Yavapai County Climate

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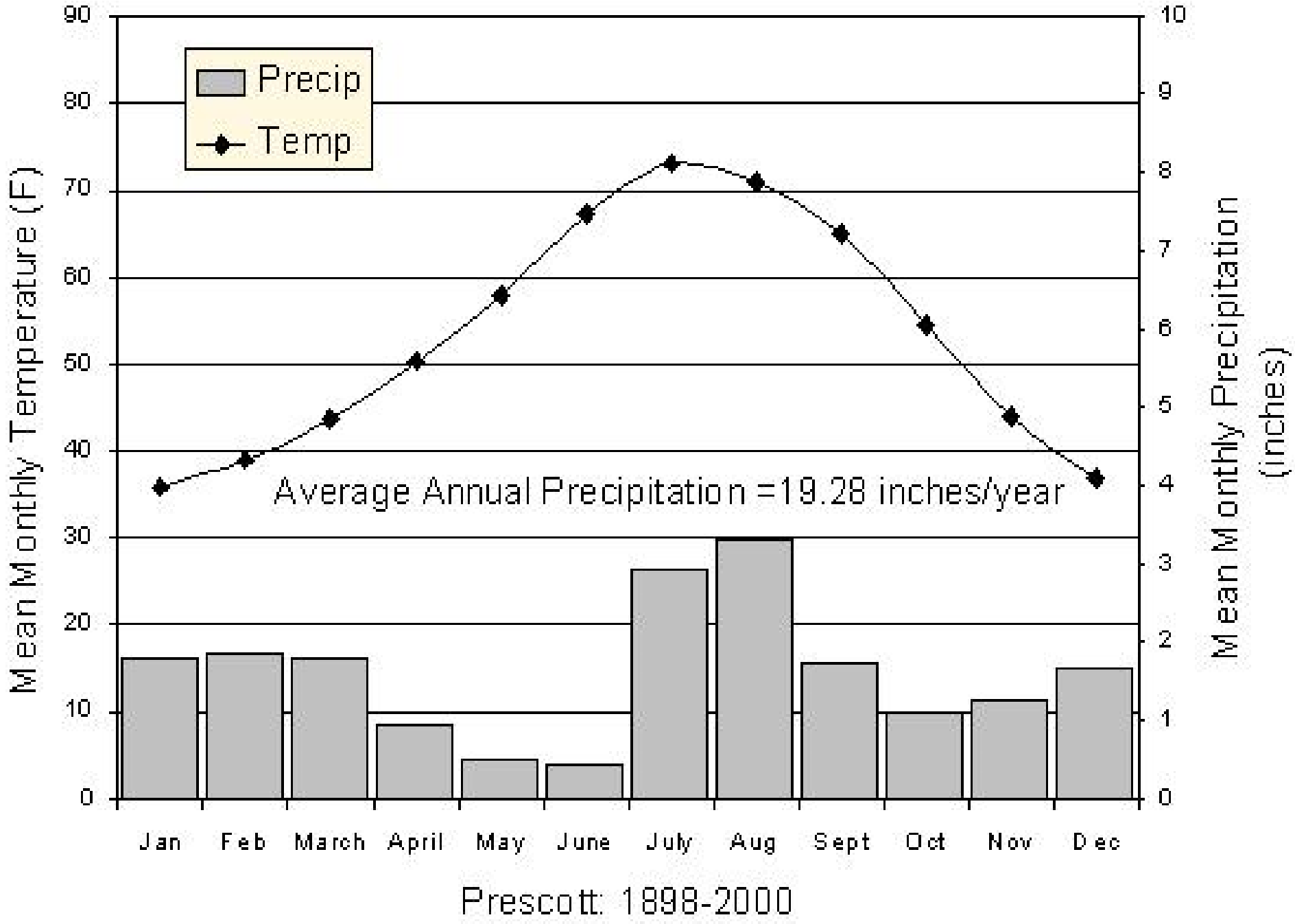
Arizona's Climate

- Bimodal Precipitation Pattern
- Wide Diurnal Temperature Fluctuations
- Elevation Differences Cause Variability
- Highly Variable Summer Precipitation
- Periodic Drought
- Monsoon Most Dependable in Southeastern Portion of the State


