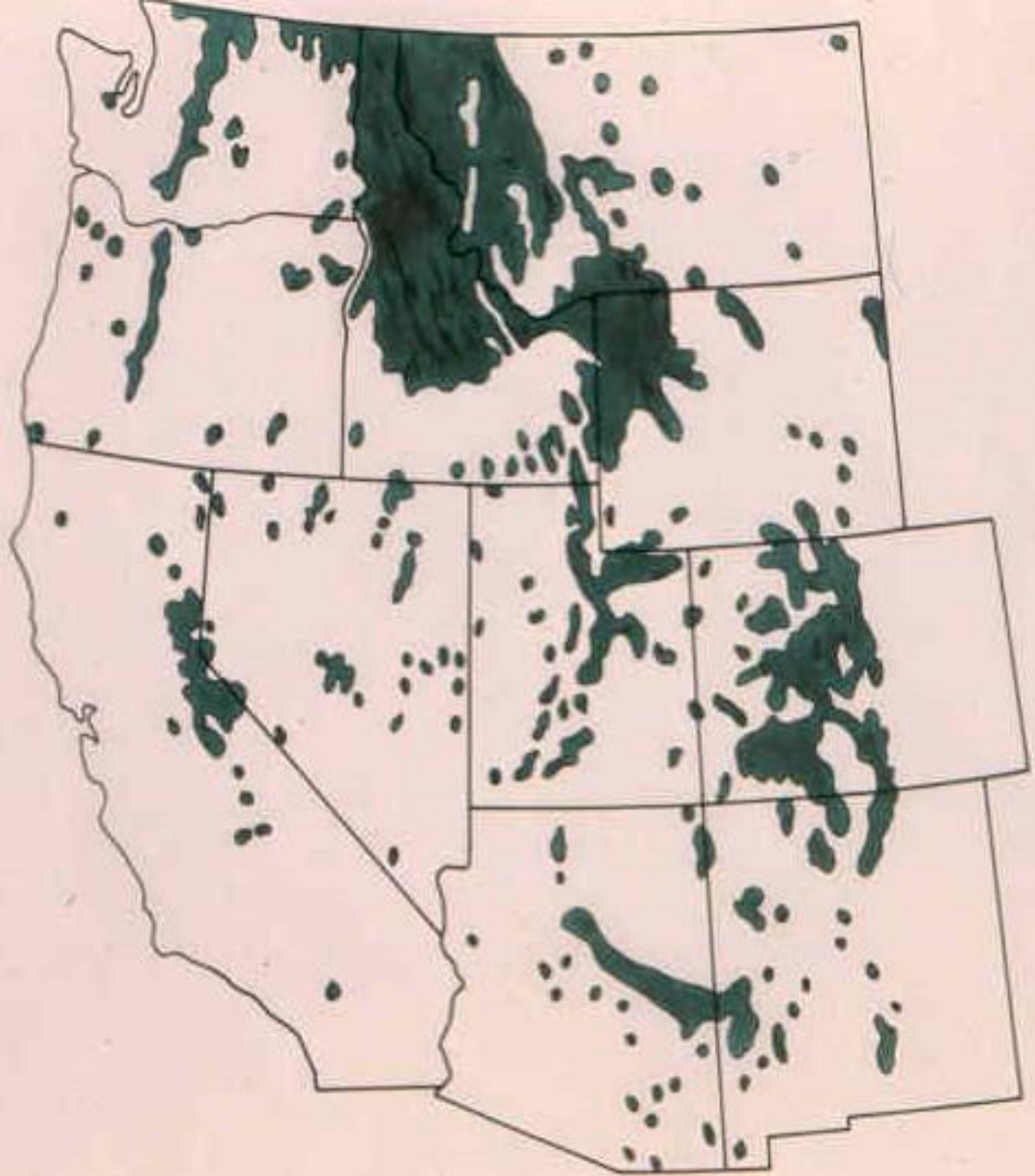


Current State of Western Aspen

Presented to
Aspen Workshop – South Lake Tahoe
10/28/2014

Dale L. Bartos, Ph.D. (retired)
Aspen Ecologist, USDA-FS Rocky
Mountain Research Station
Logan, Utah

Aspen Distribution



Functional Aspen Groups

Snowpocket Aspen (Stable Aspen Community)



Krummholz Aspen (Stable Aspen Community)



Upland Aspen/Conifer (Seral Aspen Community)



Riparian Aspen (Seral Aspen Community)



Upland Pure Aspen (Stable Aspen Community)



Meadow Fringe aspen



Lithic aspen





United States
Department
of Agriculture

Forest Service

Rocky Mountain
Research Station

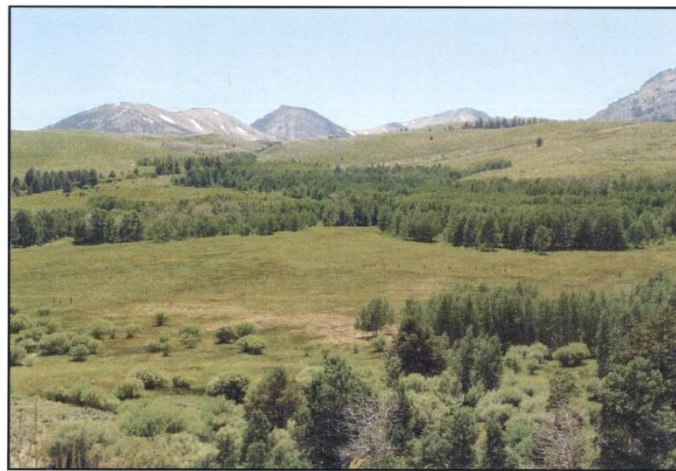
General Technical
Report RMRS-GTR-178

September 2006



Ecology, Biodiversity, Management, and Restoration of Aspen in the Sierra Nevada

Wayne D. Shepperd
Paul C. Rogers
David Burton
Dale L. Bartos



Asexual Regeneration



Aspen restoration via suckering



Aspen Restoration via suckers

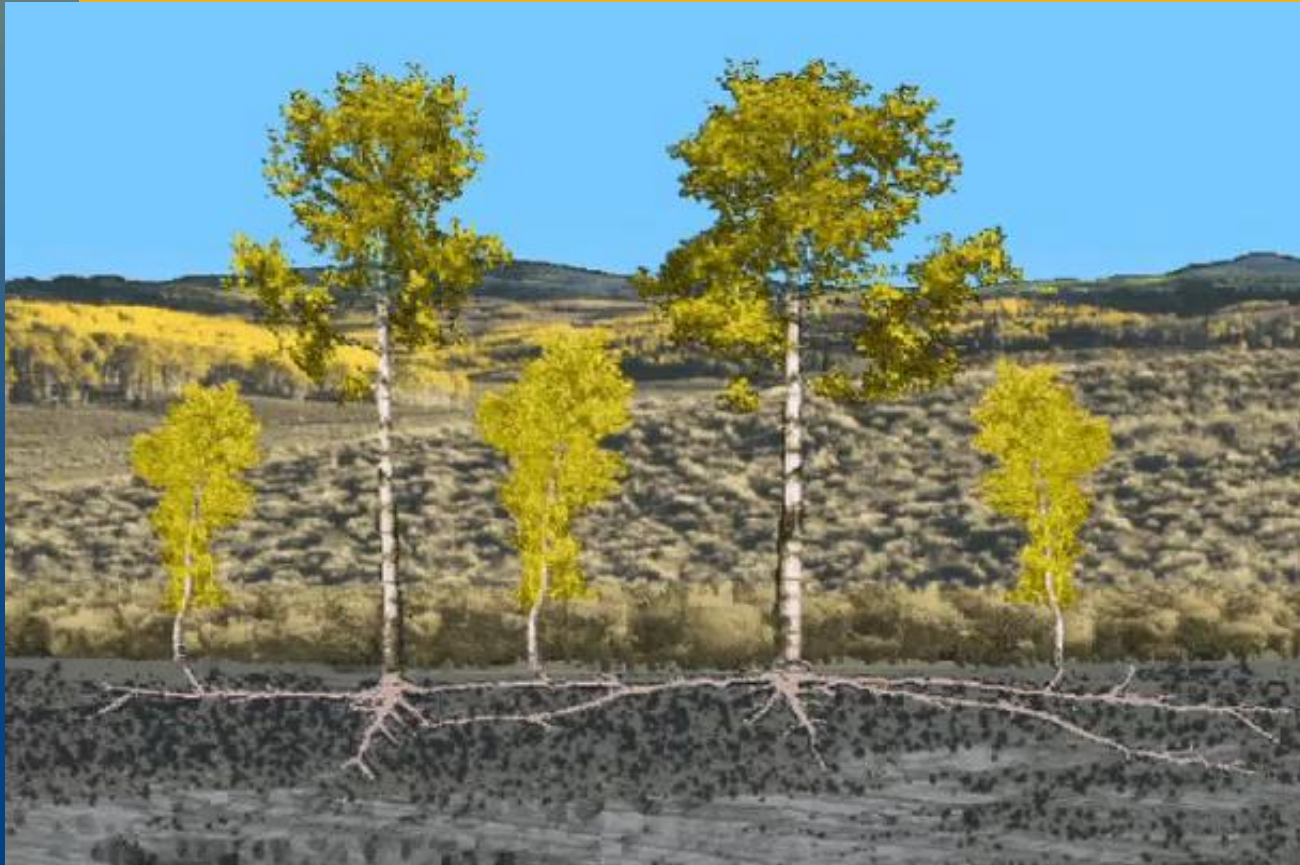




Figure 3-15. Profuse aspen seeding along a roadside in southern Colorado (note radio for scale). Source: Larry Johnson, U.S. Forest Service.

