

Appendix A Coordination and Consultation

All comments received through scoping and the public involvement processes were addressed in developing the issues and alternatives, which directed the analysis process.

Members of the Public Who Commented During the Initial Scoping:

Andy Andres

Dave Curtis

Chuck Neal

Ed Stratman

(UNREADABLE NAME)

March 28, 2001 Tim Stevens, Greater Yellowstone Coalition (GYC) called and requested the Scoping Statement. A comment letter from GYC was received April 5, 2001.

Agencies who commented during the initial scoping period:

WY Department of State Parks & Cultural Resources State Historic Preservation Office

WY Department of Environmental Quality-Air Quality Division

WY Game and Fish Department

WY Office of Federal Land Policy

Tribes who commented during the scoping period:

Cheyenne River Sioux Tribe-Eagle Butte, SD 57625

Members of the Public and Agencies Who Were Sent the Predecisional EA and/or Commented During the 30-day Predecisional Comment Period:

Andy Andres

Dave Curtis

Chuck Neal

Ed Stratman

Tim Stevens, Greater Yellowstone Coalition

WY Department of State Parks & Cultural Resources State Historic Preservation Office

WY Department of Environmental Quality-Air Quality Division

WY Game and Fish Department

WY Office of Federal Land Policy

Cheyenne River Sioux Tribe-Eagle Butte, SD 57625

U.S. Fish and Wildlife Service, Terry Root, PO Box 518, Cody, WY 82414

The following individuals or agencies were consulted or received the predecisional EA:

Ralph Swain, USFS Regional Office, Wilderness Specialist

Field visit with Wyoming Game and Fish, Summer 2000

U.S. Fish and Wildlife Service, Terry Root, PO Box 518, Cody, WY 82414

Appendix B Preparers

The following Interdisciplinary (ID) team members provided information on the project:

CORE ID TEAM

Clint Dawson – Project lead, Maps, North Zone Fire Management Officer, Shoshone NF
Kent Houston – Soils, Botany, Ecology, Invasive Plants, Sensitive Plants-Shoshone NF
Monte Barker – Wildlife-North Zone Wildlife Biologist, Shoshone NF
Marty Sharp– NEPA Coordination and Principal EA Author, Visuals

EXTENDED ID TEAM

Joe Hicks- Range - North Zone Rangeland Management Specialist, Shoshone NF
Ray Zubik– Fisheries-Shoshone NF
Greg Bevenger- Water, Air Quality-Shoshone NF
Allen Madril– Cultural Resources-Shoshone NF

Appendix C Discussion of Safety and Prescribed Burn Plan

The primary objective in accomplishing these projects will be to complete them in a safe manner. This objective includes those implementing the project as well as the private property owners in the area, hunters, tourists traveling the highway or those recreating in the area.

All aspects of the prescribed burning project will follow a Prescribed Fire Burn Plan. This plan is written specifically for the projects and considers resource objectives, weather parameters, fuel moisture parameters, pre-burn control actions needed, ignition plan, holding plan, contingency plan, public notification plan, equipment and coordination needs, smoke management plan, safety, risk analysis, costs and monitoring plan. Each will be analyzed in depth to identify the optimum burn parameters that will accomplish the projects safely. Only qualified burn personnel and resources will be utilized to accomplish these projects. The burn plan will be reviewed by the Forest Fire Management Officer and signed by the Forest Supervisor.

While the risk of an escaped prescribed fire is possible, the burn plan will be written to minimize the risk of an escape. Areas of concern for an escape will be identified and mitigated through either pre burn actions such as line construction or through ignition or holding actions during the burn. Since the majority of the burn units are inaccessible by engines, helicopter and bucket support for holding is essential to help minimize an escape. The weather and fuel moisture parameters will be set to meet the project objectives and minimize the risk of an escape.

A contingency plan will be written to address fire that may escape the burn units. This plan will identify trigger points, where dependent on the location of the escape, will specify the appropriate management response. The response may vary from do nothing, if the escape occurs in an isolated area, to suppression utilizing a range of resources such as additional helicopters, air tankers, fire engines, fire crews, etc. In all cases, where fire escape occurs near private property, a suppression response will be required.

A public notification plan will be written to identify the people that need to be contacted when this project is implemented. This includes people that live near the project, those traveling through the area on the roads or hunters/recreationists that may be camped in the area. The intent of the plan is to let people know when the projects will be implemented to reduce the risk of people being in the area during burning and compromising their safety.

Appendix D Relevant Laws and Executive Orders

Multiple-Use Sustained-Yield Act of 1960
National Historic Preservation Act of 1966, as amended
Wild and Scenic Rivers Act of 1968, amended 1986
National Environmental Policy Act (NEPA) of 1969, as amended
Clean Air Act of 1970, as amended
Endangered Species Act (ES) of 1973, as amended
Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974
National Forest Management Act (NFMA) of 1976, as amended
Clean Water Act of 1977, as amended
American Indian Religious Freedom Act of 1978
Archeological Resource Protection Act of 1980
Cave Resources Protection Act of 1988
Executive Order 11593 (cultural resources)
Executive Order 11988 (floodplains)
Executive Order 11990 (wetlands)
Executive Order 12898 (environmental justice)
Executive Order 12962 (aquatic systems and recreational fisheries)

Appendix E Project Proposal Summary

The following Table 4 is a summary of the project proposal with estimates of fire intensity for each unit.

Table 4 Bald Ridge Project

Treatment Unit	Acres	Slope	Treatment	Fire Intensity Acres/%		
				Unburned	Low	High
Unit 1	12	25	Rx Burn by Hand Ignition	1	10	1
				10%	85%	5%
Unit 2	35	15-25	Cut Firewood & Rx Burn by Hand Ignition	7	25	3
				20%	70%	10%
Unit 3	51	15-25	Cut Firewood & Rx Burn by Hand Ignition	5	38	8
				10%	75%	15%
Unit 4	39	15-25	Cut Firewood & Rx burn by Hand Ignition	6	29	4
				15%	75%	10%
Unit 5	29	0-15	Rx Burn by Hand Ignition	6	15	8
				20%	50%	30%
Unit 6	42	0-15	Rx Burn by Hand Ignition	8	27	7
				20%	65%	15%
Totals	208			33	144	31
Percentage				16%	69%	15%

Appendix F Minimum Impact Suppression Tactics

Minimum impact suppression tactics (MIST) would be used so that the least long-term impact on wilderness resources occurs. Confine and contain strategies, wetlines, minimum width hand firelines, natural barriers, and cold trailing would be considered. If firelines are used they would follow the natural physiographic breaks where possible. Ground disturbance would be avoided if possible. Compacted areas would be broken up during rehabilitation.

Appendix G Project Proposal Summary

The following Table 5 is a summary of the project proposal with estimates of fire intensity for each unit.