Precip
Temp
Average Annual Precipitation =19.28 inches/year
Mean Monthly Temperature (F)
Mean Monthly Precipitation (inches)
90
80
70
60
50
40
30
20
10
0
10
9
8
7
6
5
4
3
2
1
0
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Prescott: 1898-2000

Freeze Probabilities - Prescott

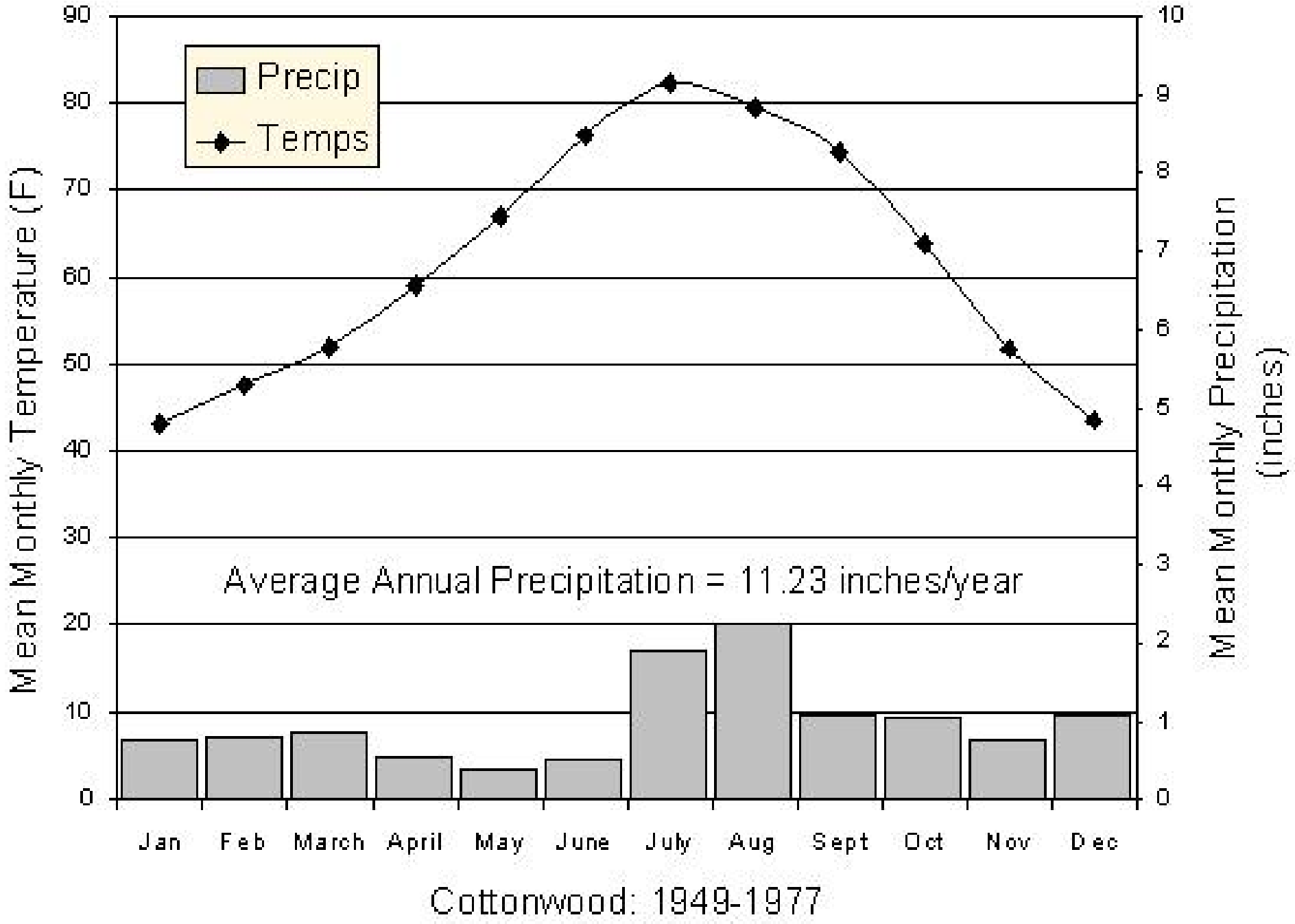
Spring Freeze Probabilities (32.5 degrees F)

