Protecting Our Forests & Communities from Catastrophic Wildfire:

Using Traditional Practices to Achieve Modern Objectives

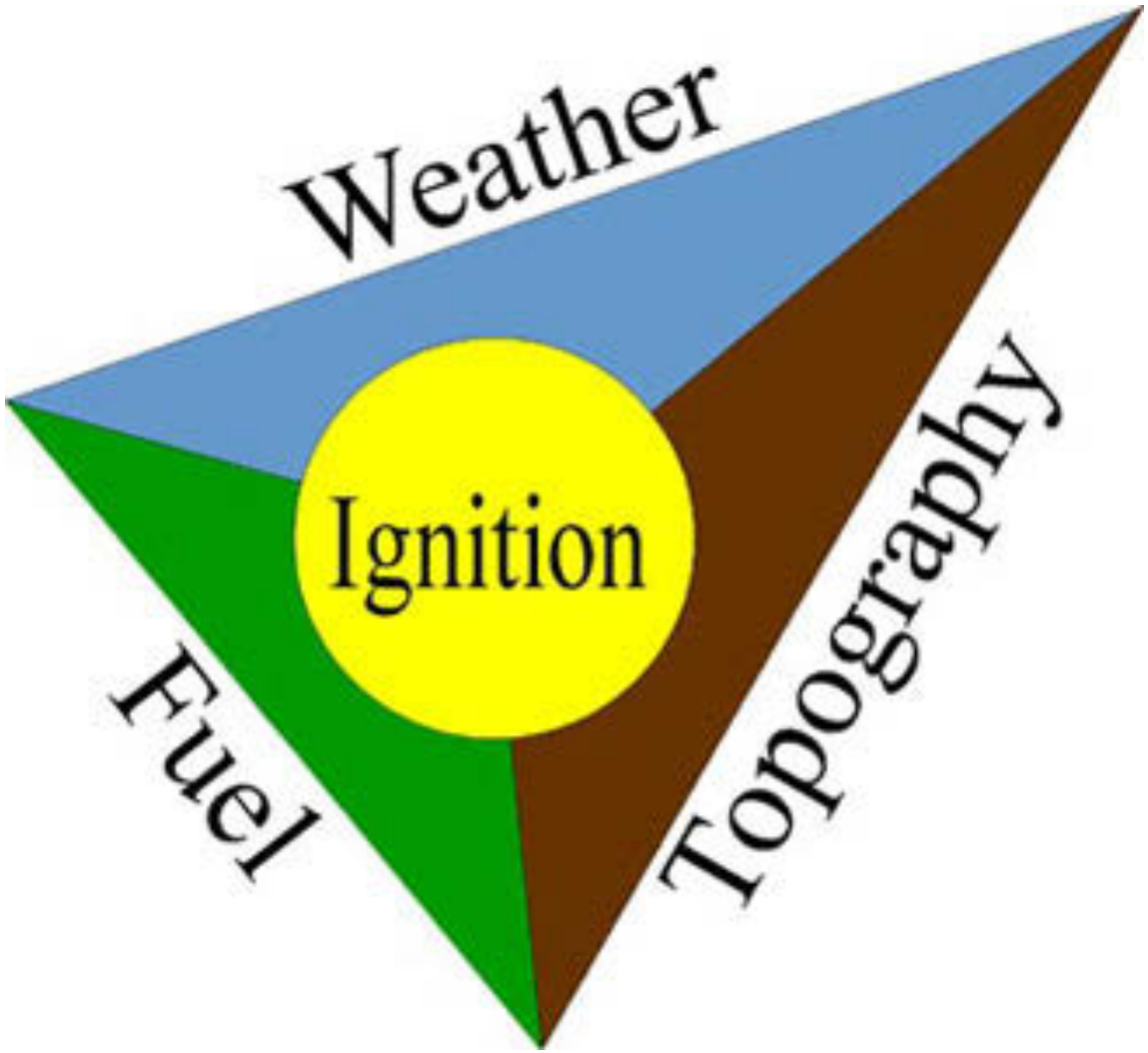
VEGETATION MANAGEMENT

Dr. Bob Zybach
www.ORWW.org

32nd Annual Forest Vegetation Management Conference

Holiday Inn, Redding, California

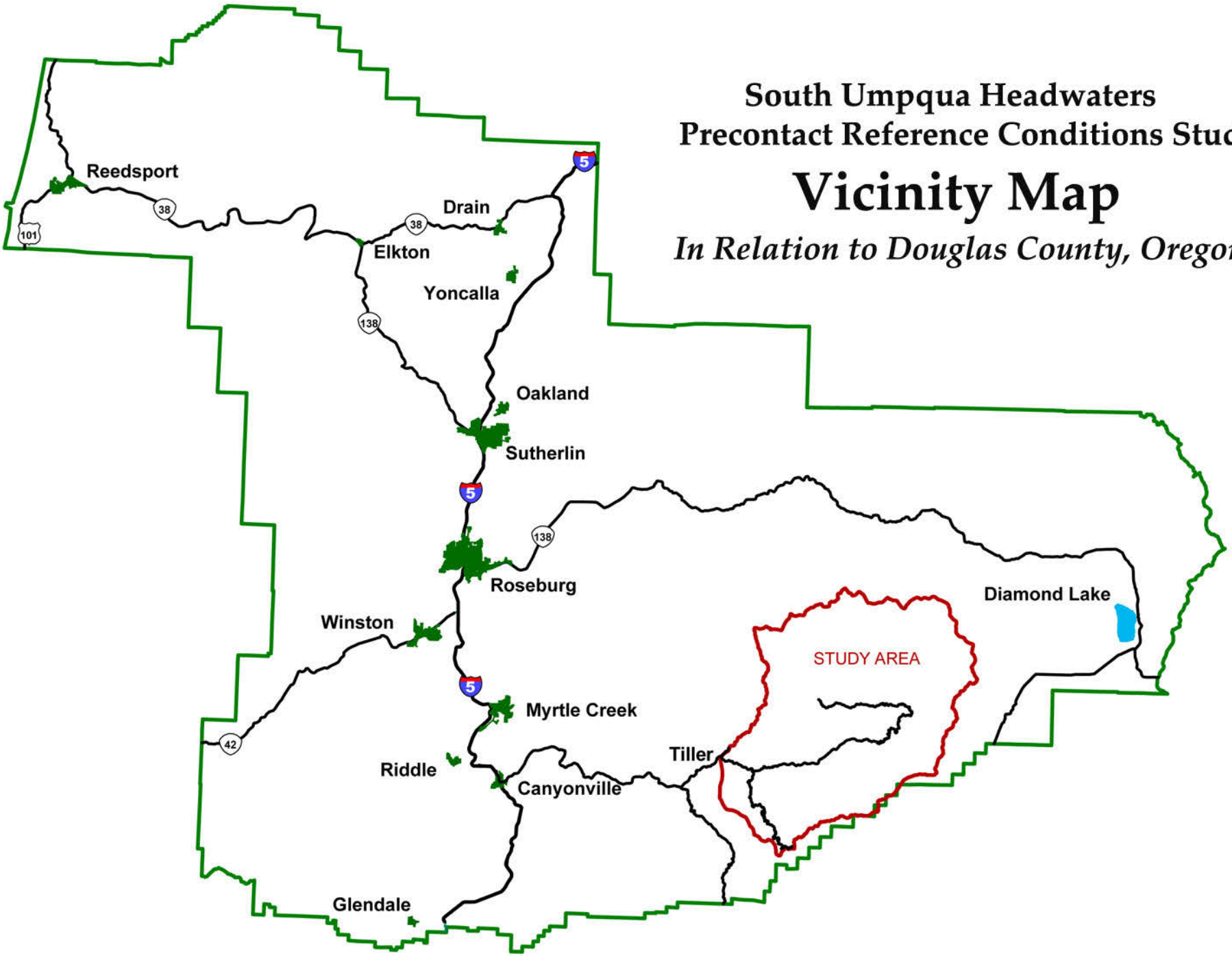
January 12-13, 2011

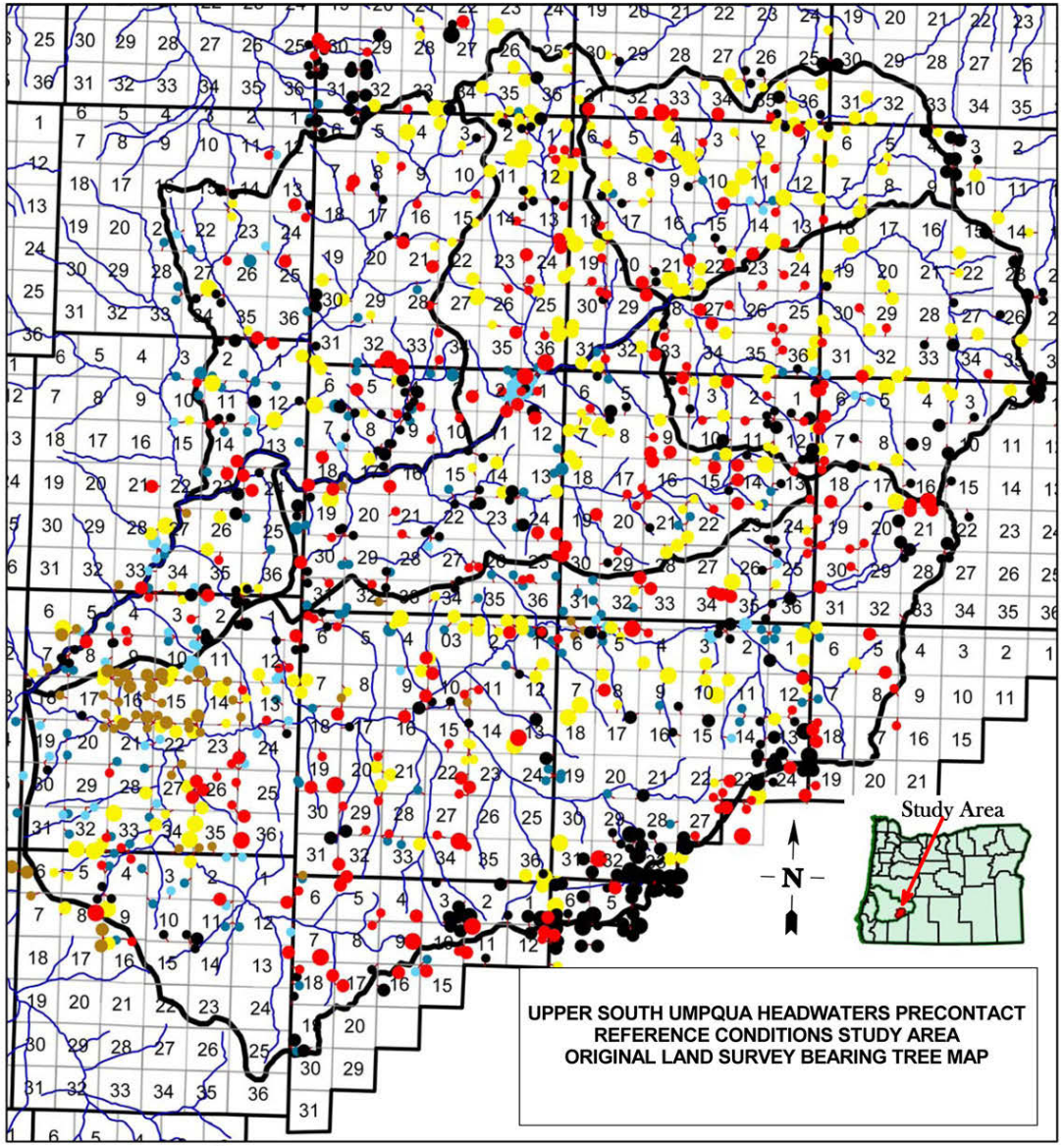

Weather
Ignition
Fuel
Topography

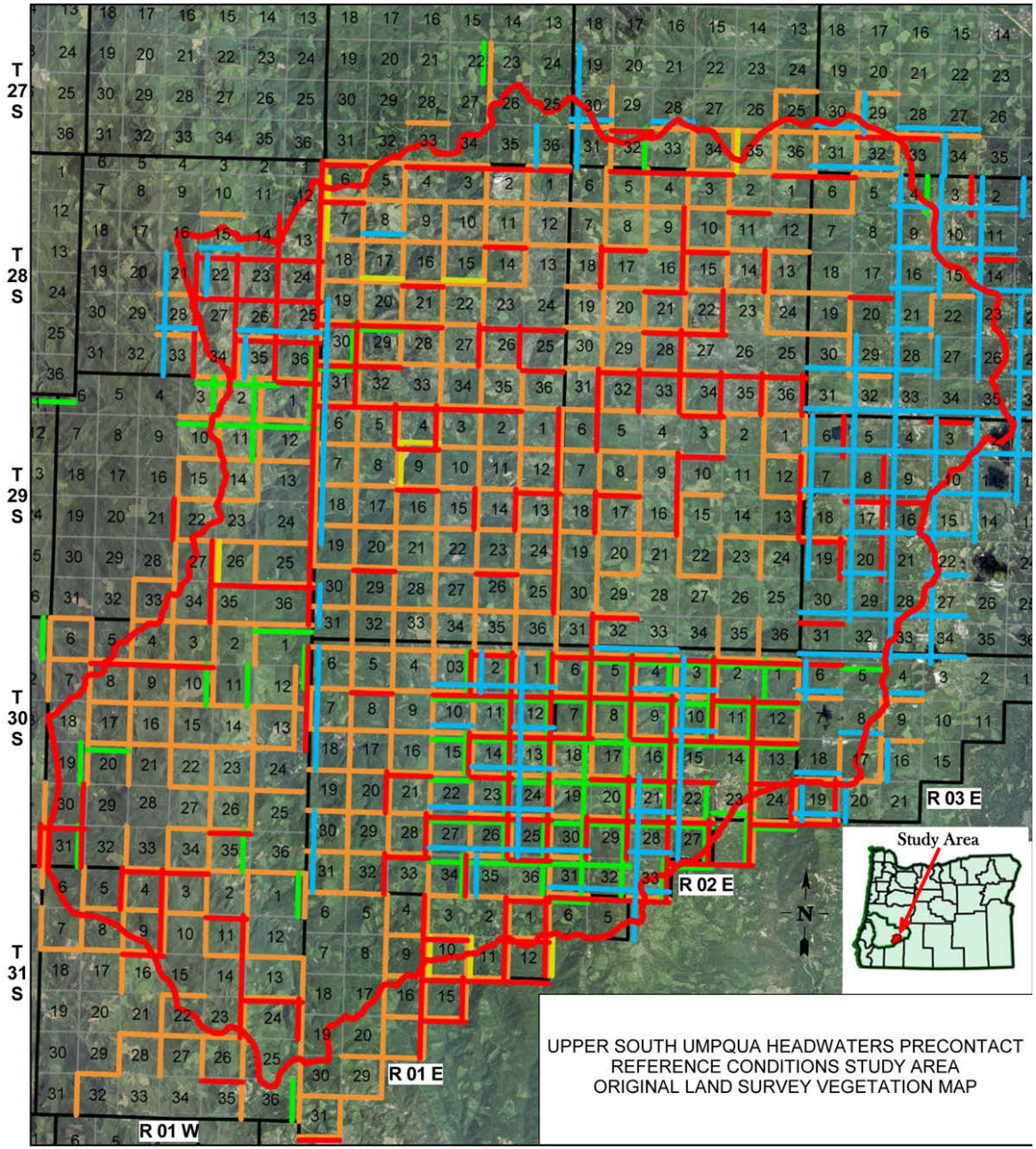
South Umpqua Headwaters Precontact Reference Conditions Study

Vicinity Map

In Relation to Douglas County, Oregon

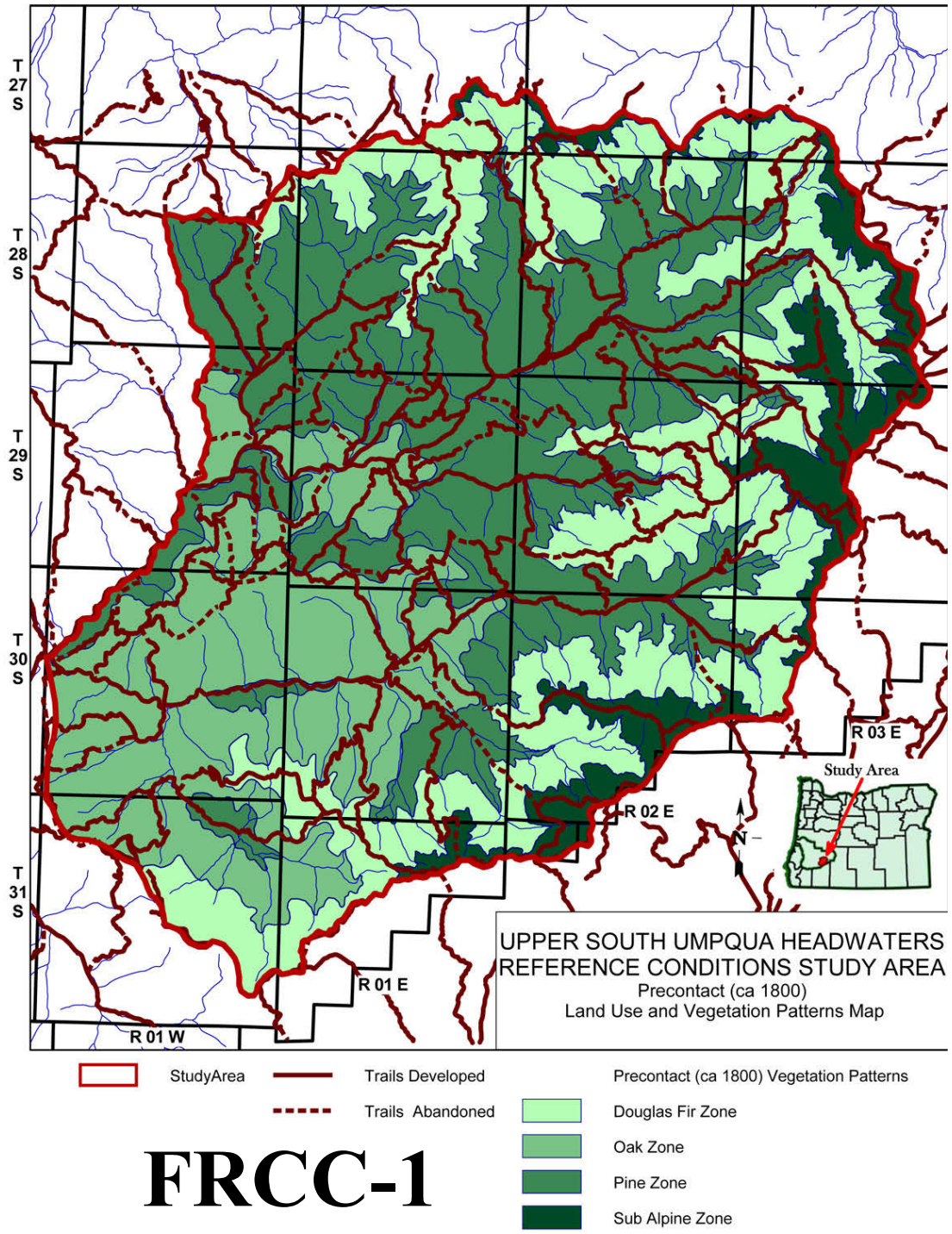



Study Area
N
UPPER SOUTH UMPQUA HEADWATERS PRECONTACT
REFERENCE CONDITIONS STUDY AREA
ORIGINAL LAND SURVEY BEARING TREE MAP
Cedar Under 18
Cedar 18 to 36
Cedar Over 36
Hem-Fir Under 18
Hem-Fir 18 to 36
Hem-Fir Over 36
Oak Under 18
Oak 18 to 36
Oak Over 36
Pine Under 18
Pine 18 to 36
Pine Over 36
Riparian Hardwood Under 18
Riparian Hardwood 18 to 36
Raparian Hardwood over 36
Upland Hardwoods Under 18
Upland Hardwoods 18 to 36
Upland Hardwoods Over 36
Subbasins
1 = Boulder Subbasin
2 = Quartz Subbasin
3 = Black Rock Subbasin
4 = Zinc Subbasin
5 = Buckeye Subbasin
6 = Castle Rock Subbasin
7 = Jackson Subbasin



