distribution
(National Vegetation Map, NatureServe)
Modeled Current Niche
0
100
200 Miles





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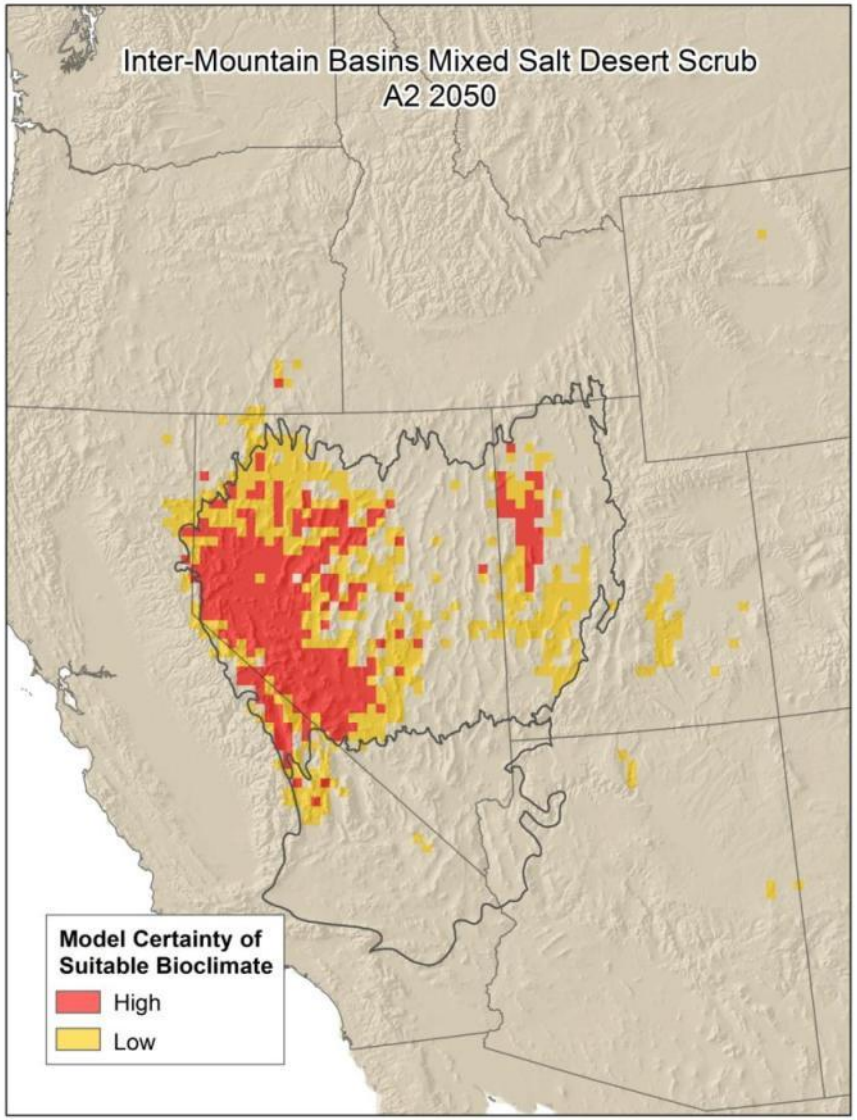