Earliest	90%	80%	70%	60%	50%	40%	30%	20%	10%	Latest
4/14	**4/26**	**5/3**	**5/8**	**5/13**	**5/18**	**5/21**	**5/26**	**5/31**	**6/2**	**6/17**

Fall Freeze Probabilities (32.5 degrees F)

Earliest	10%	20%	30%	40%	50%	60%	70%	80%	90%	Latest
8/23	**9/20**	**9/25**	**10/1**	**10/5**	**10/11**	**10/14**	**10/16**	**10/21**	**10/27**	**11/5**

Average Growing Season = 140 days


Precip
Temps
Average Annual Precipitation = 11.23 inches/year
Mean Monthly Temperature (F)
Mean Monthly Precipitation (inches)
90
80
70
60
50
40
30
20
10
0
10
9
8
7
6
5
4
3
2
1
0
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Cottonwood: 1949-1977

Freeze Probabilities - Cottonwood

Spring Freeze Probabilities (32.5 degrees F)

Earliest	90%	80%	70%	60%	50%	40%	30%	20%	10%	Latest
3/11	**3/24**	**3/26**	**4/3**	**4/9**	**4/15**	**4/20**	**4/25**	**4/29**	**5/5**	**5/8**

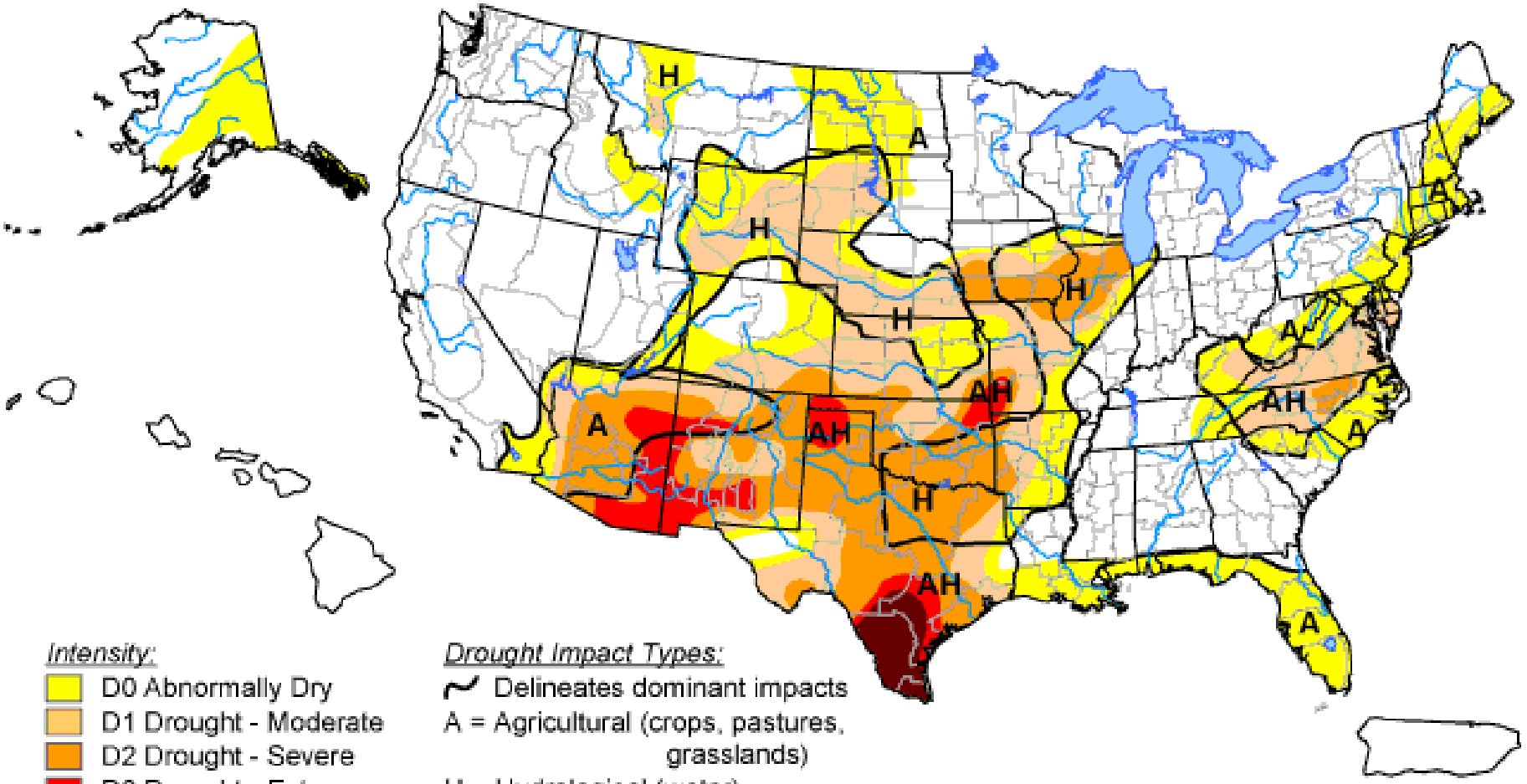
Fall Freeze Probabilities (32.5 degrees F)