Values of Aspen

Livestock Forage

Wildlife Habitat

Water for numerous uses

Recreation

Wood Fiber

Aesthetics

Biodiversity

Decline of Aspen

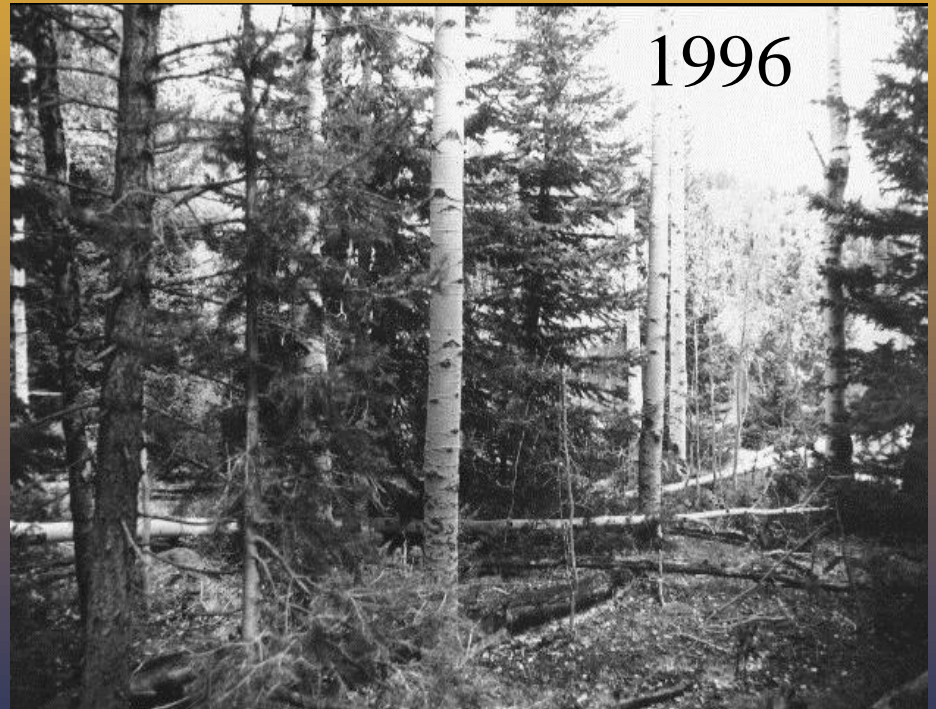
- Aspen replaced by spruce/fir
- Aspen replaced by sagebrush

Conifer invading Aspen



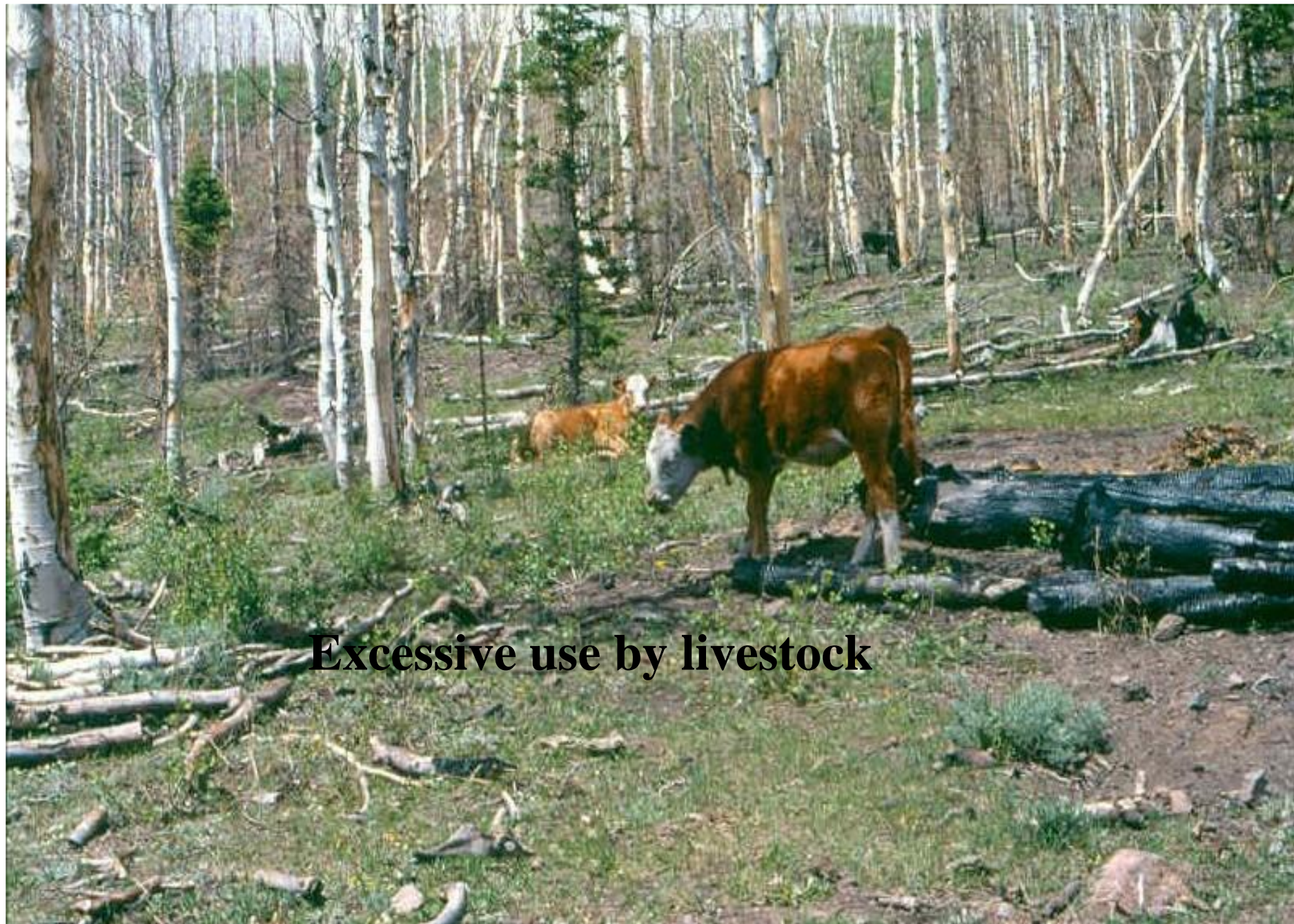
Aspen Decline with time

Slides from Charles Kay





Lack of burning



Excessive use by livestock



Excessive use by wildlife

Decline of Aspen - Resources Compromised

A photograph of a forest landscape. In the foreground, there is a field of dry, brownish grass. The middle ground is dominated by a dense forest. On the left side, several tall, thin trees with white bark and yellowing leaves are visible, indicating autumn. On the right side, there is a large area of dark green evergreen trees. The background shows more trees under a bright, slightly hazy sky. The overall scene depicts a diverse ecosystem.

Biodiversity (plants/animals)



Late Successional Aspen

A photograph of three people in a forest. The forest is dominated by aspen trees with white bark. The ground is covered in brown leaves and fallen branches. One person in a light green shirt and dark pants is leaning against a tree trunk. Another person in a white shirt and blue pants is bent over, working with a tool on the ground. A third person in a dark t-shirt and hat is standing nearby. The text 'Little Undergrowth under Late Successional Aspen' is overlaid in white at the bottom of the image.

**Little Undergrowth under
Late Successional Aspen**



**Lush Undergrowth Under
Pure Aspen >2,000 lbs/ac**



Water lost from the System

Water Loss as Succession proceeds



Next Slide



**Old Beaver Dam
on Previously
Flowing Stream**



RESTORATION EFFORTS

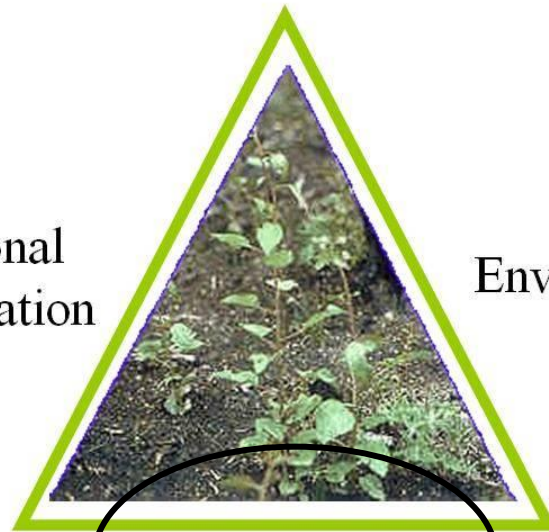
Western U.S.

