Creeks and Communities

A Continuing Strategy for Accelerating Cooperative Riparian Restoration and Management

Water – A World Wide Problem

Use has tripled since 1950

Severing of ecological connectivity

No more Water today than 100 million years ago

Loss of Continental Storage

Solutions

- Water Treaties
- Dams
- Conservation
- Water Productivity
- Environmental Reserves
- Education

Catchment Restoration

- Luna Leopold – View of the River
  - US Water Budget
  - 30” Average Precipitation
  - Debit 9” runoff
    - 3” or 1/3 from overland flow
    - 6” or 2/3 from groundwater
  - Debit 21” evaporation/transpiration

Opportunity

- **Decrease runoff**

Increase Water Storage

Keep Water on the Land Longer

? Riparian Health?

Pre-European Influence

Fisheries and Wildlife Habitat

- Varies by species
- Varies by Site

Native Species and Height of Vegetation

Native Ungulates

Inclusion of Humans and Their Lifestyles

Stream Function

Bear Creek May 1977

6 years

Bear Creek May 1983

9 years

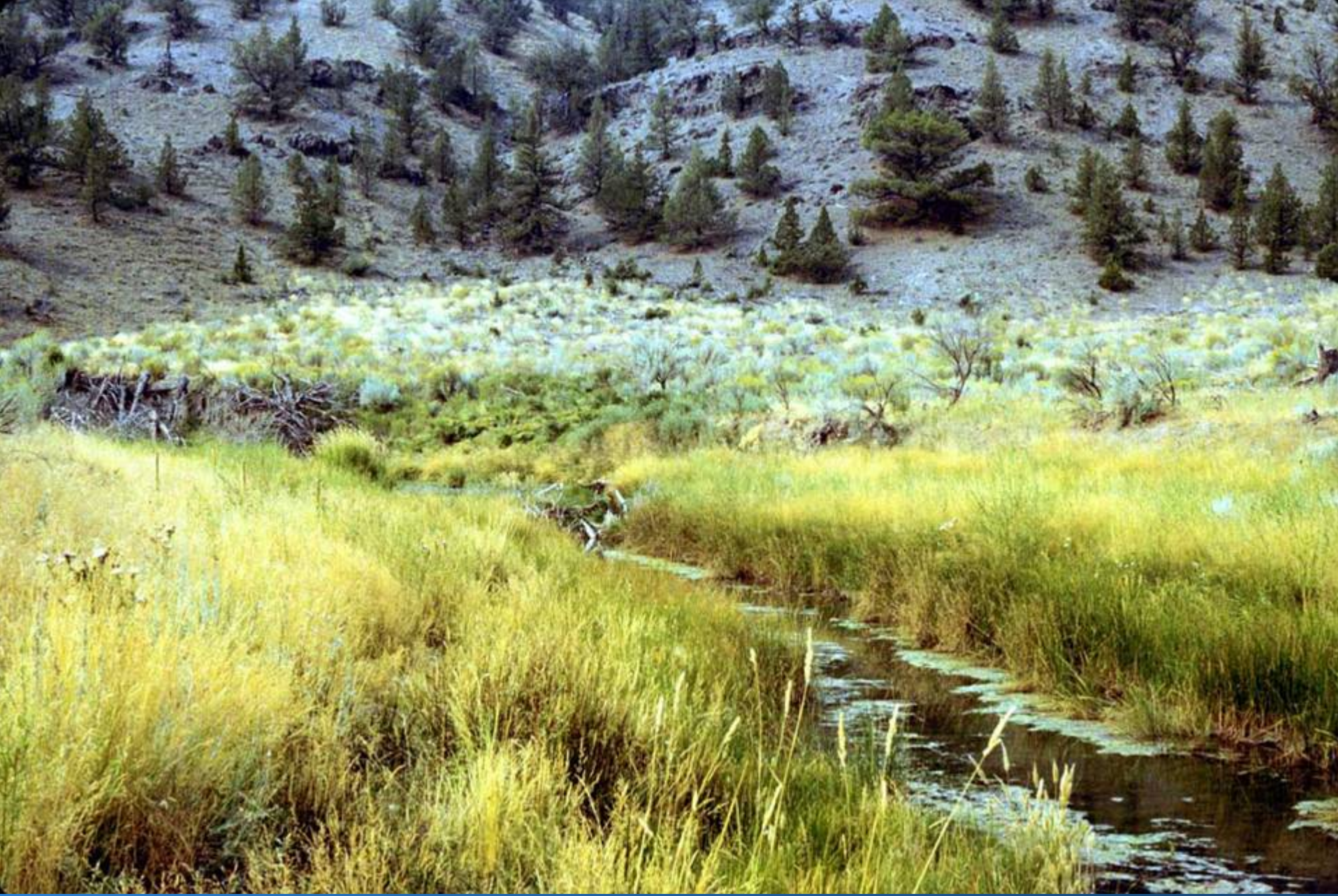
Bear Creek Aug 1986

9.8 years

Bear Creek June 1987

10 years

Bear Creek Aug 1987



11 years

Bear Creek Oct 1988

16 years

Bear Creek Aug 1993

18 years

