

APPENDICES A–S

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**APPENDIX A. BEST MANAGEMENT PRACTICES FOR RAPTORS AND
THEIR ASSOCIATED HABITATS IN UTAH, AUGUST 2006**

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I. INTRODUCTION:

Raptors, or *Birds of Prey*, are found on public lands throughout Utah. Approximately 31 species of raptors utilize public lands for at least a portion of their life cycle. These include 20 diurnal raptors, including the eagles, hawks, falcons, osprey, turkey vulture and California condor; and 11 mostly nocturnal owl species. At least 16 of the diurnal raptors are known to nest, roost and forage on public lands; while 2 others are probable nesters within the southern part of the state. The California condor is known to utilize public lands for roosting and foraging, but is not currently known to nest within the state. The rough-legged hawk is a winter resident that uses public lands for foraging. All of the owl species nest, roost and forage on public lands in Utah.

Eight of Utah's raptors are considered to be Special Status Species by the BLM, and currently receive enhanced protection, in addition to the regulatory authority provided by the Migratory Bird Treaty Act (MBTA), which covers all raptor species. The bald eagle and Mexican spotted owl are listed as Federally threatened species and are afforded the protection, as well as the Section 7 consultation requirements, of the Endangered Species Act (ESA). The bald eagle is currently being proposed for delisting by the Fish and Wildlife Service. Both the bald eagle and golden eagle are protected by the provisions of the Eagle Protection Act. The California condor is a Federally endangered species, however, the birds found in southern Utah are part of an Experimental Non-essential Population reintroduced to northern Arizona under Section 10(j) of the Endangered Species Act. The BLM is required to treat the condor as a species proposed for listing for Section 7 purposes of the ESA. The northern goshawk is managed by a multi-agency Conservation Agreement. The ferruginous hawk, short-eared owl and burrowing owl are listed as Wildlife Species of Concern by the Utah Division of Wildlife Resources (UDWR, May 12, 2006), and are therefore recognized as BLM state-sensitive species under the Bureau's 6840 Manual. The BLM's 6840 Policy states that "*BLM shall...ensure that actions authorized, funded, or carried out...do not contribute to the need for the species to become listed*".

Future raptor management on BLM lands in Utah will be guided by the use of these Best Management Practices (BMPs), which are BLM-specific recommendations for implementation of the U.S. Fish and Wildlife Service, Utah Field Office's "*Guidelines for Raptor Protection From Human and Land Use Disturbances*" ("*Guidelines*"). The "*Guidelines*" were originally developed by the Fish and Wildlife Service in 1999, and were updated during 2002 to reflect changes brought about by court and policy decisions and to incorporate Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. The "*Guidelines*" were provided to BLM and other land-managing agencies in an attempt to provide raptor management consistency, while ensuring project compatibility with the biological requirements of raptors, and encouraging an ecosystem approach to habitat management.

These Best Management Practices, or specific elements of the BMP's which pertain to a proposal, should be attached as Conditions of Approval to all BLM use authorizations which have the potential to adversely affect nesting raptors, or would cause occupied nest sites to become unsuitable for nesting in subsequent years.

Raptor management is a dynamic and evolving science, and consequently, as the science evolves, these BMP's will undergo subsequent revision. As more information becomes available through implementation of these raptor BMP's, and as our knowledge of raptor life cycle requirements increases, findings will be incorporated into future revisions of the BMP document. Additionally, BLM and the Department of Energy are initiating a 3-year Raptor Radii study which will test traditional spatial and seasonal nest buffers during actual oil and gas development activities for a select suite of species. Study results would be incorporated into new BMP revisions as well.

To adequately manage raptors and their habitats, and to reduce the likelihood of a raptor species being listed under the Endangered Species Act (ESA), BLM-authorized or proposed management activities and/or land disturbing actions would be subject to the criteria and processes specified within these BMPs. The implementation of raptor spatial and seasonal buffers under the BMPs would be consistent with Table 2 of the "*Guidelines*", included here as Attachment 2. As specified in the "*Guidelines*", modifications of spatial and seasonal buffers for BLM-authorized actions would be permitted, so long as protection of nesting raptors was ensured. State and/or Federally-listed, proposed, and candidate raptor species, as well as BLM state-sensitive raptor species, should be afforded the highest level of protection through this BMP process; however, all raptor species would continue to receive protection under the Migratory Bird Treaty Act. Modification of the buffers for threatened or endangered species would be considered pending results of Section 7 Consultation with USFWS.

As stated in the "*Guidelines*", spatial and seasonal buffers should be considered as the best available recommendations for protecting nesting raptors under a wide range of activities state-wide. However, they are not necessarily site-specific to proposed projects. Land managers should evaluate the type and duration of the proposed activity, the position of topographic and vegetative features, the sensitivity of the affected species, the habituation of breeding pairs to existing activities in the proposed project area, and the local raptor nesting density, when determining site-specific buffers. The BLM would be encouraged to informally coordinate with UDWR and USFWS anytime a site-specific analysis shows that an action may have an adverse impact on nesting raptors. The coordination would determine if the impact could be avoided or must be mitigated, and if so, to determine appropriate and effective mitigation strategies.

Potential modifications of the spatial and seasonal buffers identified in the "*Guidelines*" may provide a viable management option. Modifications would ensure that nest protection would occur, while allowing various management options which may deviate from the suggested buffers within the "*Guidelines*", which, if adequately monitored, could provide valuable information for incorporation into future management actions.

Seasonal raptor buffers from Attachment 2 should be reviewed by local raptor nesting authorities who are knowledgeable of raptor nesting chronologies within their local area. For those nesting raptors for which local nesting chronologies remain uncertain, the seasonal buffers provided in Attachment 2 should serve as the default. However, for those raptor species whose known nesting chronologies differ from the seasonal buffers provided in Attachment 2, the local seasonal buffers may be utilized as a modification of the "*Guidelines*".

Criteria that would need to be met, prior to implementing modifications to the spatial and seasonal buffers in the "*Guidelines*", would include the following:

- Completion of a site-specific assessment by a wildlife biologist or other qualified individual. See example (Attachment 1)
- Written documentation by the BLM Field Office Wildlife Biologist, identifying the proposed modification and affirming that implementation of the proposed modification(s) would not affect nest success or the suitability of the site for future nesting. Modification of the “*Guidelines*” would not be recommended if it is determined that adverse impacts to nesting raptors would occur or that the suitability of the site for future nesting would be compromised.
- Development of a monitoring and mitigation strategy by a BLM biologist, or other raptor biologist. Impacts of authorized activities would be documented to determine if the modifications were implemented as described in the environmental documentation or Conditions of Approval, and were adequate to protect the nest site. Should adverse impacts be identified during monitoring of an activity, BLM would follow an appropriate course of action, which may include cessation or modification of activities that would avoid, minimize or mitigate the impact, or, with the approval of DWR and F&WS, BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report would be completed and forwarded to UDWR for incorporation into the Natural Heritage Program (NHP) raptor database.

In a further effort to provide additional support and expertise to local BLM Field biologists, a network of biologists from various agencies with specific expertise in raptor management has been identified and included as Attachment 3. The personnel identified have extensive backgrounds in raptor management issues and are available, upon request, to assist BLM Field biologists on a case by case basis. Field biologists are encouraged to use this network, via informal conference, with one or more of the individuals identified. This coordination should be clearly distinguished from the consultation process required under Section 7 of the ESA. Individuals on the expert panel should not be expected to provide formal advice, but should serve as a sounding board for discussing potential affects of a proposal, as well as potential mitigation measures on specific projects which may be useful to BLM biologists.