Table 5 Dead Indian Project

Treatment Unit	Acres	Slope %	Treatment	Fire Intensity Acres/%		
				Unburned	Low	High
Unit 1	247	35-45	Rx Burn by Hand Ignition	49	161	37
				20%	65%	15%
Unit 2	86	35-45	Rx Burn by Hand Ignition	13	60	13
				15%	70%	15%
Unit 3	462	35-45	Rx Burn by Hand Ignition	92	231	139
				20%	50%	30%
Unit 4 (Inside Wilderness)	439	35-45	Rx burn by Aerial and Hand Ignition	110	198	131
				25%	45%	30%
Unit 5 (Outside Wilderness)	135	35-45	Rx Burn by Aerial and Hand Ignition	14	68	53
				10%	50%	40%
Unit 6 (Outside Wilderness)	250	35-45	Rx Burn by Aerial and Hand Ignition	88	100	62
				35%	40%	25%
Totals	1619			366	818	435
Percentage				23%	50%	27%

Appendix H Habitat Type, Fire Group, and Fuel Model

Table 6 Bald Ridge Burn Units by Habitat Type, Fire Group, and Fuel Model.

Unit	Series/Habitat Type	Fire Group	Fuel Models
1(pc)	Limber Pine / King Fescue Douglas fir / Ninebark	1,2	1,6
2(pc)	Limber Pine / King Fescue Douglas fir / Ninebark	1,2	1,6
3(pc)	Limber Pine / King Fescue Douglas fir / Ninebark	1,2	1,6
4(pc)	Limber Pine / King Fescue Douglas fir / Ninebark	1,2	1,6
5(pc)	Limber Pine / King Fescue Douglas fir / Ninebark	1,2	1,6
6(pc)	Limber Pine / King Fescue Douglas fir / Ninebark	1,2,3	1,6

di – Dead Indian Creek Drainage / pc – Paint Creek drainage

Table 7 Dead Indian Burn Units by Habitat Type, Fire Group, and Fuel Model.

Unit	Series/Habitat Type	Fire Group	Fuel Models
1(di)	Limber Pine / King Fescue Douglas fir / common juniper Mountain Big Sage / Idaho fescue Idaho Fescue Series	1,2,3	1,6,8
2(pc)	Limber Pine / King Fescue Douglas fir / common juniper Mountain Big Sage / Idaho fescue Idaho Fescue Series	1,2,3	1,6,8
5(pc)	Subalpine Fir / Heartleaf Arnica Whitebark Pine Series	6,8	10
3(di)	Limber Pine / King Fescue Douglas fir / common juniper Mountain Big Sage / Idaho fescue Idaho Fescue Series	0,1,2,3	1,6,8
4(di)	Limber Pine / King Fescue Douglas fir / common juniper Mountain Big Sage / Idaho fescue Idaho Fescue Series	0,1,2,3	1,6,8
6(di)	Limber Pine / King Fescue Douglas fir / common juniper Mountain Big Sage / Idaho fescue Idaho Fescue Series	0,1,2,3	1,6,8

di – Dead Indian Creek Drainage / pc – Paint Creek drainage

Appendix I Fire Record/History

Table 7. Fire History

Fire Name	Year	Cause	Acres
Dry Fork Pat O'Hara	8/1/40	Lightning	0.33
Pat O'Hara	8/18/43	Lightning	0.1
Dry Paint	9/21/44	Person	0.1
Steamboat Point	8/25/52	Lightning	0.1
Pat O'Hara	8/21/53	Lightning	2865
Dry Fork	7/17/54	Lightning	0.1
Pat O'Hara	8/23/54	Lightning	0.1
Dead Indian	8/3/56	Person	0.1
Dry Fork Paint Creek	7/8/63	Lightning	0.25
Dead Indian	10/3/64	Person	0.25
Fender	7/7/74	Lightning	0.1
Dead Indian	9/18/76	Lightning	0.1
Morning Creek	8/2/80	Lightning	0.1
VW	8/10/83	Person	0.1
Steamboat	7/24/94	Lightning	0.2
Tugboat	6/28/95	Lightning	0.1
Indian	7/7/95	Lightning	0.1
Mill	8/9/98	Lightning	0.1
Bull Elk	2/13/99	Person	0.1
Lucky	8/1/00	Lightning	0.2
Cow Camp	8/4/00	Lightning	0.1

Appendix J Discussion of Fuel Models and Analysis

In a high intensity fire there are varying degrees of fuel consumption and fire effects. All or a high percentage of the organic duff layer is consumed, a high percentage of twigs, sticks and logs < 6 inches are consumed, logs > 6 inches are scorched and partially consumed, and live tree crowns are scorched with a high mortality rate. A high intensity fire is generally a stand replacement or crown fire that occurs with high fuel loading and when influenced by slope and wind.

In a low intensity fire there is also varying degrees of fuel consumption. The fire is generally a surface fire consuming only surface fuels and occasionally torching individual or groups of trees. Only a portion of the organic duff layer is consumed, 30-70% of the twigs, stick and logs <6 inches are consumed, logs > 6 inches are scorched and very little to no crown scorch to live trees. Fires that burn at low intensity tend to move slowly and may miss and leave areas unburned when surface fuels are not adequate to carry fire.

In areas of high fuel loading, intensity may be high and in areas of low fuel loading, intensity would be less. Fuel loading in any given unit is not uniform or continuous across the entire unit. When fire is applied to the landscape, a mosaic fire pattern would be developed not necessarily by design but by the range of fuel loadings, fuel moisture, fuel type, wind, aspect and slope. There would be areas that will not burn, areas that will burn at a high intensity and areas that will burn at a low intensity.

The fire analysis area contains four primary fuel types/models (*see* Figure 7). Fuel models were developed in the early 1970's that give an indication of the expected fire behavior with a wildland fire under various weather, fuel and topographical conditions. (reference 157).

Table 8. Fuel Models

Fuel Model	Acres	% of Area
Unburnable	7,875	16
1	5,399	11
6	1,743	4
8	4,879	10
10	29,106	59

The unburnable fuel model consists of areas that will not burn such as rock or bare soil. These areas function as fuel barriers rather than contributing to fire behavior. Fuel barriers located in the right places can serve as a corral to wildland fires.

Fuel model 1 consists of grass fuels that burn after they have cured, typically in the fall or early spring. Fires are surface fires that move rapidly through the grass. Fires in these fuels are influenced by aspect and fuel moisture and in this country burn into other fuels, as there are no large expanses of grass fuels.

Fuel model 6 consists of shrubs such as sagebrush, juniper and scattered limber pine with a grass under-story. Fires in this model typically burn through the shrub/grass layer and torch individual trees and may burn rapidly through the fuels if influenced by strong winds.

Fuel model 8 consists of surface litter beneath a tree canopy. Fires in this model typically are slow moving with low flame lengths. Fires may encounter an occasional “jackpot” or heavy concentration of fuel that may flare up. Only under severe weather conditions involving high temperatures, low humidity and high winds will the fire pose a hazard. Fuel loading in this model average 6-12 tons/acre.

Fuel model 10 consists of both surface and ground fuels beneath a tree canopy and burn with the greatest fire intensity than any other timber litter model. The fuel loading is characterized by large quantities of 3 inch or larger logs resulting from over maturity or natural events that create a large load of dead material on the forest floor. Crown fires, spotting and torching of trees are more frequent with this fuel model that lead to potential fire control problems. Fuel loading in this model average 17-25 tons/acre and can contain much larger fuel loading in some habitat types.