Earliest	10%	20%	30%	40%	50%	60%	70%	80%	90%	Latest
10/18	**10/24**	**10/25**	**10/29**	**11/4**	**11/7**	**11/10**	**11/12**	**11/14**	**11/18**	**11/25**

Average Growing Season = 194 days

U.S. Drought Monitor

March 28, 2006
Valid 7 a.m. EST



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:
- ~ Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)
- (No type = Both impacts)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

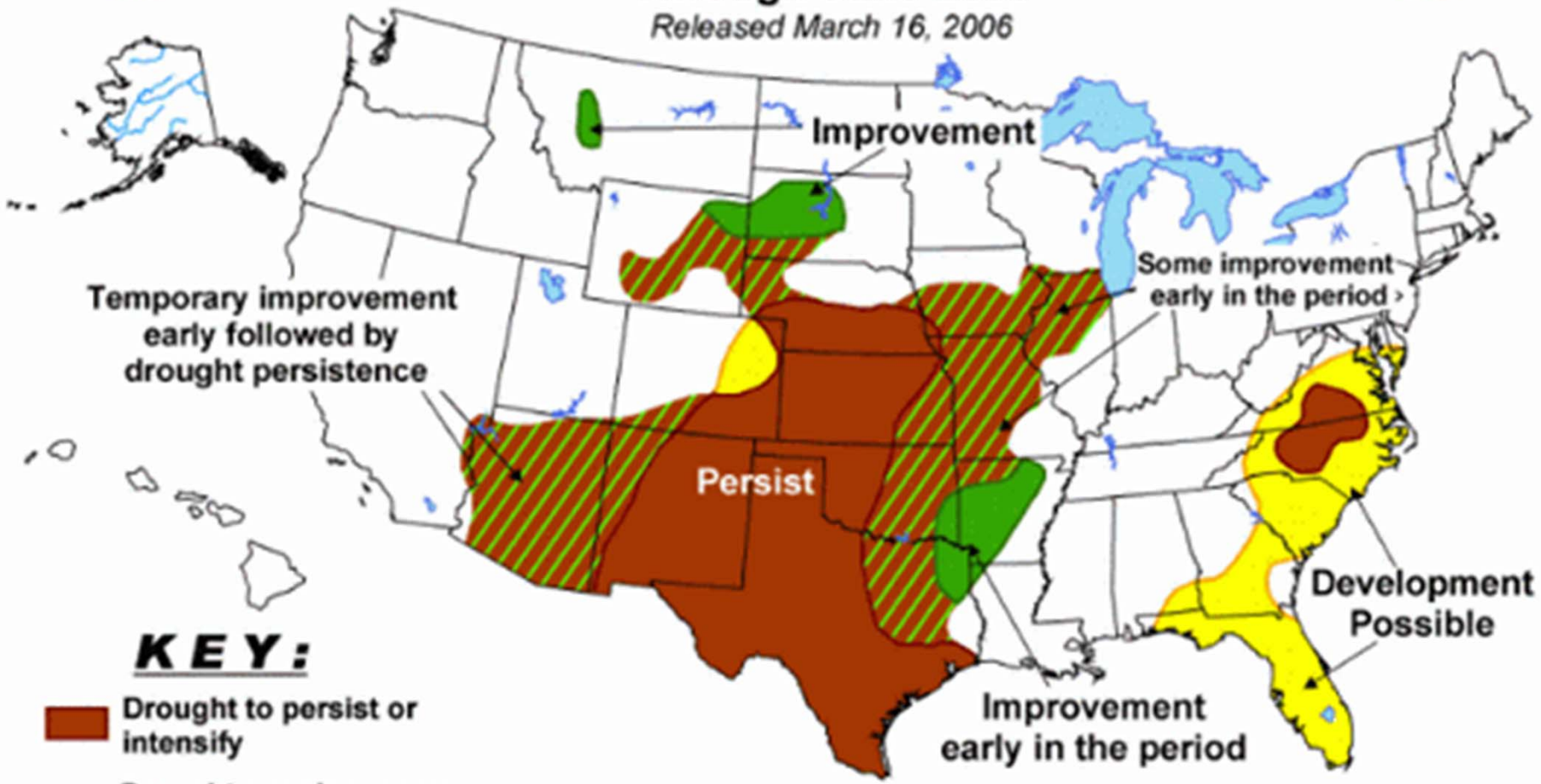
Released Thursday, March 30, 2006

Author: C. Tankersley/L. Love-Brotak, NOAA/NESDIS/NCDC

U.S. Seasonal Drought Outlook

Through June 2006

Released March 16, 2006



KEY:

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts general, large-scale trends based on subjectively derived probabilities guided by numerous indicators, including short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more that a few days in advance, so use caution if using this outlook for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4). For weekly drought updates, see the latest Drought Monitor map and text. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

El Nino and La Nina

- Related to temperature and current in the equatorial Pacific Ocean
- El Nino increases the probability of winter precipitation
- La Nina almost always forecasts low winter precipitation