II. HABITAT ENHANCEMENT:

As recommended in the “*Guidelines*”, raptor habitat management and enhancement, both within and outside of buffers, would be an integral part of these BMPs, with the understanding that in order for raptors to maintain high densities and maximum diversity, it is necessary that the habitat upon which they and their prey species depend be managed to promote healthy and productive ecosystems. Habitat loss or fragmentation would be minimized and/or mitigated to the extent practical and may include such measures as; drilling multiple wellheads per pad, limiting access roads and avoiding loop roads to well pads, effective rehabilitation or restoration of plugged and abandoned well locations and access roads that are no longer required, rehabilitation or restoration of wildland fires to prevent domination by non-native invasive annual species, vegetation treatments and riparian restoration projects to achieve Rangeland Health Standards, etc.

In some cases, artificial nesting structures, located in areas where preferred nesting substrates are limited, but where prey base populations are adequate and human disturbances are limited, may

enhance some raptor populations, or may serve as mitigation for impacts occurring in other areas.

III. PROTECTION OF NEST SITES AND BUFFER ZONES:

As stated in the “*Guidelines*”, protection of both occupied and unoccupied nests is important since not all raptor pairs breed every year, nor do they always utilize the same nest within a nesting territory. Individual raptor nests left unused for a number of years are frequently reoccupied, if all the nesting attributes which originally attracted a nesting pair to a location are still present. Nest sites are selected by breeding pairs for the preferred habitat attributes provided by that location.

Raptor nest buffer zones are established for planning purposes because the nest serves as the focal point for a nesting pair of raptors. The buffer should serve as a threshold of potential adverse affect to nest initiation and productivity. Actions proposed within these buffer zones are considered potentially impacting and, therefore, trigger the need for consideration of site-specific recommendations.

Seasonal (temporal) buffer zones are conservation measures intended to schedule potentially impacting activities to periods outside of the nesting season for a particular raptor species. These seasonal limitations are particularly applicable to actions proposed within the spatial buffer zone of a nest for short duration activities such as, pipeline or powerline construction, seismic exploration activity, vegetative treatments, fence or reservoir construction, permitted recreational events, etc., where subsequent human activity would not be expected to occur.

Spatial buffer zones are those physical areas around raptor nest sites where seasonal conservation measures, or surface occupancy restrictions may be applied, depending on the type and duration of activity, distance and visibility of the activity from the nest site, adaptability of the raptor species to disturbance, etc. Surface occupancy restrictions should be utilized for actions which would involve human activities within the buffer zone for a long duration (more than one nesting season) and which would cause an occupied nest site to become unsuitable for nesting in subsequent years.

UNOCCUPIED NESTS:

All Activities, including All Mineral Leases: Surface-disturbing activities, occurring outside of the breeding season (seasonal buffer), but within the spatial buffer, would be allowed during a minimum three-year nest monitoring period, as long as the activity would not cause the nest site to become unsuitable for future nesting, as determined by a wildlife biologist. Facilities and other permanent structures would be allowed, if they meet the above criteria.

Some examples of typical surface disturbing actions, occurring outside of the seasonal buffer, which may not be expected to affect nest production or future nesting suitability, would include; pipelines, powerlines, seismographic exploration, communication sites, an oil or gas well with off-site facilities which does not require routine visitation, recreation events, fence or reservoir construction, vegetative treatments, and other actions with discreet starting and ending times, and for which subsequent human activity or heavy equipment operation within the spatial buffer would not be expected to occur, or could be scheduled outside of the seasonal buffer in subsequent years.

Surface disturbing activities that would be expected to potentially affect nest production or nest site suitability, include; oil and gas facilities requiring regular maintenance, sand and gravel operations, road systems, wind energy projects, mining operations, and other actions requiring continual, random human activity, or heavy equipment operation during subsequent nesting seasons.

A nest site which does not exhibit evidence of use, such as; greenery in the nest, fresh whitewash, obvious nest maintenance or the observed presence of adults or young at the nest, for a period of three consecutive years, (verified through monitoring), would be deemed abandoned and all seasonal and spatial restrictions would cease to apply to that nest. All subsequent authorizations for permanent activities within the spatial buffer of the nest could be permitted. If the nest becomes reoccupied after authorized activities are completed, conservation measures would be considered to reduce potential adverse affects and to comply with the Migratory Bird Treaty Act and the Eagle Protection Act.

The three-year non-use standard varies from the “*Guidelines*” suggested seven-year non-use standard before declaring nest abandonment. This variation is based upon a similar standard which has been applied for over 20 years in two administrative areas within Utah. Empirical evidence would suggest the three-year non-use standard has been effective in conserving raptor species. The three-year standard has been applied without legal challenge or violation of “Take” under the Migratory Bird Treaty Act or the Eagle Protection Act.

Because prey base populations are known to be cyclic, and because raptor nest initiation or nesting success can be affected by drought and other random natural events, care should be taken when applying the 3-year non-activity standard. The 3-year nest occupancy monitoring requirement should be viewed as a minimum time period during those years of optimal raptor nesting conditions. During sub-optimal raptor nesting years, when nesting habitat may be affected by drought, low prey base populations, fire, or other events, the monitoring standard should be increased to allow raptors the opportunity to reoccupy nesting sites when nesting conditions become more favorable.

OCCUPIED NESTS:

All Activities: Land use activities which would have an adverse impact on an occupied raptor nest, would not be allowed within the spatial or seasonal buffer.

IV. CONSIDERATION OF ALTERNATIVES AND MITIGATION MEASURES:

Alternatives, including denial of the proposal, should be identified, considered and analyzed in a NEPA document anytime an action is proposed within the spatial buffer zone of a raptor nest. Selection of a viable alternative that avoids an impact to nesting raptors should be selected over attempting to mitigate those impacts. If unavoidable impacts are identified, mitigation measures should be applied as necessary to mitigate adverse impacts of resource uses and development on nesting raptors. Monitoring of the effectiveness of the mitigation measures should be mandatory and should be included as a Condition of Approval.

V. SPECIFIC STRATEGIES TO BE IMPLEMENTED REGARDING OTHER RESOURCE USES:

The following are management strategies designed to reduce or eliminate potential conflicts between raptors and other resource uses. This is a list of examples and is not intended to be an all-inclusive list. In all cases, when an activity on BLM lands is proposed, and a NEPA document developed, the site-specific analysis process identified in Attachment 1 may be implemented to identify and either avoid or mitigate impacts to raptors from the proposal. These strategies apply to both BLM and applicant-generated proposals. The strategies are as follows:

A. CULTURAL RESOURCES

Excavation and studies of cultural resources in caves and around cliff areas should be delayed until a qualified biologist surveys the area to be disturbed or impacted by the activity for the presence of raptors or nest sites. If nesting raptors are present, the project should be rescheduled to occur outside of the seasonal buffer recommended by the “*Guidelines*”.

B. FORESTRY AND HARVEST OF WOODLAND PRODUCTS

Timber harvest would be subject to NEPA analysis and would be conducted in a manner that would avoid impacts to raptor nests. This could also apply to areas identified for wood gathering and firewood sales.

C. HAZARDOUS FUEL REDUCTION/HABITAT RESTORATION PROJECTS

Hazardous fuels reduction projects and shrubsteppe restoration projects should be reviewed for possible impacts to nesting raptors. Removal of trees containing either stick nests or nesting cavities, through prescribed fire, or mechanical or manual treatments, should be avoided.