Wayne Shepperd's Triangle

Aspen Regeneration Triangle

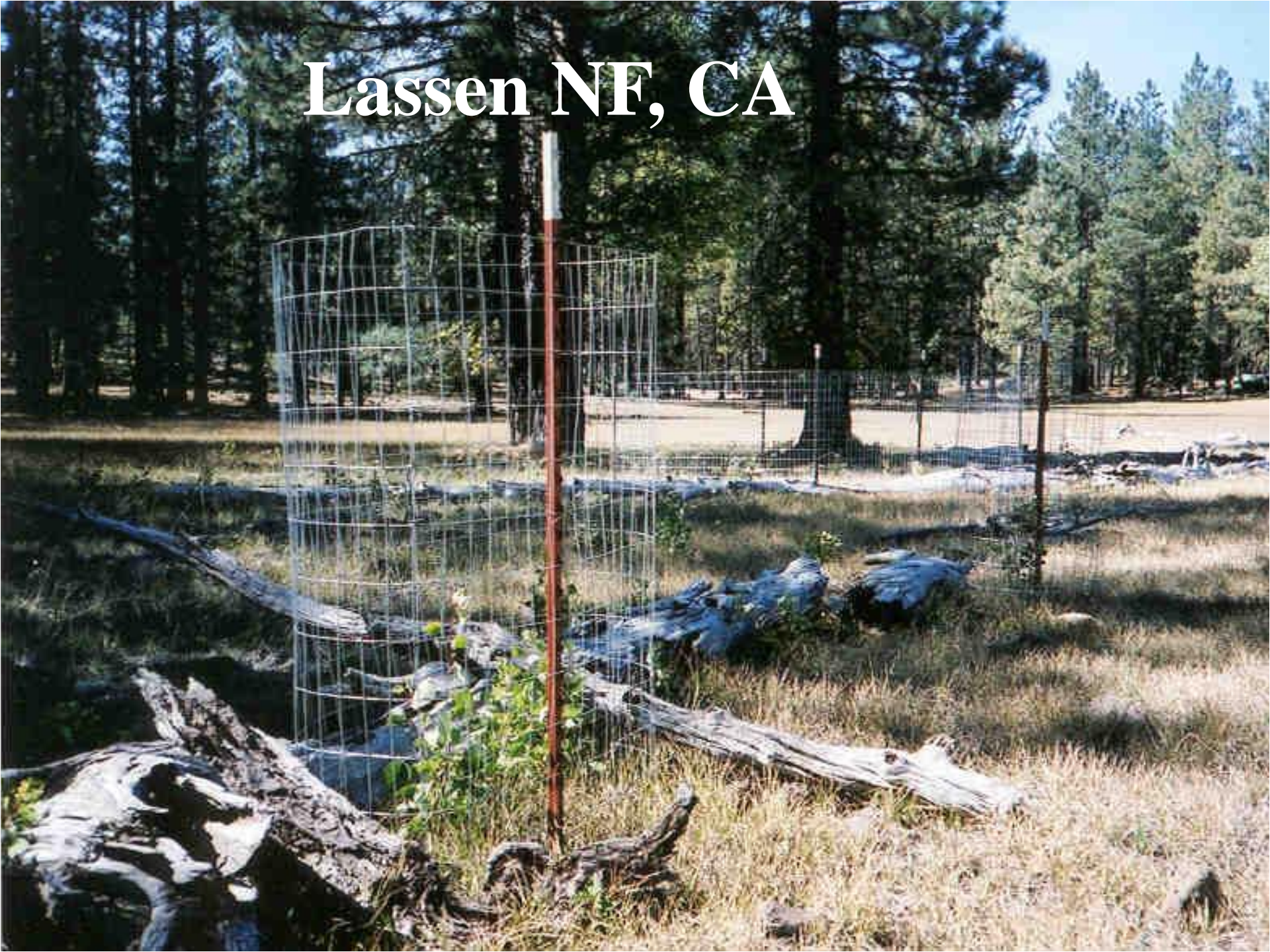
Hormonal
Stimulation

Environment



Protection

Lassen NF, CA



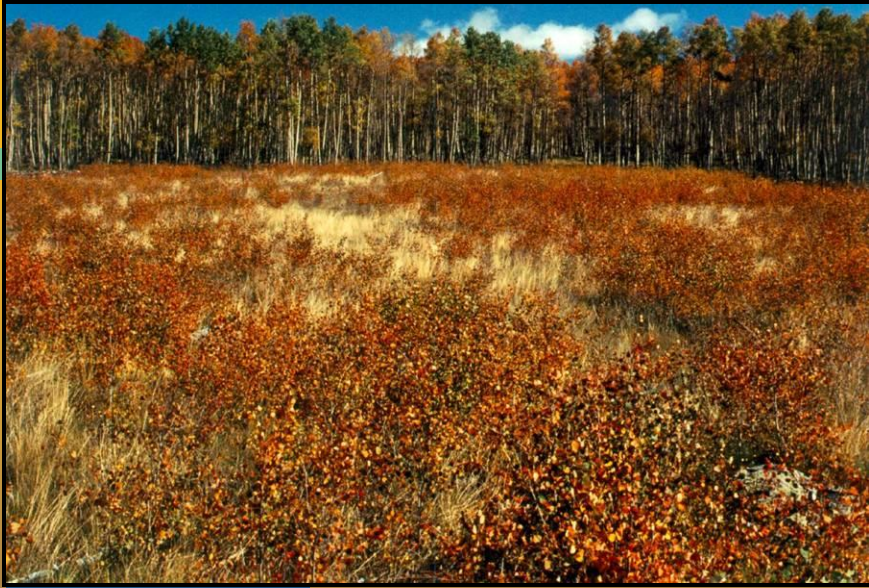
Clearcut-Whiteledges

Fishlake NF, Utah



Tidwell Slopes – 2003

Fishlake NF, Utah



Book cliffs-Eastern Ut. Exclosure



Aspen Restoration via fire

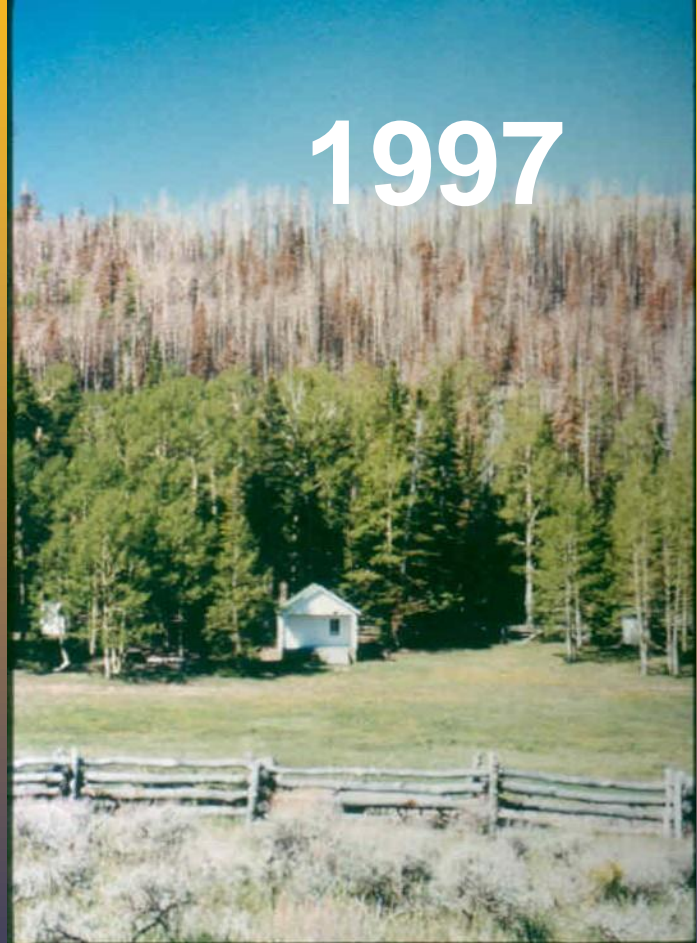


DIXIE HEAT

1996

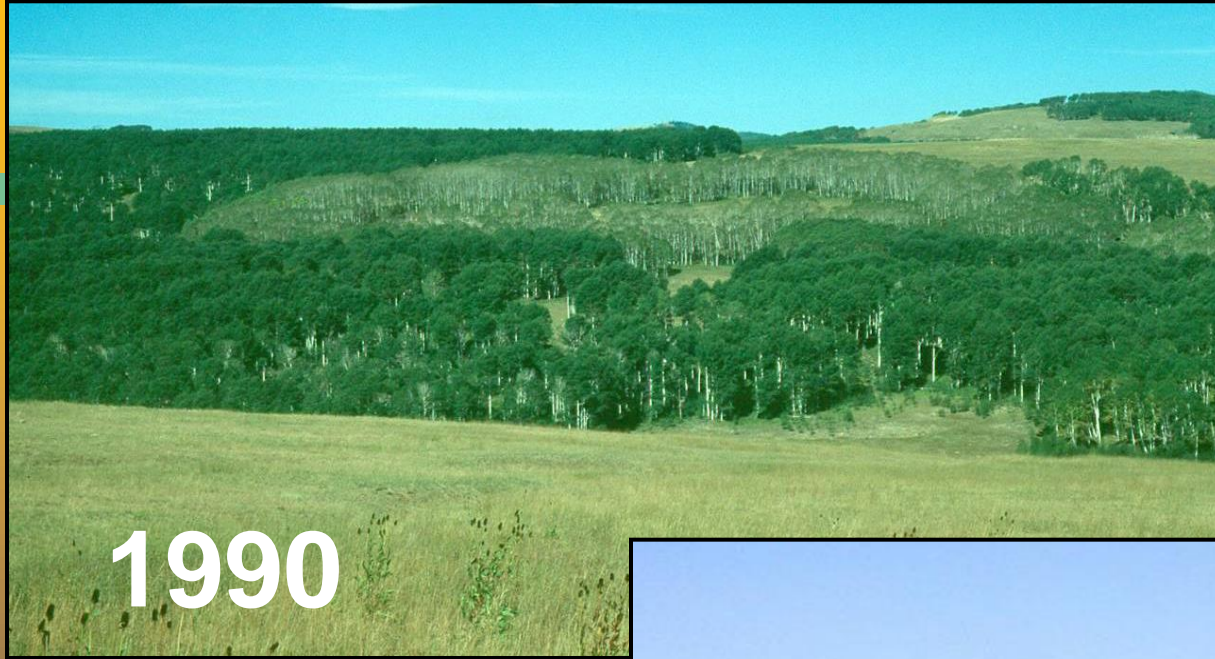


1997