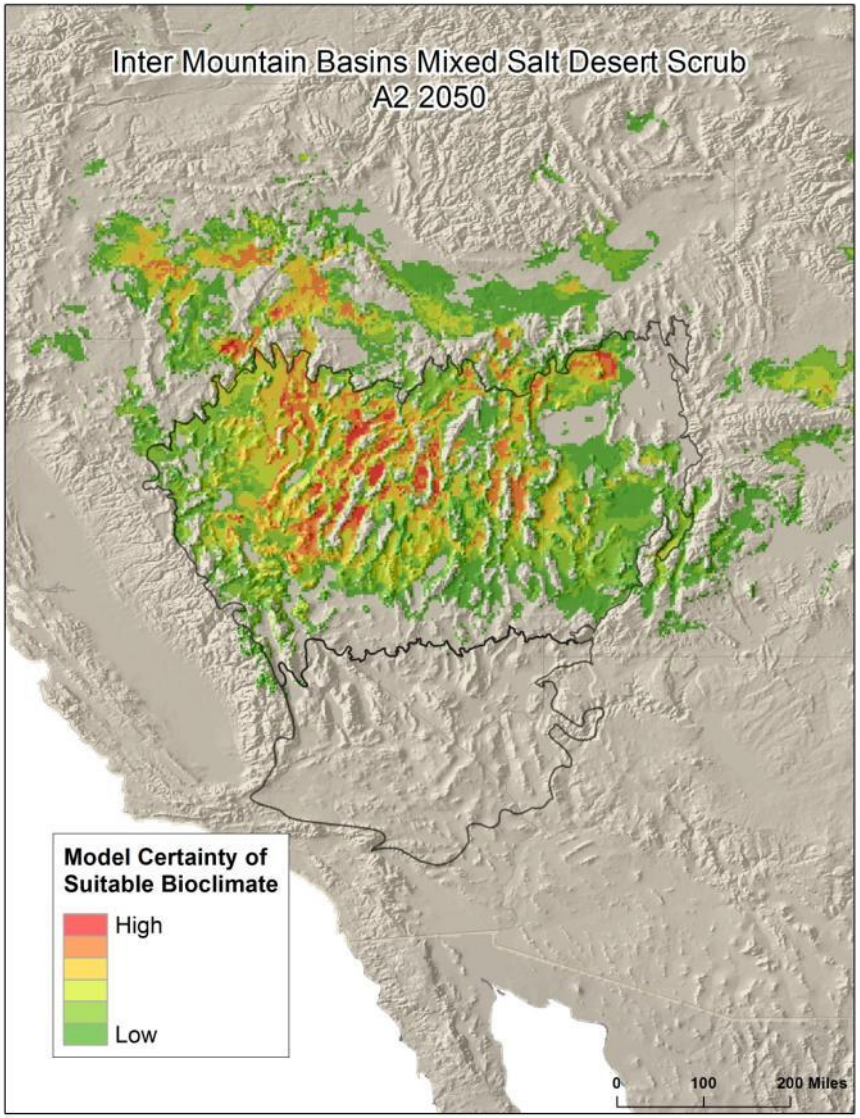

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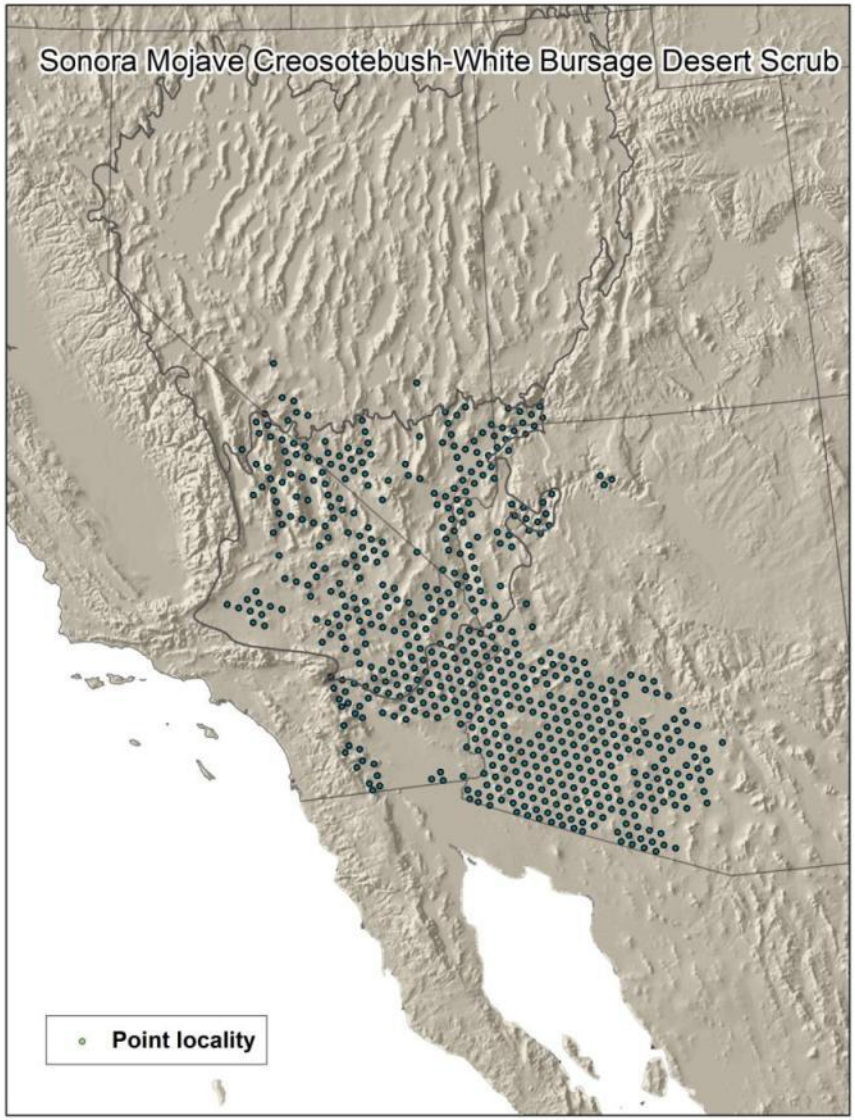
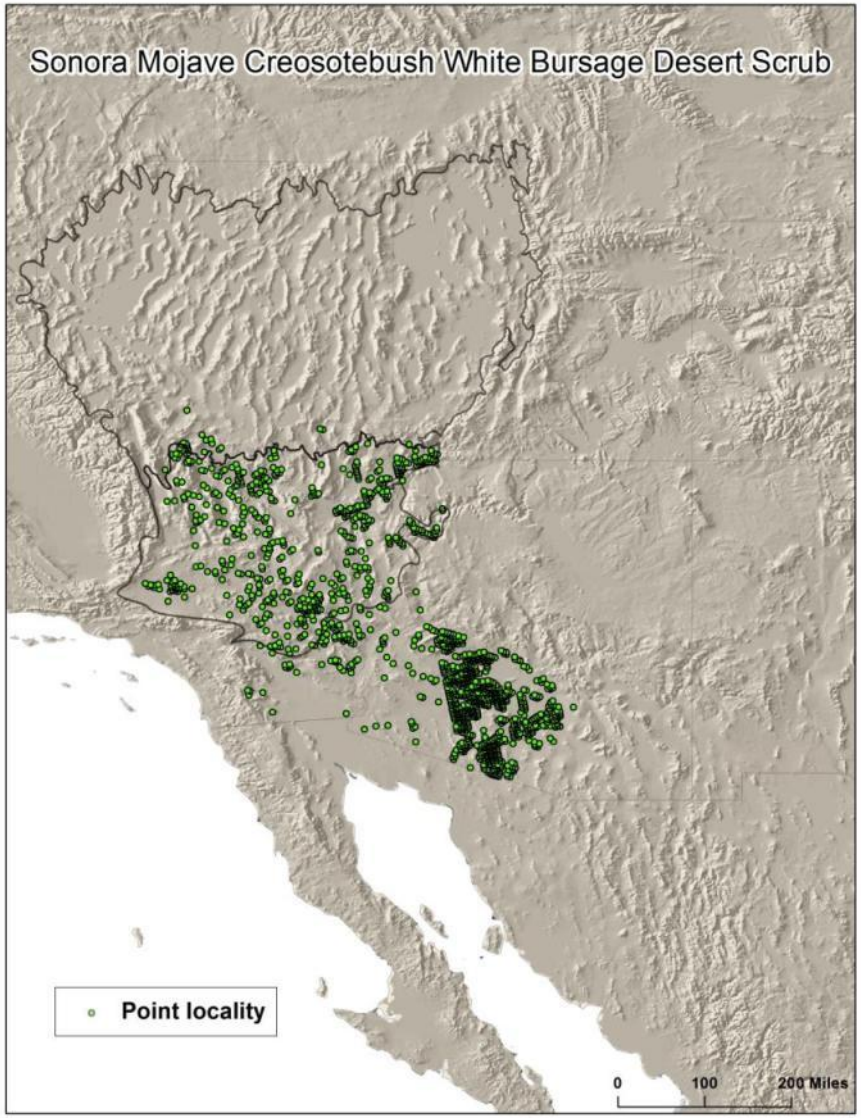
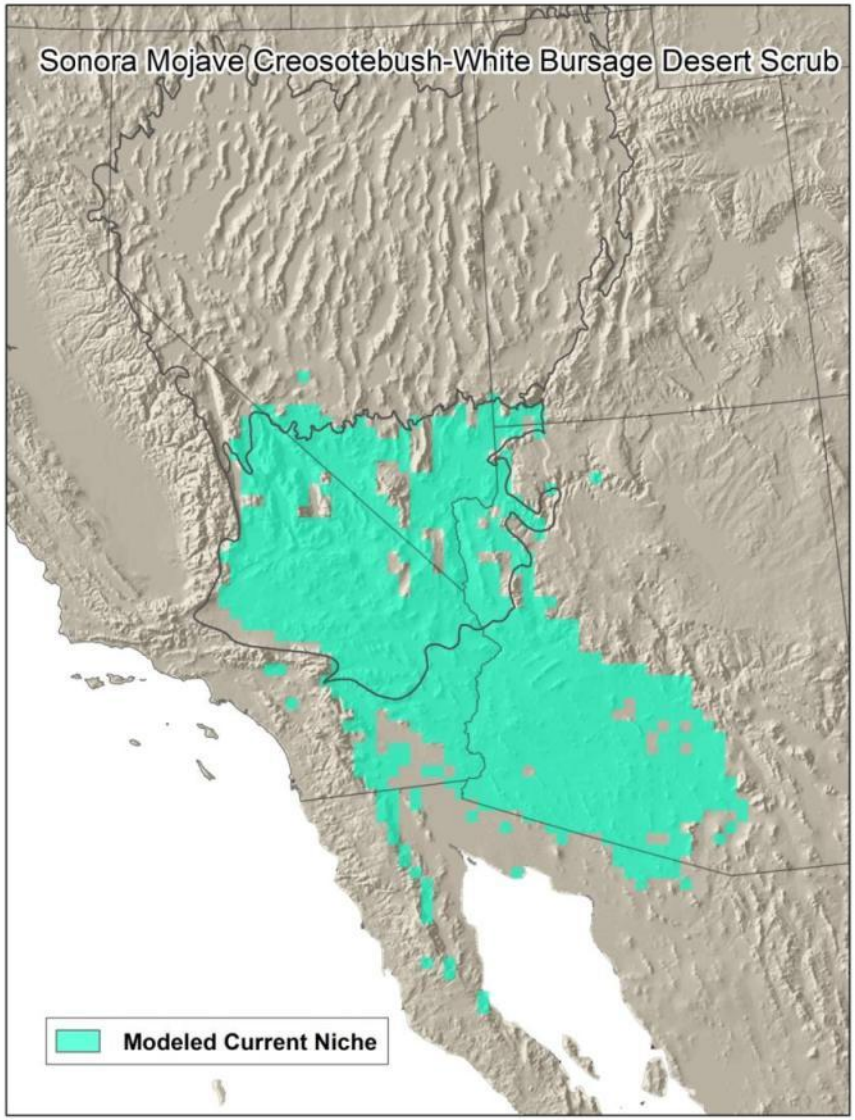
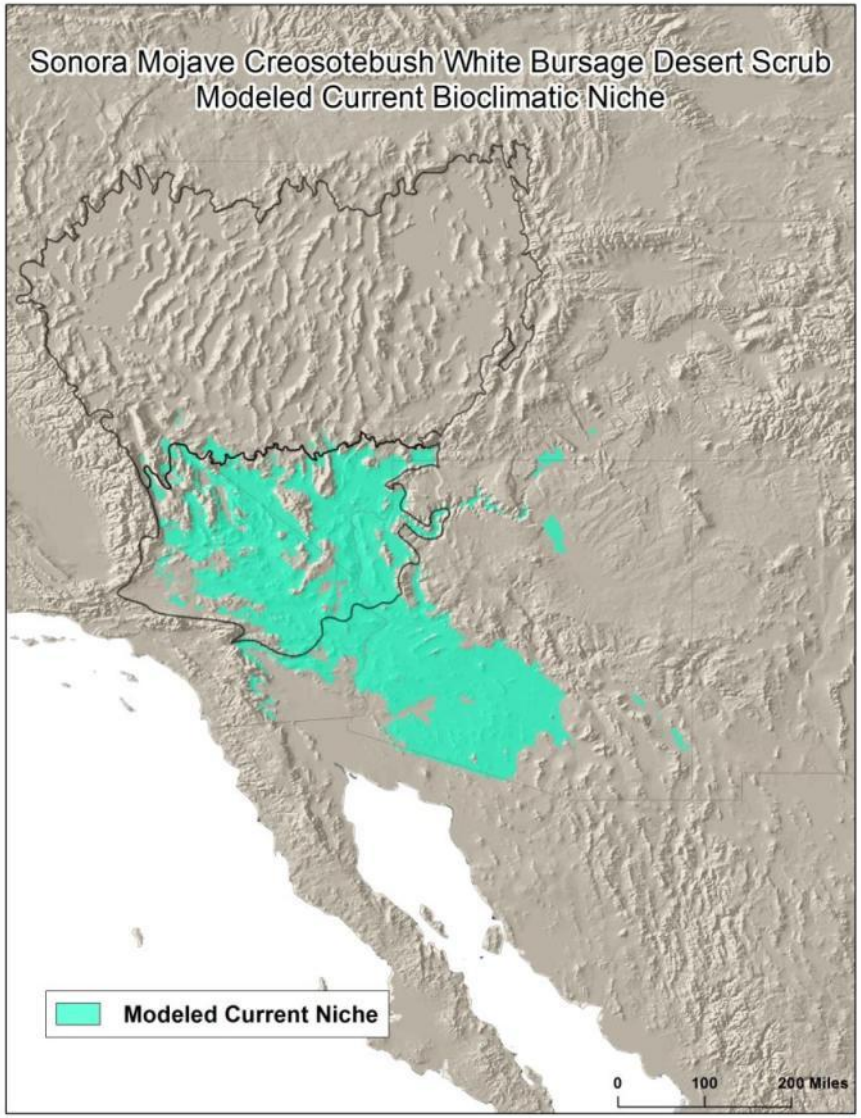
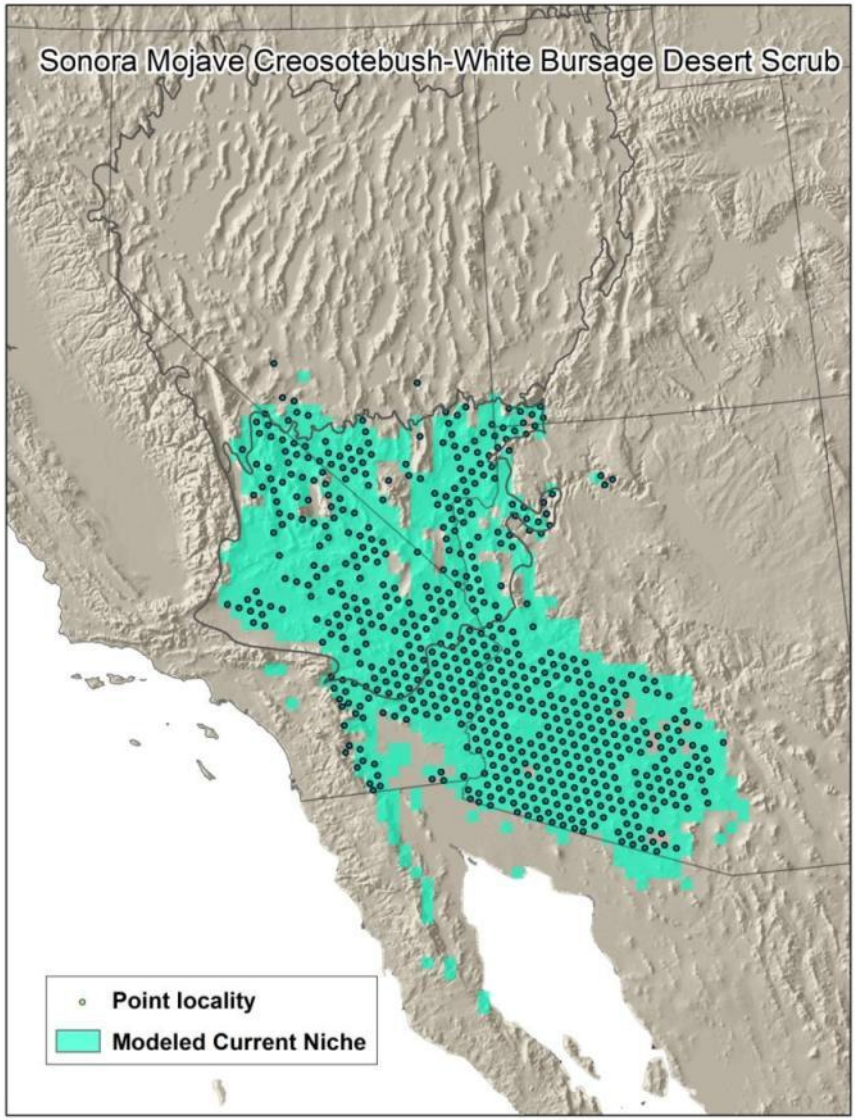
Rapid Ecoregional Assessment

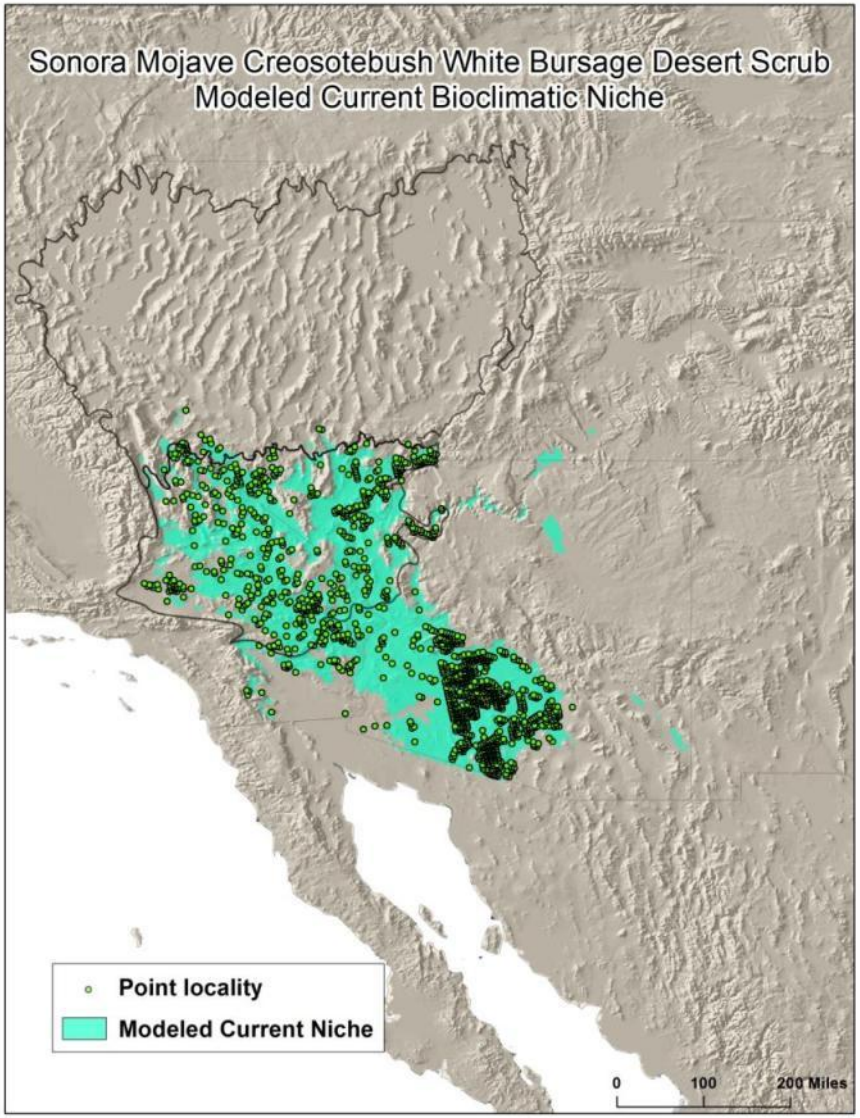

Sonora Mojave Creosotebush-White Bursage Desert Scrub
Point locality

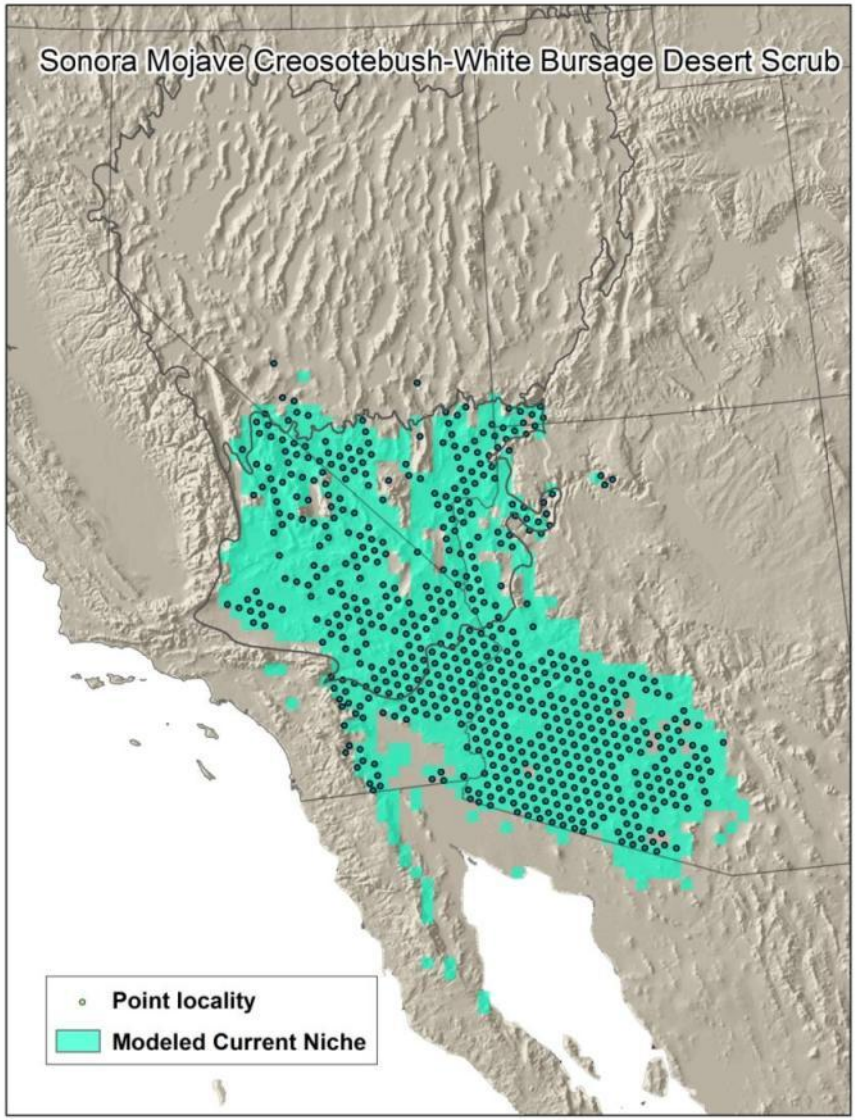

Sonora Mojave Creosotebush White Bursage Desert Scrub
Point locality
0
100
200 Miles