It is important to note that certain raptor species are tied to specific habitat types, and that consideration must be made on a site-specific basis when vegetation manipulation projects are proposed, to determine which raptor species may benefit and which may be negatively affected by the vegetation composition post-treatment.

D. LIVESTOCK GRAZING

Manage rangelands and riparian areas in a manner that promotes healthy, productive rangelands and functional riparian systems. Rangeland Health Assessments should be conducted on each grazing allotment, and rangeland guidelines should be implemented where Rangeland Health Standards are not being met, to promote healthy rangelands.

Locations of sheep camps and other temporary intrusions would be located in areas away from raptor nest sites during the nesting season. Placement of salt and mineral blocks would also be located away from nesting areas.

Season of use, kind of livestock, and target utilization levels of key species affect vegetative community attributes (percent cover, composition, etc.) and influence small mammal and avian species diversity and density. While not all raptor species would be affected in the same way, livestock management practices which maintain or enhance vegetative attributes, will preserve prey species density and diversity which will benefit the raptor resource.

E. OHV USE

Special Recreation Management Areas (SRMAs) that are developed for OHV use would not be located in areas that have important nesting, roosting, or foraging habitat for raptors.

Off highway vehicle use would be limited to designated roads, trails and managed open areas. Lands categorized as “Open” for OHV use should not be in areas important to raptors for nesting, roosting, and foraging

When proposals for OHV events are received, the area to be impacted, would be surveyed by a qualified wildlife biologist to determine if the area is utilized by raptors. Potential conflicts would be identified and either avoided or mitigated prior to the issuance of any permit.

F. OIL AND GAS DEVELOPMENT

The Code of Federal Regulations (CFR), 43 CFR 3101.1-2, allows for well site location and timing to be modified from that requested by the lessee to mitigate conflicts at the proposed site, and states that the location can be moved up to 200 meters and the timing of the actual drilling can be delayed for up to 60 days to mitigate environmental concerns. The regulation also allows BLM to move a location more than 200 meters, or delay operations more than 60 days to protect sensitive resources, with supporting rationale and where lesser restrictions are ineffective. The Site Specific Analysis (Attachment 1) would provide the supporting rationale. Provisions are also present within Sections 3 and 6 of the Standard Lease Form which require compliance with existing laws and would allow the BLM to impose additional restrictions at the permitting phase, if the restrictions will prevent violation of law, policy or regulation, or avoid undue and unnecessary degradation of lands or resources.

G. REALTY

Lands proposed for disposal which includes raptor nesting, roosting, or important foraging areas would be analyzed and evaluated for the relative significance of these resources before a decision is made for disposal or retention.

A priority list of important raptor habitat areas, especially for Federally listed or state sensitive raptor species, on state and private lands should be developed and utilized as lands to be acquired by BLM when opportunities arise to exchange or otherwise acquire lands.

Lands and realty authorizations would include appropriate conservation measures to avoid and/or mitigate impacts to raptors.

H. RECREATION

Development of biking trails near raptor nesting areas would be avoided.

Rock climbing activities would be authorized only in areas where there are no conflicts with cliff nesting raptors.

In high recreation use areas where raptor nest sites have been made unsuitable by existing disturbance or habitat alteration, mitigation should be considered to replace nest sites with artificial nest structures in nearby suitable habitat, if it exists, and consider seasonal protection of nest sites through fencing or other restrictions.

Dispersed recreation would be monitored to identify where this use may be impacting nesting success of raptors.

I. WILD HORSE PROGRAM

In areas where wild horse numbers are determined to be in excess of the carrying capacity of the range, removal of horses, as described in the various herd management area plans, would continue, to prevent further damage to rangelands.

VI. INVENTORY AND MONITORING:

- A) Each Field Office should cooperatively manage a raptor database, with UDWR and USFWS, as part of the BLM Corporate database. Raptor data should be collected and compiled utilizing the Utah Raptor Data Collection Standards developed by the Utah State Office, so that personnel from other agencies can access the data. Appropriate protocols for survey and monitoring should be followed, when available. This database should be updated as new inventory and monitoring data becomes available. The data should also be forwarded to UDWR and the Natural Heritage Program, which has been identified as the central repository for raptor data storage for the State of Utah.
- B) Use of Seasonal Employees and volunteers, as well as “Challenge Cost Share” projects, should be utilized to augment the inventory and monitoring of raptor nests within a planning area, with the data entered into the above-mentioned databases at the close of each nesting season. Project proponents, such as energy development interests, would be encouraged to participate and help support an annual raptor nest monitoring effort within their areas of interest.
- C) Active nest sites should be monitored during all authorized activities that may have an impact on the behavior or survival of the raptors at the nest site. A qualified biologist would conduct the monitoring and document the impacts of the activity on the species. A final report of the impacts of the project should be placed in the EA file, with a copy submitted to the NHP. The report would be made available for review and should identify what activities may affect raptor-nesting success, and should be used to recommend appropriate buffer zones for various raptor species.
- D) As data are gathered, and impact analyses are more accurately documented, “adaptive management” principles should be implemented. Authorization of future activities should take new information into account, better protecting raptors, while potentially allowing more development and fewer restrictions, if data indicates that current restrictions are beyond those necessary to protect nesting raptors, or conversely indicates that current guidance is inadequate for protection of nesting raptors.

ATTACHMENT 1
Site Specific Analysis Data Sheet

Observer(s) _____ Date _____

1. Conduct a site visit to the area of the proposed action and complete the raptor nest site data sheet according to BLM data standards.

2. Area of Interest Documentation (**Bold** items require completion, other information is optional)

State **Office** **Management Unit** _____

Project ID#

Location (Description)

Legal T __, R __, Sec. __, 1/4, __ 1/4, __ or UTM Coordinates

Latitude _____ Longitude _____

Photos Taken Y () N ()

Description of photos:

Raptor Species **Confirmed** **Unconfirmed**
Distance From Proposed Disturbance to:
Nest _____
Perch _____
Roost _____

Line of Site Evaluation From:
Nest _____
Perch _____
Roost _____

Extent of Disturbance: Permanent __ Temporary _____

Distance from Nest/Roost _____ Acreage _____

Length of Time ____ Timing Variations ____ Disturbance Frequency _____

Other Disturbance Factors: Yes No (If yes, explain what and include distances from nest to disturbances)

Approximate Age of Nest: New _____ **Historical:** (Number of Years) _____

Evidence of Use (Describe):

Habitat Values Impacted:

Proportion of Habitat Impacted (Relate in terms of habitat available):

Estimated Noise Levels of Project (db): _____

Available Alternative(s) (e.g., location, season, technology):

Associated Activities:

Cumulative Effects of Proposal and Other Actions in Habitat Not Associated With the Proposal:

Potential for site Rehabilitation: High_____ Low_____

Notes/Comments:

Summary of Proposed Modifications:

Possible modifications to the spatial and seasonal buffers within the FWS “*Guidelines*” include the following:

Rationale:

Summary of Proposed Mitigation Measures:

Possible mitigation measures related to the proposal include the following:

Rationale:

Summary of Alternatives Considered:

Possible alternatives to the proposal include the following:

Rationale:

Recommendation to FO Manager Based on Above Findings:

Field Office Wildlife Biologist

Date

ATTACHMENT 2

Nesting Periods and Recommended Buffers for Raptors in Utah

Species	Spatial Buffer (miles)	Seasonal Buffer	Incubation, # Days	Brooding # Days Post-Hatch	Fledging, # Days Post-Hatch	Post-fledge Dependency to Nest, # Days ¹
Bald eagle	1.0	1/1-8/31	34-36	21-28	70-80	14-20
Golden eagle	0.5	1/1-8/31	43-45	30-40	66-75	14-20
N. Goshawk	0.5	3/1-8/15	36-38	20-22	34-41	20-22
N. Harrier	0.5	4/1-8/15	32-38	21-28	42	7
Cooper's hawk	0.5	3/15-8/31	32-36	14	27-34	10
Ferruginous hawk	0.5	3/1-8/1	32-33	21	38-48	7-10
Red-tailed hawk	0.5	3/15-8/15	30-35	35	45-46	14-18
Sharp-shinned hawk	0.5	3/15-8/31	32-35	15	24-27	12-16
Swainson's hawk	0.5	3/1-8/31	33-36	20	36-40	14
Turkey vulture	0.5	5/1-8/15	38-41	14	63-88	10-12
California condor	1.0	NN yet	56-58	5-8 weeks	5-6 months	2 months
Peregrine falcon	1.0	2/1-8/31	33-35	14-21	35-49	21
Prairie falcon	0.25	4/1-8/31	29-33	28	35-42	7-14
Merlin	0.5	4/1-8/31	28-32	7	30-35	7-19
American kestrel	NN ²	4/1-8/15	26-32	8-10	27-30	12
Osprey	0.5	4/1-8/31	37-38	30-35	48-59	45-50
Boreal owl	0.25	2/1-7/31	25-32	20-24	28-36	12-14
Burrowing owl	0.25	3/1-8/31	27-30	20-22	40-45	21-28
Flammulated owl	0.25	4/1-9/30	21-22	12	22-25	7-14
Great horned owl	0.25	2/1-9/31	30-35	21-28	40-50	7-14
Long-eared owl	0.25	2/1-8/15	26-28	20-26	30-40	7-14
N. saw-whet owl	0.25	3/1-8/31	26-28	20-22	27-34	7-14
Short-eared owl	0.25	3/1-8/1	24-29	12-18	24-27	7-14
Mex. Spotted owl	0.5	3/1-8/31	28-32	14-21	34-36	10-12
N. Pygmy owl	0.25	4/1-8/1	27-31	10-14	28-30	7-14
W. Screech owl	0.25	3/1-8/15	21-30	10-14	30-32	7-14
Common Barn-owl	NN ²	2/1-9/15	30-34	20-22	56-62	7-14

¹ Length of post-fledge dependency period to parents is longer than reported in this table. Reported dependency periods reflect the amount of time the young are still dependent on the nest site; i.e. they return to the nest for feeding. ² Due to apparent high population densities and ability to adapt to human activity, a spatial buffer is not currently considered necessary for maintenance of American kestrel or Common barn-owl populations. Actions resulting in direct mortality of individual bird or take of known nest sites is unlawful

ATTACHMENT 3**Utah Raptor Management Experts From Various Agencies**

The following list of personnel from various agencies in Utah, are recognized experts in the field of raptor ecology or have extensive field experience in managing raptor resources with competing land uses. The list is provided to inform BLM field biologists and managers of this network of specialized expertise that may be able to assist, as time permits, with specific raptor management issues. Individuals in this Utah Raptor Network, also have well established contacts with an informal extended network of highly qualified raptor ecologists outside the state (i.e. USGS, State Wildlife Agencies, and Universities etc.) which could provide an additional regional perspective.

It should be pointed out that this list is not intended to replace or interfere with established lines of communication but rather supplement these lines of communication.

Utah BLM	David Mills	david_mills@blm.gov	435-896-1571
Utah BLM	Steve Madsen	steve_c_madsen@blm.gov	801-539-4058
Utah DWR	Dr. Jim Parrish	jimparrish@utah.gov	801-538-4788
Utah DWR (NERO)	Brian Maxfield	brianmaxfield@utah.gov	435-790-5355
USFWS	Laura Romin	laura_romin@usfws.gov	801-975-3330
USFWS	Diana Whittington	diana_whittington@usfws.gov	801-975-3330
USFS	Chris Colt	ccolt@fs.fed.us	801-896-1062
HawkWatch Intl	Jeff Smith	jsmith@hawkwatch.org	801-484-6808

ATTACHMENT 4

References Cited

Code of Federal Regulations; 43 CFR 3101.1-2, Leasing Regulations.

Endangered Species Act (ESA); 16 U.S.C. 1513-1543

Migratory Bird Treaty Act (MBTA); 16 U.S.C. 703-712

Romin, Laura A. and James A. Muck, 2002, "Utah Field Office Guidelines For Raptor Protection From Human And Land Use Disturbances." U.S. Department of Interior, U.S. Fish and Wildlife Service, Utah Field Office, Salt Lake City, Utah.

Standards for Rangeland Health and Guidelines for Grazing Management; 1997. U.S. Department of Interior, Bureau of Land Management.

U.S. Department of the Interior, Bureau of Land Management; 6840 Manual.

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**APPENDIX B. HYDRAULIC CONSIDERATIONS FOR PIPELINES
CROSSING STREAM CHANNELS; TECHNICAL NOTE 423**

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APPENDIX B. HYDRAULIC CONSIDERATIONS FOR PIPELINES CROSSING STREAM CHANNELS; TECHNICAL NOTE 423

Pipeline crossings of perennial, intermittent, and ephemeral stream channels should be constructed to withstand floods of extreme magnitude to prevent breakage and subsequent accidental contamination of runoff during high flow events. Surface crossings must be constructed high enough to remain above the highest possible stream flows at each crossing, and subsurface crossings must be buried deep enough to remain undisturbed by scour throughout passage of the peak flow. To avoid repeated maintenance of such crossings, hydraulic analysis should be completed in the design phase to eliminate costly repair and potential environmental degradation associated with pipeline breaks at stream crossings.

SURFACE CROSSINGS

Pipelines that cross stream channels on the surface should be located above all possible flood flows that may occur at the site. At a minimum, pipelines must be located above the 100-year flood elevation, and preferably above the 500-year flood elevation. Procedures for estimating 100-year and 500-year flood magnitudes are described in the U.S. Geological Survey's National Flood Frequency Program (Jennings, et al. 1994). Two sets of relationships for estimating flood frequencies at ungauged sites in Utah are included in the NFF program: Thomas and Lindskov (1983) use drainage basin area and mean basin elevation for flood estimates for six Utah regions stratified by location and basin elevation. Thomas et al (1997) also use drainage area and mean basin elevation to estimate magnitude and frequency of floods throughout the southwestern U.S., including five regions that cover the entire state of Utah. Results from both sets of equations should be examined to estimate the 100- and 500-year floods, since either of the relations may provide questionable results if the stream crossing drains an area near the boundary of a flood region or if the data for the crossing approach or exceed the limits of the data set used to develop the equations.