UPPER SOUTH UMPQUA HEADWATERS PRECONTACT
REFERENCE CONDITIONS STUDY AREA
ORIGINAL LAND SURVEY VEGETATION MAP

Understory Huckleberry
Understory Evergreen
Understory Salal
Understory Hardwoods
Understory Nut-Shrubs
Study Area Boundary
Section Lines
2009 Aerial Flight


T 27 S
T 28 S
T 29 S
T 30 S
T 31 S
R 01 W
R 01 E
R 02 E
R 03 E
Study Area
N
UPPER SOUTH UMPQUA HEADWATERS
REFERENCE CONDITIONS STUDY AREA
Precontact (ca 1800)
Land Use and Vegetation Patterns Map
StudyArea
Trails Developed
Trails Abandoned
Precontact (ca 1800) Vegetation Patterns
Douglas Fir Zone
Oak Zone
Pine Zone
Sub Alpine Zone

FRCC-1

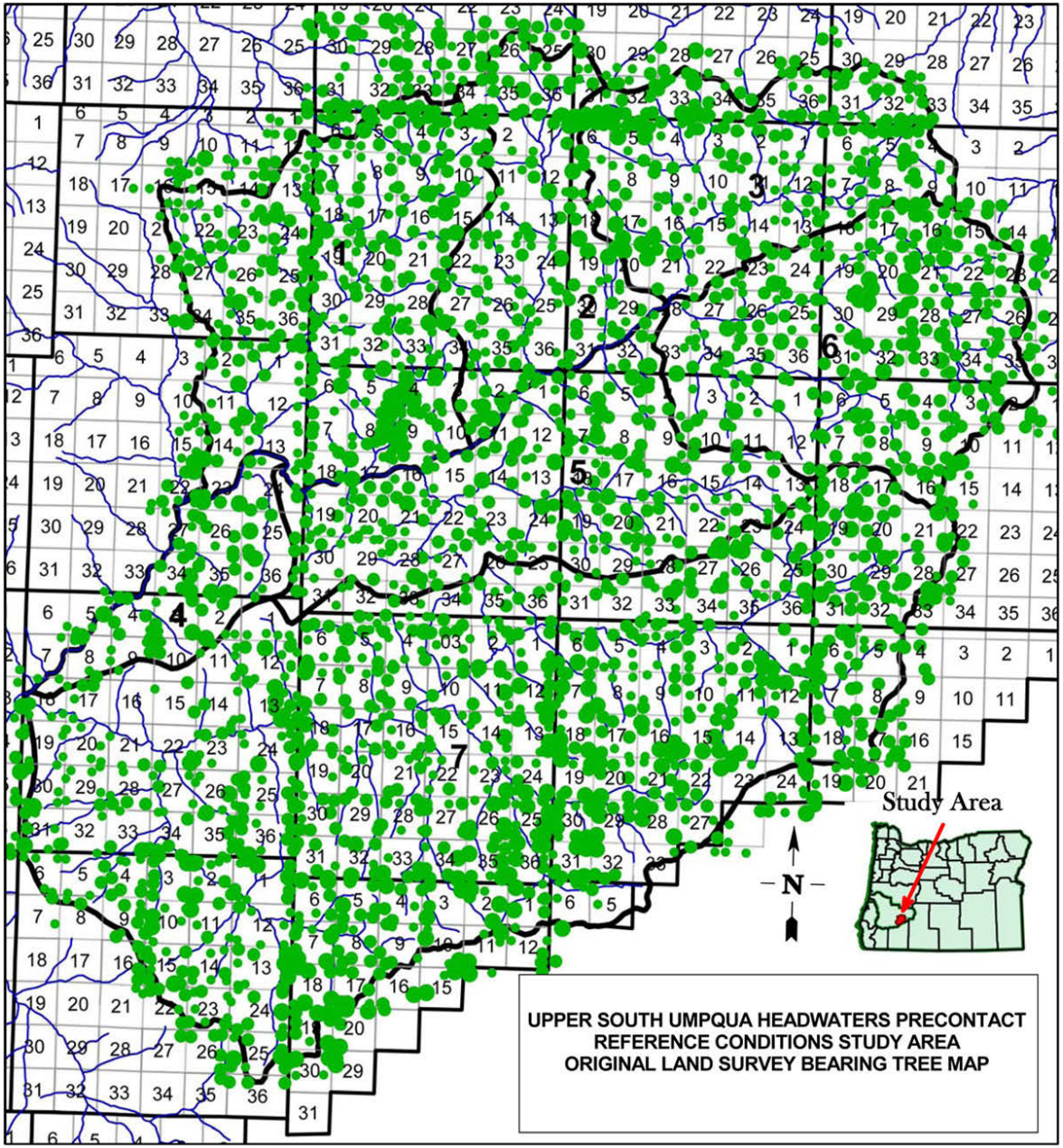
FRCC (Fire Regime Condition Class)

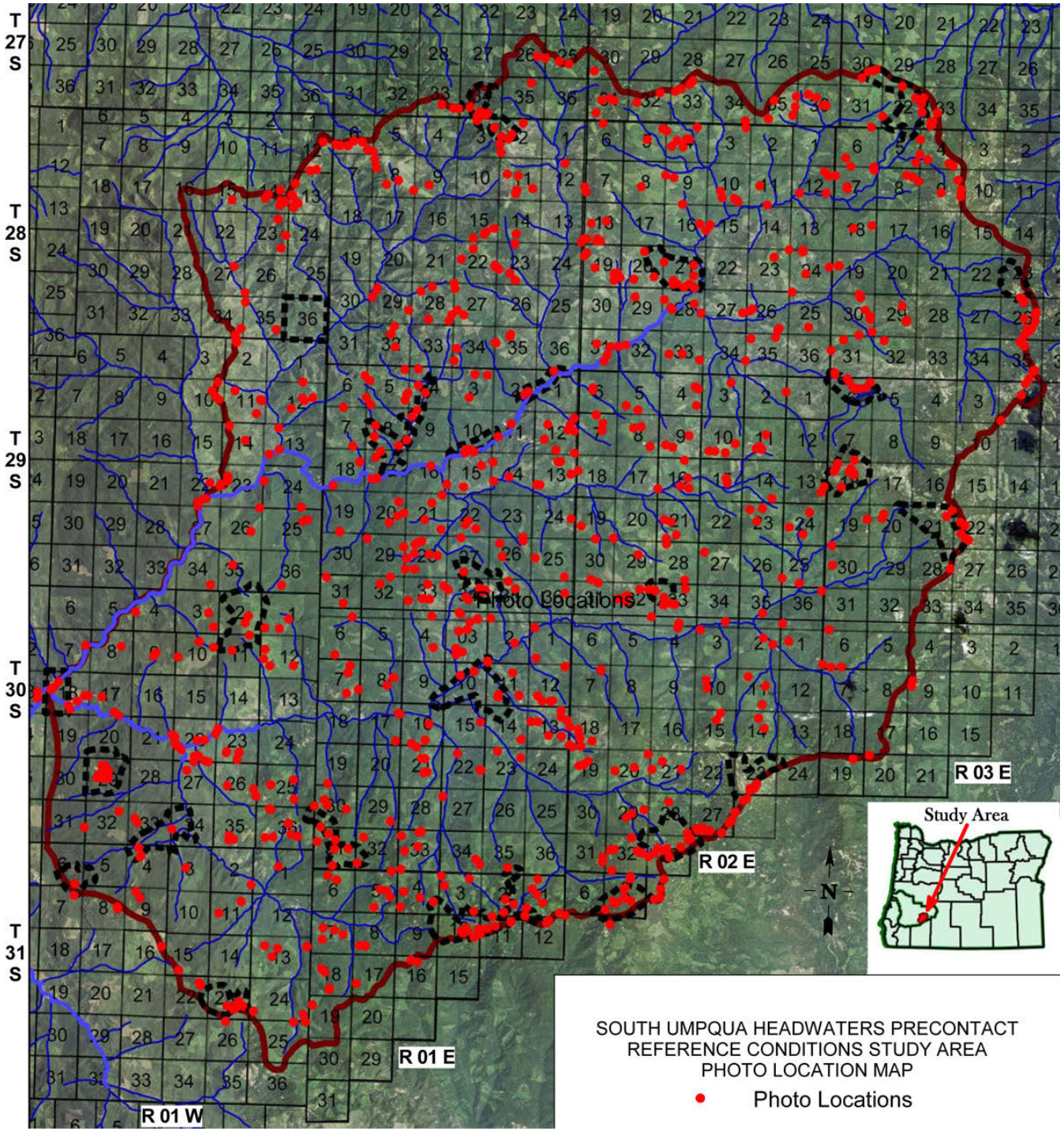
A measure of departure from reference (pre- settlement or natural or historical) ecological conditions that typically result in alterations of native ecosystem components. These ecosystem components include attributes such as species composition, structural stage, stand age, canopy closure, and fuel loadings.