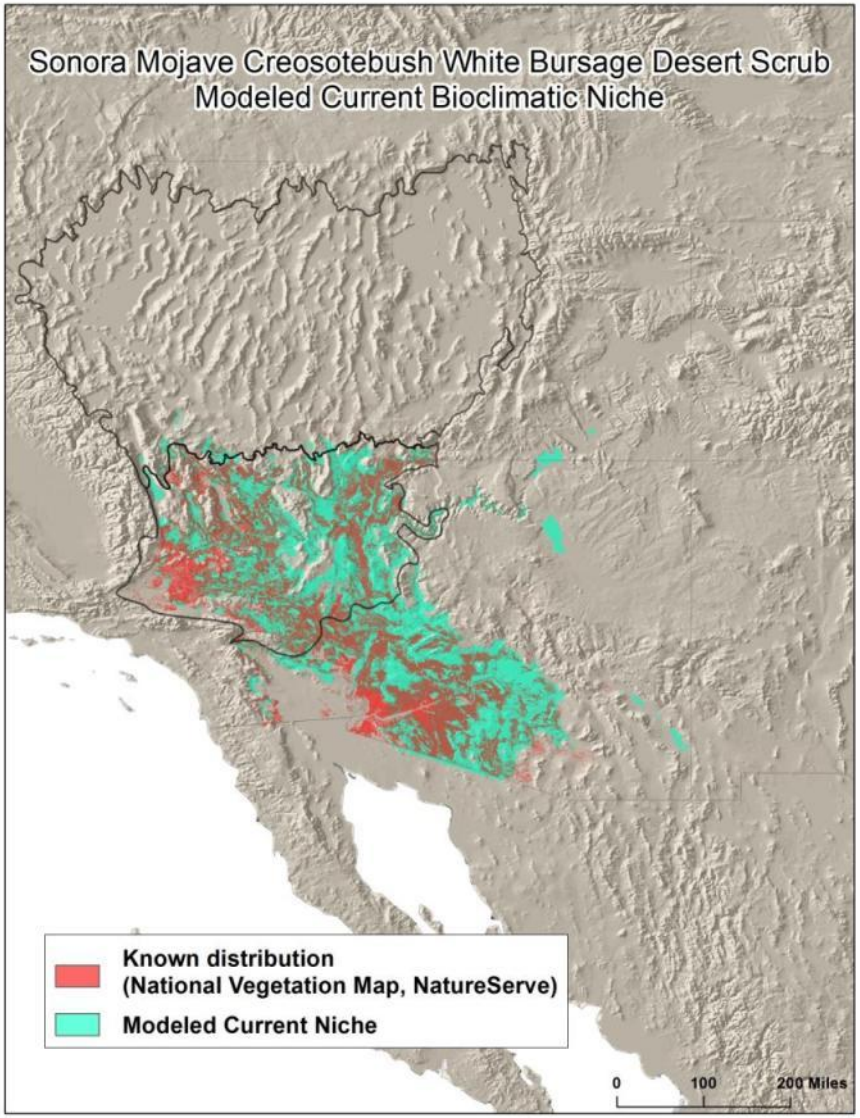

Sonora Mojave Creosotebush-White Bursage Desert Scrub
Modeled Current Niche

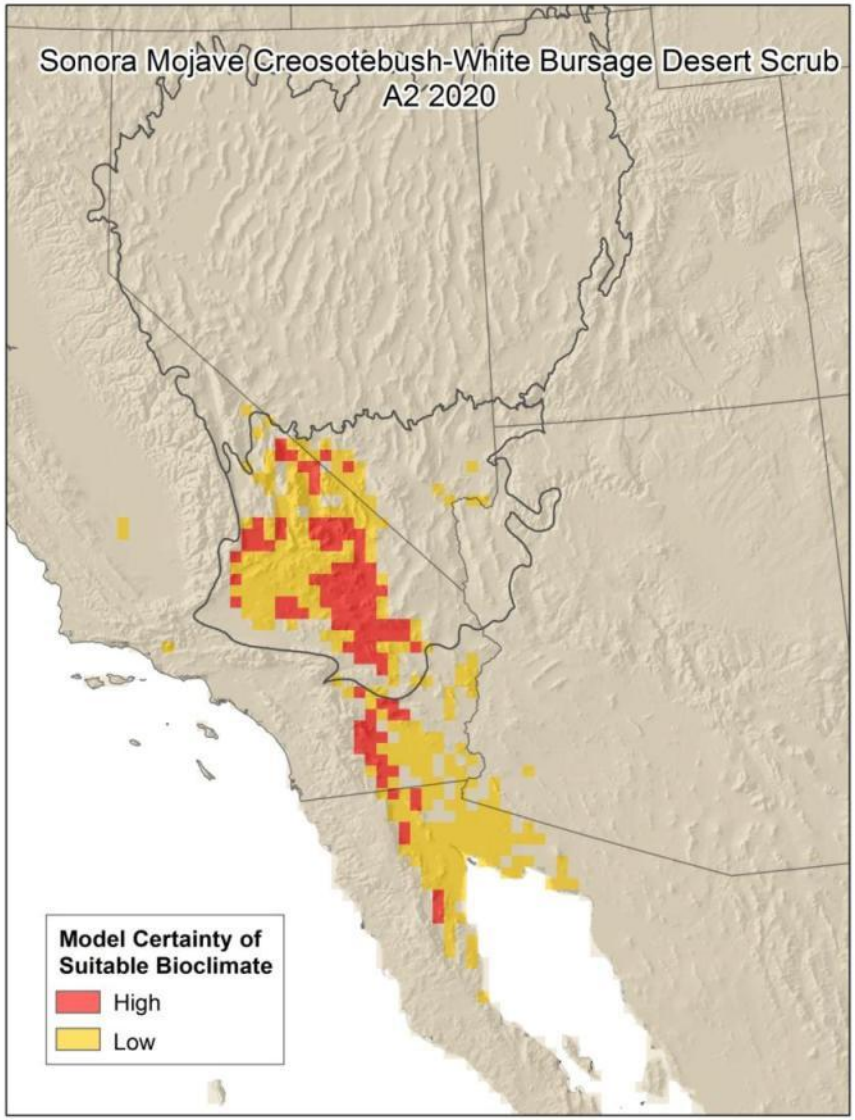

Sonora Mojave Creosotebush White Bursage Desert Scrub
Modeled Current Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles

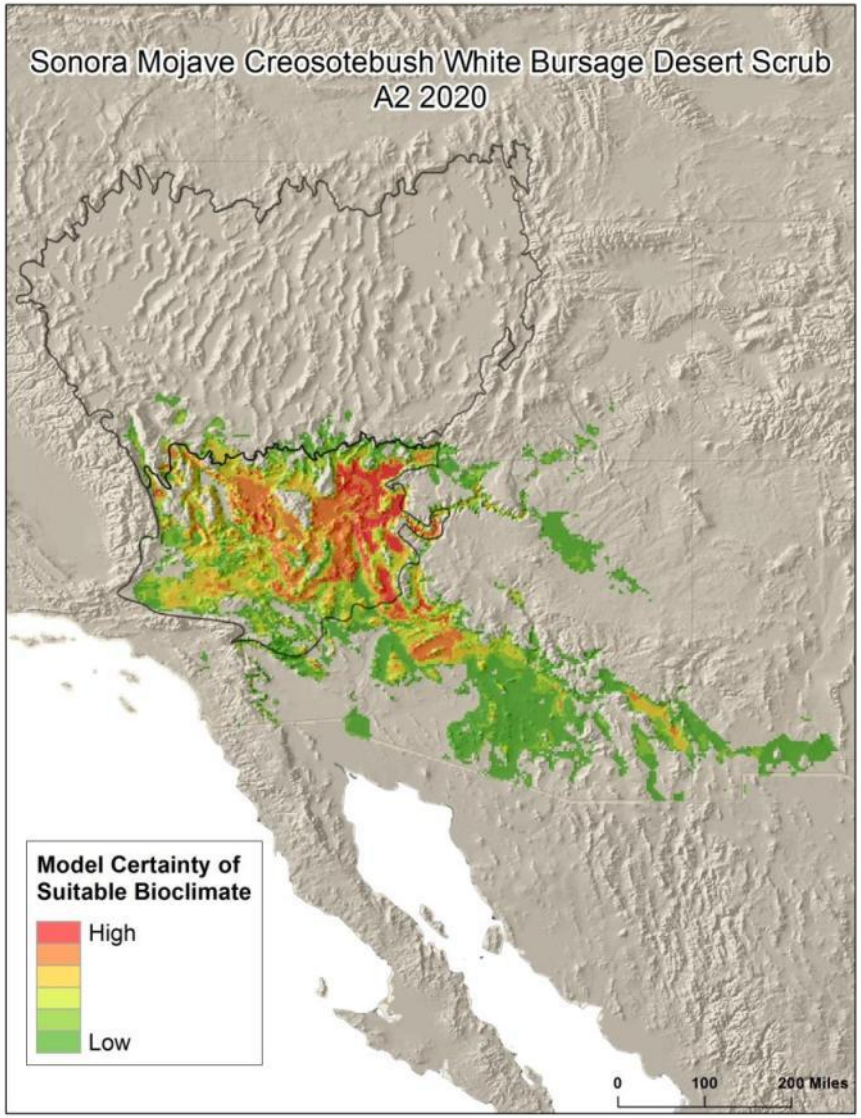

Sonora Mojave Creosotebush-White Bursage Desert Scrub
Point locality
Modeled Current Niche


Sonora Mojave Creosotebush White Bursage Desert Scrub
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles


Sonora Mojave Creosotebush-White Bursage Desert Scrub
Point locality
Modeled Current Niche


Sonora Mojave Creosotebush White Bursage Desert Scrub
Modeled Current Bioclimatic Niche
Known distribution
(National Vegetation Map, NatureServe)
Modeled Current Niche
0
100
200 Miles