Estimating the depth of flow, or conversely the elevation of the pipeline at the crossing, may be approached a number of ways. The simplest procedure would be based solely on a field reconnaissance of the site, using basic geomorphic principles. Identification of the bank-full elevation and the active floodplain (i.e., floodplain formed by the present flow regime) provides inadequate conveyance for extreme flood events. Past floodplains/present terraces also must be identified, since these represent extreme floods in the present flow regime, especially in arid and semi-arid environments. Pipeline crossings should be constructed to elevate the pipeline above the level of the highest and outermost terrace at the crossing. This level represents the geomorphic surface likely to be associated with the maximum probable flood. Since this method is entirely based on a geomorphic reconnaissance of the site, no flood-frequency analysis is required and no recurrence interval is assigned to the design elevation. While this is the simplest approach to design of the crossing, it likely will result in the most conservative estimate (i.e., highest elevation) for suspension of the pipeline.

A slightly more intensive approach to crossing design is based on the Physiographic Method described by Thomas and Lindskov (1983) for estimating flood depths at ungauged sites. The procedure utilizes regional regression equations (similar to the flood-frequency equations described above) to estimate depth of flow associated with a specified recurrence-interval flood.

Flood depth is then added to a longitudinal survey of the stream channel in the vicinity of the crossing, resulting in a longitudinal profile of the specified flood. Elevation of the flood profile at the point of pipeline crossing is the elevation above which the pipeline must be suspended. While this procedure requires a field survey and calculation of actual flood depths, it may result in a lower crossing elevation (and possibly lower costs) for the pipeline. Also, since the regional regression equations estimate flood depth for specified recurrence-interval floods, it is possible to place a recurrence interval on the crossing design for risk calculations.

It may be possible to reduce pipeline construction costs associated with channel crossings even further with a water-surface-profile model of flow through the crossing site. The water-surface-profile model requires a detailed survey of both the longitudinal channel profile and several cross sections along the stream. Design flows (e.g., 100-year and 500-year floods) are calculated for the channel at the crossing (with the regional regression equations described above) and routed through the surveyed channel reach utilizing a step-backwater analysis. The step-backwater analysis uses the principles of conservation of mass and conservation of energy to calculate water-surface elevations at each surveyed cross section. Since the computation utilizes a detailed channel survey, it is probably the most accurate method to use; however, it is likely the most expensive method for the same reason. The step-backwater computations require an estimate of the Manning n-value as an indicator of resistance to flow, and assume fairly stable channel boundaries. Estimates of the n-value for ungauged sites are a matter of engineering judgment, but n-values typically are a function of slope, depth of flow, bed-material particle size, and bedforms present during the passage of the flood wave. Guidance is available in many hydraulic references (e.g., Chow 1959). The assumption of fairly stable channel boundaries is not always met with sand-bed channels, and is an issue of considerable importance for designing subsurface pipeline crossings as well (see below).

SUBSURFACE (BURIED) CROSSINGS

Since many of the pipelines are small and most of the channels are ephemeral, it is commonplace to bury the pipelines rather than suspending them above the streams. The practice of burying pipelines at channel crossings likely is both cheaper and easier than suspending them above all flood flows; however, an analysis of channel degradation and scour should be completed to ensure the lines are not exposed and broken during extreme runoff events. Without such an analysis, pipeline crossings should be excavated to bedrock and placed beneath all alluvial material.

Buried pipelines may be exposed by stream bed lowering resulting from channel degradation, channel scour, or a combination of the two. Channel degradation occurs over a long stream reach or larger geographic area, and is generally associated with the overall lowering of the landscape. Degradation also may be associated with changes in upstream watershed or channel conditions impacting the water and sediment yield of the basin. Channel scour is a local phenomenon associated with passage of one or more flood events and/or site-specific hydraulic conditions that may be natural or man-caused in origin. Either process can expose buried pipelines to excessive forces associated with extreme flow events, and an analysis of each is required to ensure integrity of the crossing.

Detection of long-term channel degradation must be attempted, even if there is no indication of local scour. Plotting bed elevations against time permits evaluation of bed-level adjustment and

indicates whether a major phase of channel incision has passed or is ongoing. However, comparative channel survey data are rarely available for the proposed location of a pipeline crossing. In instances where a gauging station is operated at or near the crossing, it's usually possible to determine long-term aggradation or degradation by plotting the change in stage through time for one or more selected discharges. The procedure is called a specific gauge analysis and is described in detail in the Stream Corridor Restoration manual published by the Federal Interagency Stream Restoration Working Group (1998). When there is no gauging station near the proposed pipeline crossing, nearby locations on the same stream or in the same river basin may provide a regional perspective on long-term channel adjustments. However, specific gauge records indicate only the conditions in the vicinity of the particular gauging station and do not necessarily reflect river response farther upstream or downstream of the gauge. Therefore, it is advisable to investigate other data in order to make predictions about potential channel degradation at a site.

Other sources of information include the biannual bridge inspection reports required in all states for bridge maintenance. In most states, these reports include channel cross-sections or bed elevations under the bridge, and a procedure similar to specific gauge analysis may be attempted. Simon (1989, 1992) presents mathematical functions for describing bed level adjustments through time, fitting elevation data at a site to either a power function or an exponential function of time. Successive cross sections from a series of bridges in a basin also may be used to construct a longitudinal profile of the channel network; sequential profiles so constructed may be used to document channel adjustments through time.

In the absence of channel surveys, gauging stations, and bridge inspection reports (or other records of structural repairs along a channel), it may be necessary to investigate channel aggradation and degradation using quantitative techniques described in Richardson et al. (2001) and Lagasse et al. (2001). Techniques for assessing vertical stability of the channel include incipient motion analysis, analysis of armoring potential, equilibrium slope analysis, and sediment continuity analysis. Geomorphic indicators of recent channel incision (e.g., obligate and facultative riparian species on present-day stream terraces elevated above the water table) also may be helpful for diagnosing channel conditions.

In addition to long-term channel degradation at the pipeline crossing, local scour of the crossing must be addressed for pipeline safety. Local scour occurs when sediment transport through a stream reach is greater than the sediment load being supplied from upstream and is usually associated with changes in the channel cross section. Local scour can occur in natural channels wherever a pipeline crosses a constriction in the channel cross section (contraction scour). Equations for calculating contraction scour generally fall into two categories, depending on the inflow of bed-material sediment from upstream. In situations where there is little to no bed-material transport from upstream (generally coarse-bed streams with gravel and larger bed materials), contraction scour should be estimated using clear-water scour equations. In situations where there is considerable bed-material transport into the constricted section (i.e., for most sand-bed streams), contraction scour should be estimated using live-bed scour equations. Live-bed and clear-water scour equations can be found in many hydraulic references (e.g., Richardson and Davis 2001). In either case, estimates of local scour in the vicinity of the pipeline crossing must be added to the assessment of channel degradation for estimating the depth of burial for the crossing.

Even in the absence of contraction scour, local scour will still occur in most sand-bed channels during the passage of major floods. Since sand is easily eroded and transported, interaction between the flow of water and the sand bed results in different configurations of the stream bed with varying conditions of flow. The average height of dune bedforms is roughly one-third to one-half the mean flow depth, and maximum height of dunes may nearly equal the mean flow depth. Thus, if the mean depth of flow in a channel was 5 feet, maximum dune height could also approach 5 feet, half of which would be below the mean elevation of the stream bed (Lagasse et al. 2001). Similarly, Simons, Li and Associates (1982) present equations for antidune height as a function of mean velocity, but limit maximum antidune height to mean flow depth. Consequently, formation of antidunes during high flows not only increases mean water-surface elevation by one-half the wave height, it also reduces the mean bed elevation by one-half the wave height. Richardson and Davis (2001) report maximum local scour of one to two times the average flow depth where two channels come together in a braided stream.