Jones Corral (Dixie N.F.) burned 6/15/96 (high soil moisture to protect aspen roots in upper 20 cm).

SAD on Cedar Mtn, Southern Utah



Hinging – Black Hills



Slashing treatment – Black Hills



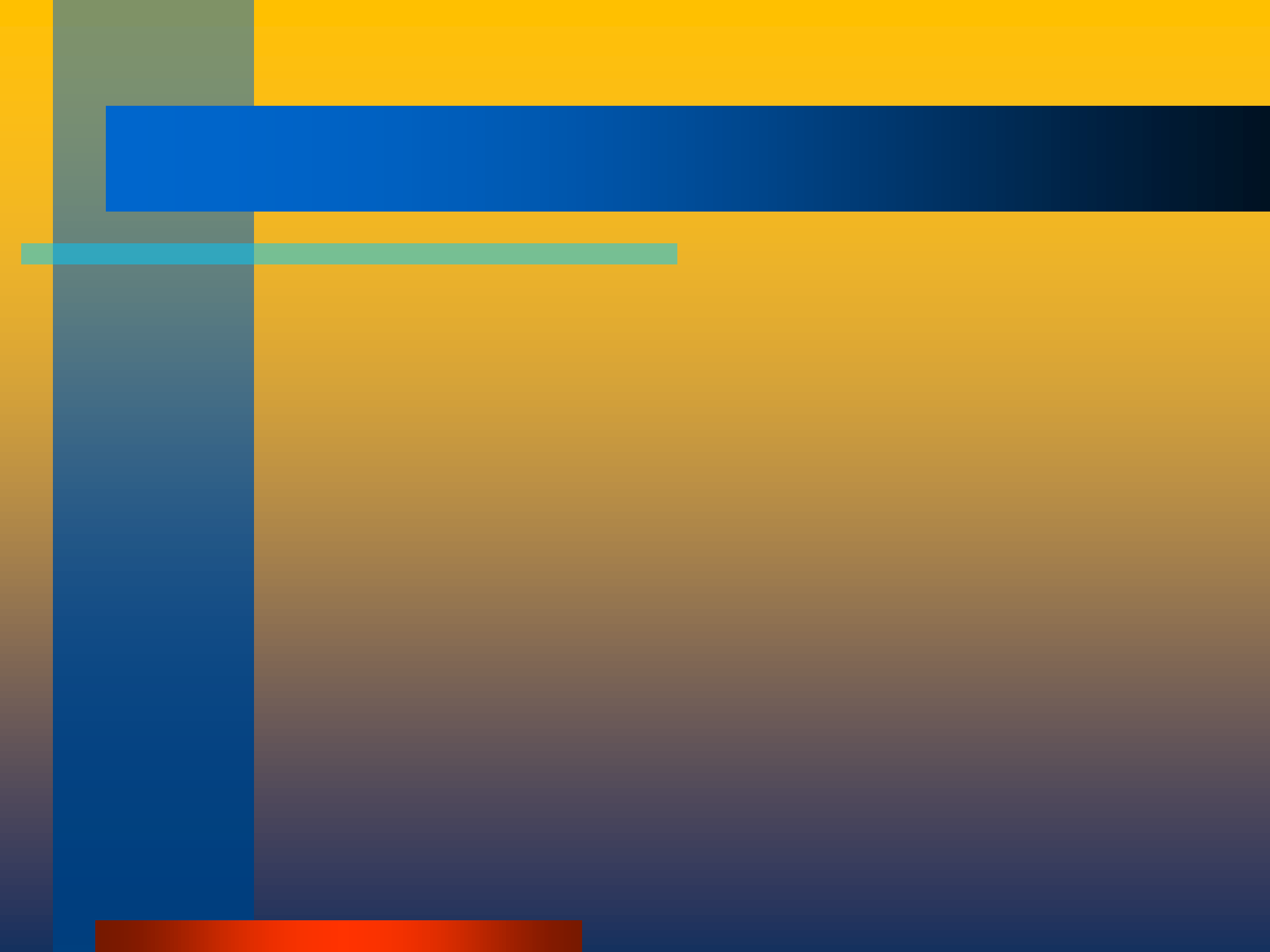
Current Status of Aspen

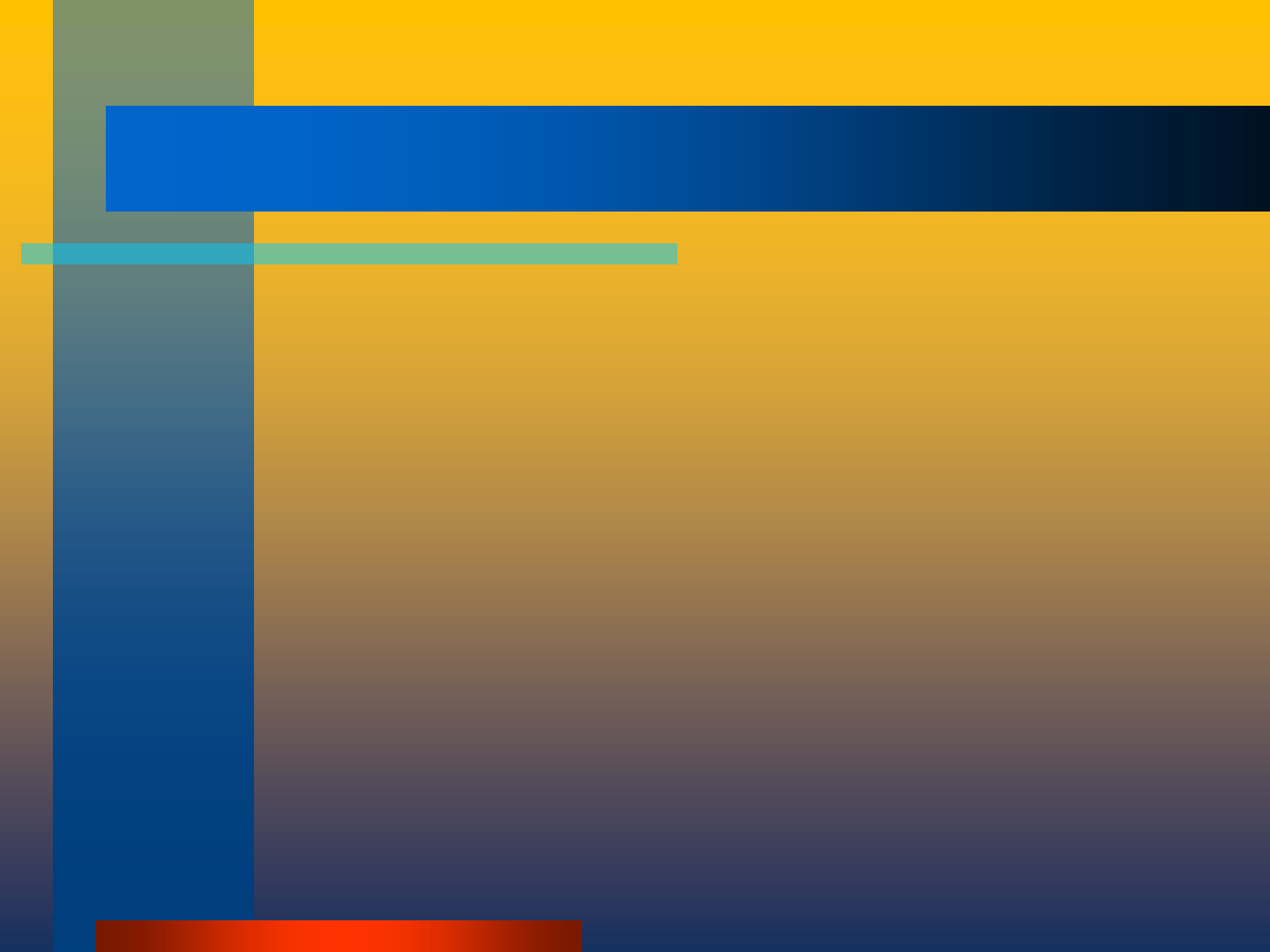
- Renewed interest in aspen issues
- Restoration efforts continues
- Protection of restored sites still critical
- SAD is slowing - Residual loss continues
- Pando clone (Fishlake N.F. Utah) 4-5 foot suckers with protection
- WAA (Western Aspen Alliance)