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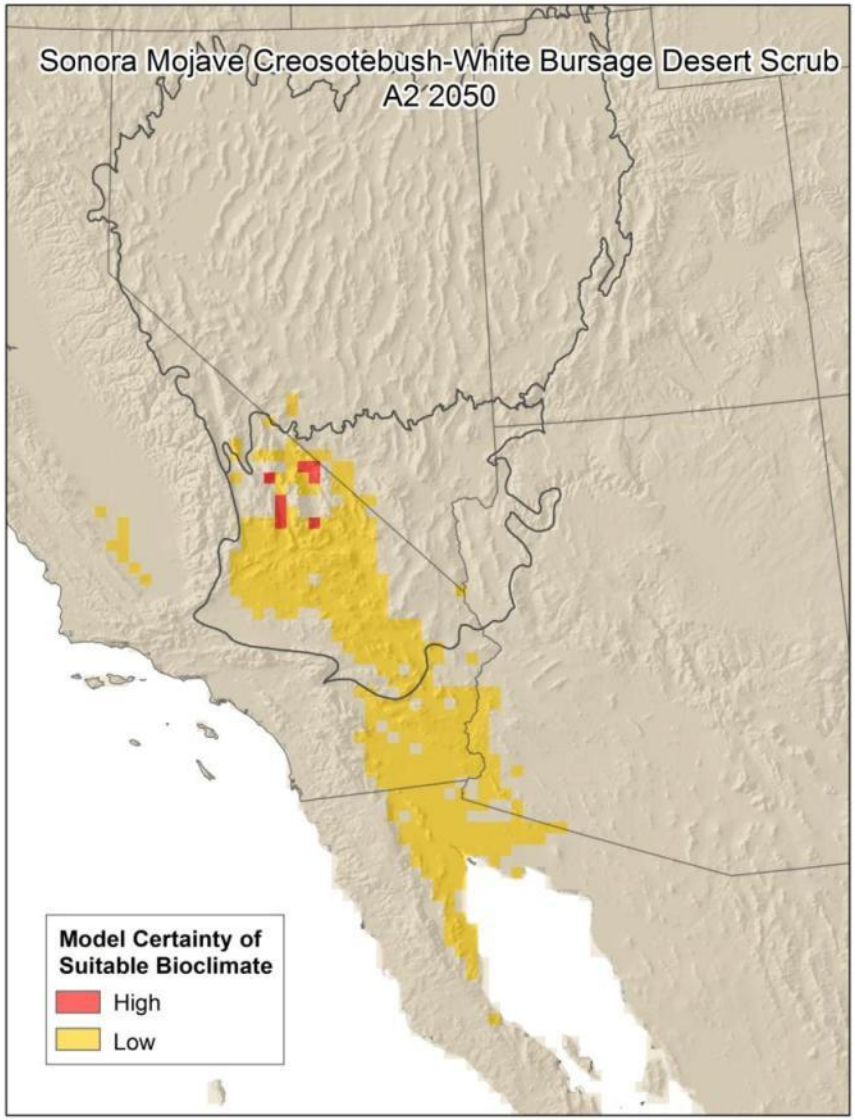
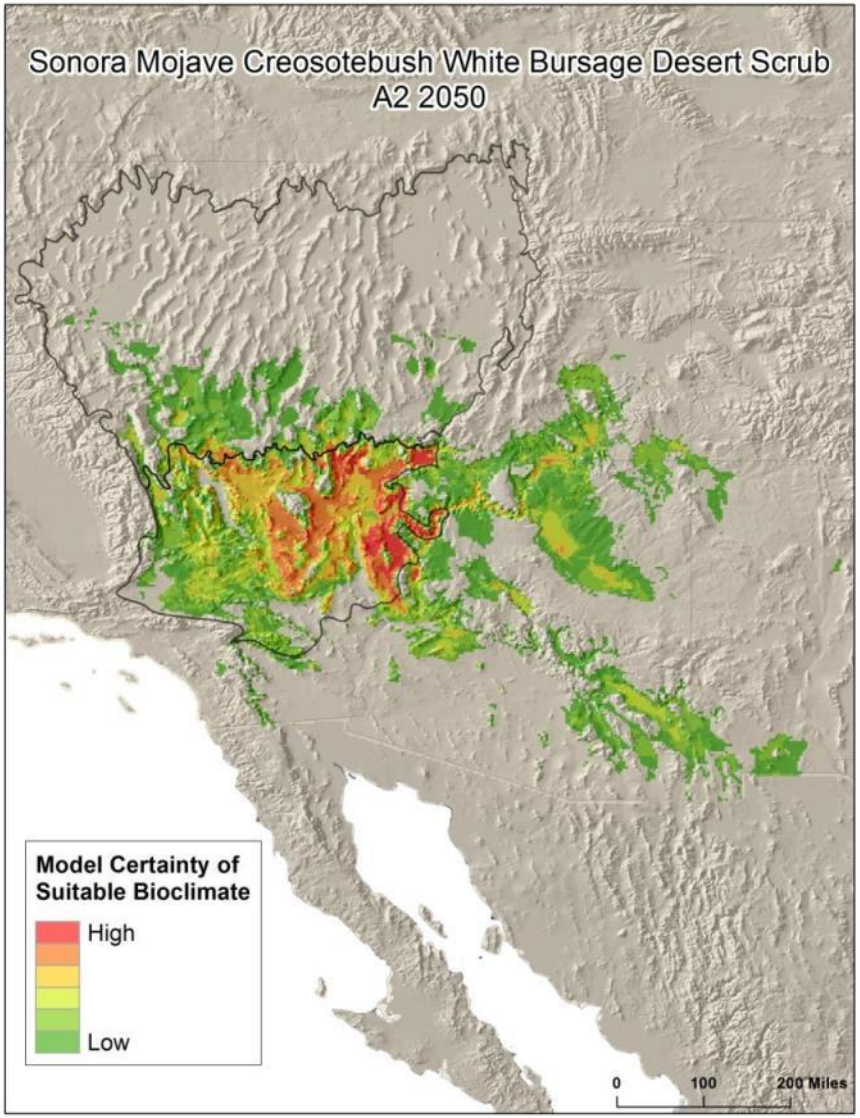
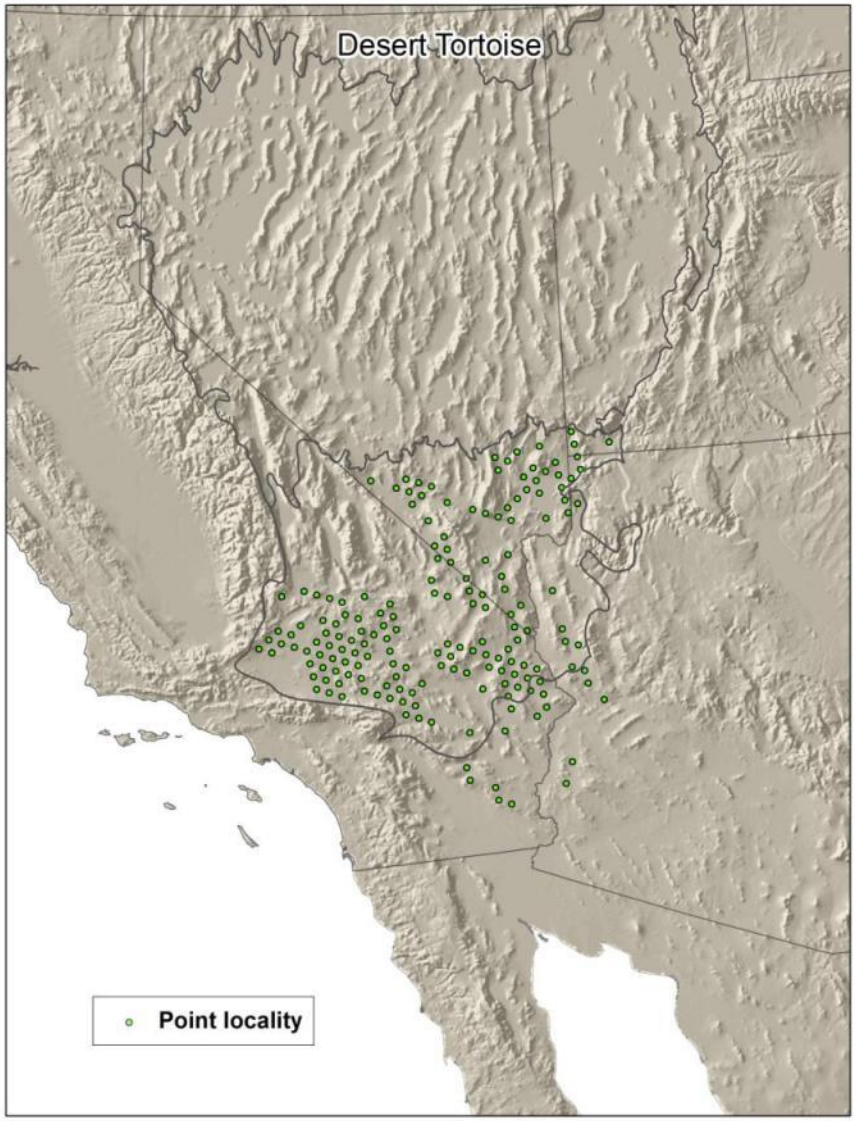
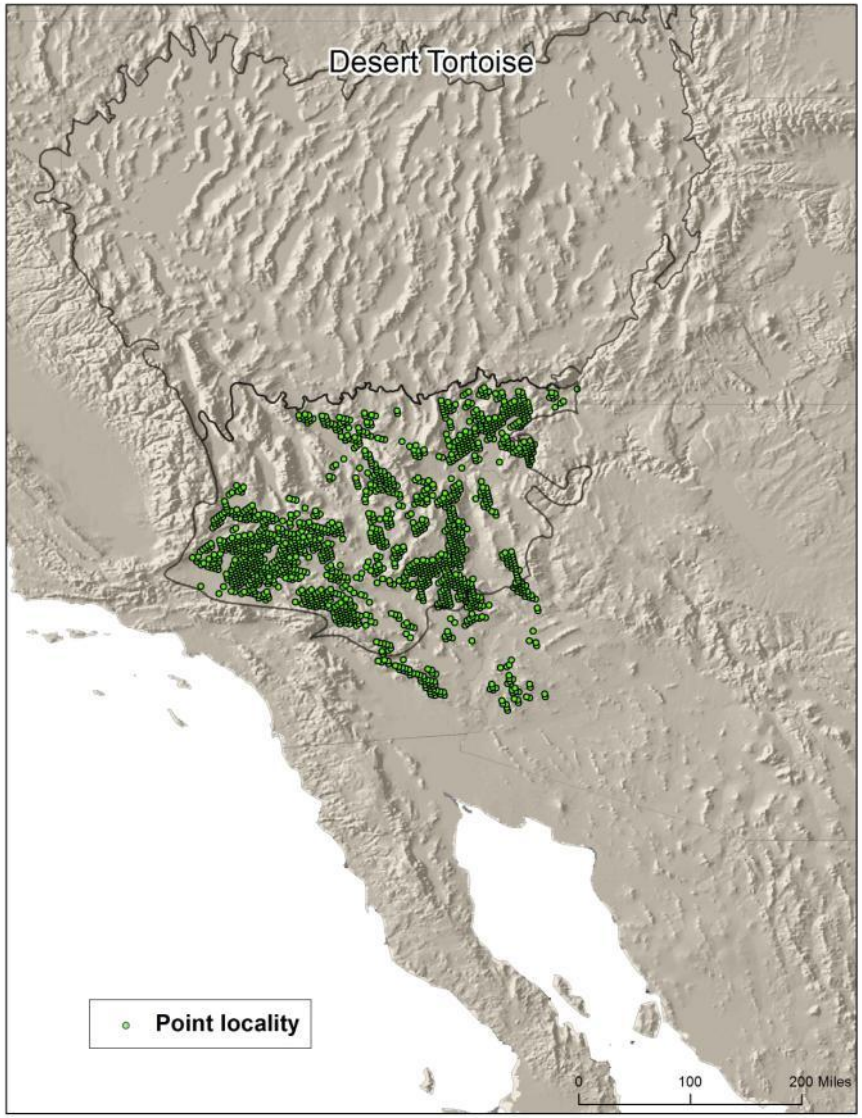
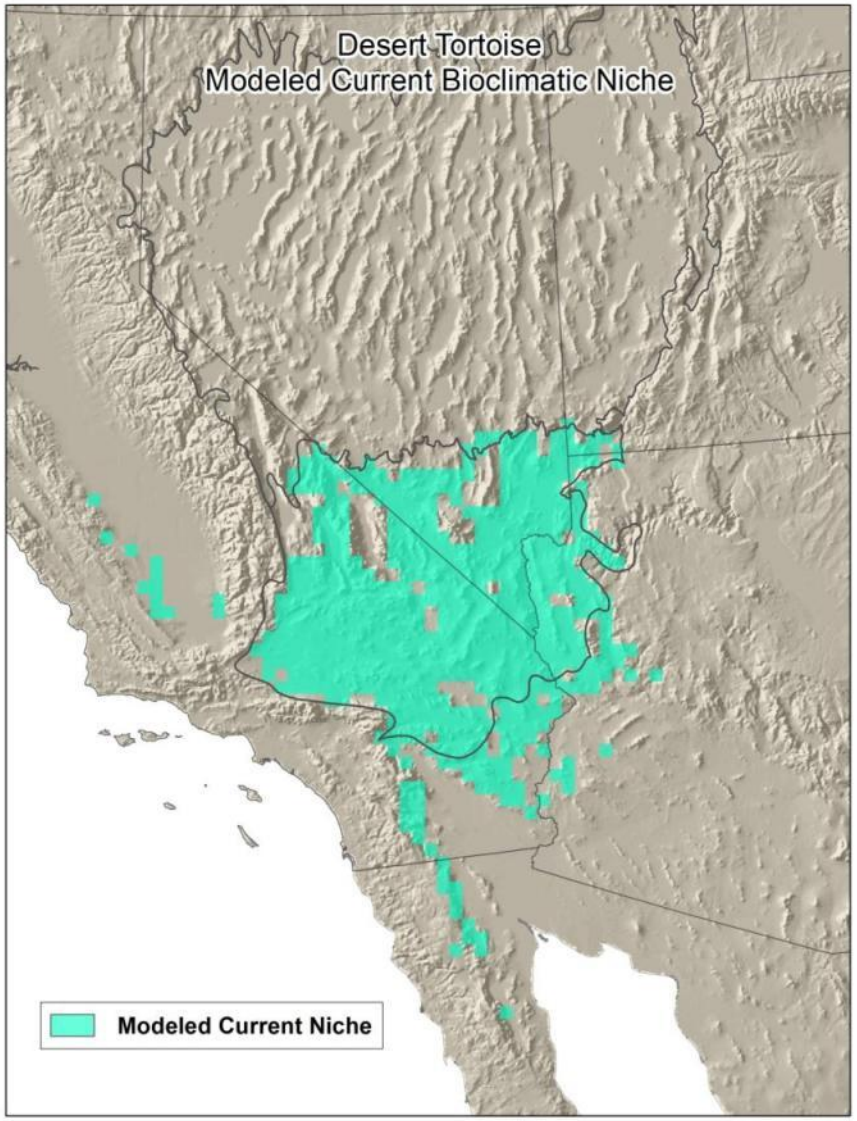
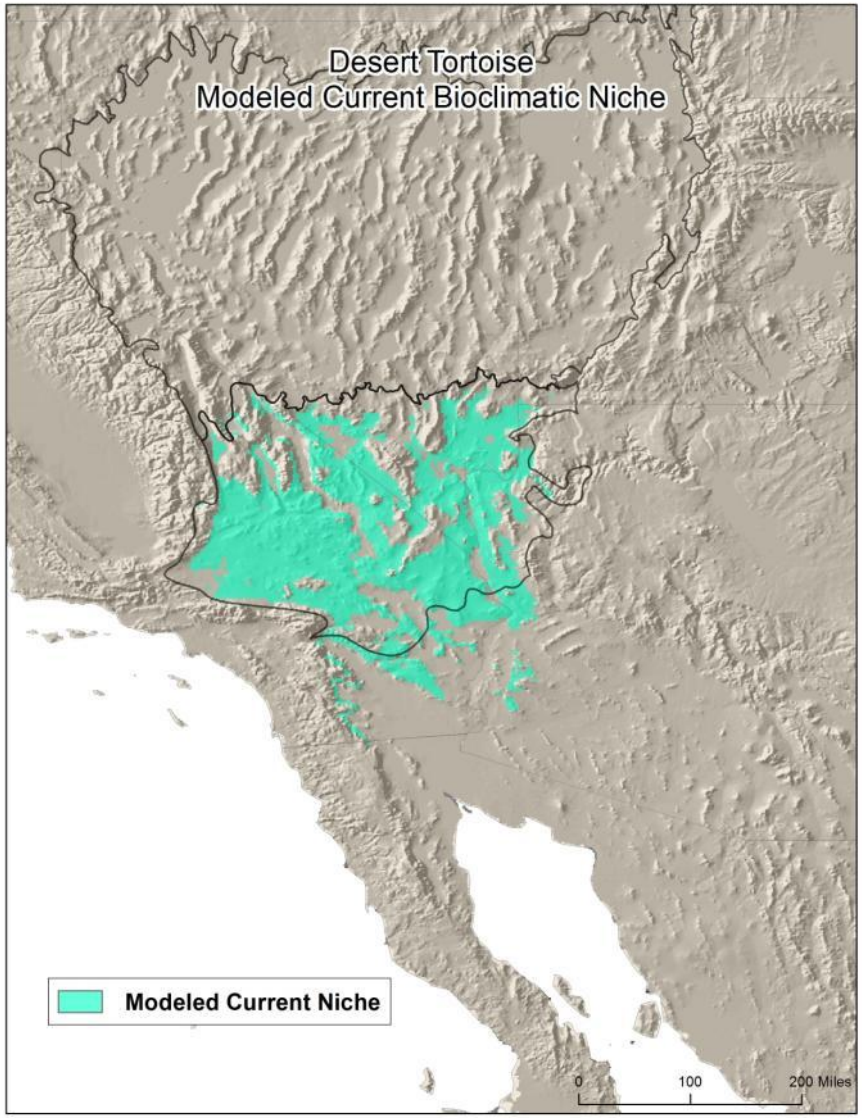