Pipeline crossings that are buried rather than suspended above all major flow events should address all of the components of degradation, scour, and channel-lowering due to bedforms described above. In complex situations or where consequences of pipeline failure are significant, consideration should be given to modeling the mobile-bed hydraulics with a numerical model such as HEC-6 (U.S. Army Corps of Engineers 1993) or BRI-STARS (Molinas 1990). The Federal Interagency Stream Corridor Restoration manual (FISRWG 1998) summarizes the capabilities of these and other models, and provides references for model operation and user guides where available.

APPENDIX C. WILD AND SCENIC RIVERS OVERVIEW

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APPENDIX C. WILD AND SCENIC RIVERS OVERVIEW

RESOURCE OVERVIEW

The Wild and Scenic Rivers Act established legislation for a National Wild and Scenic Rivers System (NWSRS) to protect and preserve designated rivers throughout the nation in their free-flowing condition, as well as their immediate environments. It contains policy for managing designated rivers, and created processes for designating additional rivers into the national system. Section 5(d) of the Act directs federal agencies to consider the potential for national wild, scenic and recreational river areas in all planning, for the use and development of water and related land resources. A “Wild and Scenic River (WSR)” review has been conducted as part of the Vernal Resource Management Plan Revision.

The first phase of the review was to inventory all potentially eligible rivers within the planning area, to determine which of those rivers are eligible for designation into the NWSRS. In order to be eligible, a river must be “free-flowing,” and possess at least one “outstandingly remarkable value.” The inventory to determine eligibility is part of the “analysis of the management situation.”

Next, all eligible rivers are taken through the land use planning process to determine their suitability for Congressional designation into the NWSRS. The suitability determinations are made in this Record of Decision (ROD)/Approved RMP for this planning effort.

There is also a reporting phase where “suitability” determinations are reported to Congress. There is no specific time requirement for completion of this phase; however, it is assumed that reporting will be done some time following completion of the land use plan. Only the Congress or the Secretary of Interior, upon an official request by a state, can designate a river into the NWSRS.

WILD AND SCENIC RIVER SUITABILITY

DETERMINATION OF SUITABILITY

Rivers determined to be eligible for inclusion into the National Wild and Scenic Rivers System (NWSRS) are further evaluated to determine their suitability for inclusion into the national system.

The purpose of the suitability step of the study process is to determine whether eligible rivers would be appropriate additions to the NWSRS. By considering tradeoffs between corridor development and river protection, it is designed to help the manager determine the best approach for managing the river corridor.

This resource management plan evaluates impacts that would result if the eligible rivers were determined suitable and managed to protect their free-flowing nature, tentative classification, outstandingly remarkable values, and water quality. It also addresses impacts that would result if the eligible rivers are not determined suitable, and those values are not managed for. Alternatives considered include no action, which does not address suitability and leaves rivers eligible; an alternative where all eligible rivers would be determined suitable; an alternative where no

eligible rivers would be determined suitable; and an alternative where portions of eligible rivers would be determined suitable.

In addition to the impact analysis addressed by the Proposed RMP and alternatives, suitability considerations listed below are applied to each eligible river in Table 5. These considerations go beyond BLM management actions addressed in the Proposed RMP and action alternatives, and consider implications of actual congressional designation on each eligible river segment. General effects of congressional designation are also addressed in the cumulative impacts section of the Proposed RMP/Final EIS.

Characteristics that would or would not make it a worthy addition to the NWSRS include:

- Land ownership and current use
- Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated
- Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including administration and cost sharing
- Manageability of the river if designated, and other means of protecting values
- The estimated costs of administering the river area, including costs for acquiring lands
- The extent to which administration costs would be shared by local and state governments

Public comment received on the Draft RMP/DEIS has been used to improve the documentation of impacts that would result from the Proposed RMP and various alternatives, as well as the documentation of the suitability considerations presented in this appendix. The actual determination of whether or not each eligible segment is suitable is a decision to be made in the Record of Decision for the Vernal RMP.

SUITABILITY CONSIDERATIONS BY ELIGIBLE RIVER SEGMENT

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
Argyle Creek	
Characteristics which would or would not make it a worthy addition to the NWSRS	Scenic values were identified as an outstandingly remarkable river-related value for Argyle Creek. This scenic area is characterized by steep wooded side canyons, high canyon walls, and vertical cliff faces.
Land ownership and current use	Of the 22 miles of shoreline in this segment, 4 miles are BLM, 1.7 are state and 16.7 are private. Within the river corridor, 32% of the land is federal (BLM), 8% is State, and 60% is private. Livestock grazing occurs along its banks. The entire segment is paralleled by a county road. The high percentage of private land adjacent to the stream has resulted in the construction of numerous ranch houses and summer homes in the corridor. A power line parallels the stream for approximately 7 miles.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated	Congressional designation of Argyle Creek into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its outstandingly remarkable scenic values. Failure to include of Argyle Creek in the NWSRS could result in deterioration of these values,

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>especially if mineral development occurs.</p> <p>Inclusion of a river into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values (high quality scenery) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures may be allowed with the Congressional classification of “recreational”, but only if it is determined that they would not negatively affect the scenic quality of the area. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible, depending upon the management prescriptions selected through this planning effort. However, even if ACEC or VRM Class II designations are made, such prescriptions are temporary and could be changed through plan amendment or plan revision.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including administration and cost sharing</p>	<p>State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be affected.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>Manageability of Argyle Creek if designated would be constrained due to the low percentage of public lands within the stream corridor. Any development of State or private lands within the corridor would diminish the overall scenic qualities of the area, but would probably not exceed standards for the recreational tentative classification. In addition, the free-flowing nature of this stream could be at risk due to the high percentage and possible development of State and private lands within the corridor. Other means of protection of federal lands within the corridor considered through this planning process include possible ACEC designation and/or the adoption of VRM Class II management prescriptions. However, such management prescriptions are subject to</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	change with revised land use plans. Therefore, the protection they afford the river values is subject to change.
The estimated costs of administering the river, including costs for acquiring lands	The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands within the river corridor (8% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 60% of the corridor of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing to sell. The high percentage of private lands would make acquisition prohibitive.
The extent to which administration costs would be shared by local and state governments	State and local governments would not share costs of managing the river
Bitter Creek	
Characteristics which would or would not make it a worthy addition to the NWSRS	The fish and wildlife habitat, cultural, historic and recreational values are outstandingly remarkable and make this a worthy addition to the NWSRS. This stream segment supports brook trout, and the river corridor supports a large population of deer and elk, and is also an important area for black bear, cougar coyote, beaver, muskrat, porcupine, bobcat, gray fox and red fox. This area was known formerly and presently to Tribal people as highly significant culturally and spiritually due to the river. The Book Cliffs area has a colorful past of Indians, mountain men, traders, cattlemen, cowboys, and outlaws. A number of historic sites still exist along Bitter Creek and add interest to a visit: These include ranch buildings and homesteads. In addition to the recreation opportunities related to the historical sites, the presence of numerous waterfowl and wildlife species supported by the creek provide good opportunities for fishing, hunting, and waterfowl viewing.
Land ownership and current use	Of the 20.4 miles of shoreline in this segment, 7.3 miles are BLM, 0.3 are State, 7.9 are Tribal, 4.6 are UDWR, and 0.3 are private. Within the river corridor, 65% of the land is BLM, 6% is State, 14% is UDWR, 14% is Tribal, and 1% is private. This river is used extensively for recreation, including, floating, fishing, hunting, wildlife and waterfowl viewing, and for exploring historical sties. Livestock grazing occurs along its banks. A two-track road parallels Bitter Creek for much of its length; however, it is mostly hidden from view and does not attract attention. Other than the road there are few other developments within the corridor.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated	Congressional designation of Bitter Creek into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its outstandingly remarkable scenic values. Failure to include of Bitter Creek in the NWSRS could result in deterioration of these values, especially if mineral development occurs.