Conclusions



Not for distribution





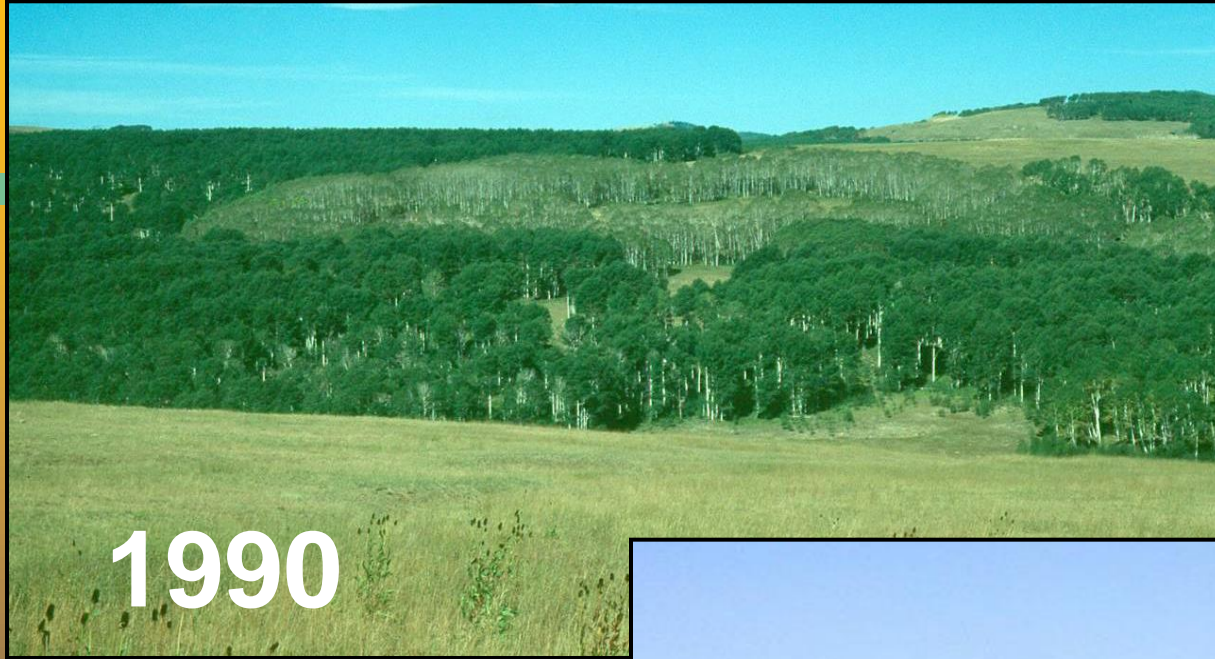
Conclusions



State	Historical Aspen Acres	Current Aspen Acres	Acres Lost	Decline %
Arizona	720,880	29,009	691,871	96
Colorado	2,188,003	1,110,764	1,077,239	49
Idaho	1,609,547	621,520	988,027	61
Montana	590,674	211,046	379,628	64
Nevada	-----	118,768	-----	-----
New Mexico	1,141,677	140,227	1,001,450	88
Utah	2,930,684	1,427,973	1,502,711	51
Wyoming	436,460	203,965	232,495	53
Total	9,617,925	3,863,272	5,754,653	60

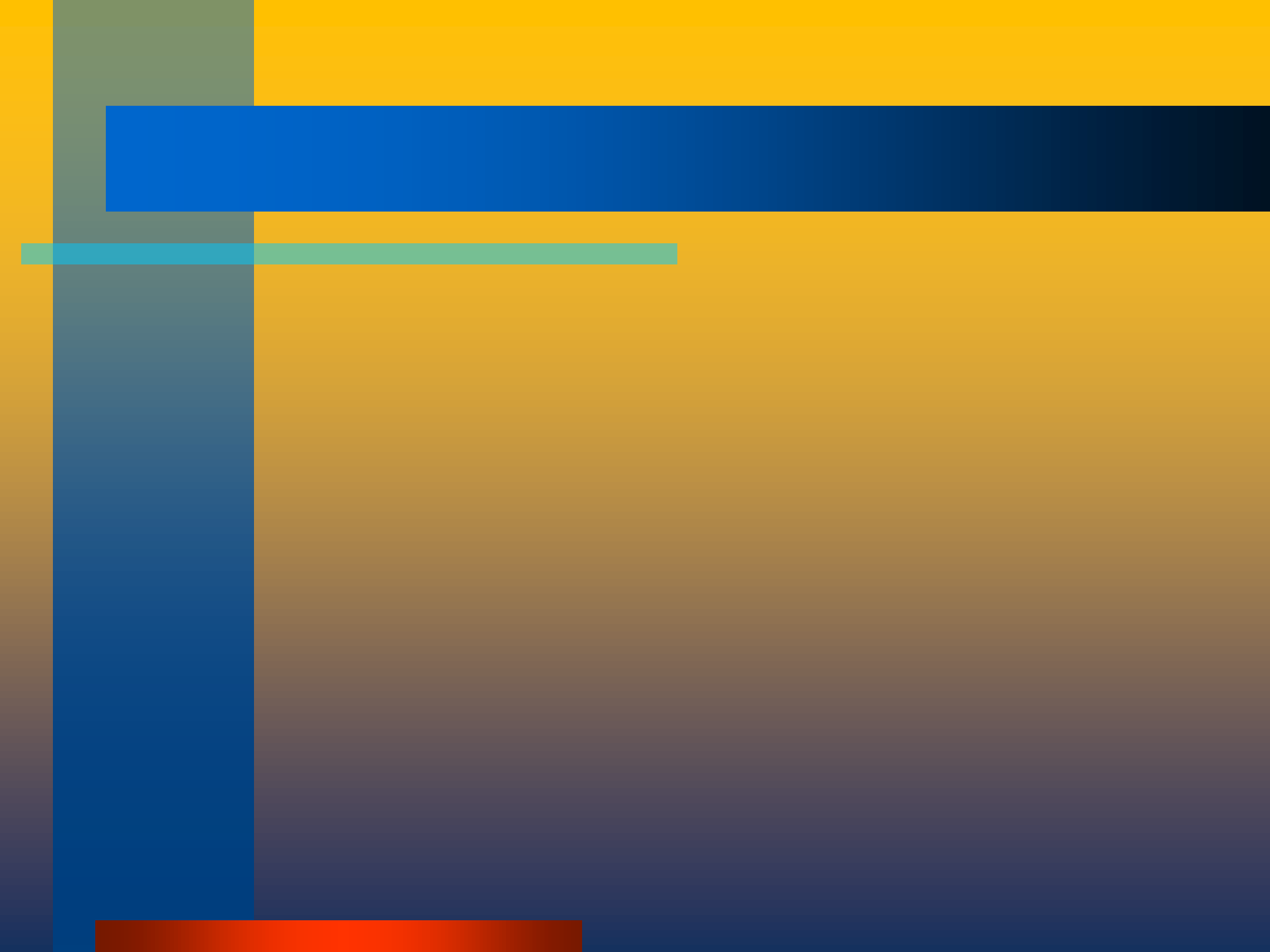
Current and Historical acres of Aspen for various states and % decline