As shown by Table 8 above, almost two thirds of the analysis area contains fuels comparable to fuel model 10. Utilizing BEHAVE (Fire Behavior Prediction and Fuel Modeling System), a computer model, each of the fuel types were modeled using the same weather and topographical conditions (reference 151). The fuel moisture, slope and wind used were constant for all four fuel types and is typical of a mid August summer day. As shown by Table 8, each fuel type yields much different fire behavior.

Table 9. Fire Behavior

Fuel Model	Rate of Spread (Miles/hour)	Flame Length (feet)	Acres burned in 2 hours
1	1.4	5.2	1996
6	0.5	7.1	267
8	0.03	1.3	1
10	0.1	5.7	15

With these fuel reduction projects, there is very little fuel reduction that can be done in the grass fuel type beyond mowing. Fires in this fuel type are generally short lived in this area, as there are no large expanses of grasslands. Fires burning in grass usually burn quickly through the grass and enter another fuel type and either goes out or at least slow down substantially.

In fuel model 6, fires slow down substantially but produce a lot of heat from the long flame lengths. Firefighting crews with hand tools can generally direct attack, or construct hand line adjacent to the active fire, when flame lengths are less than 4 feet. In this fuel type the flame lengths are almost twice the capability of hand crews so other suppression forces such as dozers or aerial resources need to be utilized. The majority of the Bald Ridge project occurs within this fuel type.

In fuel model 8, fires slow down to the least fire spread of the fuel models and produce a very low flame length that fire crews can direct attack with hand tools. Fires in this fuel type generally cause no suppression problems. The goal of both fuel reduction projects is to reduce a portion of each unit's fuel loading to represent this fuel model.

In fuel model 10, fires are relatively slow when the fire is burning only the surface fuels. The flame lengths are generally greater than those direct attacked by hand crews so either indirect attack methods or other resources need to be utilized. A common problem in this fuel type is the presence of ladder fuels from the shade tolerant tree species. The fuel loading on the surface is generally heavy enough to produce sufficient heat to dry and ignite the lower branches of the spruce and fir which carries fire up the tree to the crowns where embers are lofted up and with the wind and deposited in more receptive fuels which aids in fire spread and growth much greater than shown in the table above. In the presence of dense tree canopies and strong winds, a crown fire can develop and large fire growth can occur in excess of 10,000-acres on a hot summer afternoon.

The fuel models represented within the treatment units by project area are shown in Table 10 and 11.

Table 10. Dead Indian Project

Treatment Unit	Fuel Model Acres				
	1	6	8	10	Total
Unit 1	89	90	0	68	247
Unit 2	11	11	6	58	86
Unit 3	112	228	100	22	462
Unit 4	51	128	135	125	439
Unit 5	33	0	1	101	135
Unit 6	95	140	4	11	250
Total	391	597	246	385	1619

Table 11. Bald Ridge Project

Treatment Unit	Fuel Model Acres				
	1	6	8	10	Total
Unit 1	1	11	0	0	12
Unit 2	2	33	0	0	35
Unit 3	8	43	0	0	51
Unit 4	3	36	0	0	39
Unit 5	2	27	0	0	29
Unit 6	4	38	0	0	42
Total	20	188	0	0	208

Dead and down fuel loading was measured on Units 3 and 4 in the Dead Indian project area and estimated elsewhere. The procedures used to determine fuel loading can be found in “Handbook for Inventorying Downed Woody Material”. (reference 150). The data was analyzed with DDWoodyPC (reference 155). The areas where fuel loading was estimated, utilized the Photo Guide for Appraising Downed Woody Fuels in Montana Forests – Lodgepole pine, Engelmann Spruce, Subalpine fir (reference 153).

The dead and down fuel loading for both project areas shown in Table 11 and Table 12.

Table 12. Dead Indian Project Area

Treatment Unit	Min. Loading (tons/ac)	Max Loading (tons/ac)	Average Fuel Loading (tons/ac)
Unit 1	12	25	19
Unit 2	22	42	31
Unit 3	5	15	12
Unit 4	25	45	32
Unit 5	28	47	33
Unit 6	8	16	13
Average	17	32	23

Table 13. Bald Ridge Project Area

Treatment Unit	Min. Loading (tons/ac)	Max. Loading (tons/ac)	Average Fuel Loading (tons/ac)
Unit 1	12	22	17
Unit 2	9	18	15
Unit 3	12	15	19
Unit 4	6	15	12
Unit 5	16	28	23
Unit 6	15	23	19
Average	12	20	18