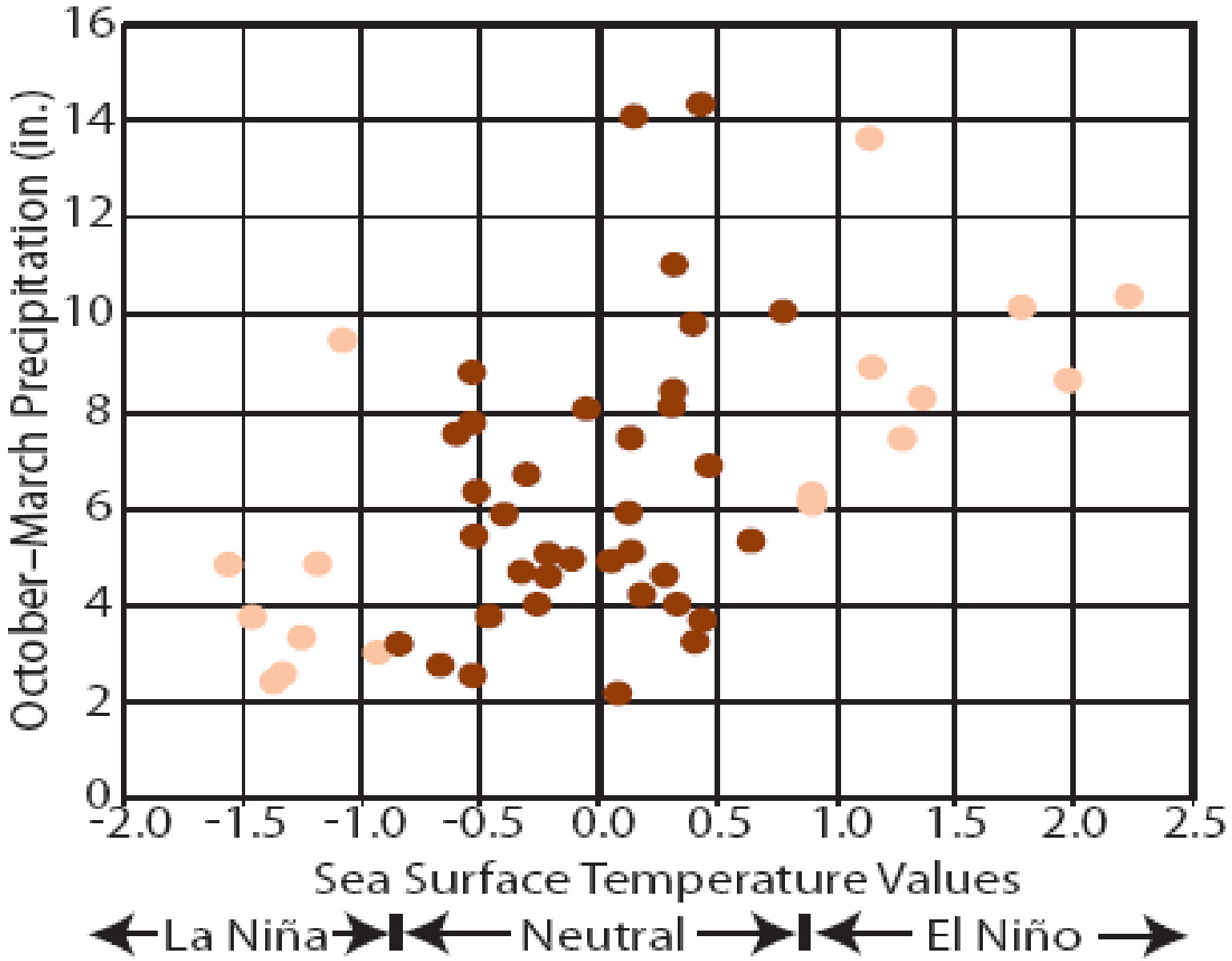