SAD on Cedar Mtn, Southern Utah



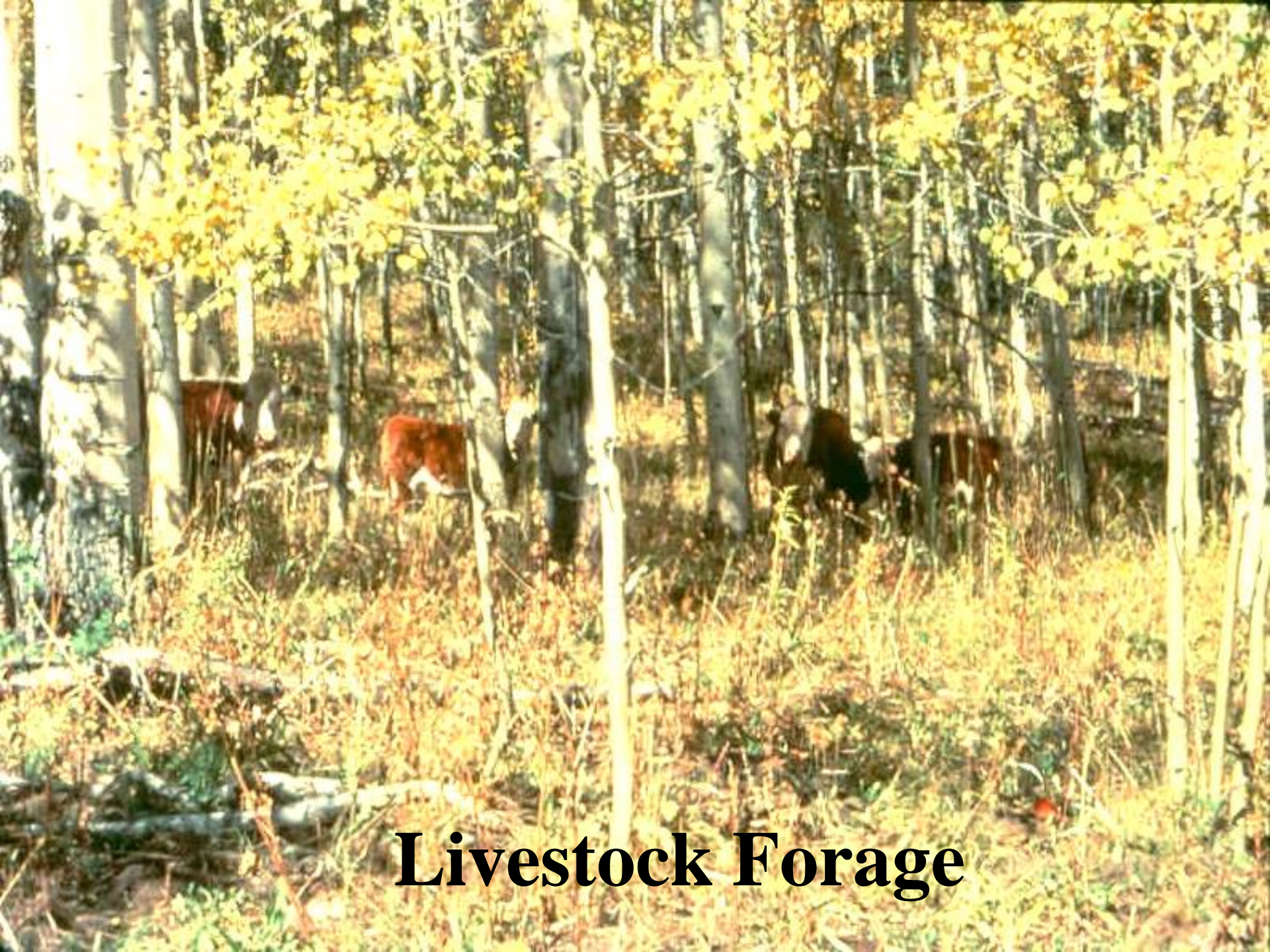


**Lush Undergrowth Under
Pure Aspen >2,000 lbs/ac**





Aesthetics



Livestock Forage

Mueggler RNA





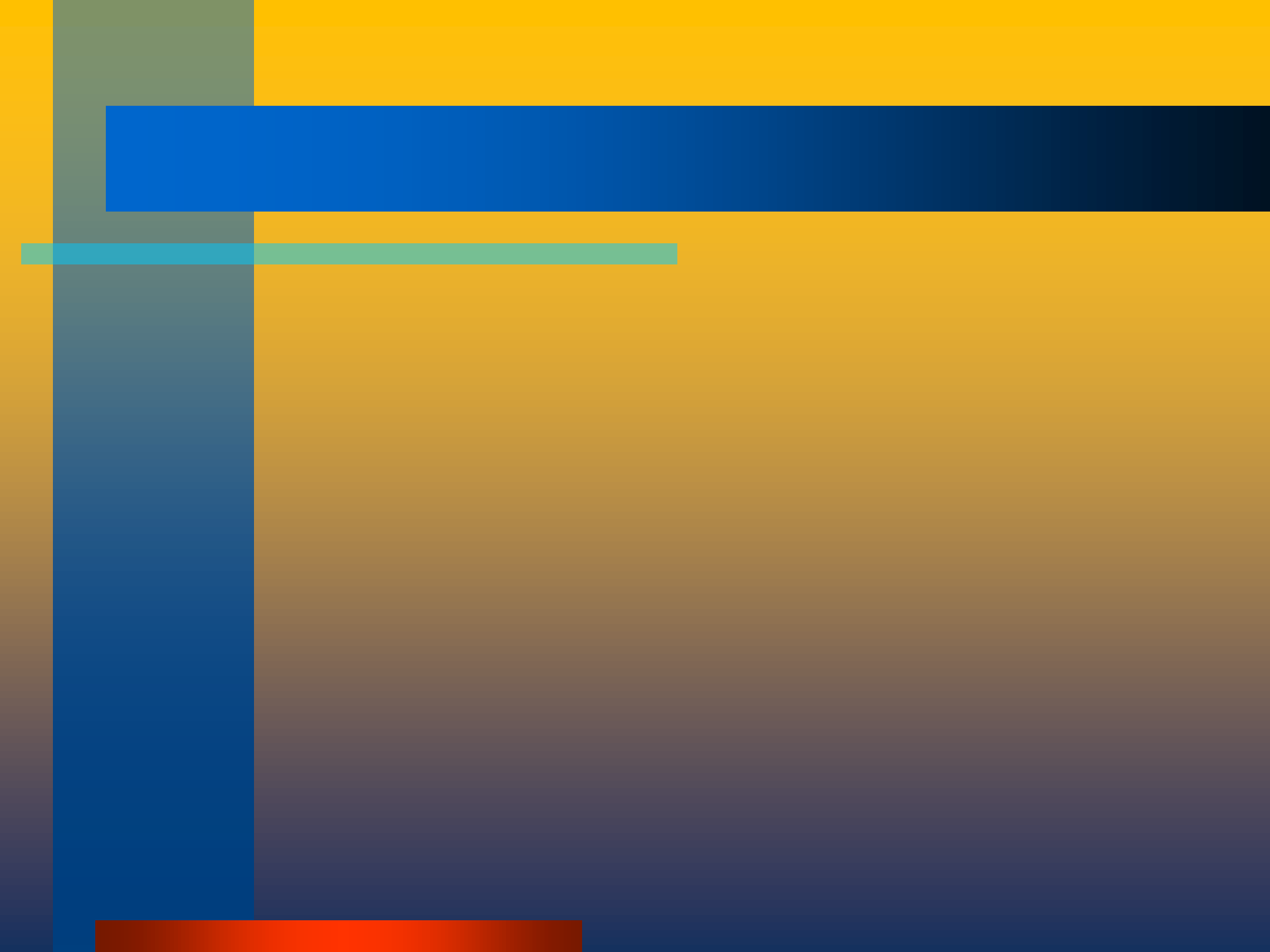