Bear Creek Nov 1995

18.5 years

Bear Creek Feb 1996

18.7 years

Bear Creek April 1996

19 years

Bear Creek Oct 1996

20 years

Bear Creek Sept 1997

22.5 years

Bear Creek Dec. 2000

24 years

Bear Creek July 2001

25 years

Bear Creek July 2002

26 years

Bear Creek May 2003

27 years

Bear Creek March 2004

27 years

Bear Creek May 2004

27 years

Bear Creek May 2004

27 years

Bear Creek May 2004

27 years

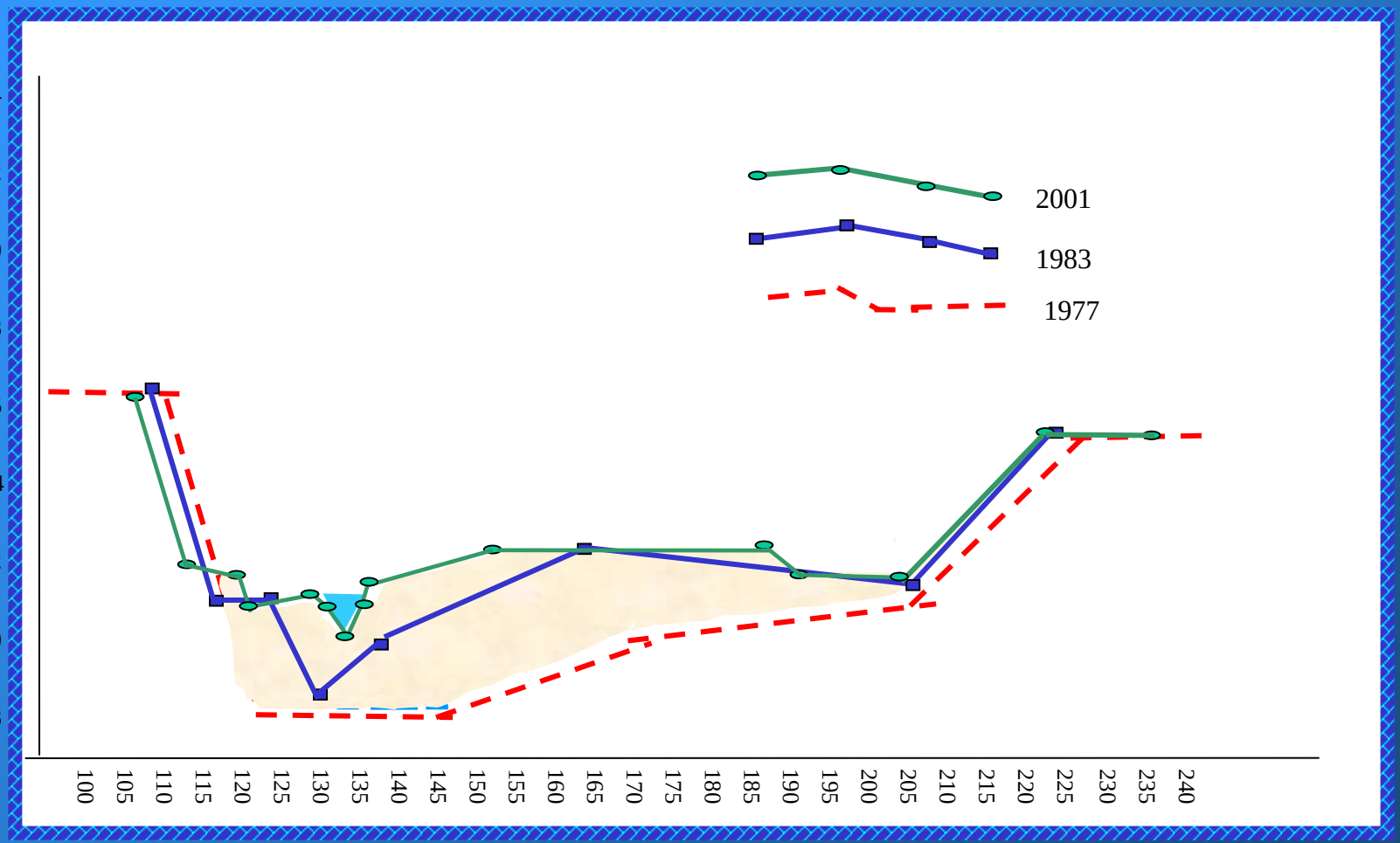
Bear Creek July 2004

27 years

Bear Creek July 2004

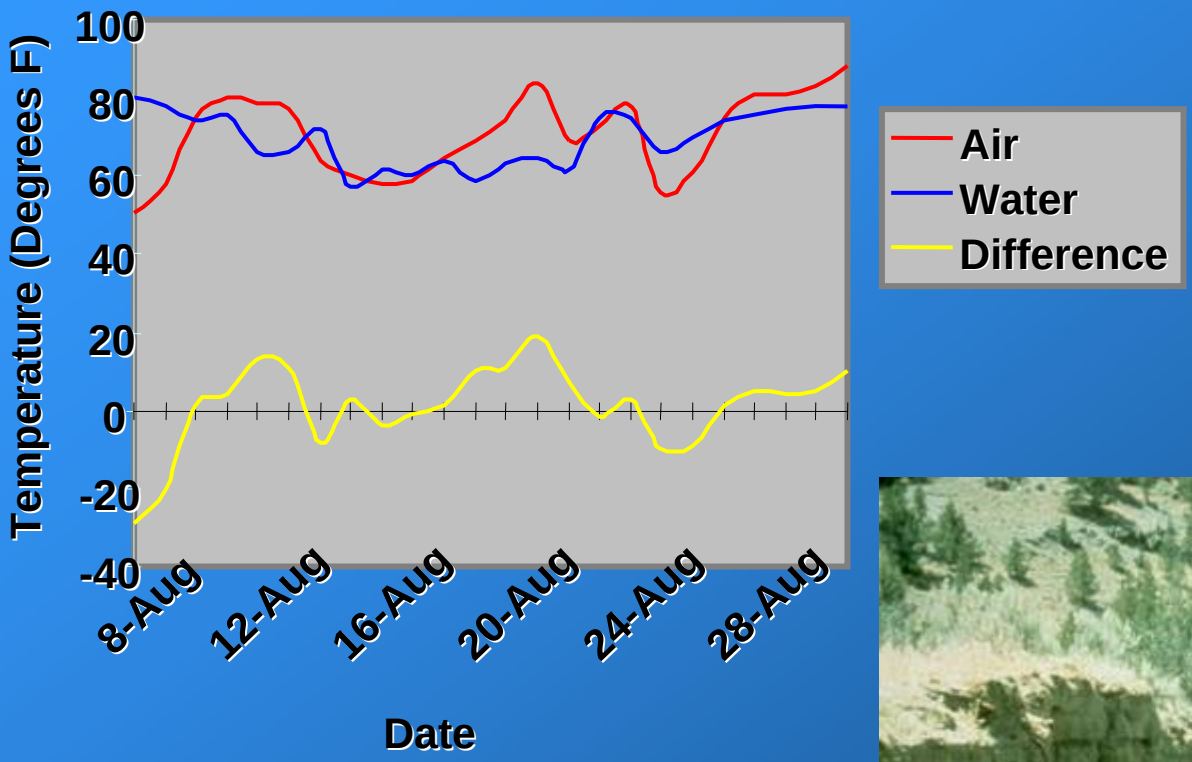
Bear Creek : Change In Channel Profile (1977 - 2001)