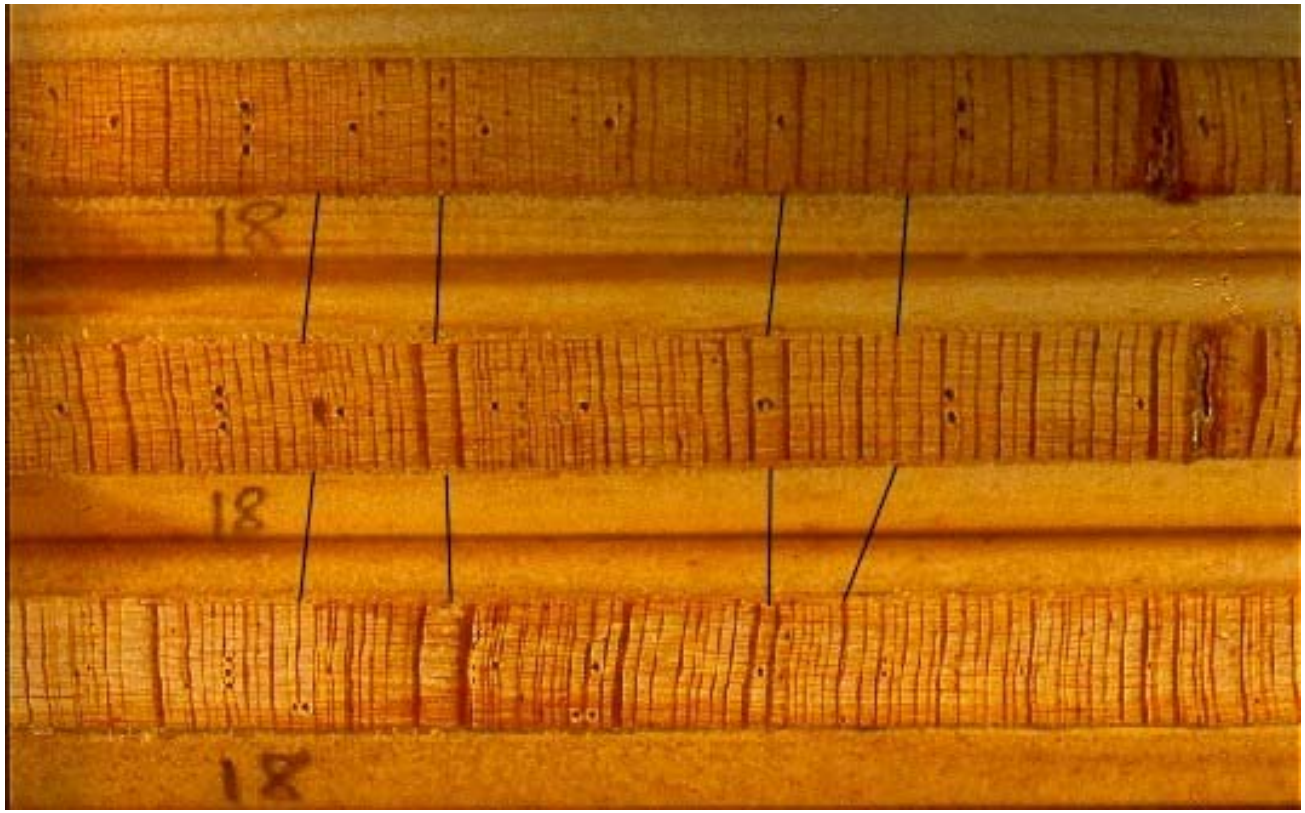