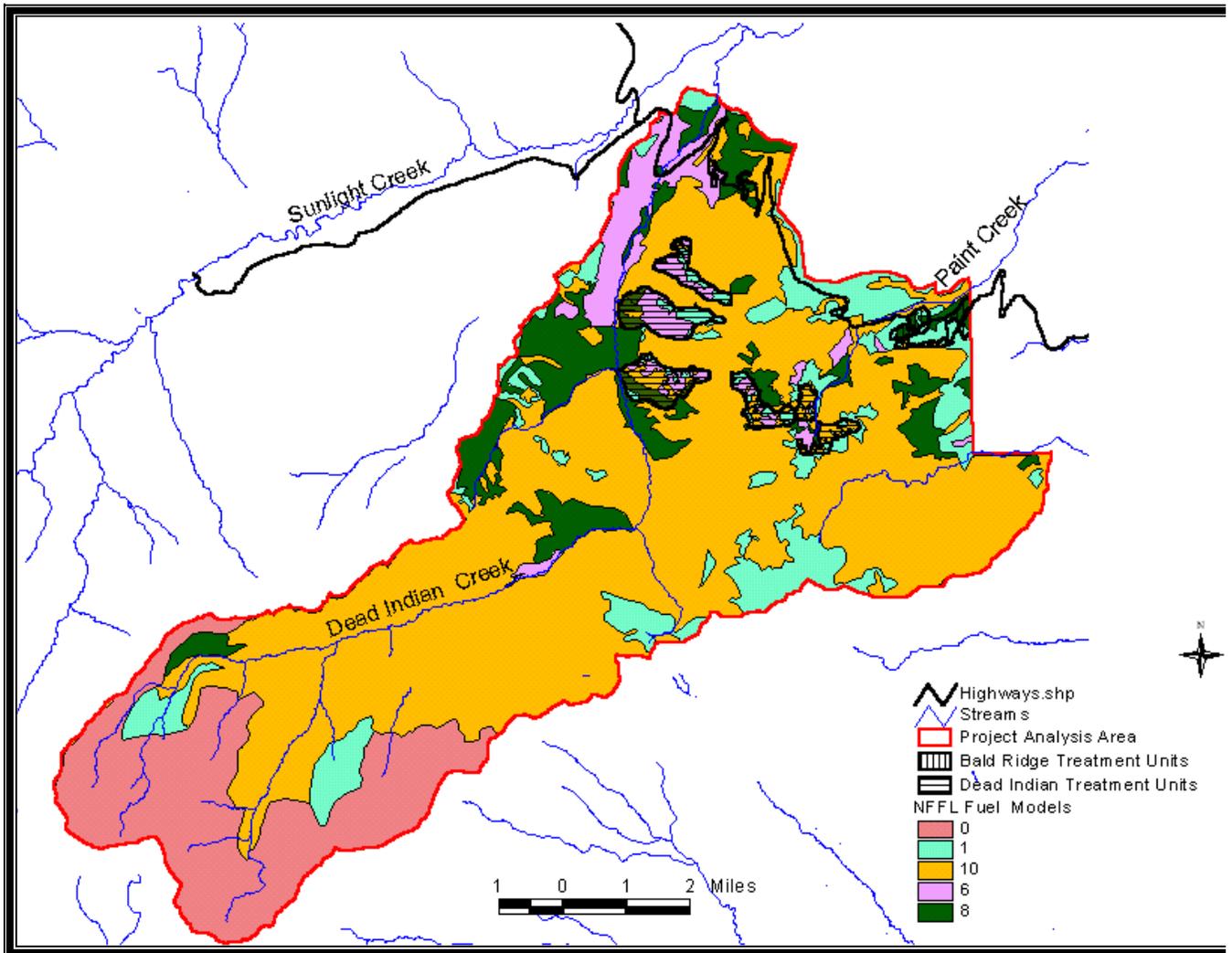


Figure 7 – Fuel Types/Fuel Models

Appendix K Literature Review

Literature Cited: References, Contacts, and Data Sources-Wildlife and Fisheries

1. Cerovski, A. 1999. *Boreal Owl Surveys On The Shoshone National Forest Completion Report*. In Threatened, Endangered, And NonGame Bird and Mammal Investigations. Non game Program Biological Services Section Annual Completion Report; 12 August, 1999. Wyoming Game & Fish Dept., Lander, Wy. pp 104-110.
2. Cerovski, A., M. Gorges, T. Buyer, K. Duffy, & D. Felley. 1999. *Wyoming Draft Bird Conservation Plan*. Wyoming Partners In Flight, Lander, WY. 131 pages.
3. Clark, Tim W. & Mark R. Stromberg. 1987. *Mammals in Wyoming*. Public Education Series No. 10, University of Kansas Museum of Natural History. 314 pages.
4. Cronquist, A. 1955. Pt. 5. Compositae. In: Hitchcock, C.L., A. Cronquist, M. Ownbey, and J.W. Thompson (eds). *Vascular Plants of the Pacific Northwest*. University Washington Publications Biology 17(5): 1-343.
5. Cronquist, A., A.H. Holmgren, N.H. Holmgren, J.L. Reveal, and P.K. Holmgren. 1977. Vol. 6. Monocotyledons. *Intermountain flora: Vascular Plants of the Intermountain West*, U.S.A. Columbia University Press, NY.
6. Dorn, R.D. 1977a. *Manual of the Vascular Plants of Wyoming*. 2 volumes. Garland Publ., INC., New York, NY.
7. Dorn, R.D. 1978. *A new species of Draba (Cruciferae) from Wyoming and Utah*. Madrono 25:101-103
8. Dorn, R.D. 1988. *Vascular Plants of Wyoming*. Mountain West Publishing. Cheyenne, WY.
9. Dorn, R.D. 1989a. *A report on the status of Descurainia torulosa, a Candidate Threatened species*. Unpublished report prepared for the US Fish and Wildlife Service by Mountain West Environmental Services, Cheyenne, WY.
10. Dorn, R.D. 1989b. *A report on the status of Lomatium attenuatum, a Candidate Threatened species*. Unpublished report prepared for the US Fish and Wildlife Service by Mountain West Environmental Services, Cheyenne, WY.
11. Dorn, R.D. 1989c. *A report on the status of Penstemon absarokensis, a Candidate Threatened species*. Unpublished report prepared for the US Fish and Wildlife Service by Mountain West Environmental Services, Cheyenne, WY.
12. Dorn, R.D. 1989d. *Report on the status of Shoshonea pulvinata, a Candidate Threatened species*. Unpublished report prepared for the US Fish and Wildlife Service by Mountain West Environmental Services, Cheyenne, WY.
13. Dorn, R.D. 1992. *Vascular Plants of Wyoming*, second edition. Mountain West Publishing, Cheyenne, WY.
14. Dorn, R.D. 1995. *A taxonomic study of Salix section Cordatae subsection Luteae (Salicaceae)*. Brittonia 47(2): 160-174.
15. Dorn, R.D. 1997. *Rocky Mountain Region Willow Identification Field Guide*. US Forest Service Region 2, Denver, CO.
16. Dorn, R.D. and J. Dorn. 1972. *Ferns and other Pteridophytes of Montana, Wyoming, and the Black Hills of South Dakota*. Published by the authors.

17. Dorn, R.D. and J.L. Dorn. 1980. *Illustrated Guide to Special Interest Vascular Plants of Wyoming*. Published by US Fish and Wildlife Service and Bureau of Land Management.
18. Duft, J.E. and R.K. Moseley. 1989. *Alpine Wildflowers of the Rocky Mountains*. Mountain Press Publ. Co., Missoula, MT.
19. Eicher, Tim. 2001. *Wolf locations*. Personal Communication
20. ERO Resources Corporation. 1999. *Final Report: Plant species of concern, portions of US 212 (FH 4), the Beartooth Highway, Park County, Wyoming*. Prepared for the Federal Highway Administration by ERO Resources Corp., Denver, CO.
21. Evert, E. F. 1982. *Noteworthy Collections, Wyoming*. *Madrono* 29 (2): 124-125.
22. Evert, E.F. 1983. *A new species of Lomatium (Umbelliferae) from Wyoming*. *Madrono* 30(3): 143-146.
23. Evert, E.F. 1984a. *Penstemon absarokensis, a new species of Scrophulariaceae from Wyoming*. *Madrono* 31 (3): 140-143.
24. Evert, E.F. 1984b. *A new species of Antennaria (Asteraceae) from Montana and Wyoming*. *Madrono* 31:109-112.
25. Evert, E. F. 1985. *Rare Plants: Story Area*. Unpublished report prepared for The Nature Conservancy.
26. Evert, E.F. 1986. *The Yellowstone region: endemics and other interesting plants*. In: Williams, J., ed. *Rocky Mountain Alpines*. American Rock Garden Society and Denver Botanic Gardens.
27. Evert, E. F. 1991. *Annotated checklist of the vascular plants of the North Fork Shoshone River Drainage, Northwestern Wyoming*. Unpublished report.
28. Evert, E.F. and L. Constance. 1982. *Shoshonea pulvinata, a new genus and species of Umbelliferae from Wyoming*. *Systematic Botany* 7 (4): 471-475.
29. Evert, E. F. and R. L. Hartman. 1984. *Additions to the Vascular Flora of Wyoming*. *Great Basin Naturalist* 44: 482-483.
30. Evert, E.F., R.D. Dorn, R.L. Hartman, and R.W. Lichvar. 1986. *Noteworthy collections, Wyoming*. *Madrono* 33(4): 315-317.
31. Fertig, W. 1992a. *A floristic survey of the west slope of the Wind River Range, Wyoming*. Unpublished Master's Thesis, University of Wyoming, Department of Botany.
32. Fertig, W. 1992b. *Checklist of the Vascular plant flora of the west slope of the Wind River Range and status report on the sensitive plant species of Bridger-Teton National Forest*. Unpublished report prepared for the Bridger-Teton National Forest by the Rocky Mountain Herbarium, University of Wyoming, Laramie, WY.
33. Fertig, W. 1992d. *Distinguishing Aster mollis from "look-alike" species in the Bighorn Mountains*. Report prepared for Bighorn National Forest by the Wyoming Natural Diversity Database, Laramie, WY.
34. Fertig, W. 1992e. *New additions to the flora of Wyoming*. *Wyoming Native Plant Society Newsletter* 11 (2): 3-4.
35. Fertig, W. 1992f. *Sensitive plant species surveys and revised species checklist, Grass Creek Resource Area, BLM*. Unpublished report prepared for the Bureau of Land Management, Grass Creek Resource Area, by the Wyoming Natural Diversity Database, Laramie, WY.

