WRC #18

Cultural Resources

and the
Frank Church Wilderness of No Return

Poster Presentation By:

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FC collections - Pocatello
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Lee Sappington - going for Frank's position

monitoring of resource condition - Dave Deason - BLM Cottonwood
Mary P. Rossillon -

MS Mitzi Rossillon - modelling meadows & grassland
120 years of grazing

Public Education and Participation

- Active Involvement of Native Americans
- Brochures on Cultural Resources
  (Study and Protection)
- Workshops for Managers and Outfitters
  (Research and Conservation)
- Cooperative Agreements for Field Studies
  (Universities, Passport In Time,
  Earthwatch, Sierra Club)

Conservation

- Anti-looting
  Education (see above)
  Stewardship (Outfitters and Volunteers)
  Law Enforcement

- In-Place Protection
  Reduce Impact of Camping
  Monitor and Retard Erosion
  Frugal Archaeological Testing

Interagency Cooperation and Information Exchange

- Coordinate Cultural Resource Personnel in Adjacent Forests
- Create Multi-forest Geographic Information System (Natural and Cultural Resources)
- Cooperative Agreements (State Historical Society and Regional Universities Sponsoring Research)
- Consult Native Americans

Curation of Collections and Records

- Appropriate Resources to Curatorial Facilities
- Consolidate Collections with one Facility (University of Idaho)
- House all Records in Three Facilities (Salmon NFS, Taylor Ranch, Idaho State Historical Society)
- Establish Programs that Actively Use and Interpret Collections (Small Grants, Traveling Exhibits, Kits for Public Schools)

Comprehensive Cultural Resource Inventory

- Historic Sites
  (Archaeology, Architecture, Engineering)
- Rock Art Inventory and Analysis
- House Site Excavations
  (where threatened by visitor impacts)
- High Country Inventory
  (Homesteads, Mines, Campsites)
- Cultural Landscapes
  (Fire Areas, Mining Districts, Ranches)
- Oral History
  (In-holders, Miners, Outfitters, Users)
- Administrative History
  (Agency Personnel)

Paleoenvironmental Research

- Climate Change and Fire History

  Tree-ring Research
    Forest and Archaeological Samples
  Pollen and Charcoal Studies
    High Lakes and Bogs

- Environmental Archaeological Research

  Animal and Plant Resource Use/Management
    Rockshelter Excavations for Ecofacts
    House Excavations for Demographic Models

- Paleoecological Models

  Simulation Models of Climatic Change
    Temperature
    Precipitation
    Runoff and Stream Flow

  Simulation of Plant, Animal and Human Response
    Ungulate Range Condition
    Ungulate Population Fluctuation
    Salmonid Population Fluctuation
    Human Economies and Demographics

Archaeological Site Inventory

The Salmon has a long history of survey and site inventory (Harrison 1972; Swanson 1958b, 1958c, 1959b; Swisher 1973; Sisson 1982; Price 1982). Survey and inventory along the Middle Fork Salmon and Big Creek has been conducted by Swanson (1958a, 1959a, 1959b), Dahlstrom (1972), Pavesic (1978), Knudson et al. (1982), Kulesza (1982b), and Leonhardy and Johnston 1984).

Sporadic surveys of higher elevations (+5,500 ft) have revealed sites on the upper Middle Fork River tributaries (Bowers 1964; DeBloois; Gallagher 1975; Green 1975; Holmer 1989; Knudson et al. 1982); in the Chamberlain Basin, Cold Mountain, and Big Horn Crags areas (Dahlstrom 1972; Kulesza 1982a; Leonhardy and Johnston 1984).

Table 5. Middle Fork Salmon Site and Feature Distributions by River-Mile (from Knudson et al. 1982; Kulesza 1982b; Leonhardy et al. 1986).