FRCC 3 is defined as:

Greater than 66 percent departure: Fire regimes have been substantially altered.
Risk of losing key ecosystem components is high.
Fire frequencies may have departed by multiple return intervals.
This may result in dramatic changes in fire size, fire intensity and severity, and landscape patterns.
Vegetation attributes have been substantially altered.

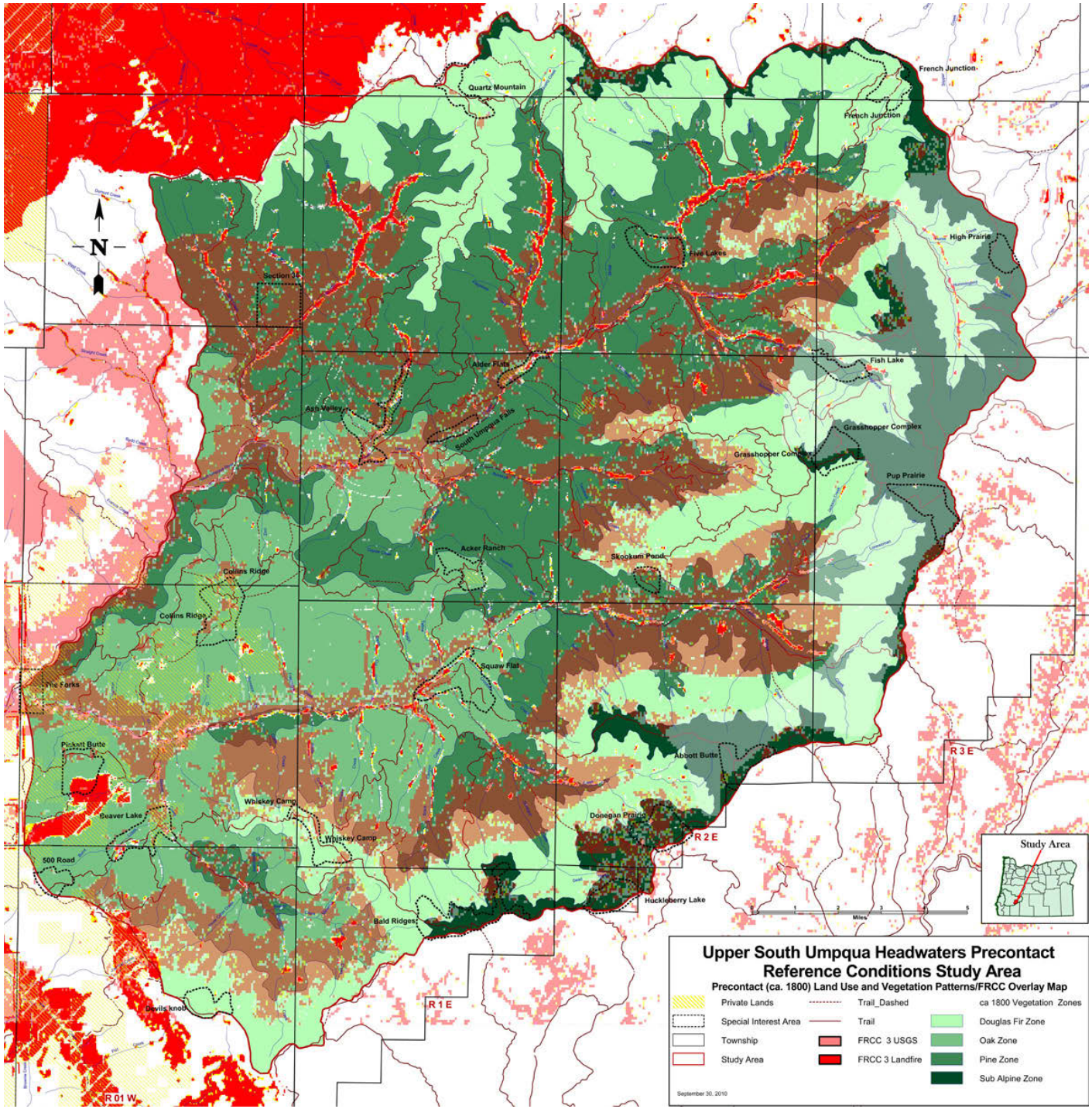
National Interagency Fuels, Fire, & Vegetation Technology Transfer 2010: 98


Study Area
N
UPPER SOUTH UMPQUA HEADWATERS PRECONTACT
REFERENCE CONDITIONS STUDY AREA
ORIGINAL LAND SURVEY BEARING TREE MAP
Doug-Fir Under 18
Doug-Fir 18 to 36
Doug-Fir over 36
Subbasins
1 = Boulder Subbasin
2 = Quartz Subbasin
3 = Black Rock Subbasin
4 = Zinc Subbasin
5 = Buckeye Subbasin
6 = Castle RockSubbasin
7 = Jackson Subbasin



SOUTH UMPQUA HEADWATERS PRECONTACT
REFERENCE CONDITIONS STUDY AREA
PHOTO LOCATION MAP

● Photo Locations


N
Quartz Mountain
French Junction
French Junction
High Prairie
Five Lakes
Section 35
Alder Flats
Fish Lake
Ash Valley
South Umpqua Falls
Grasshopper Complex
Grasshopper Complex
Pup Prairie
Acker Ranch
Skookum Pond
Collins Ridge
Collins Ridge
Squaw Flat
The Forks
Pickett Butte
Abbott Butte
R 3 E
Whiskey Camp
Beaver Lake
Donegan Prairie
Whiskey Camp
R 2 E
500 Road
Huckleberry Lake
Bald Ridges
R 1 E
Devils knob
R 01 W
Study Area
0 1 2 3 4 5
Miles
Upper South Umpqua Headwaters Precontact Reference Conditions Study Area
Precontact (ca. 1800) Land Use and Vegetation Patterns/FRCC Overlay Map
Private Lands
Special Interest Area
Township
Study Area
Trail_Dashed
Trail
FRCC 3 USGS
FRCC 3 Landfire
ca 1800 Vegetation Zones
Douglas Fir Zone
Oak Zone
Pine Zone
Sub Alpine Zone
September 30, 2010

All the oak timber was owned by well-to-do families and was divided off by lines and boundaries as carefully as the whites have got it surveyed today. It can be easily seen by this that the Indians have carefully preserved the oak timber and have never at any time destroyed it.

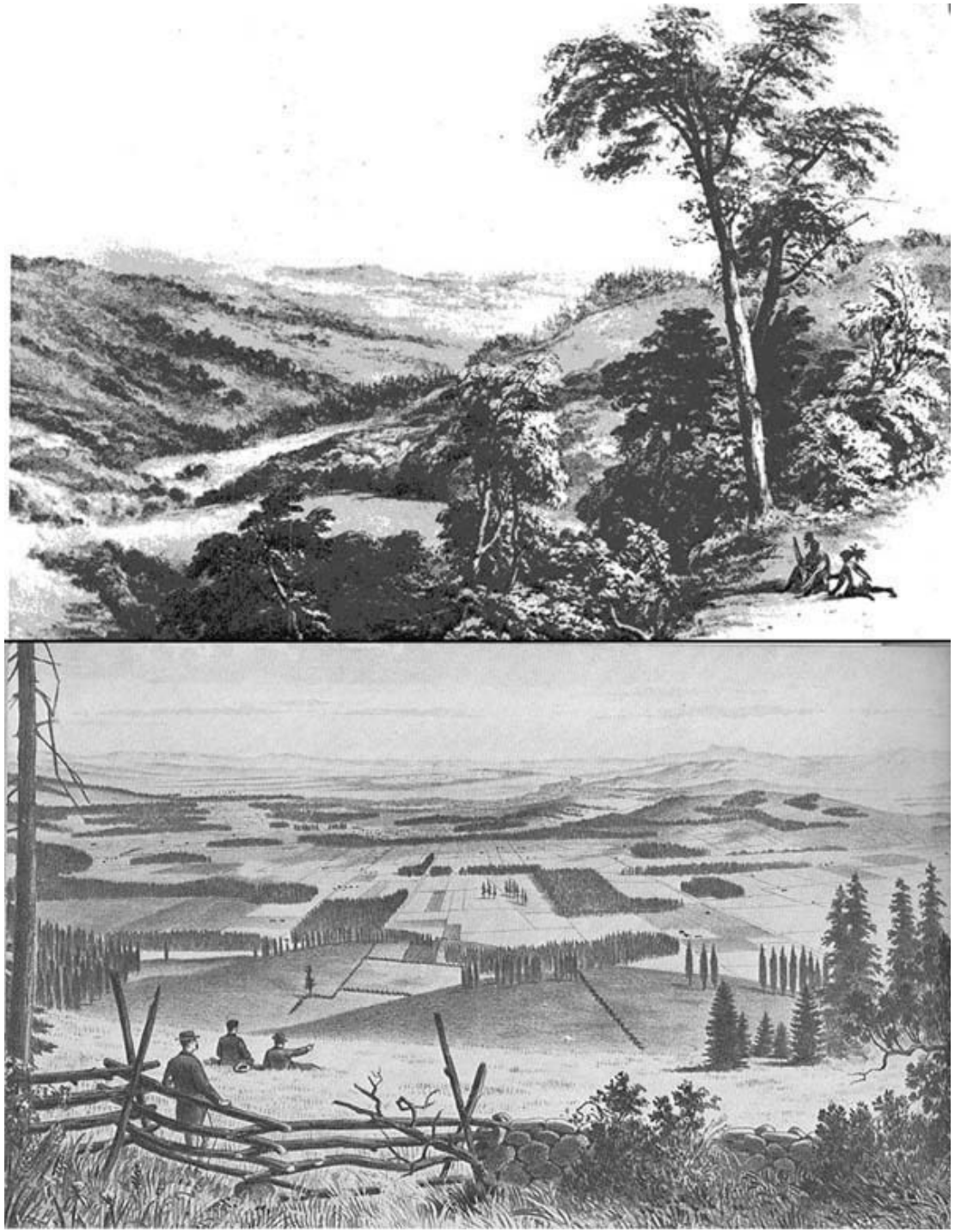
The Douglas fir timber they say has always encroached on the open prairies and crowded out the other timber; therefore they have continuously burned it and have done all they could to keep it from covering the open lands. Our legends tell when they arrived in the Klamath River country that there were thousands of acres of prairie lands, and with all the burning that they could do the country has been growing up to timber more and more.