36. Fertig, W. 1993c. *Pink agoseris (Agoseris lackschewitzii), a newly discovered sensitive plant species from the west slope of the Wind River Range, Bridger-Teton National Forest*. Addendum to Fertig's 1992 Checklist of the flora and Sensitive species of the Wind River Mountains on the Bridger-Teton NF, Wyoming Natural Diversity Database, Laramie, WY
37. Fertig, W. 1995c. *Report on the potential vulnerability of Shoshone National Forest Candidate and Sensitive plant species to livestock grazing*. Unpublished report prepared for Shoshone National Forest by the Wyoming Natural Diversity Database, Laramie, WY.
38. Fertig, W. 1995d. *Status report on Lesquerella fremontii in central Wyoming*. Unpublished report prepared for the BLM Wyoming State Office and Rawlins District by the Wyoming Natural Diversity Database, Laramie, WY.
39. Fertig, W. 1995e. *Plants of The Nature Conservancy's Red Canyon Ranch*. Unpublished report prepared for the Wyoming Nature Conservancy by the Wyoming Natural Diversity Database, Laramie, WY.
40. Fertig, W. 1995f. *Status report on Parrya nudicaulis in Bridger-Teton National Forest*. Unpublished report prepared for the Bridger-Teton NF by the Wyoming Natural Diversity Database.
41. Fertig, W. 1996d. *Status report on Primula egaliksensis in Bridger-Teton National Forest*. Unpublished report prepared by the Wyoming Natural Diversity Database for the Bridger-Teton National Forest, 19 March 1996. 20 pp. + appendices.
42. Fertig, W. 1997. *Plant species of special concern on Shoshone National Forest: 1996 survey results*. Unpublished report prepared by the Wyoming Natural Diversity Database, Laramie, WY. 283 pp.
43. Fertig, W. 1998b. *Plant species of special concern and vascular plant flora of the National Elk Refuge*. Unpublished report prepared for the US Fish and Wildlife Service by the Wyoming Natural Diversity Database, Laramie, WY.
44. Fertig, W. 1998d. *The status of rare plants on Shoshone National Forest: 1995-97 survey results*. Report prepared by the Wyoming Natural Diversity Database, Laramie, WY.
45. Fertig, W. 1999b. *Sensitive plant surveys and status of rare plant species on Bridger-Teton National Forest, 1997-1998*. Report prepared by the Wyoming Natural Diversity Database, Laramie, WY.
46. Fertig, W. 1999c. *The status of rare plants in the Bighorn Landscape*. Report prepared for The Nature Conservancy Wyoming Field Office by the Wyoming Natural Diversity Database, Laramie, WY.
47. Fertig, W. and G. Beauvais. 1999. *Wyoming Plant and Animal Species of Special Concern*. Prepared by the Wyoming Natural Diversity Database. Laramie, WY.
48. Fertig, W. and M. Bynum. 1994a. *Biological report on the proposed Bald Ridge Research Natural Area*. Unpublished report prepared for Shoshone National Forest by the Wyoming Natural Diversity Database.
49. Fertig, W. and M. Bynum. 1994b. *Biological report on the Proposed Twin Lakes Research Natural Area*. Unpublished report prepared for Shoshone National Forest by the Wyoming Natural Diversity Database.

50. Fertig, W. and G. Jones. 1992. *Plant communities and rare plants of the Swamp Lake Botanical Area, Clarks Fork Ranger District, Shoshone National Forest*. Unpublished report prepared for the Shoshone NF by the Wyoming Natural Diversity Database.
51. Fertig, W. and S. Markow. 1998. *Guide to the Willows of Shoshone National Forest*. Unpublished report prepared for the Shoshone National Forest by the Wyoming Natural Diversity Database, Laramie, WY.
52. Fertig, W., R.L. Hartman, and B.E. Nelson. 1991. *General floristic survey of the west slope of the Wind River Range, Bridger-Teton National Forest, 1990*. Report prepared by the Rocky Mountain Herbarium, University of Wyoming, for the Bridger-Teton National Forest.
53. Fertig, W., C. Refsdal, and J. Whipple. 1994. *Wyoming Rare Plant Field Guide*. Wyoming Rare Plant Technical Committee, Cheyenne WY.
54. Fertig, W., L. Welp, and S. Markow. 1999. *Status report on Evert's waferparsnip (*Cymopterus evertii*) in northwestern Wyoming*. Report prepared for the Bureau of Land Management Wyoming State Office by the Wyoming Natural Diversity Database, Laramie, WY.
55. Fire Effects Information System Website: <http://www.fs.fed.us/database/feis/>
56. Hartman, R. L. and L. Constance. 1985. *Two new species of *Cymopterus* (Umbelliferae) from western North America*. Brittonia 37 (1): 88-95.
57. Hartman, R.L. and R.S. Kirkpatrick. 1986. *A new species of *Cymopterus* (Umbelliferae) from northwestern Wyoming*. Brittonia 38(4): 420-426.
58. Hartman, R.L., B.E. Nelson, and K.H. Dueholm. 1985. *Noteworthy collections Wyoming*. Madrono 32:125-128.
59. Hitchcock, A. S. 1950. *Manual of the Grasses of the United States*, second edition, revised by Agnes Chase. USDA Misc. Publ. NO. 200.
60. Hitchcock, C.L. 1941. *A revision of the *Drabas* of western North America*. Univ. Washington Publ. Biology 11:1-132.
61. Hitchcock, C.L. and A. Cronquist. 1961. Pt.3. *Saxifragaceae to Ericaceae*. In: C.L. Hitchcock, A. Cronquist, M. Ownbey, and J.W. Thomas. Vascular Plants of the Pacific Northwest. Univ. Washington Publ. Biol. 17(12): 1-597.
62. Hitchcock, C.L. and A. Cronquist. 1964. Pt. 2. *Salicaceae to Saxifragaceae*. In: Hitchcock, C.L., A. Cronquist, M. Ownbey, and J.W. Thompson. Vascular Plants of the Pacific Northwest. Univ. of Washington Publ. Biol. 17(1): 1-914.
63. Hitchcock, C.L., A. Cronquist, and M. Ownbey. 1959. Pt. 4. *Ericaceae through Campanulaceae*. In: C.L. Hitchcock, A. Cronquist, M. Ownbey, and J.W. Thompson. Vascular Plants of the Pacific Northwest. Univ. Washington Publ. Biology 17(4): 1-510.
64. Hitchcock, C.L., A. Cronquist, and M. Ownbey. 1969. Pt. 1. *Vascular Cryptograms, Gymnosperms, and Monocotyledons*, In: Hitchcock, C.L., A. Cronquist, M. Owenbey, and J.W. Thompson (eds). Vascular Plants of the Pacific Northwest. Univ. Washington Publ. Biol. 17 (1): 1-914.
65. Hoover, Robert L. & Dale L. Wills. 1987. *Managing Forested Lands for Wildlife*. Colorado Division of Wildlife. 459 pages. Jones, G.P. 1991a. Report on the proposed Bald Ridge Special Botanical Area. Unpublished report prepared for the USDA