Figure 2: Arizona precipitation. Points represent October–March precipitation tallies, with values from 1951–2003.

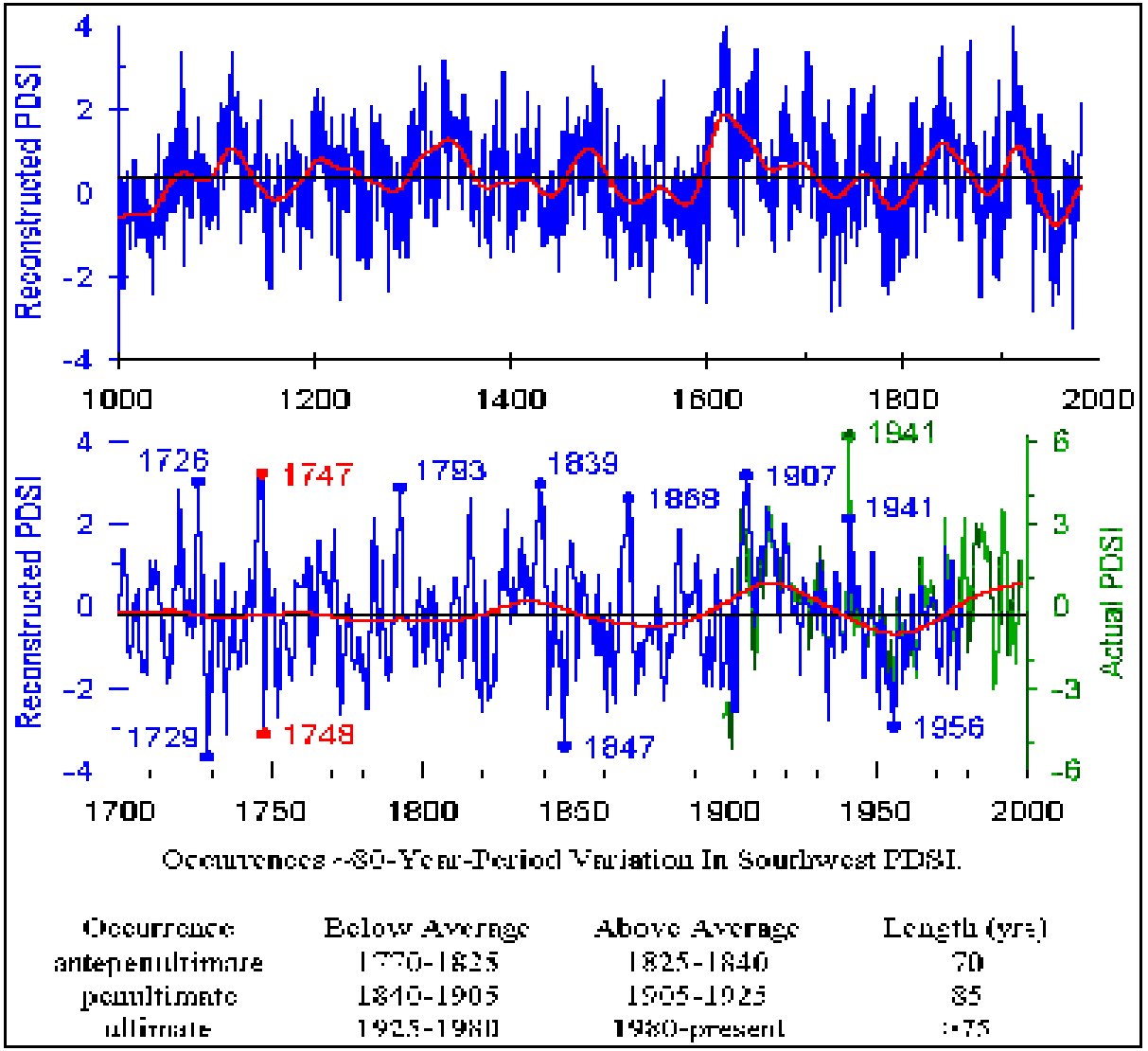
Arizona's Paleoclimate

- Data gathered from tree ring and pack rat midden studies



Long-Term Moisture Variability

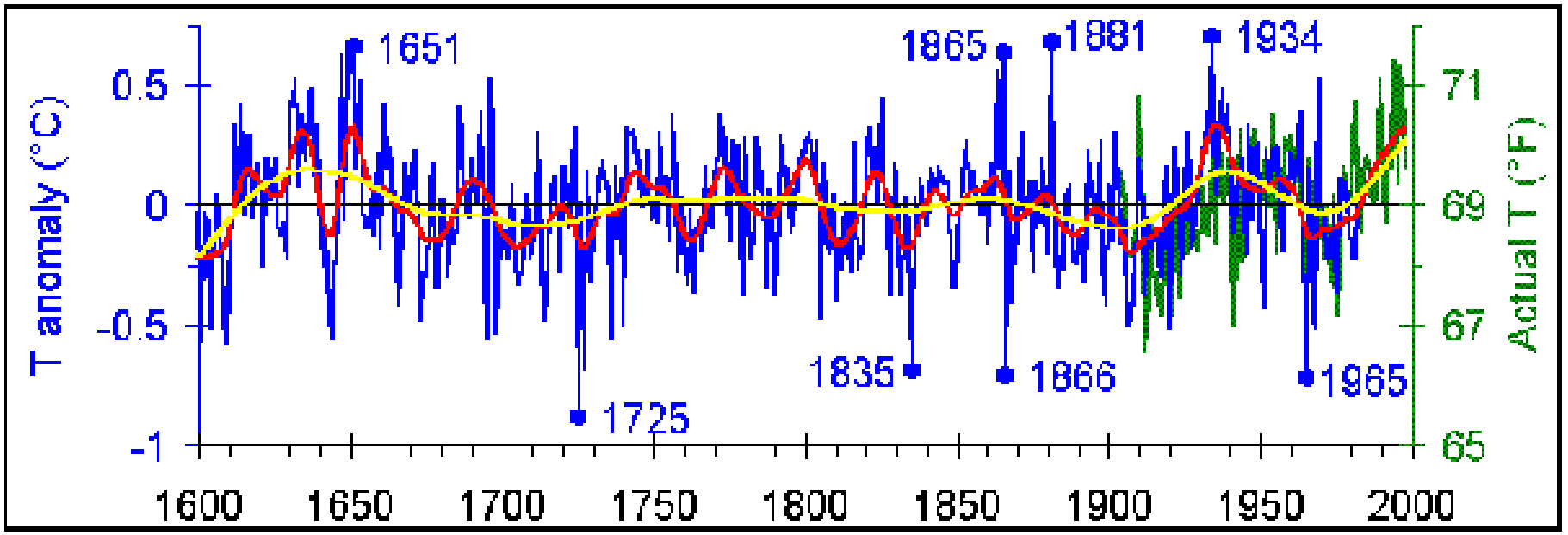
- 20 year early 1900s wet period exceeded only in early 1600s.
- Longest drought of millennium in 1500s.
- ~80 year pattern of variation, alternating below to above average PDSI (Gleissberg solar cycle?)



Occurrences ~80-Year-Period Variation In Southwest PDSI.

Occurrence	Below Average	Above Average	Length (yrs)
antepenultimate	1770-1825	1825-1840	70
penultimate	1840-1905	1905-1925	85
ultimate	1925-1980	1980-present	~75

Temperature Variability



- **Recent temperatures unprecedented in last 400 years.**
- ~20 year variability: warm mid-1600s & 1930s, cold 1907 & 1600.
- ~80 year pattern weak 1700-1900 (as for precipitation).
- **Extremes are recent** and short-term temporal variability also varies:
  - warm in 1865, 1881, 1934, equaled around 1651.
  - cool in 1725, 1835, 1866 and 1965.