Confluence	River Mile	Site Area[a]	Site Total	Lithic Scatters	House Sites	Houses	Pict.	Talus Pit Sites
Dagger Falls	0-5	11.3[b]	5	4	0	0	1	1
	5-10	2.0	2	2	2	7	0	1
	10-15	1.6	1	1	1	18	0	0
Rapid River	15-20	9.4	4	4	0	0	0	0
	20-25	3.3	2	2	0	0	1	0
Indian Cr.	25-30	7.2	3	3	1	22	0	1
Pungo Cr.								
Marble Cr.	30-35	8.0	7	4	6	41	2	2
	35-40	8.6	13	7	2	63	4	3
Cameron Cr.	40-45	7.5	10	2	1	20	0	4
Loon Creek	45-50	24.0	12	9	9	136	2	2
	50-55	8.2	13	8	4	28	5	5
	55-60	8.8	7	4	4	50	3	0
Camas Cr.	60-65	3.7	21	8	7	71	1	6
Bernard Cr.	65-70	10.9	11	10	1	7	0	2
	70-75	12.5	14	7	3	14	3	4
Big Creek	75-80	4.8	10	6	2	18	4	1
	80-85	2.1	13	5	0	0	9	0
	85-90	2.4	7	5	1	3	4	0
	90-95	8.5	3	3	1	7	1	0
Salmon R.	95-100	-	2	1	0	0	2	0
Lower Big Creek[c]	5	27.0	33	7	16	131	3	8
	Totals	171.8	193	102	61	636	45	40

a Site area X 1000 sq m.

b Values for site area differ from Knudson et al. (1982) and Hackenberger (1984) due to re-evaluation of reported site extent and additions of data from Kulesza (1982b).

c Lower Big Creek (Taylor Ranch to Cabin Creek) site data from project files of F. Leonhardy, University of Idaho, Laboratory of Anthropology (also see Leonhardy et al. 1986).

Historic Site Inventory

Known sites include: seven site identified with the Sheepeater military campaign, four Chinese mining settlements, ten 19th century ranches and mines, ten 20th century mining camps, over 45 homesteads (1910-1937), and six Civilian Conservation Corps Camps.

Rock Art

Pictographs commonly portray human and animal stick figures, and dots and dashes in red paint on smooth rock faces of overhangs and shelters. They depict elk, deer, mountain sheep, dogs, bows, and at least in one instance a mounted horseman with a possible rifle. The greatest concentration of pictographs occurs between Big Creek and the Salmon River (Boreson 1976, 1980; Knudson et al. 1982; and Kulesza 1982b).

Talus Pits

Talus pits, which may have served as hunting blinds and/or meat caches, are numerous in the prime big game range between Pungo and Bernard Creeks. Although pits and houses are sometimes associated, most pits occur in areas without houses.

Canyon Settlement

Hackenberger (1988) has hypothesized two separate phases of intensified settlement (1) 500 to 1 B.C. (subject to testing of obsidian hydration dates), and (2) A.D. 1200-1300 (based on mean of radiocarbon dated house features) may correspond with warm, dry periods during which forested valleys would be characterized by increased ungulate availability.

Hackenberger (1988) reviews data relevant to the hypothesis that ancestral Numic peoples occupied central Idaho by 500 B.C. and may have established the first regular year round settlement of the Middle Fork Salmon River Basin.

High Country Settlement

An ethnographic model of upland resource use and seasonal settlement in the headwaters of the Salmon and Payette rivers was first proposed by Gallagher (1975). These models were followed by predictons of resource use locations (Knudson et al. 1982; Hackenberger 1984). Known sites locations suggest upland hunting, root gathering and white-bark pine nut procurement (Hackenberger 1984, 1988; Munger 1991).