Sonora Mojave Creosotebush-White Bursage Desert Scrub
A2 2050
Model Certainty of Suitable Bioclimate
High
Low

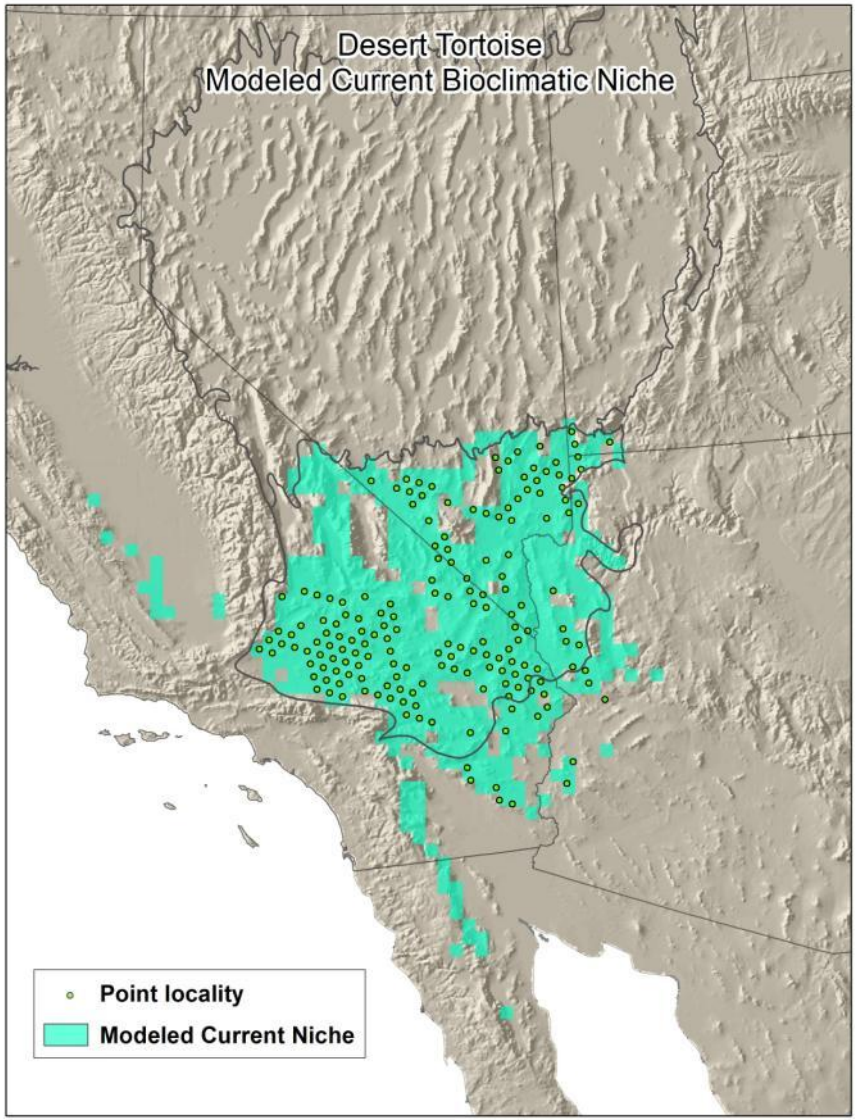

Sonora Mojave Creosotebush White Bursage Desert Scrub
A2 2050
Model Certainty of Suitable Bioclimate
High
Low
0
100
200 Miles