--Che-na-wah Weitch-ah-wah, Klamath River, 1915

Willamette Valley, Oregon

1845

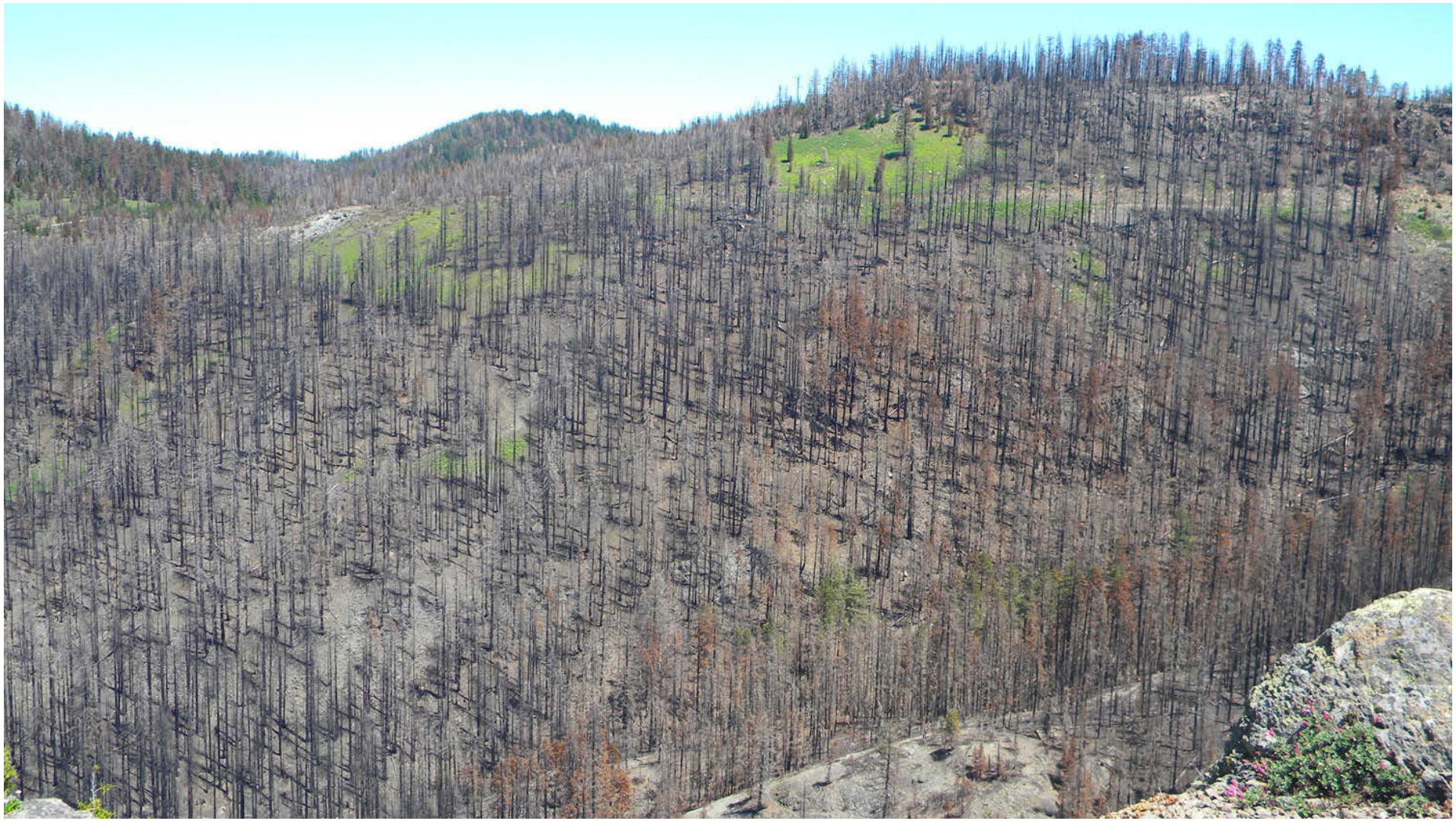
1885



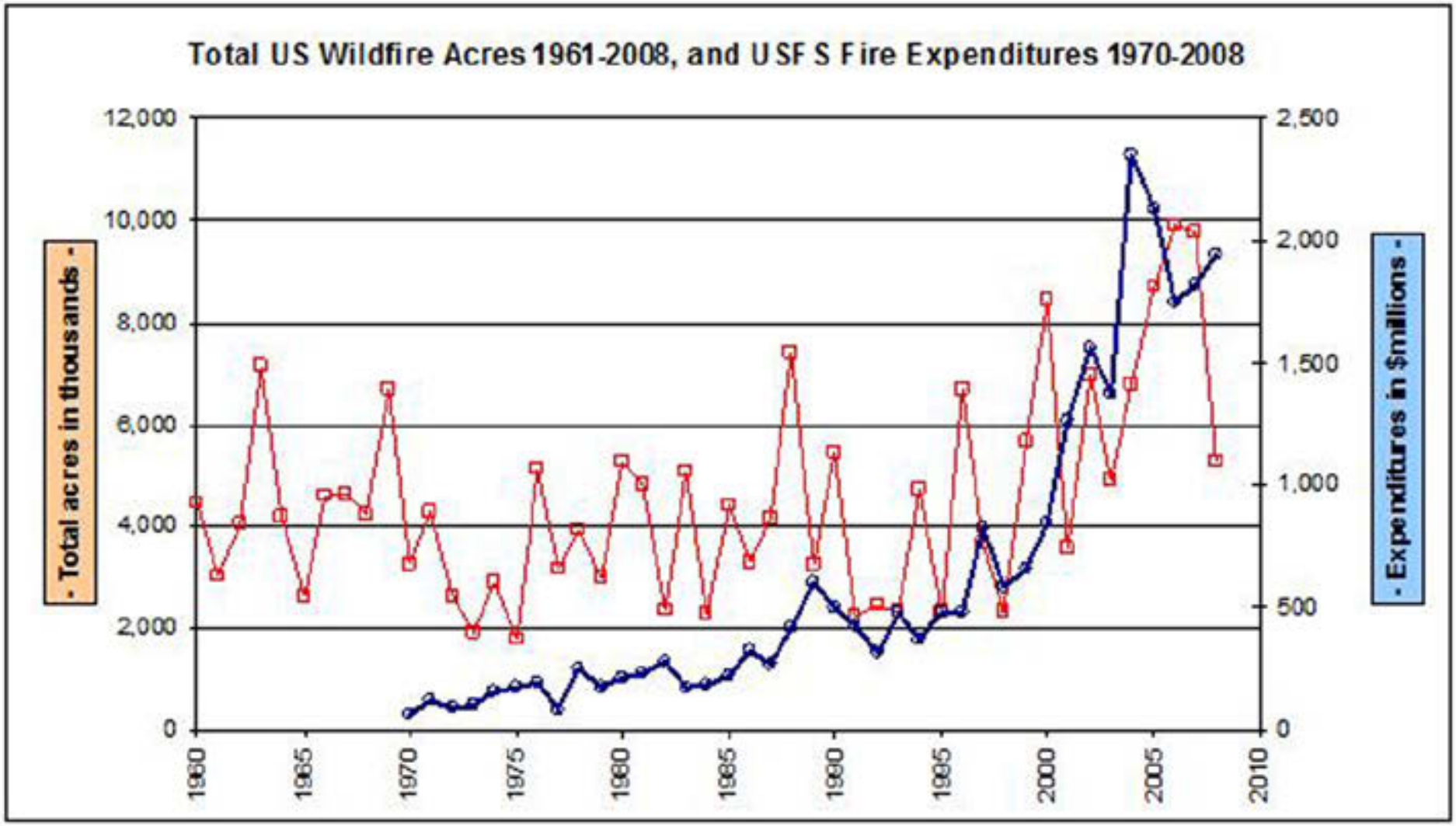

Dead Wood


Wildfire Protection


09/22/2009



SUPPRESSION COSTS

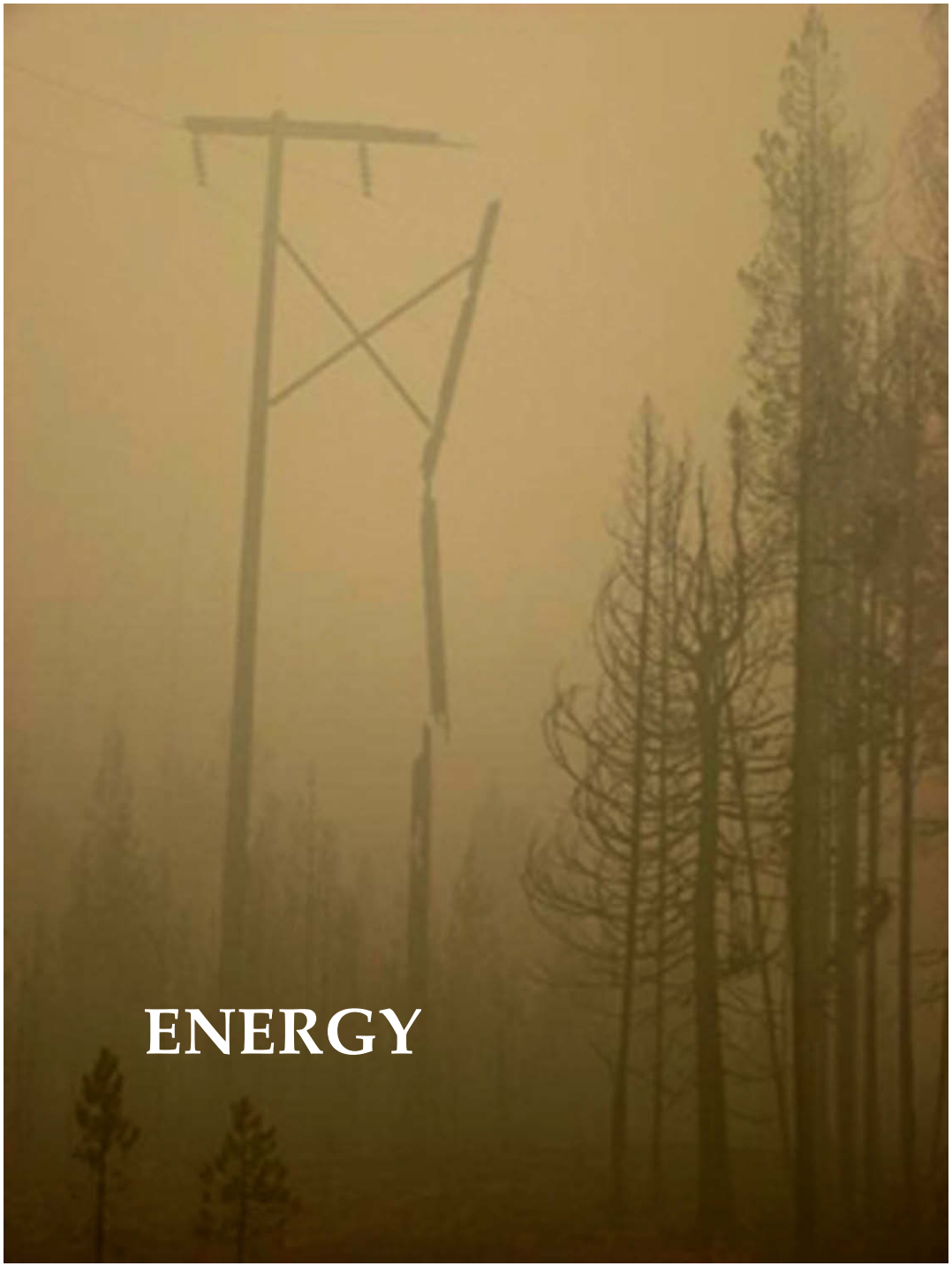

Total US Wildfire Acres 1961-2008, and USFS Fire Expenditures 1970-2008
- Total acres in thousands -
- Expenditures in $millions -
12,000
10,000
8,000
6,000
4,000
2,000
0
2,500
2,000
1,500
1,000
500
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010