Occupations at Coyote Springs on Cold Mountain began by at least 5000 to 4000 years ago (3000 to 2000 B.C.) (Leonhardy 1987). Initial occupations began between 3000 and 2000 B.C. at Sheepeater Battle Ground. Rates of artifact deposition more than doubled at about 500 to 400 B.C., and slowly increased until A.D. 1300 (Gallagher 1975). These data suggest increased use of the site during warm, dry periods between 500 B.C. and A.D. 1300. Holmer (nd) has recently conducted excavations at Dagger Falls (a major salmon spearing station) and has recovered an assemblage with high frequencies of late Middle Period Great Basin Elko-like projectile points.

House and Rockshelter Excavation

The Corn Creek Site is dated to about 5000 B.P. (about 3000 B.C.) (Holmer and Ross 1985). Occupations resume about 3300 years ago (1300 B.C.), but intensive occupation with house features does not begin until about 1200 years ago (A.D. 700). Relatively intense occupation, including at least one human burial, continued until about A.D. 1400.

Big Creek Cave deposits were at least 110cm deep (dated 3,900 +/-90 year B.P.) (Wylie, Scott and Galagher 1981). Four 1x1m pits yielded approximately 50 diagnostic projectile points. Some 11 undecorated brown/grey pottery sherds were recovered from the top 20 cm of sediments. Occupations of nearby 10VY31 began by 2000 years ago (A.D. 1); however, relatively intensive occupation with house features occurred between A.D. 750 and 1650 (Leonhardy 1987). One house feature was burned and a uniquely complete assemblage of tools was recovered from the house floor.

Mountain sheep dominate the faunal remains in all levels and features at Corn Creek, Big Creek Cave and Big Creek Village. Salmon vertebra in Big Creek Cave indicate the presence of a Chinook Salmon about 80 cm in length and 20 lb. and three other salmon ranging from 30 to 5 pounds (Manion 1981:2).

PHASE	AGE B.P.	A.D./B.C.	STRATUM	DEPTH CM	CORN CREEK 					
CORN CREEK	500	1450	11	5	11	4	3	2		1
OWL CREEK	1000	950	10	10	25	7	4	15	1	1
			HOUSE FILL	D5	5		2	24		
OWL CREEK	2000	1	9	30	3	1	1	8	2	
BIG CREEK	3000	1050	8	40		1		6	4	
	4000	2050								
SHOUP	5000	3050	3A	100 PLUS						3
			2							1

Artifact Collections

Based on their findings at Corn Creek and comparisons with nearby site excavations Holmer and Ross (1985) define five phases. These are: Shoup (5000 B.P. Large side-notched), Big Creek Cave (3000 B.P. Large corner-notched and stemmed points), Owl Creek (2000-1000 B.P. large and small corner-notched points), and Corn Creek (500 B.P. small side-notched, and large and small corner-notched points).

Paleoenvironmental Research

Diverse methods and data are being integrated in order to understand the hunting, gathering and fishing adaptations of the Northern Shoshone and Nez Perce, and their prehistoric ancestors.

Pollen and tree-ring records provide proxy climatic data and indicate responses of forest ecosystems. Analyses of historical tree-rings indicate significant relationships between tree-ring growth and seasonal weather. Winter precipitation and summer temperature, as estimated from tree-rings, are used to simulate past conditions limiting winter ungulate range, and late spring and summer salmonid spawning. Historic and recent estimates of ungulate and salmonid populations appear to corroborate simulations predicting great fluctuations of ungulate and salmonid populations related to episodes of low and high winter precipitation.

Fire Histories

Forest fire histories indicate frequent fires of presumed human origin after A.D 450. Particularly high fire frequency between A.D. 500 and A.D. 800, and after 200 years ago, may also have been promoted by drier climatic conditions (Mehringer et al. 1977; Hemphill 1983; Smith 1983). Fires in lower elevation transition forests may be explained by prehistoric fire management to improve winter and spring ungulate range. The practice of burning in subalpine fir forests may be a result of burning whitebark and/or limber pine to roast green cones and gather pine nuts in these forests between early and mid-fall.