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>Inclusion of a river into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values (fish and wildlife habitat, cultural, historic and recreational values) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively affect the outstandingly remarkable values or scenic tentative classification. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible, depending upon the management prescriptions selected through this planning effort. However, even if ACEC or VRM Class I or II designations are made, such prescriptions are temporary and could be changed through plan amendment or plan revision.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>State, local and Tribal governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be affected.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>Manageability of Bitter Creek if designated would be constrained due to the percentage of public lands within the stream corridor. Any development of State, private, UDWR, Tribal or private lands within the corridor would diminish the overall qualities of the area, and could exceed standards for the scenic tentative classification. In addition, the free-flowing nature of this stream could be at risk due to the high percentage and possible development of State, private and Tribal lands within the corridor. Other means of protection of federal lands within the corridor that have been considered through this planning process include possible ACEC designation and/or the adoption of VRM Class I or II management prescriptions. However, even if adopted, such management prescriptions are subject to change with revised land use plans. Therefore, the protection they afford the river</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	values is subject to change.
The estimated costs of administering the river, including costs for acquiring lands and interests	The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands (6% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 1% of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing to sell.
The extent to which administration costs would be shared by local and state governments	State, local and Tribal governments would not share costs of managing the river
Evacuation Creek	
Characteristics which would or would not make it a worthy addition to the NWSRS	The creek's outstandingly remarkable historic values make it a worthy addition to the NWSRS. The southern one half of the segment parallels the abandoned narrow gauge railroad grade that ran between Mack Colorado and Watson, Utah. The town site of Watson is on Evacuation Creek. Around the turn of the century Watson was a busy railroad town. Trains stopped here before going on to the Gilsonite mining camp of Rainbow. In the spring each year wool and lambs from several thousand head of sheep were shipped to market along this route.
Land ownership and current use	Of the 25.4 miles of river in this segment, 7.1 miles are BLM, 1.3 are state and 17.0 are private. Within the river corridor, 32% of the land is federal (BLM), 6% is State, and 62% is private. This river is used by recreationists for exploring historical sties. Livestock grazing occurs along its banks. An improved dirt road parallels Evacuation Creek for much of its length. Two bridges and a suspended pipeline cross the Creek An old railroad grade is within the corridor of the southern part of the segment.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated	Congressional designation of Evacuation Creek into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its outstandingly remarkable historic values. Failure to include Evacuation Creek in the NWSRS could result in deterioration or loss of these values, especially if mineral development occurs. Other than where it intersects with the White River, only minimal means of protection of federal lands within the corridor are being considered in the Vernal RMP/EIS. Inclusion of a river into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable historic values or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures may be allowed with the Congressional classification of "recreational",

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>but only if it is determined that they would not negatively affect the historic values of the area. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be affected.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>Manageability of Evacuation Creek if designated would be constrained due to the low percentage of public lands within the stream corridor. Any development of State or private lands within the corridor would diminish the overall qualities of the area, but would probably not exceed standards for the recreational tentative classification. In addition, the free-flowing nature of this stream could be at risk due to the high percentage and possible development of State and private lands within the corridor. Other than where it intersects with the White River, only minimal means of protection of federal lands within the corridor are being considered in the Proposed RMP/FEIS.</p>
<p>The estimated costs of administering the river, including costs for acquiring lands and interests</p>	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands within the river corridor (6% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 62% of the corridor of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing sell. The high percentage of private lands would make acquisition prohibitive.</p>
<p>The extent to which administration costs would be shared by local and state</p>	<p>State and local governments would not share costs of managing the river.</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
governments	
Upper Green River	
<p>Characteristics which would or would not make it a worthy addition to the NWSRS</p>	<p>The river’s scenic, recreational, fish wildlife/habitat and cultural/historic values are outstanding remarkable and make it a worthy addition to the NWSRS. The upper portion of the segment presents striking, abrupt contrasts, sometimes flowing through a deep, narrow gorge, sometimes between low, rolling hills, and sometimes across an almost flat-bottomed valley. In places red rock walls rise or stair step away from the river. The river is an appealing clear green color with deep holes and small rapids or riffles. The presence of numerous waterfowl and wildlife species provide good opportunities for fishing, hunting, waterfowl viewing, and floating. The segment contains prime trout habitat and is a continuation of the blue ribbon trout fishery that begins directly below Flaming Gorge Dam. The segment provides high quality nesting and migration habitat for Canada geese, ducks and other migratory birds, and helps to provide crucial winter habit for both deer and elk. This segment has supported a colorful past of Indians, mountain men, traders, cattlemen, cowboys, and outlaws. A number of historic sites still exist in along the river within Browns Park, and are an attraction to recreation users. These include ranch buildings, homesteads, and the remains of several outlaw cabins. Several sites have been nominated for inclusion on the National Register of Historic Places. These values are not only regional in importance, but are clearly of national significance.</p>
<p>Land ownership and current use</p>	<p>Of the 22.0 miles of shoreline in this segment, 12.0 miles are BLM, 3.7 are UDWR, 5.2 are USFS, 0.8 are state and 0.3 are private. Within the river corridor, 67% of the land is federal (BLM), 16% is UDWR, 12% is USFS, 3% is State, and 2% is private.</p> <p>This river is used extensively for recreation, including, floating, fishing, hunting, wildlife and waterfowl viewing, and for exploring historical sites. Livestock grazing occurs along its banks.</p> <p>An improved dirt road parallels the river for a short distance near the John Jarvie Historic Site and BLM’s Bridge Hollow and Indian Crossing Campgrounds. A bridge crosses the river at this point. All four of these improvements can readily be seen from the river. There are other developments within the corridor such as the Allan Ranch and developments associated with the Utah Division of Wildlife Resources Browns Park Waterfowl Refuge.</p>
<p>Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.</p>	<p>Congressional designation would provide permanent protection specifically of free-flowing condition of the river, its water quality and outstandingly remarkable values.</p> <p>Inclusion of a river into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads,</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>pipelines or other structures would only be allowed if it is determined that they would not negatively affect the scenic, fish and wildlife habitat, cultural, historic and recreational values of the area, and are in keeping with the Congressional classification of "scenic". Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed.</p> <p>Local municipalities, industries and other water users have expressed concerns that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments but also upstream or downstream of these segments. However, for the reasons discussed below, congressional designation of the Green River into the NWSRS would be expected to have no effect on water use, allocation, or flow regimes.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Under normal operations, reservoir releases through Flaming Gorge power plant, the primary influence of river flows outside of spring run-off flows, range from 800 to 4,600 cubic feet per second (cfs). These flows adhere to the interim operating criteria for Flaming Gorge Dam established by the Bureau of Reclamation in September 1974. Under these criteria, the Bureau of Reclamation agreed to provide (1) a minimum flow of 400 cfs at all times; (2) flows of 800 cfs under normal circumstances and for the foreseeable future; and (3) flows exceeding 800 cfs when compatible with other Colorado River Storage Project reservoir operations. These minimum flows are maintained to enhance the use of the river for fishing, fish spawning, and boating.</p> <p>Currently, however, the Bureau of Reclamation is evaluating recommendations by the Upper Colorado River Endangered Fish Recovery Program, a cooperative effort between the States of Colorado, Utah, and Wyoming, several federal agencies, and environmental, energy and water user organizations, to modify releases to better facilitate recovery of endangered fish (identified as components of the outstandingly remarkable fish value for the Green River). These recommendations, if implemented, would honor the minimum flow requirements while providing water releases of sufficient magnitude and, with the proper timing and duration, to assist in the recovery of the endangered fishes and their designated critical habitat. The BLM supports these recommendations and recognizes that the proposed minimum flow release from Flaming Gorge dam would be sufficient to maintain and/or enhance the values for which the river is eligible.</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>Because this minimum flow release would be adequate to maintain the outstandingly remarkable values, BLM sees no need for and would not pursue a federal reserved water right in any recommendation that is forwarded to Congress.</p> <p>Failure of Congress to include the Upper Green River in the NWSRS could result in degradation of the values for which the river was determined eligible, depending upon the management prescriptions selected through this planning effort. However, even if ACEC or VRM Class II designations are made and no surface occupancy stipulations applied to mineral leasing, such prescriptions are temporary and could be changed through plan amendment or plan revision.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>There has been some State and local government support for designation of this segment in the past, and bills have been introduced into Congress for the purpose of such designation. However, there is currently no county support for designation.</p> <p>Local agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be affected. However, there is no current or foreseen water use of the Upper Green River that would in fact be affected.</p> <p>There is strong support from the environmental community for congressional designation. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p> <p>The Forest Service supports designation of their portion of the river segment and would share in its administration.</p> <p>The State of Utah has also expressed concerns regarding the designation of the Green River. They are supportive of designating portions of the Green River only if the Department of Interior does not seek to acquire a federal reserved water right to ensure a minimal instream flow for the river. The State recognizes that the proposed minimum flow releases from Flaming Gorge Dam would be sufficient to maintain and/or enhance the river values which make the river eligible for designation and that no change in water use or allocation would be necessary.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>The BLM would be capable of managing this river segment if it were designated, particularly with adequate funding. Congressional designation of the Green River into the NWSRS would Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational and other management of the area would improve. Designation would promote national and public recognition of the values associated with this river and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.</p> <p>On the other hand, the free-flowing nature of this river segment is not currently at risk, and the identified outstandingly remarkable values could be effectively managed without congressional designation with the protective land use prescriptions being considered in the Proposed RMP/FEIS,</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	including closure or no surface occupancy for oil and gas leasing, ACEC designation, and VRM Class I or II. However, such management prescriptions are subject to change through plan amendment or revision. Therefore, the protection they would afford the river values is subject to change.
The estimated costs of administering the river, including costs for acquiring lands and interests	The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands within the river corridor (3% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 2% of the corridor of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing sell.
The extent to which administration costs would be shared by local and state governments	State and local governments would not share costs of managing this river segment.
Middle Green River	
Characteristics which would or would not do or do not make it a worthy addition to the NWSRS	The existence of two endangered fish within this segment of the Green River make it a worthy addition to the NWSRS. They are the humpback chub and the Colorado squaw fish
Land ownership and current use	Of the 47.5 miles of shoreline in this segment, 20.3 are BLM, 1.6 are state and 25.6 are private. Within the river corridor, 31% of the land is BLM, 30% is State, and 32% is private. This river segment is used for recreation, including, floating, fishing, hunting, wildlife and waterfowl viewing. Livestock grazing occurs along its banks. There are many intrusions along the river corridor including irrigated fields, homes, corrals, fences, roads, a gravel pit and numerous oil and gas wells.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated	Congressional designation would provide permanent protection specifically of free-flowing condition of the river, its water quality and outstandingly remarkable values. Inclusion the Middle Green River into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively impact the fish outstandingly remarkable values of the area, and are in keeping with the Congressional classification of "recreational". Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed. Local municipalities, industries and other water users have expressed concerns that existing water rights could be