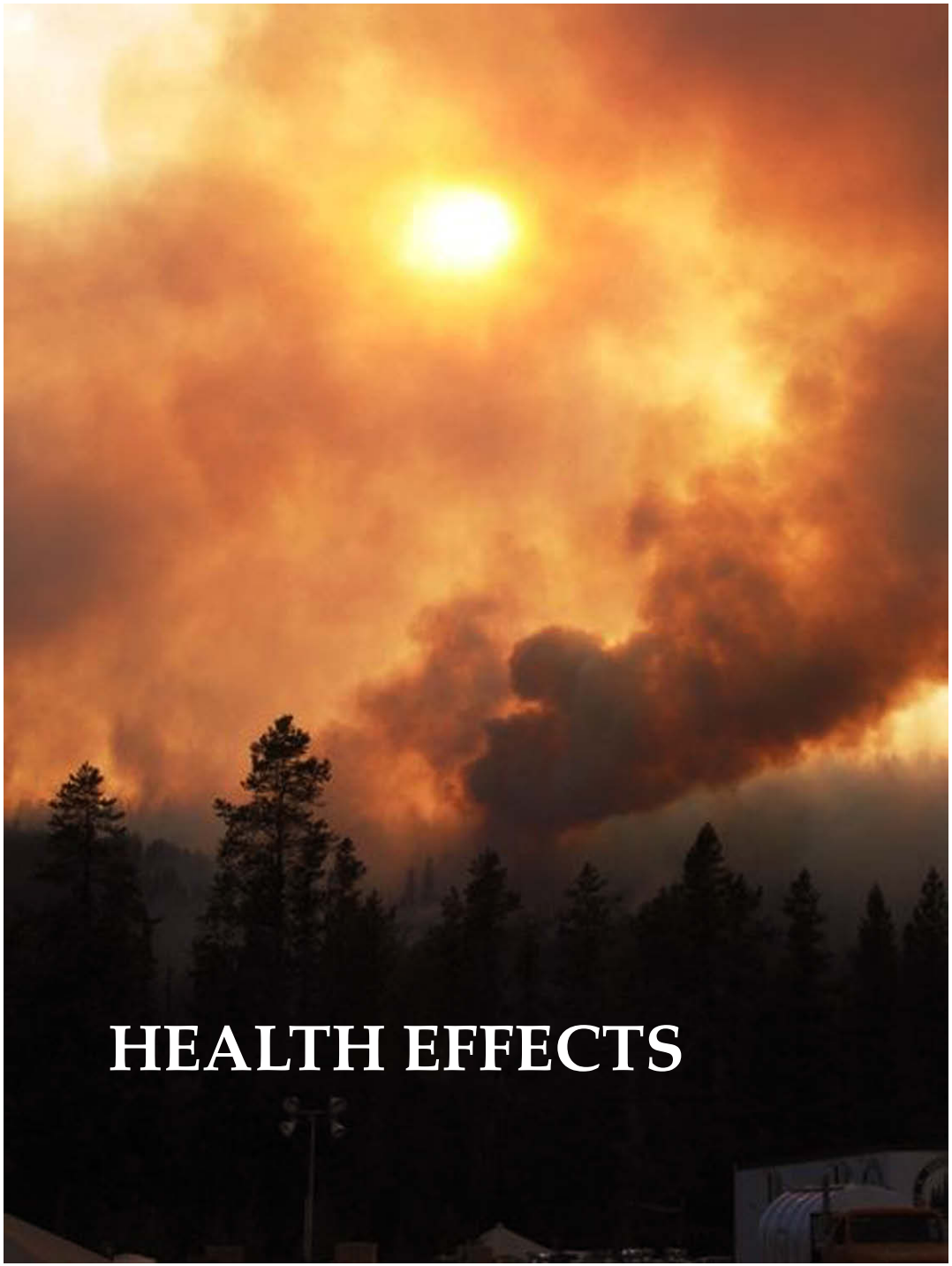
PROPERTY DAMAGE


VEGETATION


WILDLIFE

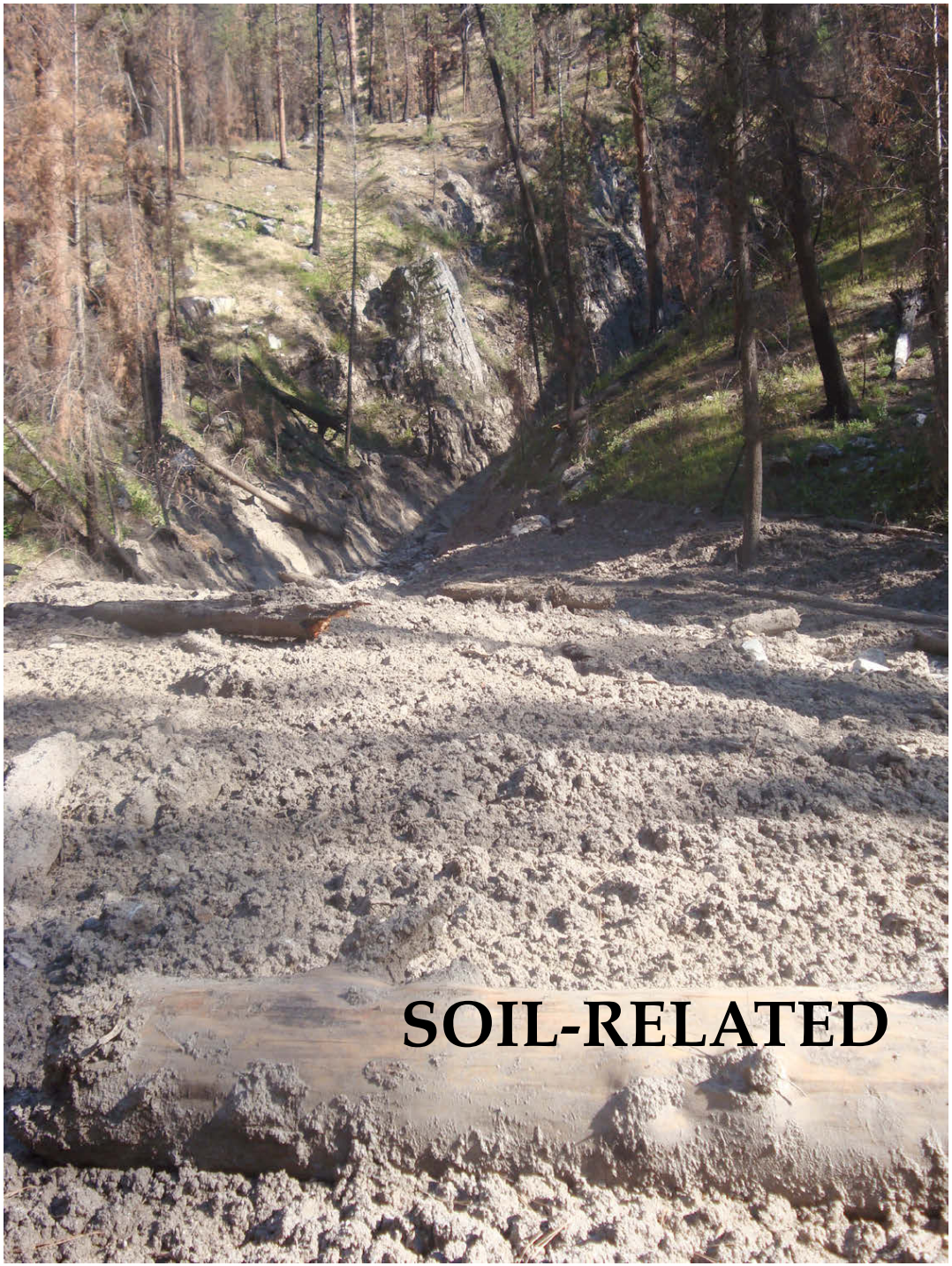

AIR & ATMOSPHERICS


ENERGY



HEALTH EFFECTS


WATER


SOIL-RELATED


RECREATION

HERITAGE RESOURCES

INDIAN BURNING

It would be difficult to find a reason why the Indians should care one way or another if the forest burned.
It is quite something else again to contend that the Indians used fire systematically to "improve" the forest.
Improve it for what purpose?
Yet this fantastic idea has been and still is put forth time and again because somebody's grandfather said that is what happened.

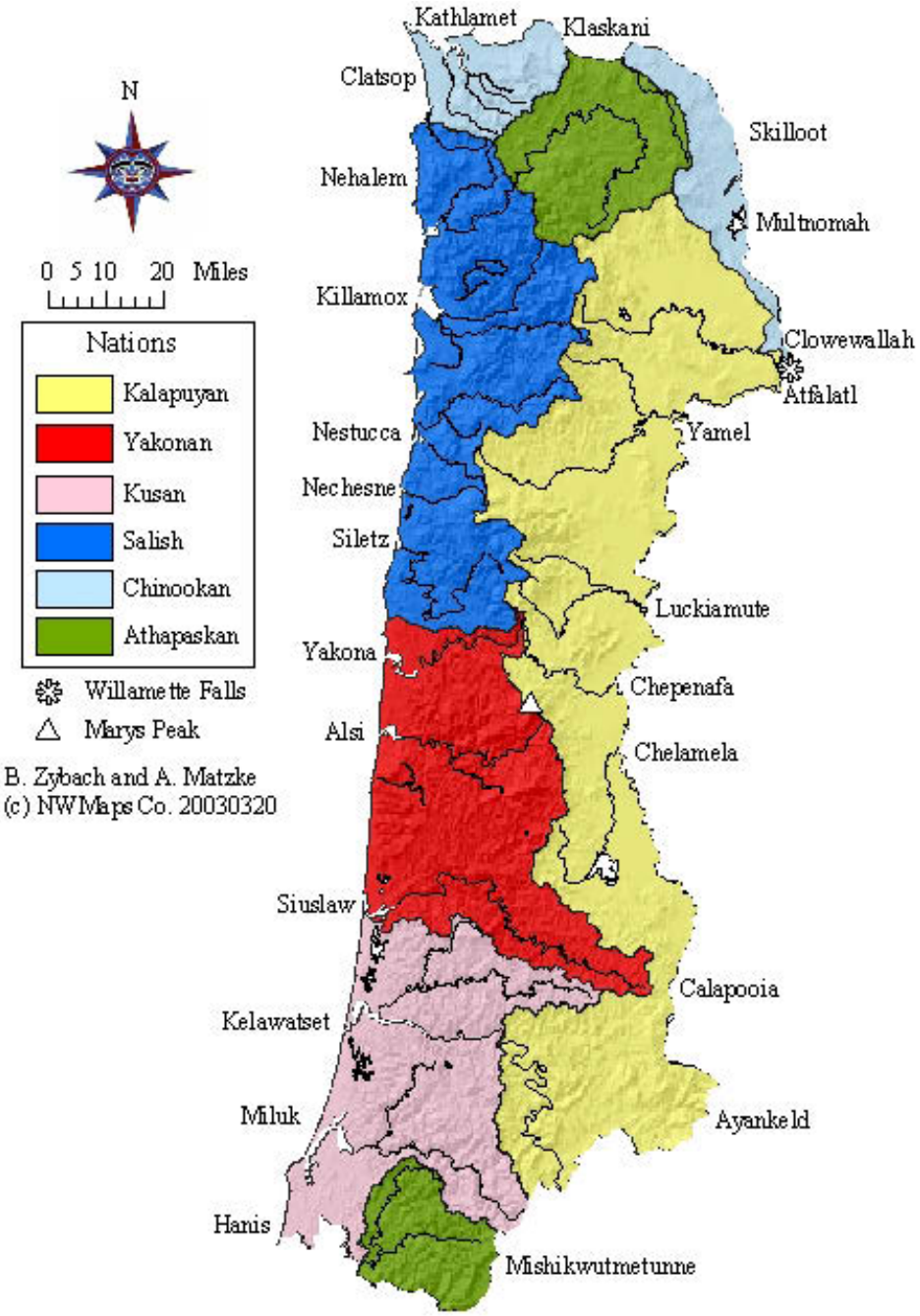
--C. Raymond Clar 1959: 7.

California Government and Forestry: From Spanish Days until the Creation of the Department of Natural Resources in 1927.
Division of Forestry, Department of Natural Resources,
State of California, Sacramento, California: 623 pp.

Figure 8.01 GLO Surveyor Norman Price and wife, ca. 1940.

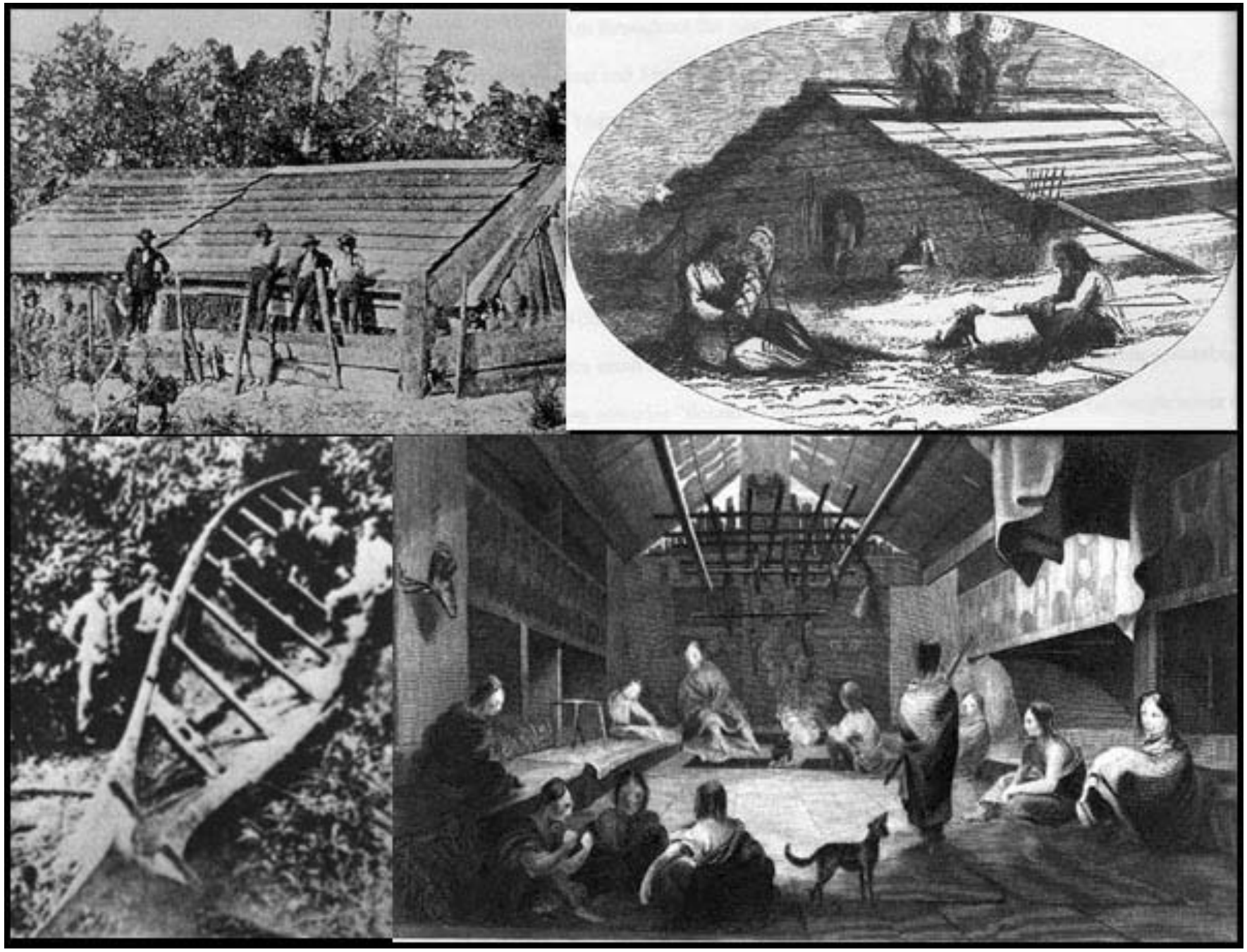
Price helped survey much of the study area in the late 1930s (e.g., Price et al. 1929). His observations regarding his survey of Tsp. 34 S., Rng. 8 W. to the southwest of the South Umpqua River are relevant to the findings of this research:

"Most of the township is covered with such a dense growth of buckthorn, manzanita, lilac, madrona, chinquapin, and sweet acorn that no grasses can thrive. A small area on what is known as Peavine Mountain, in sec. 21, sustains a growth of native peavine sufficient to graze a few head of cattle for about six weeks. It is an historical fact that in the days immediately following the occupation of this country by the Indians this country was all covered with a fine growth of native grasses and practically no underbrush. The Indians accomplished this by setting fire to the vegetation on one side of the river one year and the other side the next year. Thus they kept the country open and clean and were never in danger of a forest fire."