Climatic Change and Forest Response

Collectively, the pollen records from several ecological zones indicate at least five climatic periods of vegetation change after 3000 years ago (Bartholomew 1982; Bright 1966; Chatters 1982; Davis et al. 1977; Hemphill 1983; Mehringer et al. 1977; Smith 1983). These periods are: (1) a warm, dry period beginning about 500 B.C.; (2) a warmer and probably drier period between A.D. 250 and 850; (3) a relatively brief interval of cooler and/or moister conditions at A.D. 850 to 950; (4) a warm, dry period from A.D. 950 to 1350; and (5) a cool, moist period between A.D. 1350 to 1850. Beginning at about 1800 the historic period is considered to be generally drier and warmer at first and later moderately cool and moist.

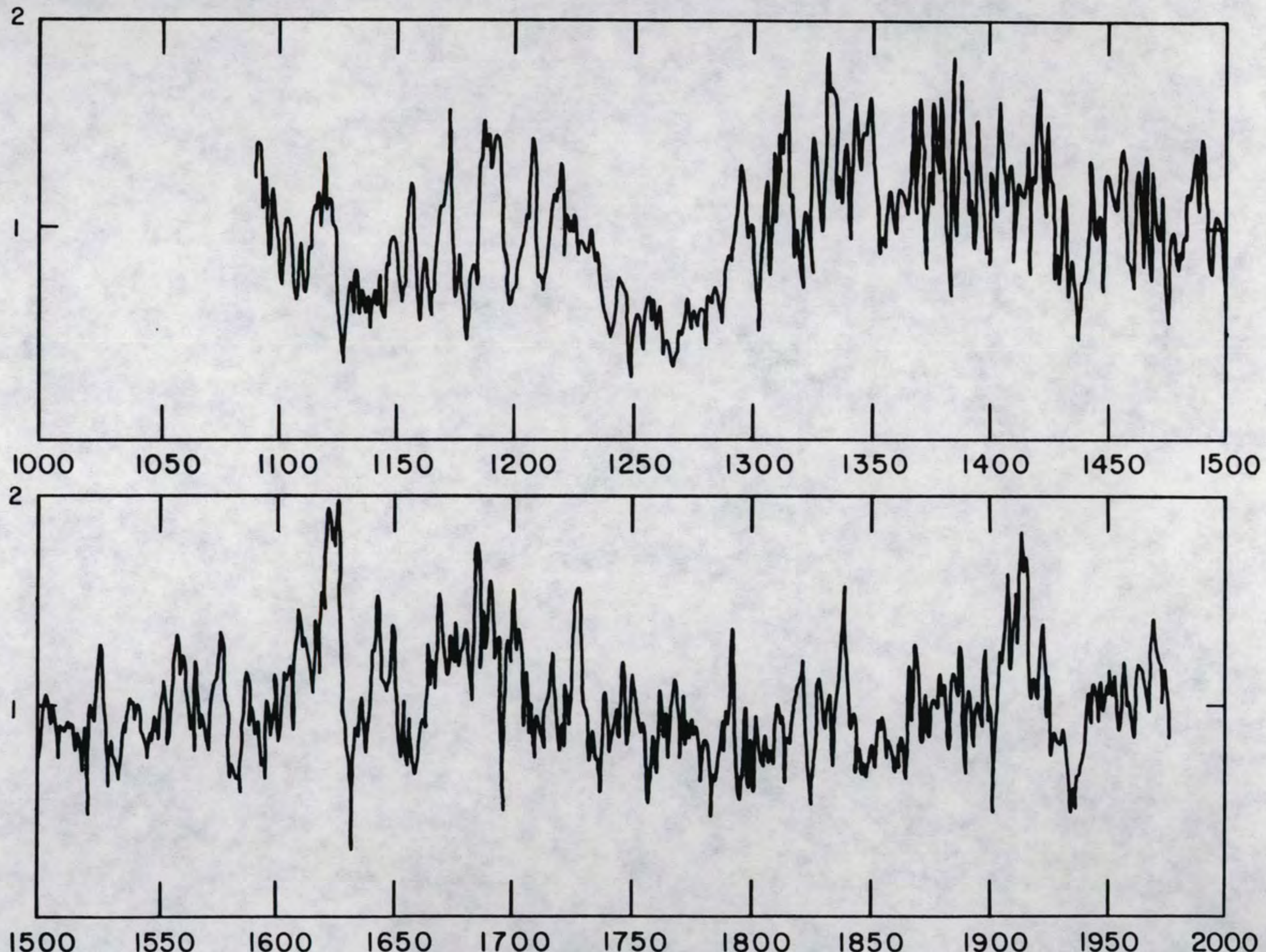

2
1
1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
2
1
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950
2000

Table 8. Summary Climatic Interpretations of Profiles from Pollen and Fire Records.

Year Ago			Chatters (1982) Bisonweh	Mehringer et al. (1977) Lost Trail	Hempill (1983) Sheep Mtn.	Bright (1966) Swan L.	Smith (1983) Blue L.	Bartholomew (1982) Clear L.
	X		xeric[a]					
100	E		------	FIRES[b]				