Wood Products



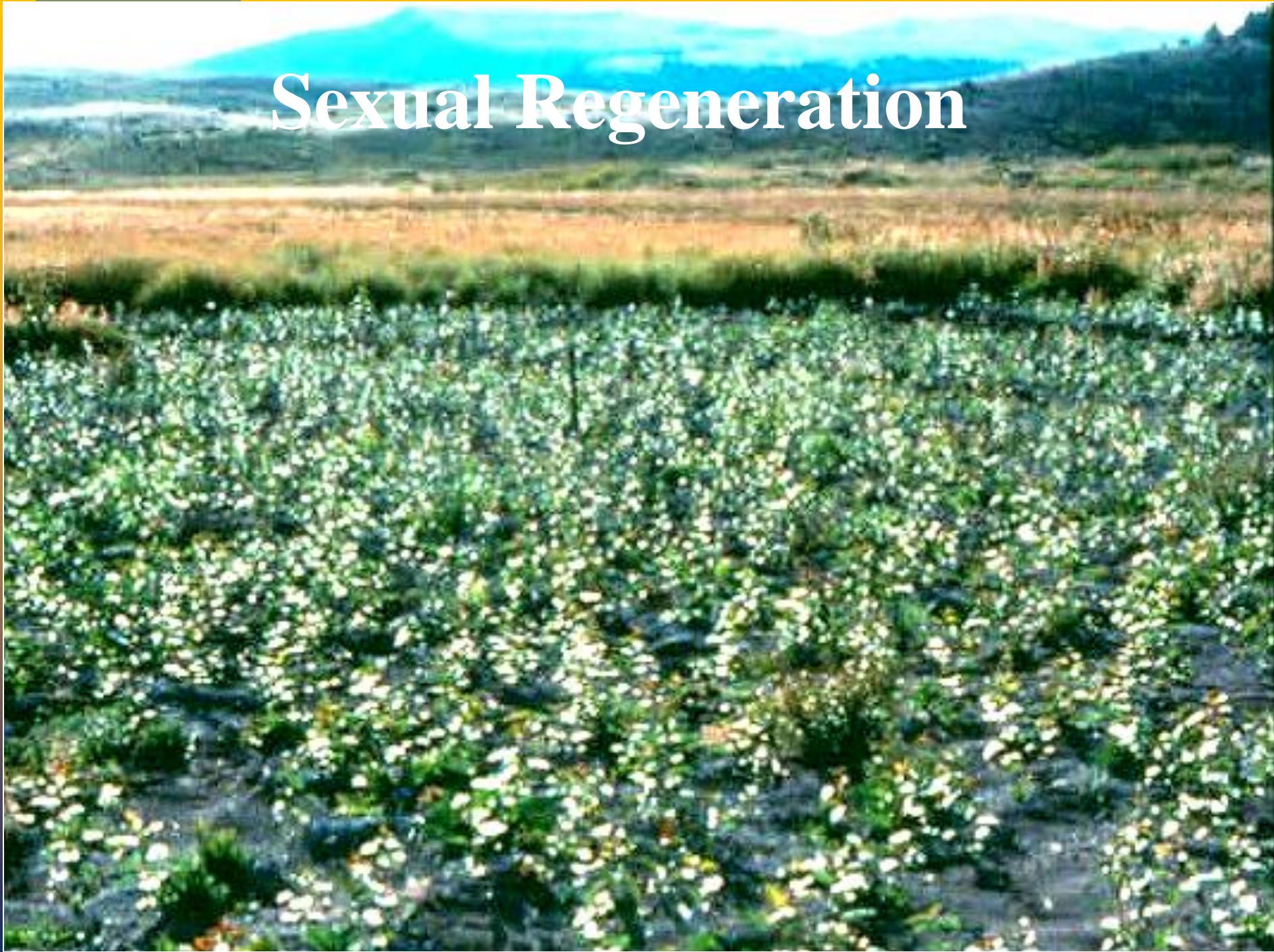
Recreational Opportunities

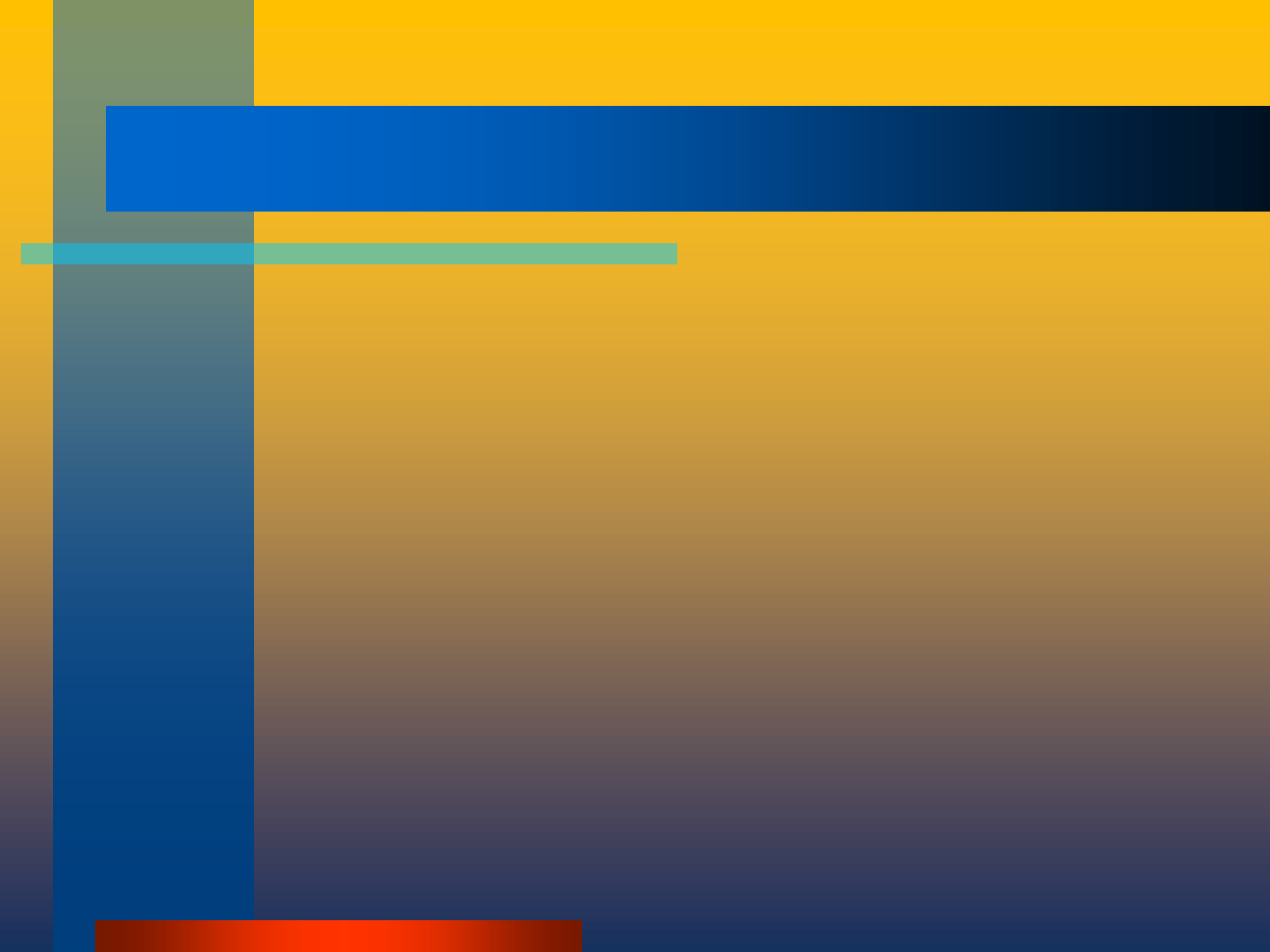
Water for numerous uses





Sexual Regeneration

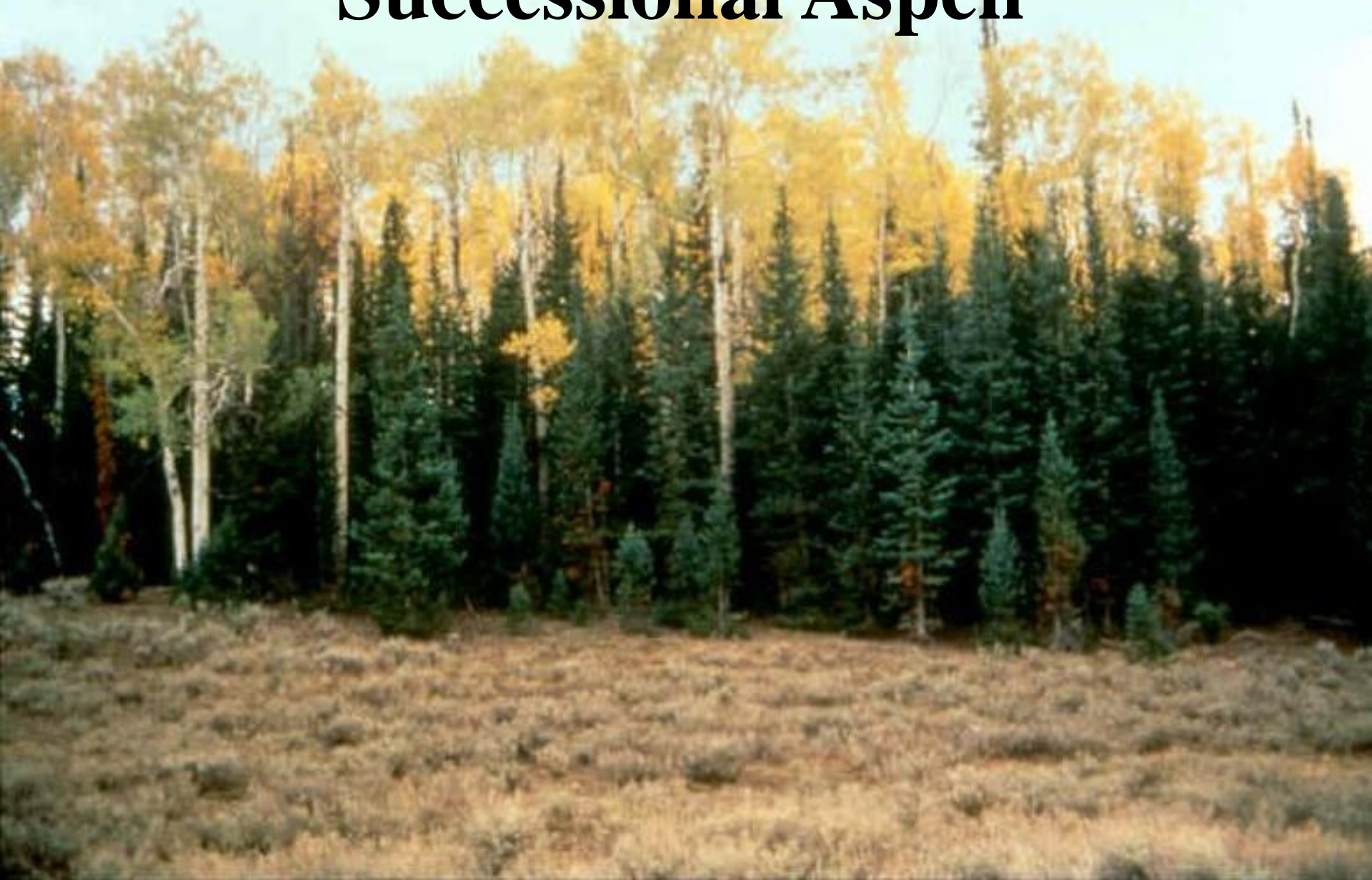