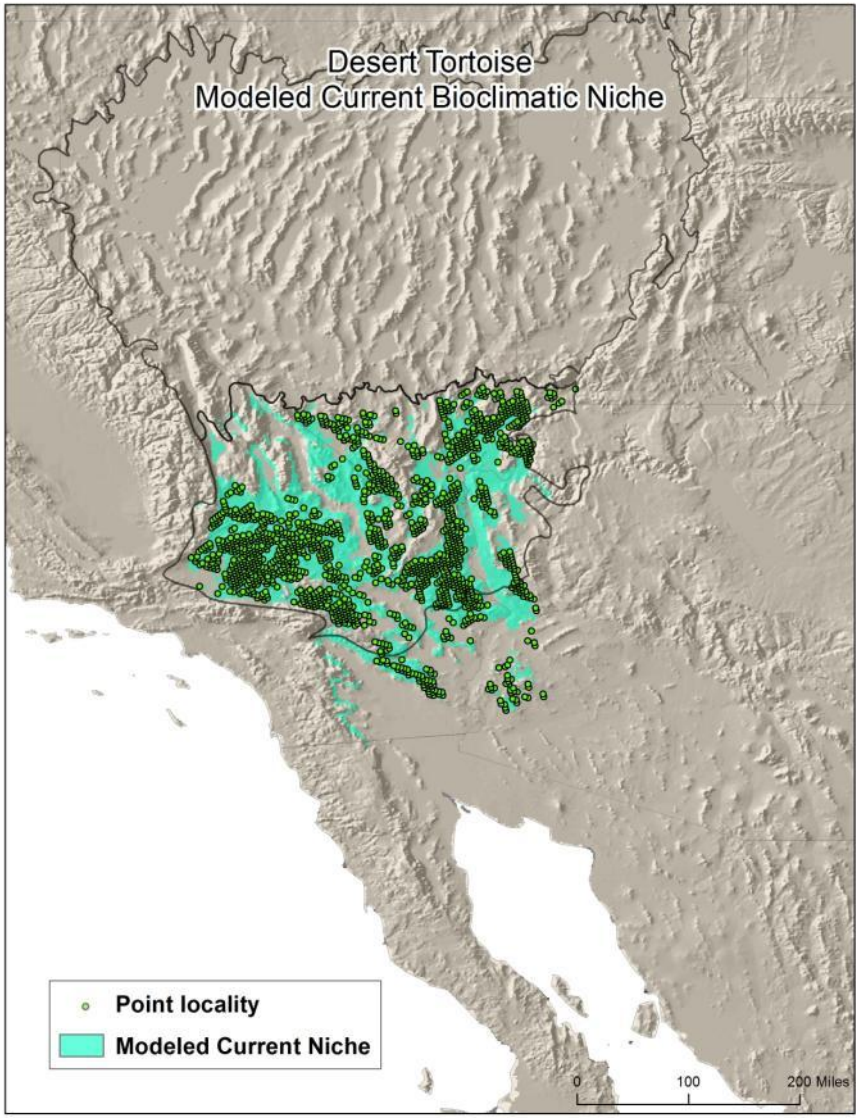

Desert Tortoise
Point locality

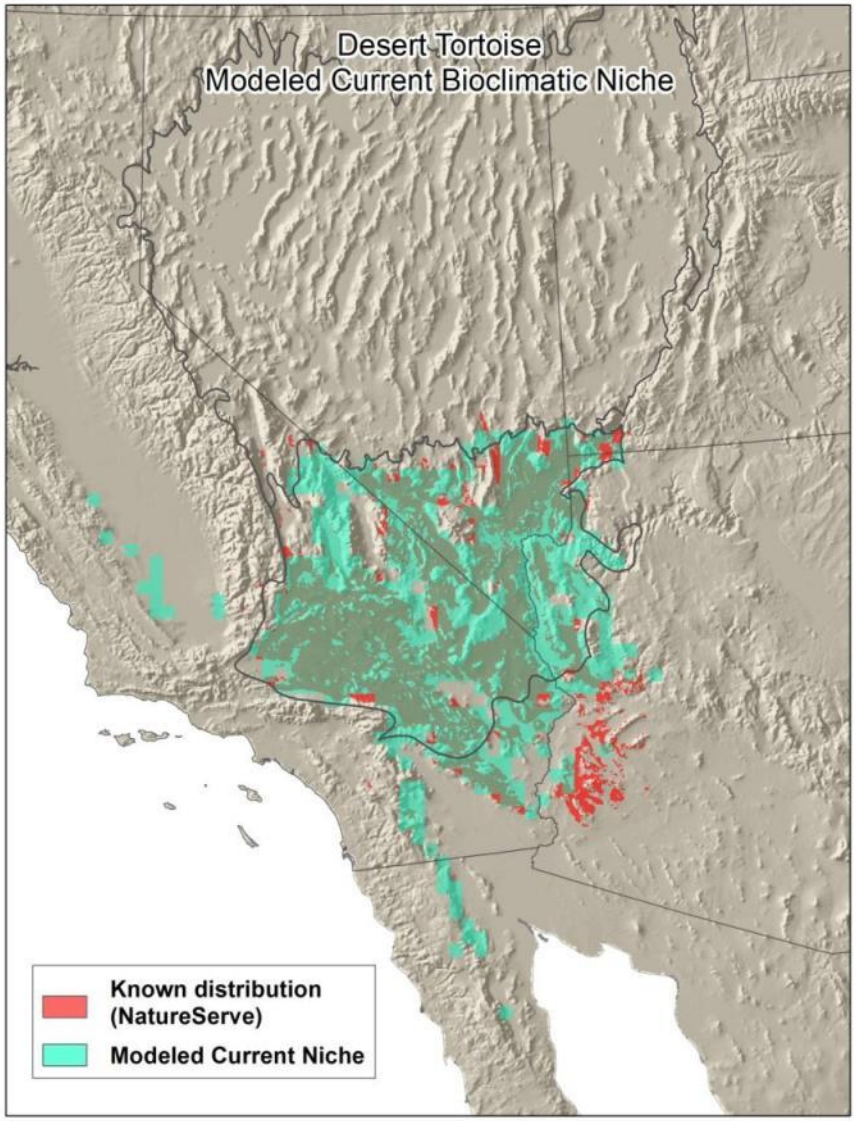

Desert Tortoise
Point locality
0
100
200 Miles

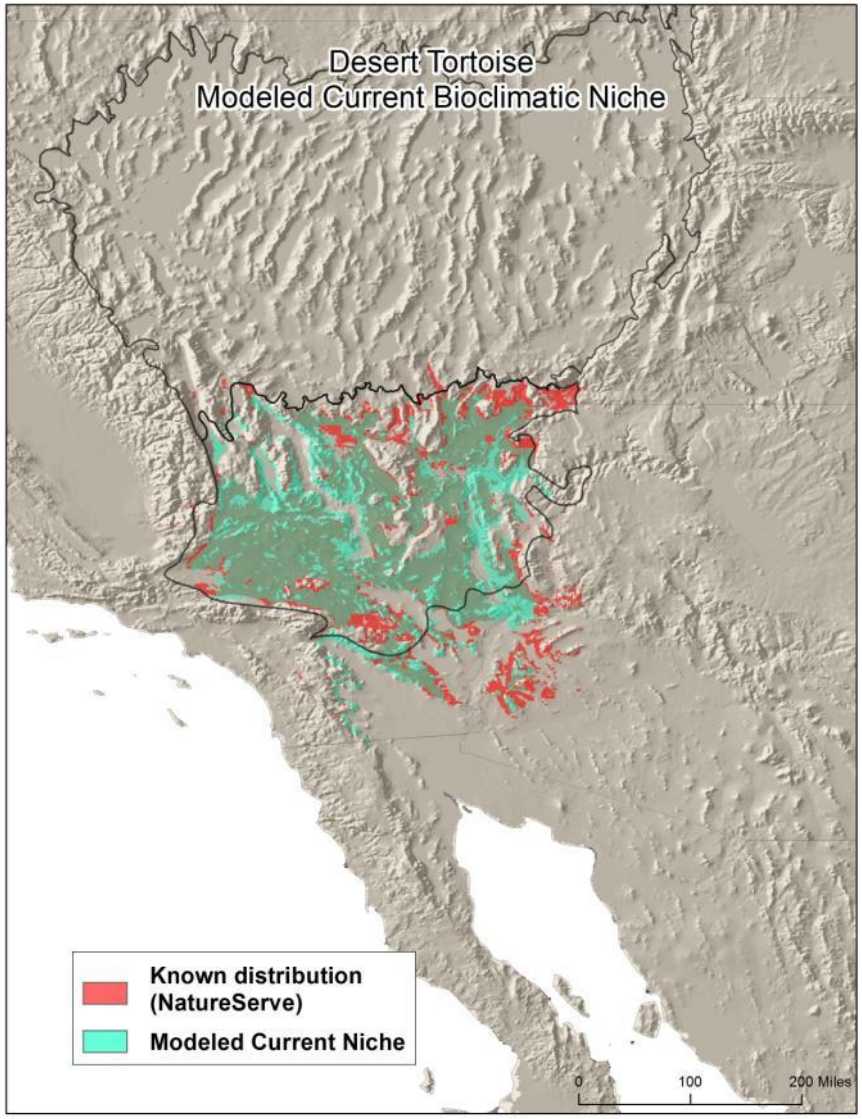

Desert Tortoise
Modeled Current Bioclimatic Niche
Modeled Current Niche

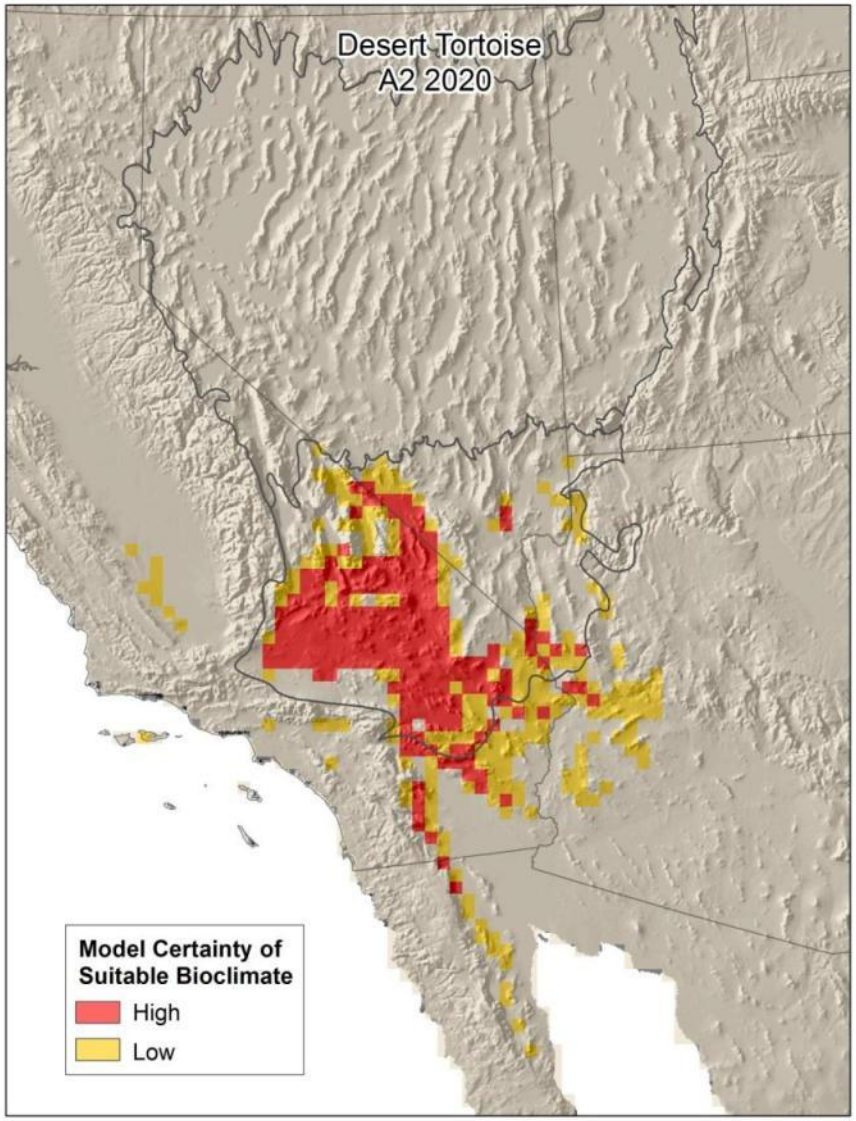

Desert Tortoise
Modeled Current Bioclimatic Niche
Modeled Current Niche
0
100
200 Miles

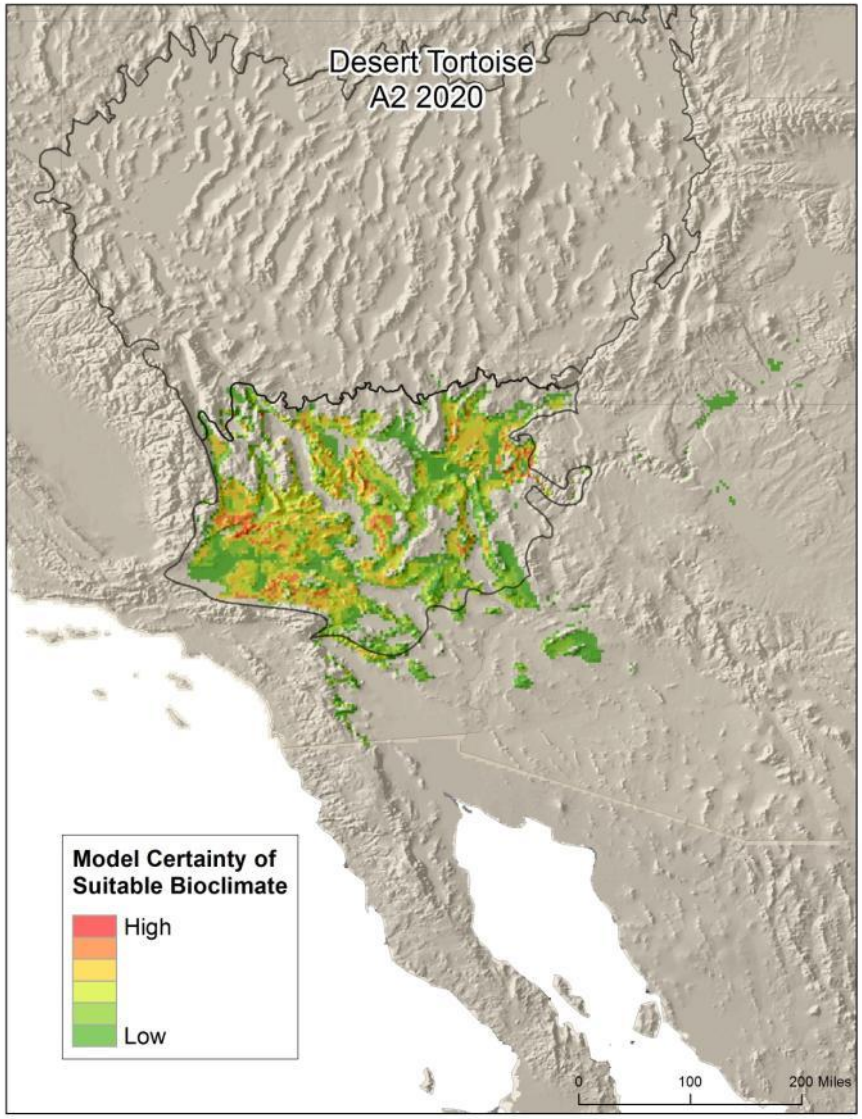

Desert Tortoise
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche

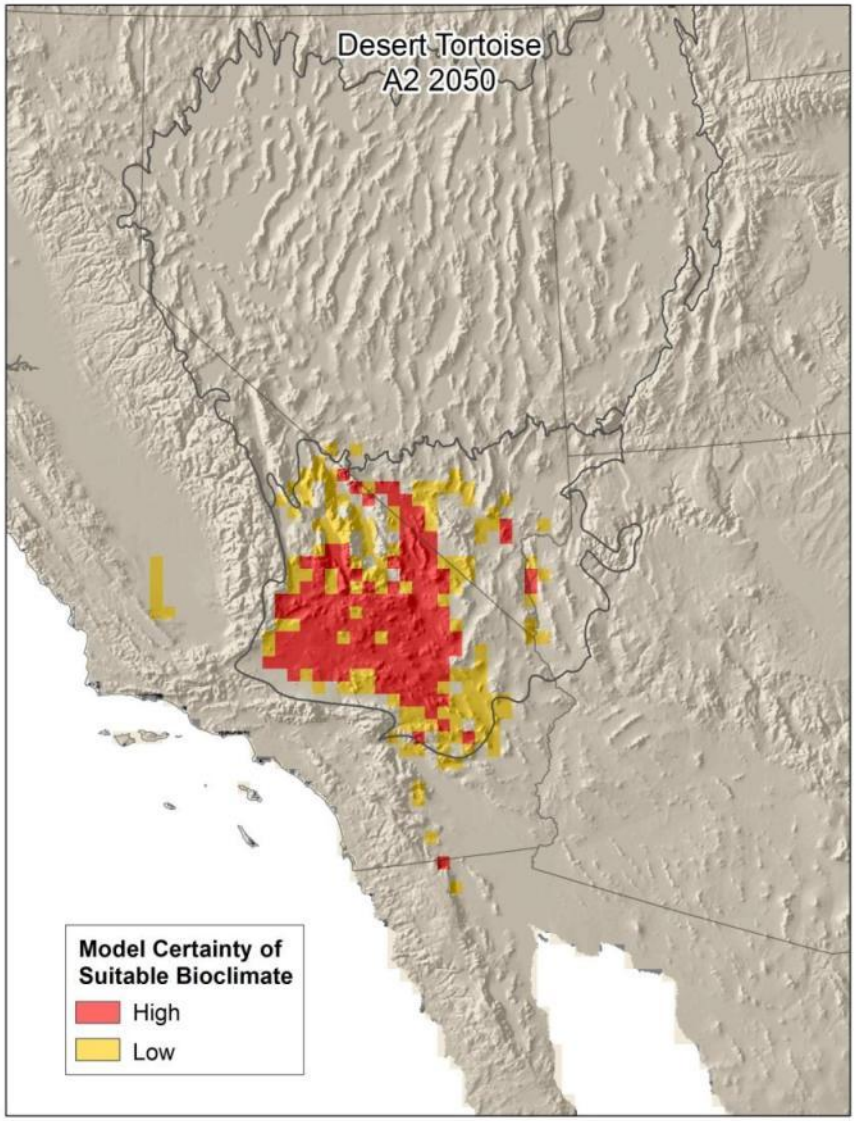

Desert Tortoise
Modeled Current Bioclimatic Niche
Point locality
Modeled Current Niche
0
100
200 Miles