- Forest Service, Shoshone National Forest by the Wyoming Natural Diversity Database, Laramie, WY.
66. Jones, G.P 1991b. *Survey of plant species and plant communities of interest in the Carter Mountain Area of Critical Environmental Concern*. Report to the Bureau of Land Management, Worland District Office from the Wyoming Natural Diversity Database, The Nature Conservancy. Unpublished.
 67. Jones, G. P. and W. Fertig. 1999a. *Ecological evaluation of the potential Sheep Mesa Research Natural Area within the Shoshone National Forest, Park County, Wyoming*. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.
 68. Jones, G. P. and W. Fertig. 1999b. *Ecological evaluation of the potential Lake Creek Research Natural Area within the Shoshone National Forest, Park County, Wyoming*. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.
 69. Jones, G.P. and W. Fertig. 1999c. *Ecological evaluation of the potential Beartooth Butte Research Natural Area within the Shoshone National Forest, Park County, Wyoming*. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.
 70. Jones, G. P. and W. Fertig. 1999d. *Ecological evaluation of the potential Pat O'Hara Mountain Research Natural Area within the Shoshone National Forest, Park County, Wyoming*. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.
 71. Jones, G. P. and W. Fertig. 1999e. *Ecological evaluation of the potential Arrow Mountain Research Natural Area within the Shoshone National Forest, Fremont County, Wyoming*. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming.
 72. Jones, G. P. and W. Fertig. 1999f. *Ecological evaluation of the potential Grizzly Creek Research Natural Area within the Shoshone National Forest, Park County, Wyoming*. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming.
 73. Jones, G.P. 1999g. *Ecological evaluation of the potential Roaring Fork Mountain Research Natural Area within the Shoshone National Forest, Fremont County, Wyoming*. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming.
 74. Knight, D.H. 1994. Mountains and plains. *The ecology of Wyoming landscapes*. Yale University Press, New Haven and London.
 75. Kruse, C.G. 1995. *Genetic purity, habitat, and population characteristics of Yellowstone cutthroat trout in the Greybull River Drainage, Wyoming*. Master's Thesis, University of Wyoming, Zoology and Physiology Dept.
 76. Kruse, Carter, 1998. *Influence of Non-native Trout and Geomorphology on Distributions of Indigenous Trout in the Yellowstone River Drainage of Wyoming*, PhD Dissertation, Department of Zoology and Physiology, University of Wyoming, Laramie Wyoming.

77. Laurion, T. 1997. Update - *Lynx, Wolverine, and Fisher Survey* - Shoshone National Forest. Wyoming Game & Fish Dept. Memo. Wyoming Game & Fish Dept., Lander, WY.
78. Lesica, P. and P.L. Achuff. 1992. *Distribution of Vascular Plant Species of Special Concern and Limited Distribution in the Pryor Mountain Desert, Carbon County, Montana*. Unpublished report prepared for the USDI Bureau of Land Management by the Montana Natural Heritage Program, Helena, Montana.
79. Lesica, P. & J. S. Shelly. 1991. *Sensitive, Threatened and Endangered Vascular Plants of Montana*. Montana Natural Heritage Program, Occ. Publ. No. 1. Helena, MT.
80. Lesica, P. 1992. *Monitoring populations of Shoshonea pulvinata in the Pryor and Beartooth Mountains, Carbon County, Montana*. Unpublished report prepared by the Montana Natural Heritage Program, Helena MT.
81. Lesica, P. 1993. *Vegetation and flora of the Line Creek Plateau area, Carbon County, Montana*. Unpublished report prepared for USDA Forest Service Region 1, by the Montana Natural Heritage Program, Helena MT.
82. Lesica, P. 1995. *Conservation status of Haplopappus carthamoides var subsquarrosus in Montana*. Unpublished report prepared for the US Forest Service and Bureau of Land Management by the Montana Natural Heritage Program, Helena, MT.
83. Lichvar, R.W. 1983. *Evaluation of Draba oligosperma, D. pectinipila, and D. juniperina complex (Cruciferae)*. Great Basin Naturalist 43: 441-444.
84. Lichvar, R.W. and R.D. Dorn. 1980. *Noteworthy collections*. Madrono 27(3): 140-141.
85. Luce, B. 1995. *Sensitive Species Inventory*. Wyoming Game & Fish Department and Shoshone National Forest. Interim Completion Report - Challenge Cost-share Agreement # 110214109410. Wyoming Game & Fish Dept., Lander, WY.
86. Marriott, H.J. 1988b. *Survey of sensitive plant species on Shoshone National Forest*. Unpublished report prepared for Shoshone National Forest by the Wyoming Natural Diversity Database, Laramie, WY.
87. Marriott, H.J. 1991b. *Status report for Descurainia torulosa (Wyoming tansymustard)*. Prepared for Bridger-Teton and Shoshone National Forests by the Wyoming Natural Diversity Database, Laramie, WY.
88. Marriott, H.J. 1992a. *Field survey for Claytonia lanceolata var flava, Cryptantha subcapitata and Shoshonea pulvinata in the Owl Creek and southeastern Absaroka Mountains*. Prepared for the Bureau of Land Management by the Wyoming Natural Diversity Database, Laramie, WY.
89. Marriott, H.J. 1992b. *Field survey for Aster mollis, Astragalus barrii and Lesquerella arenosa var. argillosa in northeast and central Wyoming*. Unpublished report prepared for the Casper District, Bureau of Land Management by the Wyoming Natural Diversity Database, Laramie, WY.
90. Marriott, H.J. 1992c. *Field survey for Astragalus paysonii and Draba borealis, Bridger-Teton National Forest, Wyoming: First-year progress report*. Prepared for Bridger-Teton National Forest by the Wyoming Natural Diversity Database, Laramie, WY.
91. Marriott, H.J. 1992d. *Status report for Descurainia torulosa (Wyoming tansymustard), Sweetwater County, WY*. Prepared for the Bureau of Land management, Rock Springs District by the Wyoming Natural Diversity Database, Laramie, WY.