200	R			------		------		
	I							
	C							
300	M						mesic	
400	E		mesic	FEWER FIRES		mesic		
500	S		g/s	[c]		p/s	p/g	
600	I			D		------	------	------
	C							
700	X		xeric					DRY
800	E		s/g					LAKE
900	R	M	------ [d]					------
1000	I	E	mesic g/s				xeric	
1100	X	S	------			xeric		
1200		I		s/c			g/p	
1300	X	C				s/p,g		
1400	E		xeric s/g	FIRES	FIRES			
1500	R			------	------		FIRES [e]	
1600	I						Ponderosa	
	C							
							Douglas-fir	
1700			------				g/p	
1800	X							
1900	E							
2000	R							
2100	I					------		
	C							
2200								
2300						------		
2400			------				------	
2500	M							
2600	E							
2700	S		mesic			mesic		
2800	I							
2900	C			c/s		g,p/s		
3000				------			p/g	
.								
.								
4000								

a xeric and mesic labels indicate cited climatic interpretations.
b FIRES indicates increased fire frequency.
c D indicates increased sediment deposition.

d c/s = sedge pollen increase over sage pollen; g/s = grass pollen increase over sage pollen; s/g = sage pollen increase over grass pollen; p/g pine pollen increase over grass pollen; g/p = grass pollen increase over pine pollen; g,p/s = grass and pine pollen increase over sage pollen.

e Ponderosa pine increases and Douglas-fir decreases.