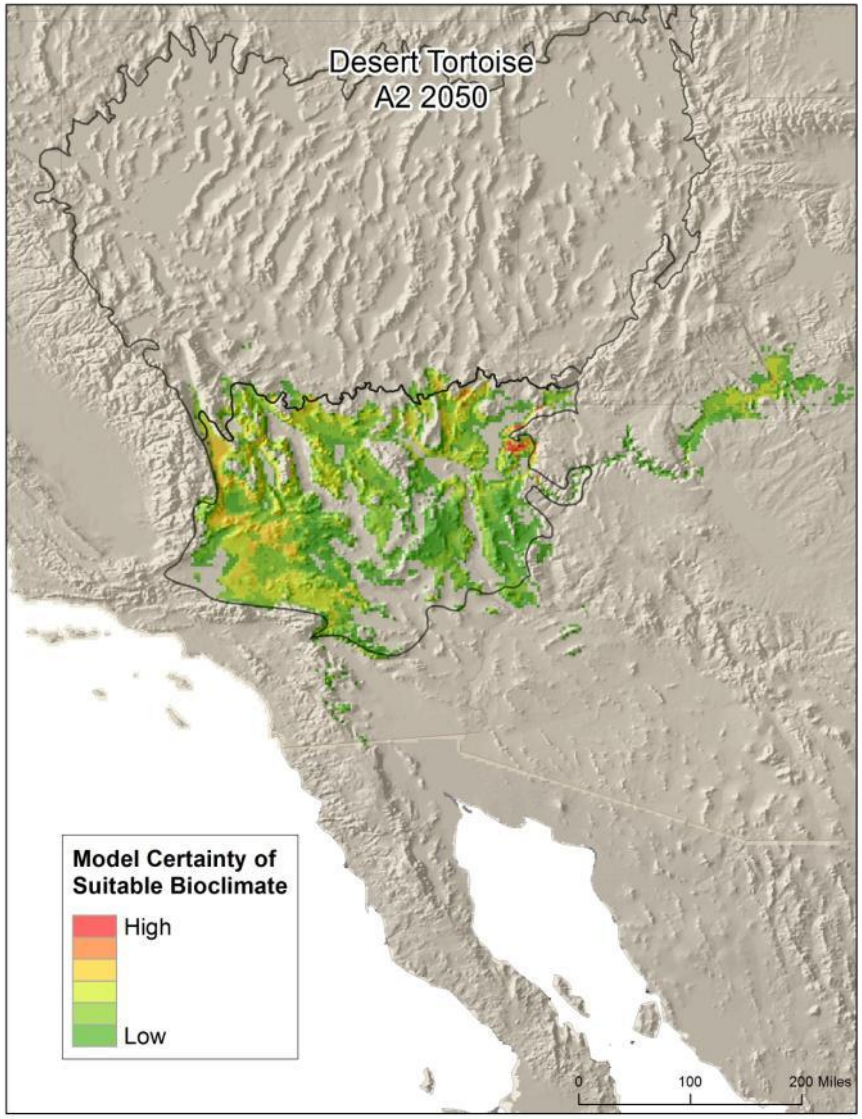

Desert Tortoise
Modeled Current Bioclimatic Niche
Known distribution (NatureServe)
Modeled Current Niche


Desert Tortoise
Modeled Current Bioclimatic Niche
Known distribution (NatureServe)
Modeled Current Niche
0
100
200 Miles


Desert Tortoise
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low

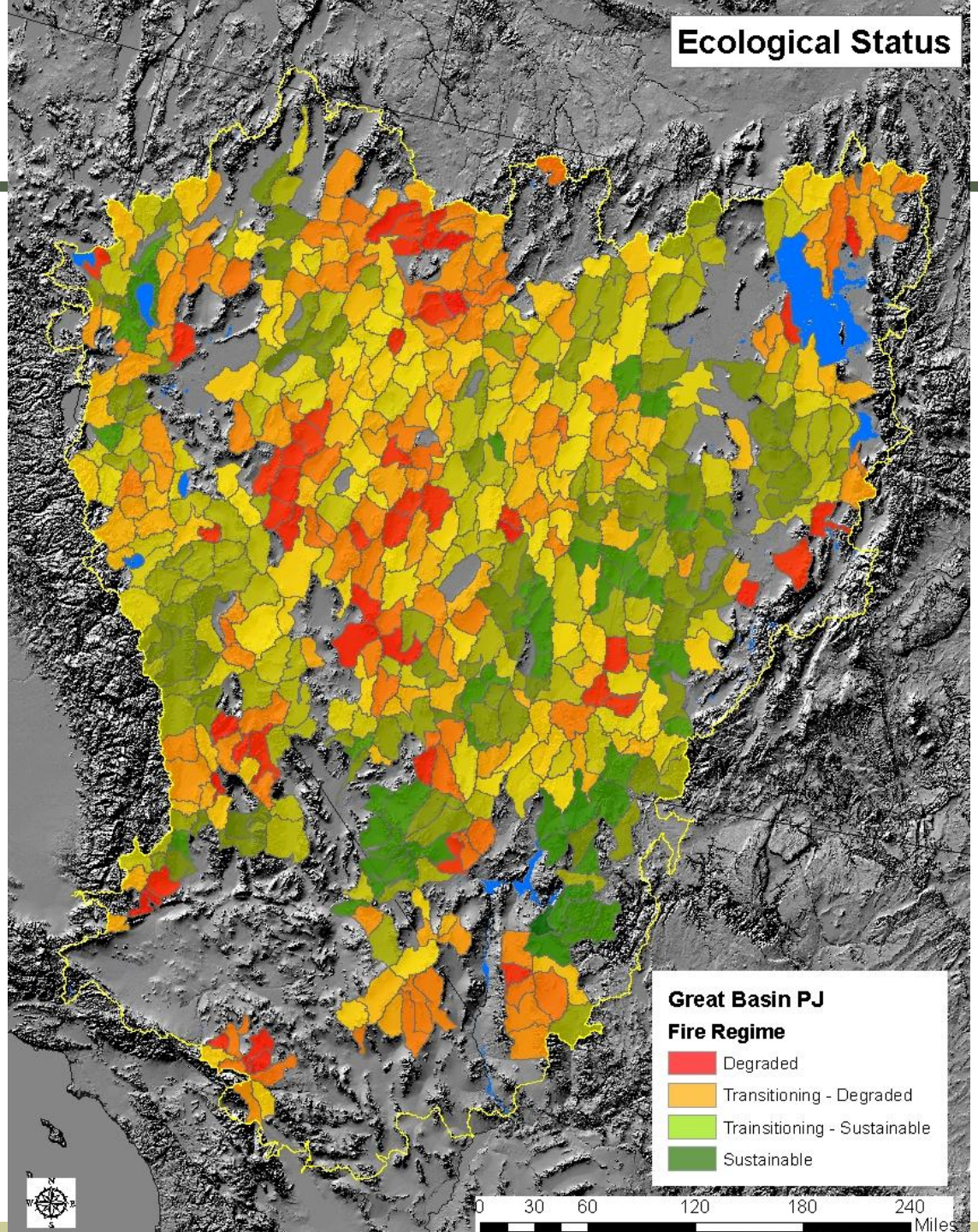

Desert Tortoise
A2 2020
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles


Desert Tortoise
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low


Desert Tortoise
A2 2050
Model Certainty of
Suitable Bioclimate
High
Low
0
100
200 Miles

Fire Regime

- Current Departure, by HUC
  - Modeled Historic Range of Variation (HRV) for each of the 29 veg types
  - Calculated Area of each Sclass for each veg type within each HUC
  - Calculated Departure, for each veg type, within each HUC
  - Calculated a weighted Mean Departure for each HUC. Weights were based on the relative spatial extent of each veg type



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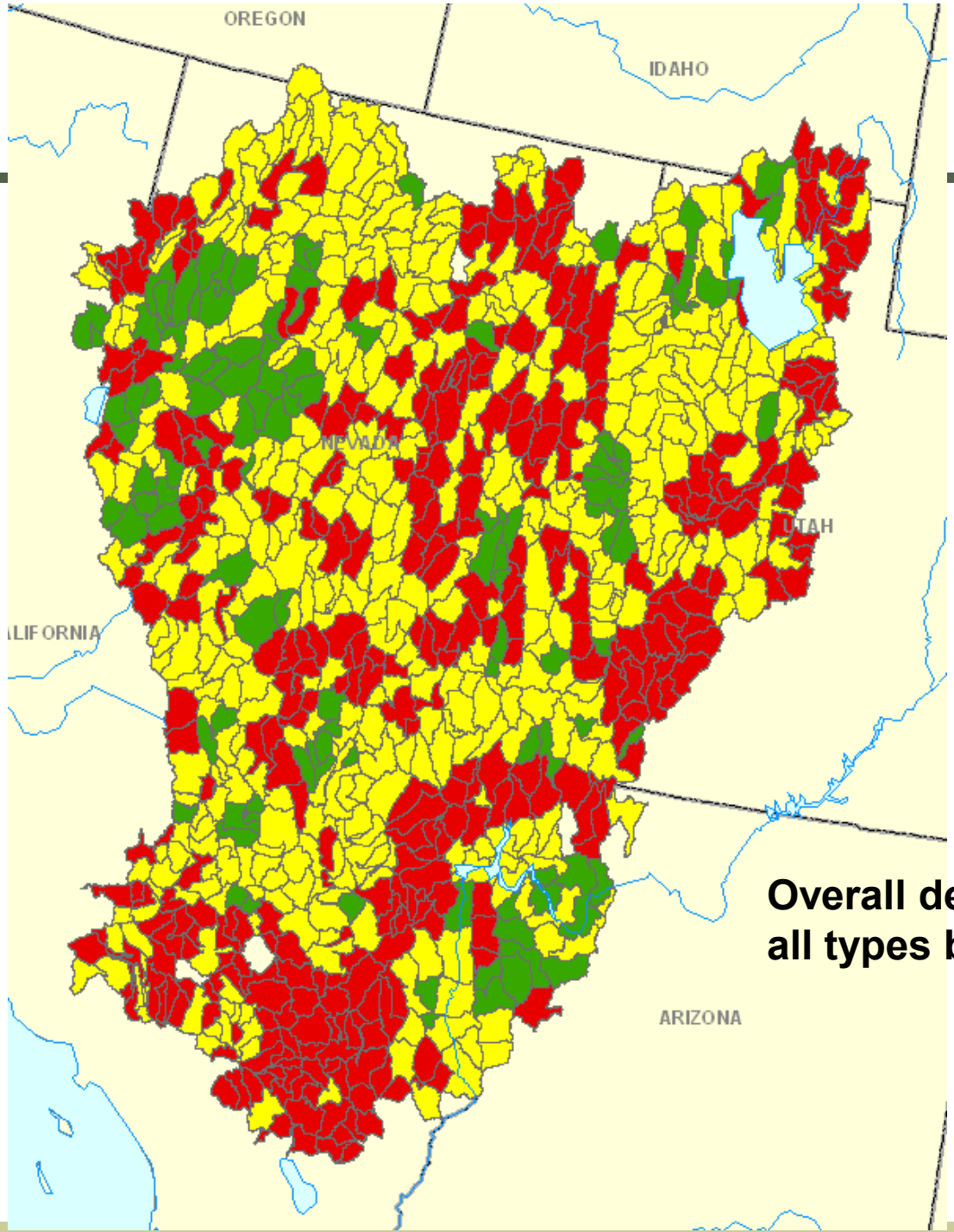
Rapid Ecoregional Assessment



Overall departure for all types by HUC

Fire Regime forecasts

- Too many watersheds X types for individual forecasts (11,828)
- Use of FRCC departure index (0-10) to characterize range by type across ecoregion (e.g., all fall into categories 2-6)
- Based on actual distributions, run 3 characteristic forecasts per type
- Report forecast results by watershed based on 3-5 forecast models per type

Fire Regime forecasts

Current Departure Class (1-3)