92. Mealey, Stephen P. 1987. *Interagency Grizzly Bear Guidelines*. Interagency Grizzly Bear Committee. 99 pages.
93. Mills, S. and W. Fertig. 1996a. *Field guide to rare and sensitive plants of the Shoshone National Forest*, February 1996. Prepared by the Wyoming Natural Diversity Database for the Shoshone National Forest, February 1996.
94. Mills, S. and W. Fertig. 1996b. *Survey of plant species of special concern on the Shoshone National Forest*, 1995. Unpublished report prepared for Shoshone National Forest by the Wyoming Natural Diversity Database, Laramie, WY.
95. Niemeyer, C. 2000. *Rocky Mountain Wolf Recovery 1999 Annual Report*. US Fish & Wildlife Service, the Nez Perce Tribe, the National Park Service, and the USDA Wildlife Services. 23 pages.
96. Oakleaf, B. 1997. *Sensitive Species Inventory*. Wyoming Game & Fish Department and Shoshone National Forest. Interim Completion Report - Challenge Cost Share Agreement # 110214109410. Wyoming Game & Fish Dept., Lander, WY.
97. Oakleaf, B. 1999. *Sensitive Species Inventory*. Wyoming Game & Fish Department and Shoshone National Forest. Interim Completion Report - Challenge Cost-share Agreement # 110214109512. Wyoming Game & Fish Dept., Lander, WY. pp 25-39.
98. Pavlick, L. and J. Looman. 1984. *Taxonomy and nomenclature of rough fescues, Festuca altaica, F. campestris (F. scabrella var. major), and F. hallii, in Canada and the adjacent part of United States*. Can. J. Bot. 62: 1739-1749.
99. Priday, J. 1998. *Sensitive Species Inventory*. Wyoming Game & Fish Department and Shoshone National Forest. Interim Completion Report - Challenge Cost Share Agreement # 110214109512. Wyoming Game & Fish Dept., Lander, WY.
100. Rocky Mountain Herbarium Website: <http://www.rmh.uwyo.edu/>
101. Rosenthal, D.M. 1998. *Report on a general floristic survey of vascular plants in selected areas of Shoshone National Forest*. Report prepared by the Rocky Mountain Herbarium, University of Wyoming, Laramie, WY.
102. Rosenthal, D.M. 1999. *A floristic survey of selected areas in Shoshone National Forest*, Wyoming. Master's Thesis, Department of Botany, University of Wyoming, Laramie, WY.
103. Ruediger, Bill et. al. 2000 Canada *Lynx Conservation Assessment and Strategy*. 2nd Edition. USDA Forest Service, USDI Fish & Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication #R1-00-53, Missoula, MT. 142 pages.
104. Ruggiero, L.F., K.B. Aubrey, S.W. Buskirk; L.J. Lyon; W.J. Zielinski. 1994. *American Marten, Fisher, Lynx, and Wolverine in the Western United States - The Scientific Basis for Conserving Forest Carnivores*. General Technical Report RM-254. Rocky Mountain Forest and Range Experiment Station. Ft. Collins, Colorado. 184p.
105. Ruggiero, L.F., K.B. Aubrey, S.W. Buskirk, G.M. Koehler, C.J. Kregs, K.S. McKelvey, & J.R. Squires. 1999. *Ecology and Conservation of Lynx in the United States*. USDA Forest Service, Rocky Mountain Research Station General Technical Report RMRS-GTR-30WWW. 480 pages.
106. Scholl, S., R.S. Smith, & Data Management Staff. 2000. *Shoshone National Forest – Known Occurrences of Threatened, Endangered, Forest Sensitive and WYNDD – Designated Plant and Animal Species of Concern and Community Occurrences*.

- Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY. 491 pages.
107. Shelly, J.S. 1988a. Report on the conservation status of *Shoshonea pulvinata*, a candidate Threatened species. Unpublished report prepared for the US Fish and Wildlife Service by the Montana Natural Heritage Program, Helena, MT.
 108. Shelly, J.S. 1988b. *Status review of Orchis rotundifolia in U.S. Forest Service, Region 1, Flathead and Lewis & Clark National Forests, Montana*. Unpublished report prepared for the US Forest Service by the Montana Natural Heritage Program, Helena, MT.
 109. Smith, Douglas W. ----. *Yellowstone Wolf Project Annual Report 19--*. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming. – pages.
 110. Snow, N. 1994. *The vascular flora of southeastern Yellowstone National Park and the headwaters region of the Yellowstone River, Wyoming*. Wasmann J. Biol. 50(1-2): 52-95.
 111. Thomas, Jack Ward et. al. 1979. *Wildlife Habitats in Managed Forests – The Blue Mountains of Oregon and Washington*. US Department of Agriculture, Forest Service. Agriculture Handbook No. 553. 512 pages.
 112. Tilt, Whitney, Ruth Norris, & Amos S. Dno. 1987. *Wolf Recovery in the Northern Rocky Mountains*. National Audubon Society and the National Fish & Wildlife Foundation, Washington D.C. 31 pages.
 113. Tweit, S. J. and K. E. Houston. 1980. *Grassland and shrubland habitat types of the Shoshone National Forest*. U.S. Dept. of Agriculture, Forest Service, Rocky Mountain Region, Shoshone National Forest.
 114. USDA Forest Service. 1989. *Idaho and Wyoming: Endangered and Sensitive Plant Field Guide*. USDA Forest Service Intermountain Region, Ogden UT.
 115. USDA Forest Service. 1986 *Shoshone National Forest Land and Resource Management Plan*. Rocky Mountain Region, USDA Forest Service, Shoshone National Forest, Cody, WY.
 116. USDA Forest Service. 1991. *Threatened, Endangered, and Sensitive Species of the Intermountain Region*. US Forest Service Region 4, Ogden, UT.
 117. USDI Fish & Wildlife Service. 2000. *Canada Lynx Conservation Assessment and Strategy*. USFW, Helena, MT 116pp.
 118. USDI Fish & Wildlife Service. 2001. *Endangered, Threatened, and Candidate Species, Shoshone National Forest*. 1 page.
USDA Forest Service. 1994. *R2 Regional Forester's Sensitive Species List*. FS Handbook. Pages 10-16.
 119. Wagner, D.H. 1992. *Guide to the species of Botrychium in Oregon*. Unpublished report prepared by the University Herbarium, University of Oregon, Eugene, OR.
 120. Wagner, W.H. Jr. and F.S. Wagner. 1981. *New species of moonworts, Botrychium subg. Botrychium (Ophioglossaceae), from North America*. American Fern Journal 71(1): 20-22.
 121. Wagner, W.H. Jr. and F.S. Wagner. 1986. *Three new species of moonworts (Botrychium subg. Botrychium) endemic in western North America*. Amer. Fern Journal 76: 33-47.