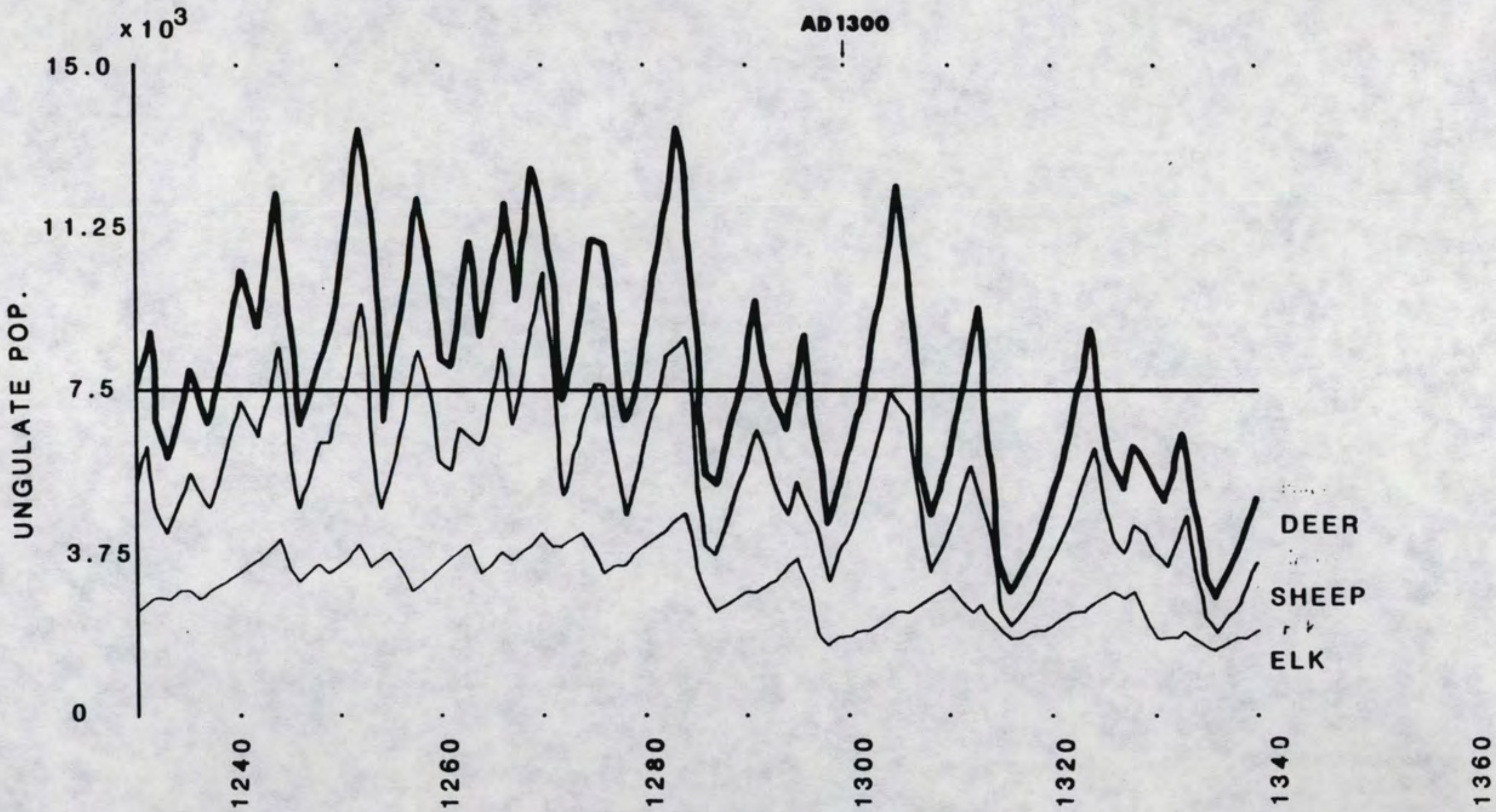
----- This symbol marks temporal division noted by cited researchers.