2001



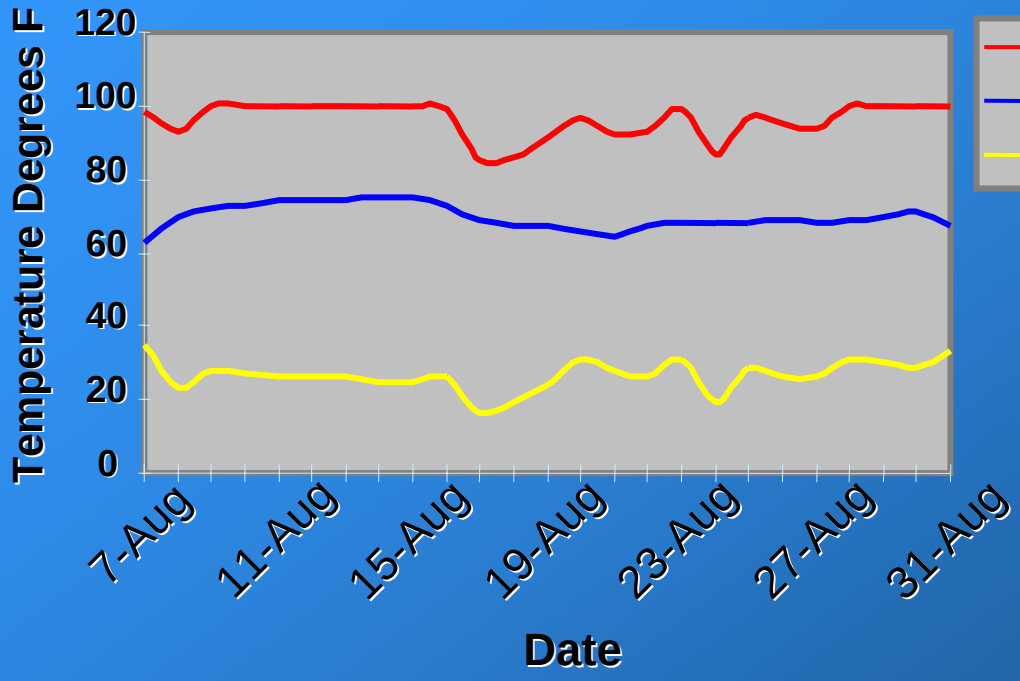
Difference in Air & Water Temperatures

Bear Creek - Central Oregon
1976



Difference in Air & Water Temperatures

Bear Creek - Central Oregon
1998



Bear Creek
(3.5 Miles)

	1978	1994
Wetted Area	7.8 acres	15.9 acres
Bank Erosion	12,448 feet	799 feet
Water Storage	500,000 gal/mi	1.5 mil gal/mi
Production	200 lbs/acre	2000 lbs/acre

Data from C. Rasmussen (1996) and W. Elmore

Winston Churchill

- Americans can always be trusted to do what is right after they have tried everything else.