122. Wagner, W.H., Jr. and F.S. Wagner. 1993. *Ophioglossaceae*. IN: Flora of North America Editorial Committee. Flora of North America North of Mexico. Vol. 2 Pteridophytes and Gymnosperms. Oxford University Press, New York.
123. Welp L., Fertig W., Jones G., Beauvais G., and Ogle S. 2000. *Fine Filter Analysis of the Bighorn, Medicine Bow, and Shoshone National Forests in Wyoming*. Wyoming Natural Diversity Database. Laramie, Wyoming.
123. Wilken, D. and R.L. Hartman. 1991. *A revision of the Ipomopsis spicata complex (Polemoniaceae)*. Systematic Botany 16(1): 143-161.
124. Yekel, Steve. February 22, 2001. Personal communication. Wyoming Game and Fish Department, Cody Region Fisheries Biologist,
125. Wyoming Game and Fish Department, *Wyoming Trout Stream Classification Map*, 1987, revised 1991.
126. Zubik, R.; M.M. Girard; H. Golden; A. Blankenship; C. Messlo. 1995. *Biological Evaluation for Yellowstone Cutthroat Trout and Habitat Needed in Riparian Areas Grazed by Domestic Livestock on the Shoshone And Bighorn National Forests*. Unpublished Forest Service Report.

Literature Cited – References (Soil and Water, Threatened and Endangered Plant Species)

127. Bradley, Anne F.; Fischer, William C.; Noste, Nonan V., 1992. *Fire Ecology of the Forest Habitat Types of Eastern Idaho and Western Wyoming*. General Tech. Report INT-290. Intermountain Forest and Range Exp. Station. Ogden, Utah. 92 pages.
128. Carter, President, 1977a. Floodplain Management Executive Order 11988.
128. Carter, President, 1977b. Protection of Wetlands Executive Order 11990.
130. Case, J., 1989. *Geological Hazards of Shoshone National Forest 1:24,000 maps*. Wyoming Geological Survey. Laramie Wyoming.
131. Despain, D.G. and D.J. Mattson. 1985. *Grizzly Bear Habitat Component Mapping Handbook for the Greater Yellowstone Ecosystem*. Unpublished.
132. Elliot W.J., D.E. hall, and D. L. Schele. 2000. *Draft Wepp interface for disturbed forest and range runoff, erosion, and sediment delivery*. Rocky Mountain Research Station. USDA Forest Service.
133. Fertig, W. 1994. *Guide to Sensitive Wyoming Plants of the US Forest Service Region 2-DRAFT*. Wyoming Natural Diversity Database. Laramie, Wyoming. 83 p.
134. Fertig, W. 1994. *Wyoming Rare Plant Field Guide*. The Nature Conservancy. Wyoming Natural Diversity Database. Laramie, Wyoming.
135. Houston K.E. 1999. *Shoshone National Forest Subsections and Land Type Associations*. Draft.
136. Natural Resource Conservation Service (NRCS). 1997. *Soil Interpretation Handbook*.
137. Neighbours, M. 1994 through 1997. *Shoshone National Forest: Known Occurrences of Animals and Plants-Threatened, Endangered, Forest Sensitive, and Otherwise of Concern-And Occurrences of Communities*. The Nature Conservancy. Wyoming Natural Diversity Database. Laramie, Wyoming.
138. Reider, R.G., G.A. Huckleberry, and G.C. Frison, 1988. *Soil Evidence for Postglacial*

- Forest-Grassland Fluctuation in the Absaroka Mountains of Northwestern Wyoming*. U.S.A. Art. Alp. Res. 20:188-98.
139. Steele, R., et. al. 1983. *Forest Habitat Types of Eastern Idaho-Western Wyoming*. USDA Forest Service. GTR-INT-144. 122pp.
140. USDA Forest Service, Region 2, 1996. *Watershed Conservation Practices Handbook*.
141. USDA Forest Service, Region 2, 1999. *Regional Soil Interpretations Rating Guide*. Unpublished.
142. USDA, Shoshone National Forest. 1993. *Oil and Gas Leasing FEIS and ROD*.
143. USDA, Shoshone National Forest. 1995a. *Allowable Sale Quantity FEIS and ROD*.
144. Wyoming Department of Environmental Quality, 1973. Wyoming Environmental Quality Act.
145. Wyoming Department of Environmental Quality, 1990. *Water Quality Rules and Regulations*, Chapter 1.
146. Wyoming Department of Environmental Quality, 1997. *Silviculture Best Management Practices*.
147. Wyoming Natural Diversity Database. 1996. *Known Occurrences of Animals and Plants- Threatened, Endangered, Forest Sensitive, and Otherwise of Concern and Occurrences of Communities*. The Nature Conservancy.

Literature Cited – References (Fire and Other)

148. Anderson, Hal E. 1968. *Sundance Fire: An analysis of fire phenomena*. Res. Pap. INT-56. Ogden, UT: U.S. Department Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 39 p.
149. Arno, Stephen F.; Scott, Joe H.; Hartwell, Michael G. 1995b. *Age-class structure of old growth ponderosa pine/Douglas-fir stands and its relationships to fire history*. Res. Pap. INT-481. Ogden, UT: U.S. Department Agriculture, Forest Service, Intermountain Research Station. 20 p.
150. Brown, James K., 1974. *Handbook for Inventorying Downed Woody Material* Gen Tech Rep. INT-16. Ogden, UT: U.S. Department Agriculture, Forest Service, Intermountain Research Station. 24 p.
151. Burgan, Robert E.; Rothermel, Richard C, 1984. *BEHAVE: fire prediction and fuel modeling system – FUEL subsystem*, Gen Tech. Rep. INT-167. Ogden, UT: U.S. Department Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 126 p.
152. Dawson, Clint. April 24, 2001. *In-house Fire Specialist Report*. Shoshone National Forest, North Zone Fire Management Officer.
153. Fischer, William C. 1981. *Photo guide for appraising downed woody fuels in Montana forests: lodgepole pine and Engelmann spruce- subalpine fir cover types*. Gen. Tech. Rep. INT-98. Ogden, UT: U.S. Department Agriculture, Forest Service, Intermountain Research Station. 143 p.
154. Hendee, John C.; Stankey, George W.; Lucas, Robert C. 1990. *Wilderness Management*, Second Edition, revised. North American Press, Golden, Colorado.
155. *Fire Program Solutions*, LLC, 1998, 1999 Acacia Services, P.O. Box 1589, Estacada, OR, 97023.

156. Morgan, P.; Bunting, S.C. 1989. *Unpublished data on file at: Forest Resources Department, University of Idaho, Moscow, ID.*
157. Rothermel, Richard C. 1972. *A mathematical model for spread predictions in wildland fuels.* USDA For. Serv. Res. Pap. INT-115, 40 p. Intermountain Forest and Range Experiment Station. Ogden, UT.
158. USDA Forest Service, 1974, *National Forest Landscape Management, Vol. 2, U.S. Department of Agriculture, Agriculture handbook Number 462.*
159. USDA, Region 2, 1999, Forest Health Management Biological Opinion, R2-99-05-*Evaluation of White Pine Blister Rust Disease on the Shoshone National Forest* and personnel communication, Jeri Lyn Harris, Plant Pathologist, USDA Forest Service Region 2.
160. USDA, Region 6 *Forest Disease Management Notes.*
(<http://fs.fed.us/outernet/r6/nr/fid/mgmtnote/wpbr.pdf>)
161. USDA, Shoshone National Forest, 1998. *North Absaroka Wilderness Fire Plan.*
162. USDI, USDA Forest Service, 2000. *Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President In Response to the Wildfires of 2000.* [National Fire Plan]