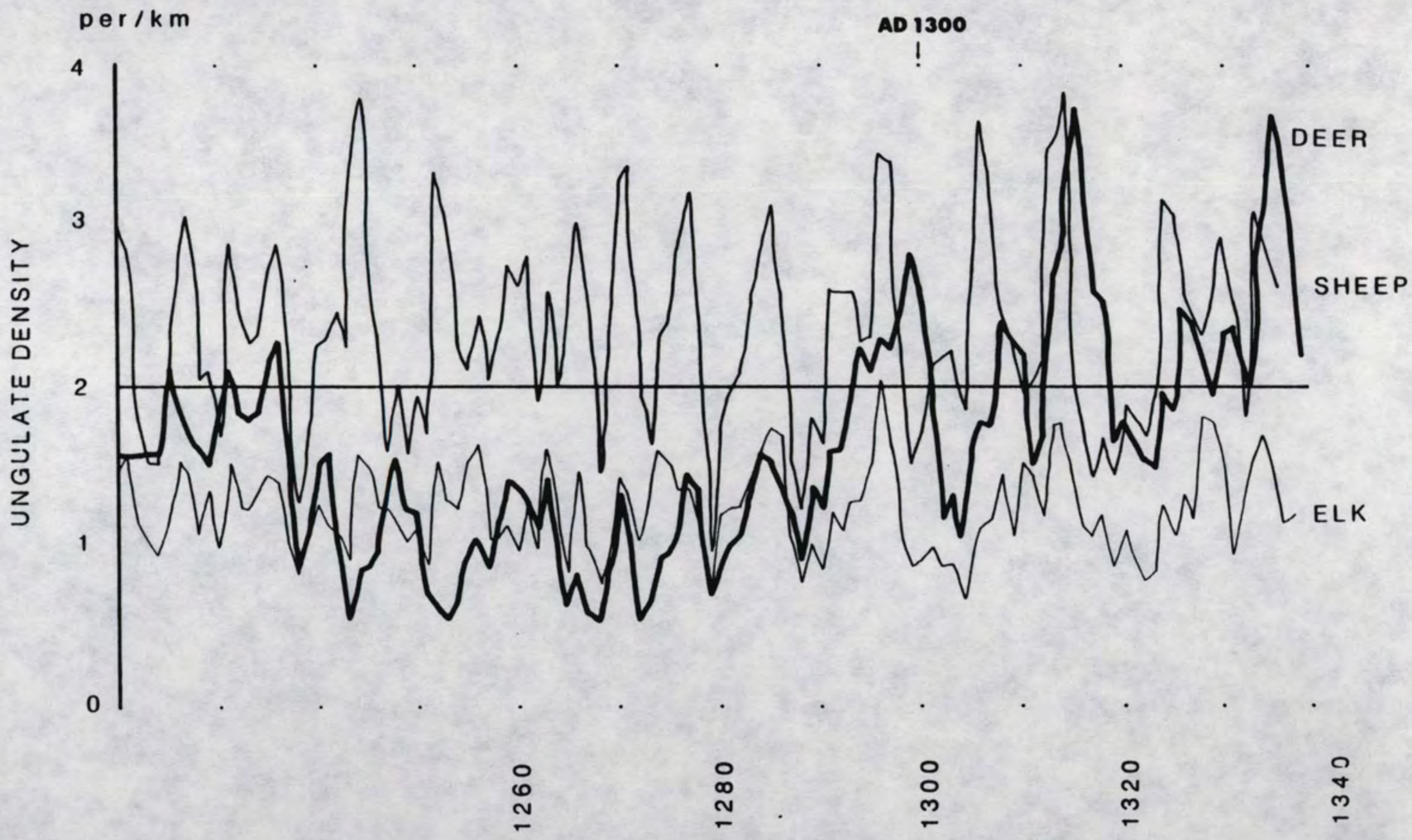
Ungulate Response

Simulation models of ungulate and salmonid populations have direct implications for studies of animal ecology and forest and wildlife management.

The amount of winter range with less than 1.5 ft of accumulated snow affects the population total and relative density of ungulates (William Hickey 1985; Leege and Hickey 1977; Picton and Knight 1971; Trout and Leege 1971). The condition of grass, forbs and browse is affected by both spring and summer temperatures as well as by effective moisture in these seasons (Dalke and Presby 1964; Presby 1963). It is therefore possible to simulate probable changes in the amount and condition of winter range and the related effects on ungulate populations.

Akenson and Akenson (1983) report minimum figures for winter ungulate density (per sq mile) in the Big Creek winter grass range: elk = 5, mountain sheep = 6, deer = 6.5. These estimates approximate the average winter density predicted by the simulation results for mountain sheep and deer. When simulation results for the 1900's are compared with known ungulate population trends several periods of population decline predicted by the model match the major periods of recorded decreases in animal populations.


x 10^3
AD 1300
15.0
11.25
7.5
3.75
0
UNGULATE POP.
1240
1260
1280
1300
1320
1340
1360
DEER
SHEEP
ELK



per/km
AD 1300
DEER
SHEEP
ELK
UNGULATE DENSITY
4
3
2
1
0
1260
1280
1300
1320
1340