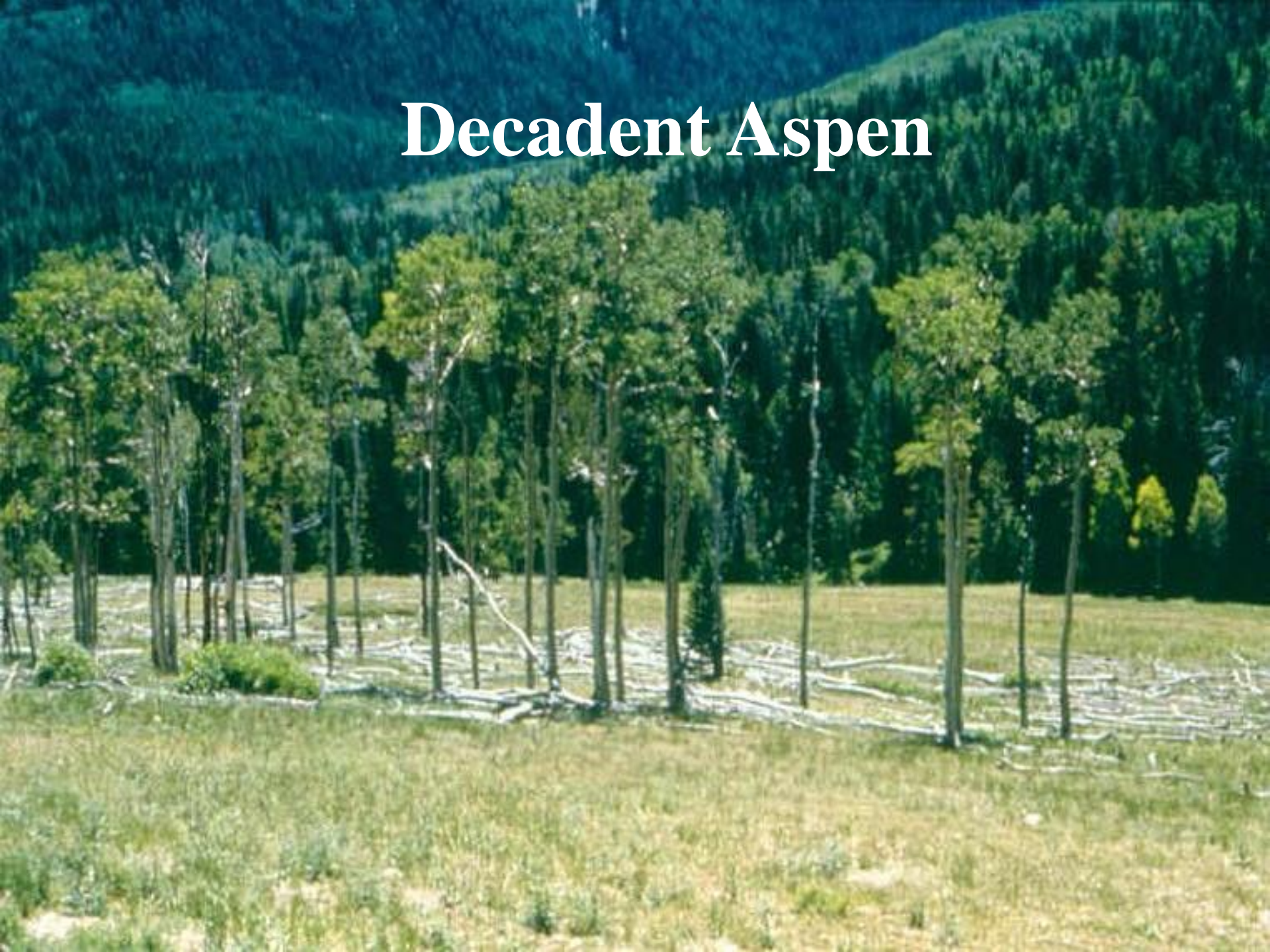
Stable or Climax Aspen

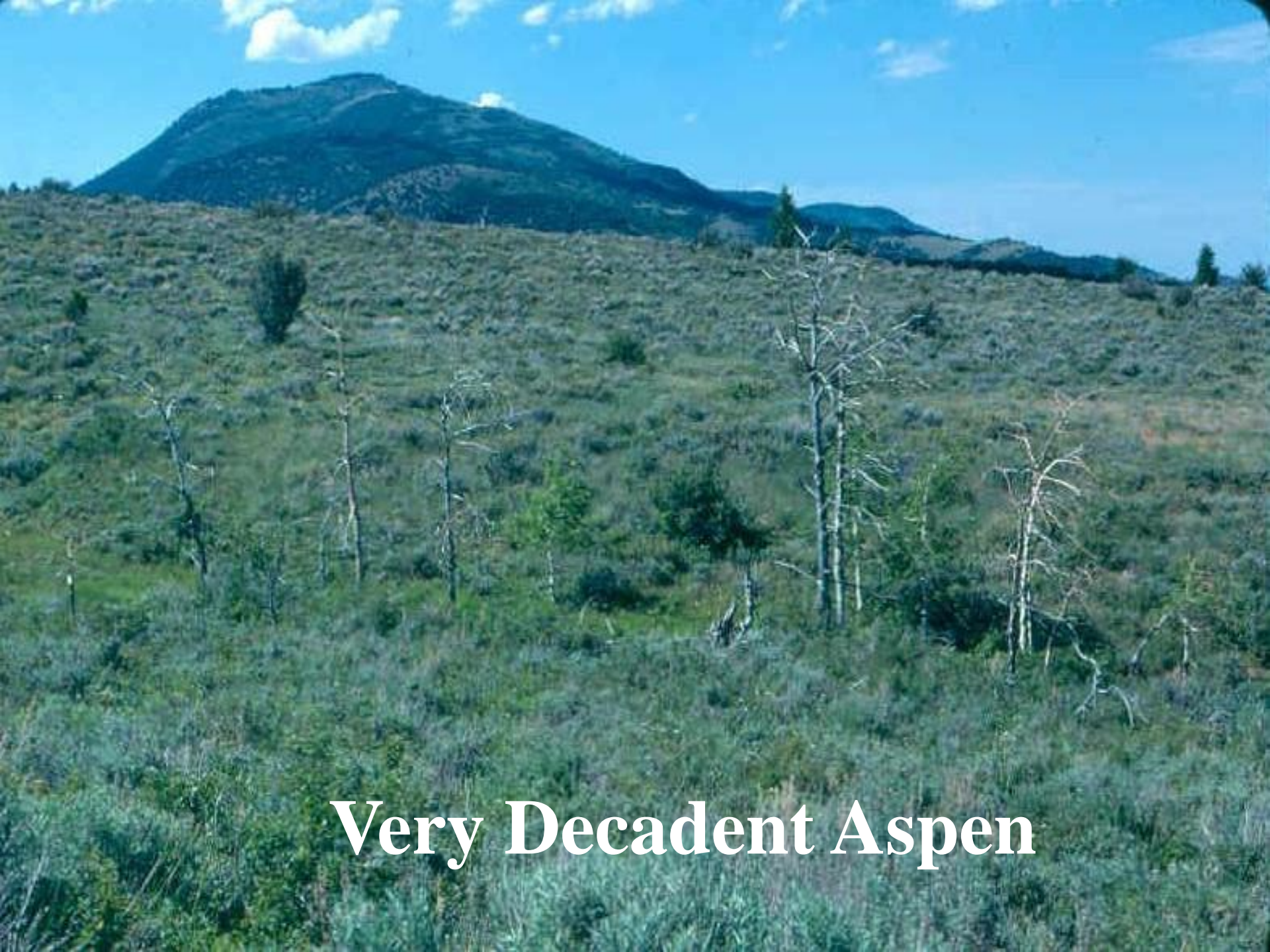


Successional Aspen



Decadent Aspen





Very Decadent Aspen

SAD of Stable Aspen with successful regeneration – SE Idaho