Tribe	Language	River
Northern		
Clowewallah	Chinookan	Willamette
Multnomah	Chinookan	Willamette
Kathlamet	Chinookan	Columbia
Clatsop	Chinookan	Youngs
Klaskani	Athapaskan	Clatskanie
Nehalem	Salish	Nehalem
Eastern		
Atfalatl	Kalapuyan	Tualatin
Yamel	Kalapuyan	Yamhill
Luckiamute	Kalapuyan	Luckiamute
Chepenafa	Kalapuyan	Marys
Chelamela	Kalapuyan	Long Tom
Calapooia	Kalapuyan	Willamette
Western		
Killamox	Salish	Tillamook
Nestucca	Salish	Nestucca
Nechesne	Salish	Salmon
Siletz	Salish	Siletz
Yakona	Yakonan	Yaquina
Alsi	Yakonan	Alsea
Siuslaw	Yakonan	Siuslaw
Southern		
Ayankeld	Kalapuyan	Umpqua
Kelawatset	Kusan	Umpqua
Hanis	Kusan	Coos
Miluk	Kusan	Coquille
Mishikwut-metunne	Athapaskan	Coquille

YAQUINA BAY—INDIANS' FULL DRESS.

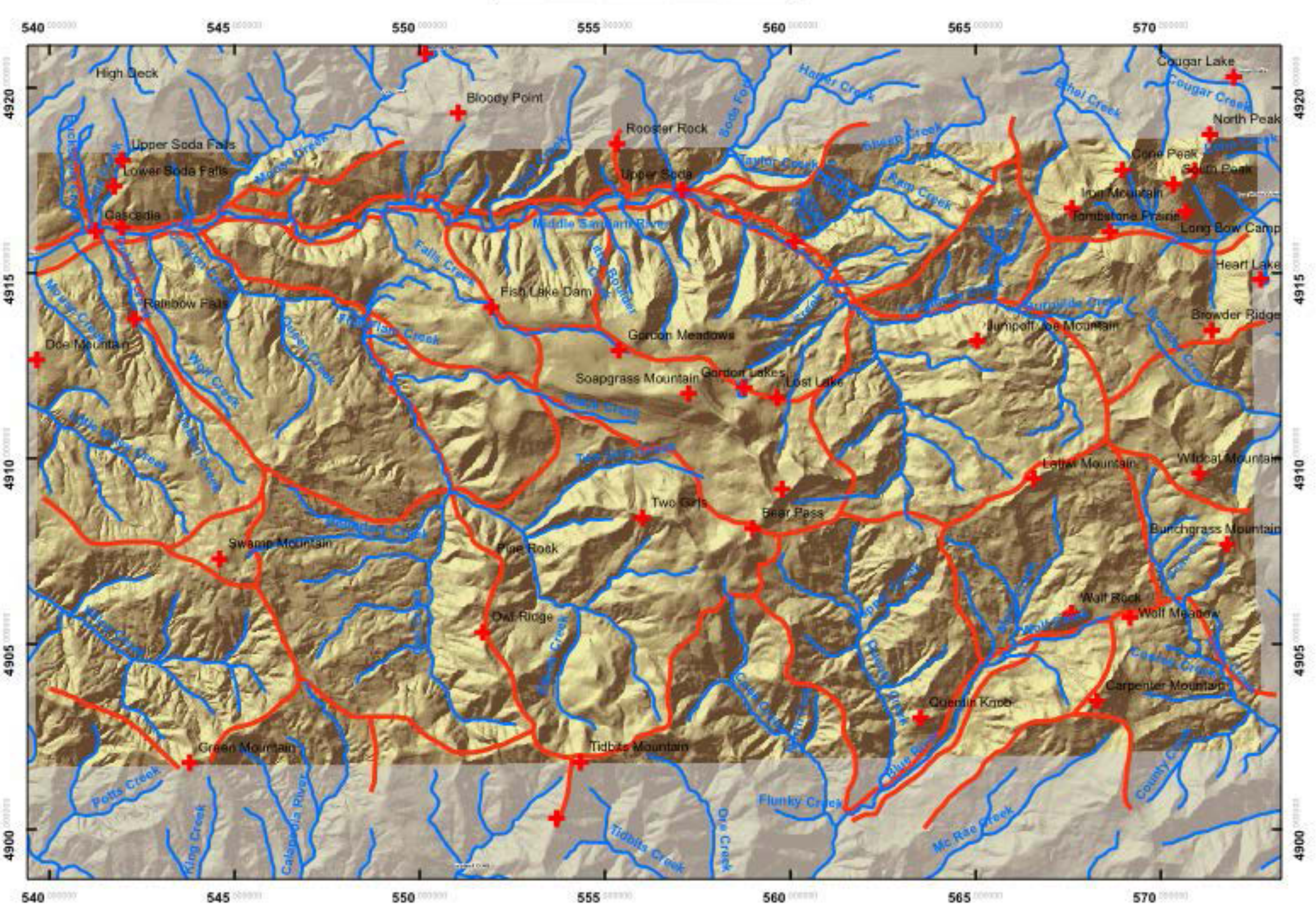


this Countrey must be thickly inhabited by the many fiers we saw in the night and culloms of smoak we would see in the day time but I think they can derive but little of there subsistance from the sea but to compenciate for this the land was beautyfully diversified with forists and green veredent launs which must give shelter and forage to vast numbers of wild beasts most probable most of the natives on this part of the Coast live on hunting for they most of them live in land this is not the case to the Northward for the face of the Countrey is widly different

--Robert Haswell, Oregon Coast, 1788


Sacred Landmarks

Santiam Molalla Primary Trail System, 1750-1850: South Santiam River and Blue River, Oregon Headwaters



Types of Indian Burning Practices

Type of burning	Products and purposes	Timing
Firewood gathering and burning	Heat, light, cooking, boiling, fuel stores, celebration, ceremony, security	Daily, concentrated near homes, trails, settlements and campgrounds
Patch burning	Hunting, berry patches, root fields, pest control, weaving materials, trail maintenance	Seasonal and situational
Broadcast burning	Stable wildlife habitat, curing seeds, hunting, transportation, weaving materials, acorn harvest.	Seasonal: late summer, early fall for grasslands; late winter, early spring for brackenfern

I was envited into the house of the 2nd Chief where concluded to sleep. This man was pore nothing to eat but dried fish, and no wood to burn. Altho' the night was cold they could not rase as much wood as would make a fire

William Clark, Columbia River, 1806


Native Plants


Traditional Foods

OREGON COAST RANGE

Seasonal Burning Patterns, ca. 1600-1848

Mo.	Season	Weather	Temperature	Plant Fuels	Burning
Jan.	Winter	Wet	Freezing	Dormant	Firewood
Feb.	Winter	Wet	Freezing	Dormant	Patches
Mar.	Spring	Wet	Freezing	Budburst	Patches
Apr.	Spring	Mixed	Cool	New Growth	Patches
May	*Transition*	*Mixed*	*Warming*	*Growing*	*Projects*
Jun.	Summer	Dry	Warm	Growing	Firewood
Jul.	Summer	Dry	Warmest	Growing	Firewood
Aug.	Late Summer	Dry	Warmest	Dormant	Broadcast
Sep.	Late Summer	Dry	Warm	Dormant	Broadcast
Oct.	*Transition*	*Mixed*	*Cooling*	*Fall Growth*	*Patches*
Nov.	Fall	Wet	Freezing	Dormant	Firewood
Dec.	Fall	Wet	Freezing	Dormant	Firewood


Vision for the Future

no walks in his 31st career complete game.

The Angels won their season-best fifth straight, while the

this season," Colon said through a translator. "I've got a sense of responsibility."

Colon was 21-8 with a 3.48 ERA

ing up in the ninth.

"He was still fresh," Scioscia said.

The Angels scored all their runs

Blazers sign Roy,

3 4 5 6 7 8 9 10 11

with a 7-2 rec

road trip.

he 33-year

seventh st

th since

s on the

ed righ

n since

dersta

ring

t by

ing

de-

g up

alks

Aldridge and guard Brandon Ro Terms of the contracts were not disclosed.

Port

Aldrid

pick out

Chicago Bul

Viktor Khry

draft righ

Thomas, the

dge, at 6-foot-11,

points and 8.2

sophomore

red Roy,

k, in a

ith the

wolves

all pick,

was ac-

quired

a deal with Boston.

Roy, at 6-foot-6, played four seasons at Wa averaging 14.3 rebounds and per game.

Named P the Year his s is the Huskies' 10th all-time leading scorer.

"These two represent a strong part of the change in culture we are striving to achieve in Portland are looking forw of them bein Blazers unif

TRADITIONAL INDIAN FOREST MANAGEMENT PRACTICES

MANAGING FOR MULTIPLE RESOURCES

- Food
- Fuel
- Fiber
- Fun

PREPARING THE LAND FOR FIRE

- Firewood Gathering
- Tillage
- Harvesting

BURNING AT THE RIGHT TIME

- Fuel and Weather Conditions
- Time of Day
- Season of the Year

INTENSIVE RIPARIAN PLANT MANAGEMENT

- Regular Fuel Gathering
- Trail Maintenance
- Tilling, Harvesting & Burning

Future Generations

U.S. Wildfire Cost-Plus-Loss Economics Project

http://www.wildfire-economics.org/

Oregon Websites and Watersheds Project, Inc.

www.ORWW.org