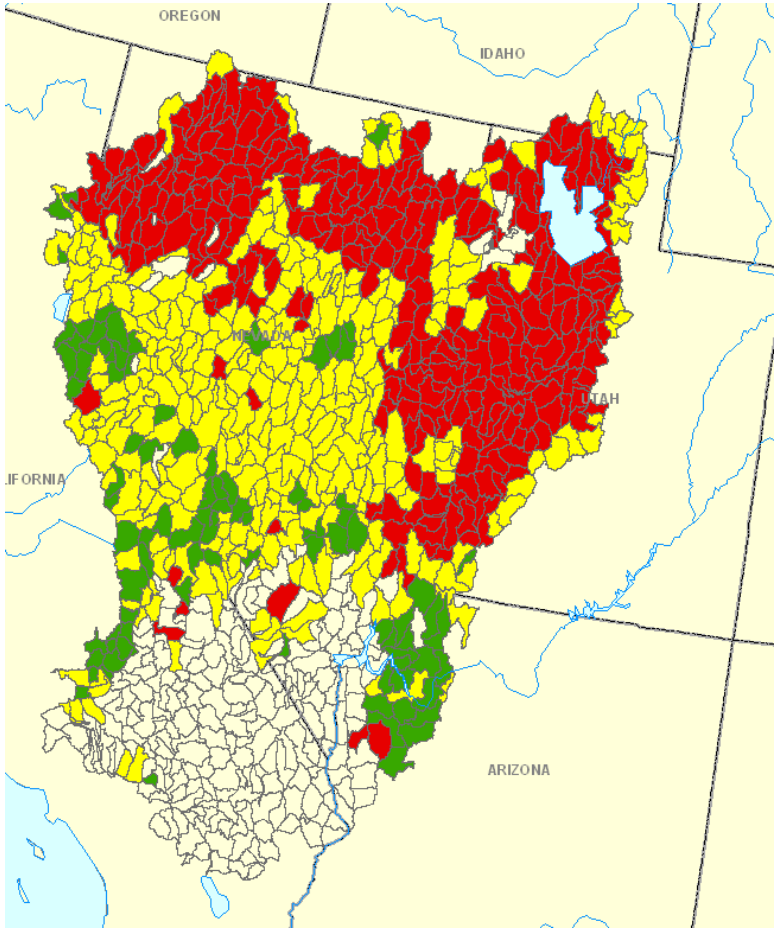
Average of SClass extent for each veg type in each Departure class

Run models for each Departure Class With initial conditions as average Sclass extent for each Departure class

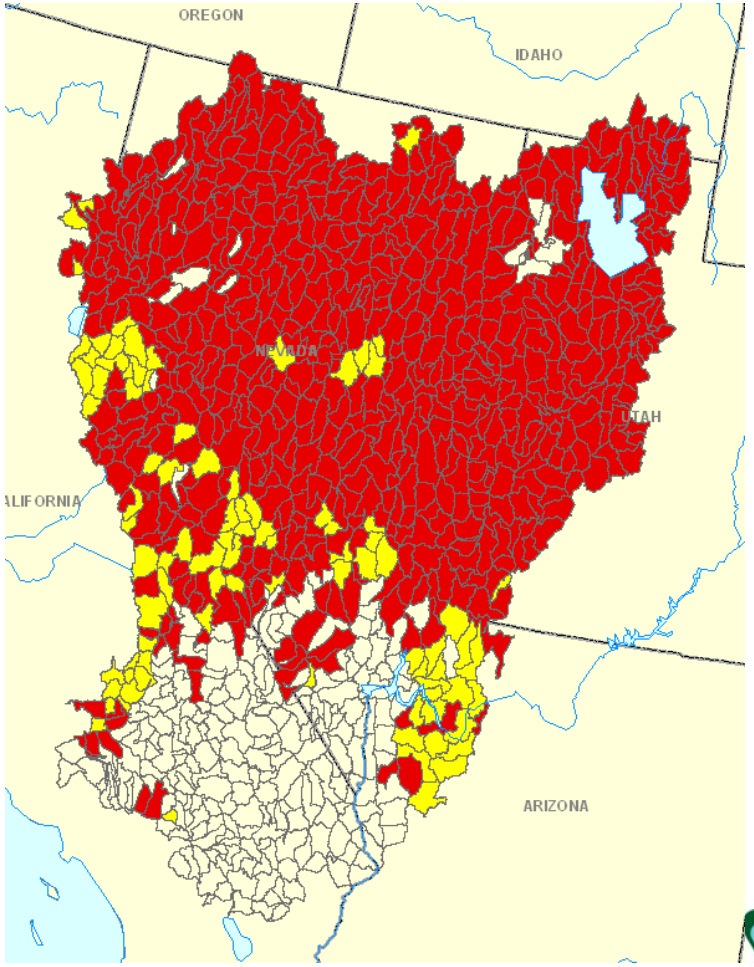
Assign Future Sclass for each veg type Within each HUC based on model results

Fire Regime forecasts

Inter-Mountain Basins Big Sagebrush Shrubland



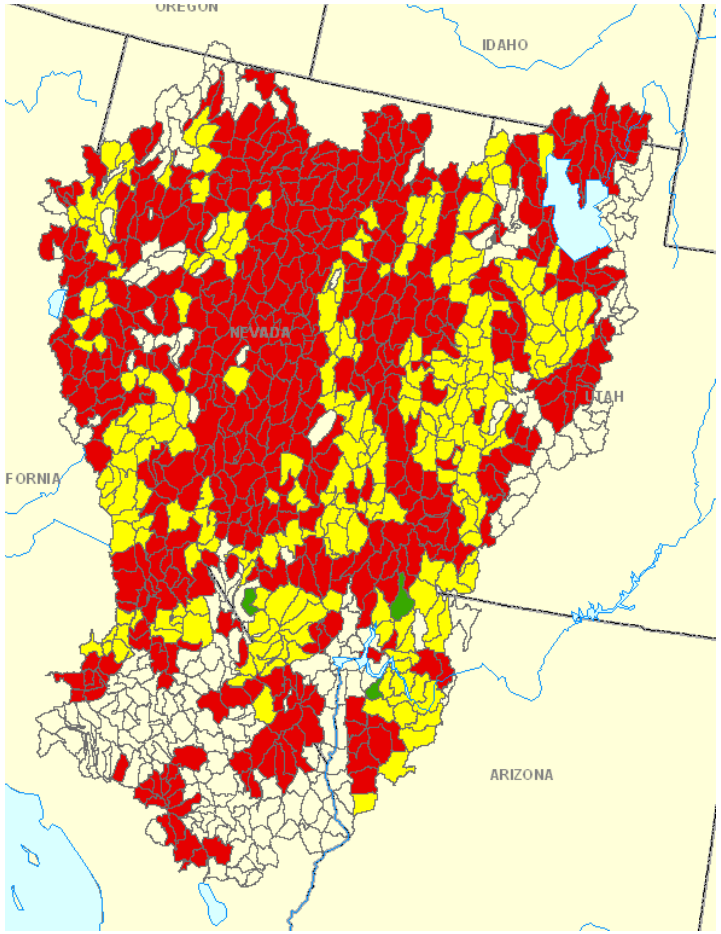
Current



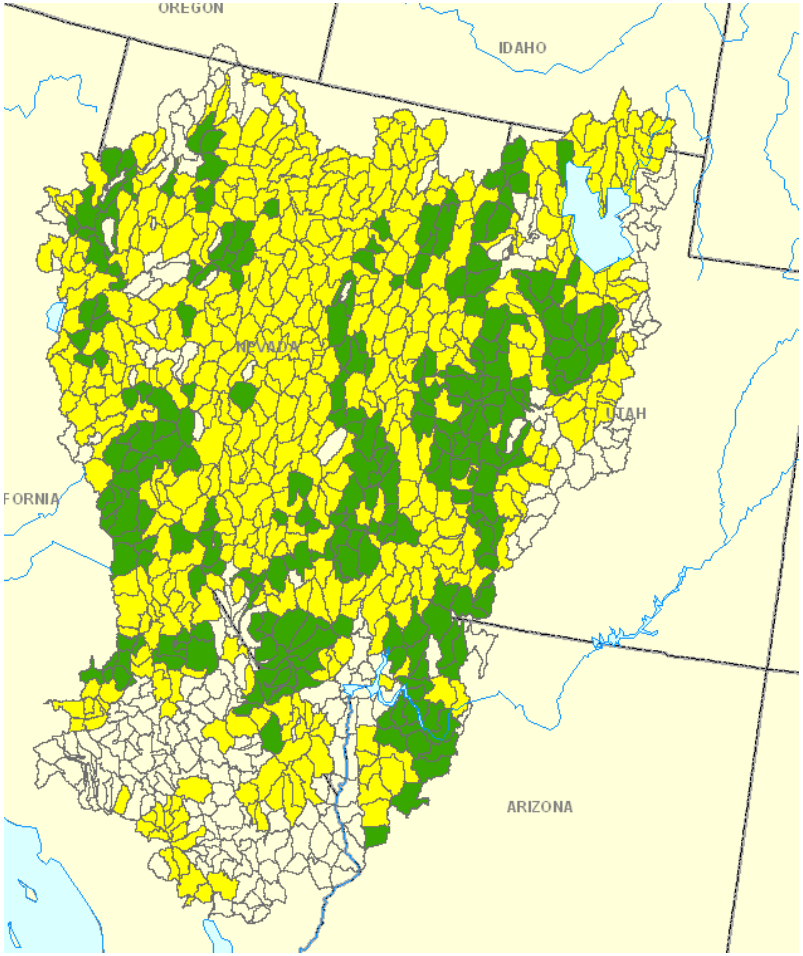
2060

Fire Regime forecasts

Great Basin Pinyon-Juniper Woodland



Current



2060

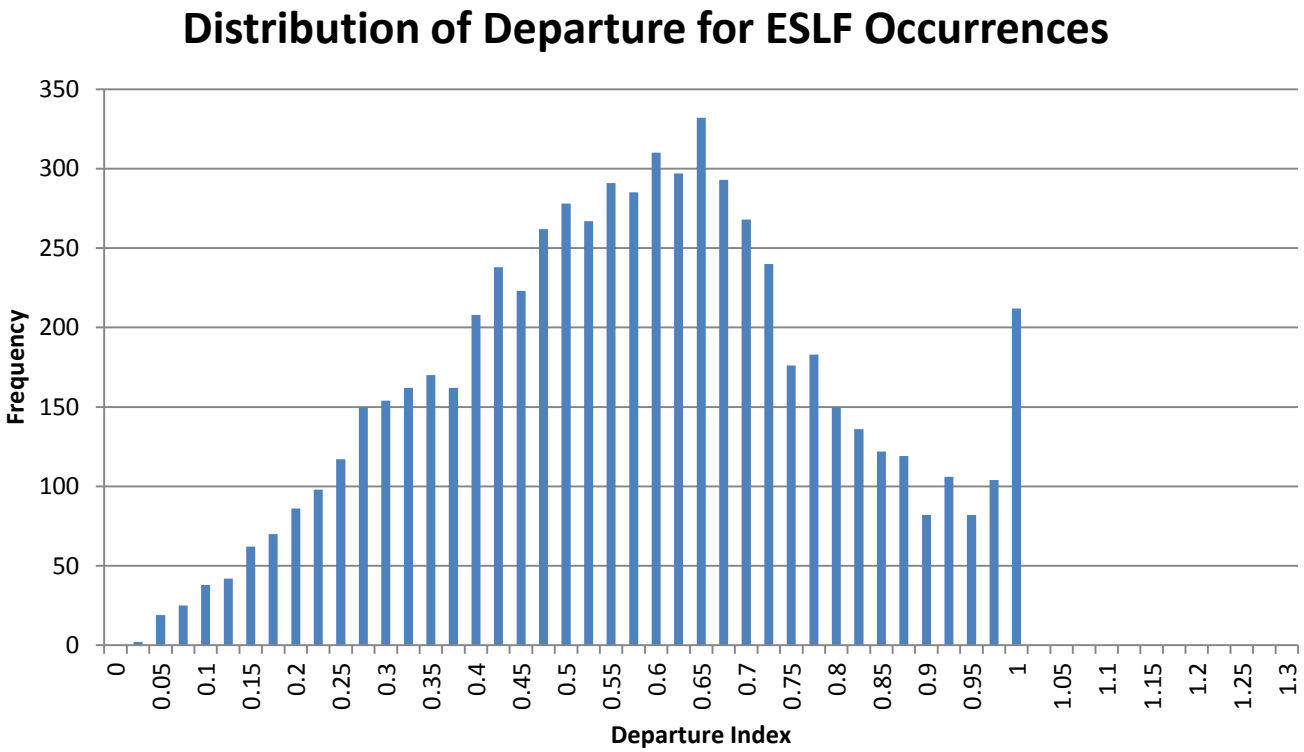
BLM
Rapid Ecoregional Assessment

Forecasting 2060 w/Climate Change

- Climate change translated into fire probabilities within VDDT models
- In general, stand-replacing fires are so infrequent that changes in departure from CC effects do not manifest by 2025 and only begin effecting change by 2060
- An area for future research…

Reporting issues and options

- Number of Classes



Reporting issues and options

- Reporting by veg type v. HUC
- Including Current Land Use

Break

Final report outline/product formats (Ford)

Discussion, recap parking lot items, & identify new agenda items for day 3

Adjourn Day 2
Dinner on your own