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>affected and that opportunities for future water development could be foreclosed, not only within the designated river segments but also upstream or downstream of these segments. However, for the reasons discussed below, congressional designation of this portion of the Green River into the NWSRS would be expected to have no effect on water use, allocation, or flow regimes.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Under normal operations, reservoir releases through Flaming Gorge power plant, the primary influence of river flows outside of spring run-off flows, range from 800 to 4,600 cubic feet per second (cfs). These flows adhere to the interim operating criteria for Flaming Gorge Dam established by the Bureau of Reclamation in September 1974. Under these criteria, the Bureau of Reclamation agreed to provide (1) a minimum flow of 400 cfs at all times; (2) flows of 800 cfs under normal circumstances and for the foreseeable future; and (3) flows exceeding 800 cfs when compatible with other Colorado River Storage Project reservoir operations. These minimum flows are maintained to enhance the use of the river for fishing, fish spawning, and boating.</p> <p>Currently, however, the Bureau of Reclamation is evaluating recommendations by the Upper Colorado River Endangered Fish Recovery Program, a cooperative effort between the States of Colorado, Utah, and Wyoming, several federal agencies, and environmental, energy and water user organizations, to modify releases to better facilitate recovery of endangered fish (identified as components of the outstandingly remarkable fish value for the Green River). These recommendations, if implemented, would honor the minimum flow requirements while providing water releases of sufficient magnitude and, with the proper timing and duration, to assist in the recovery of the endangered fishes and their designated critical habitat. The BLM supports these recommendations and recognizes that the proposed minimum flow release from Flaming Gorge dam would be sufficient to maintain and/or enhance the outstandingly remarkable fish values for which the river is eligible.</p> <p>Because this minimum flow release would be adequate to maintain the outstandingly remarkable fish values, BLM sees no need for and would not pursue a federal reserved water right in any recommendation that is forwarded to Congress. Failure of Congress to include the Middle Green River in the NWSRS would have little effect on the outstandingly remarkable fish values, as they would continue to be protected by the Endangered Species Act.</p>
Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of	The county, local agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
administration of the river	<p>affected. The State of Utah has also expressed concerns regarding the designation of the Green River. It is supportive of designating portions of the Green River only if the Department of Interior does not seek to acquire a federal reserved water right to ensure a minimal instream flow for the river. The State recognizes that the proposed minimum flow releases from Flaming Gorge Dam would be sufficient to maintain and/or enhance the river values which make the river eligible for designation and that no change in water use or allocation would be necessary.</p> <p>The National Park Service manages a contiguous segment to the north, and may share administrative costs. Some private citizens and regional and national conservation groups have promoted the suitability of this river segment for congressional designation, and may be willing to volunteer their services.</p>
Manageability of the river if designated, and other means of protecting values	<p>Manageability of the Middle Green River if designated would be constrained due to the low percentage of public lands within the stream corridor. Any development of State or private lands within the corridor would diminish the overall scenic qualities of the area, but scenery is not an outstandingly remarkable value for this segment. Such development would probably not exceed standards for the segment's recreational classification.</p> <p>If this segment is not designated into the NWSRS, its free-flowing nature could be at some risk due to the high percentage and possible development of State and private lands within the corridor. However, the outstandingly remarkable fish values would be protected by the Endangered Species Act, probably involving a required minimum flow.</p> <p>Another means of protection of some of the federal lands within the corridor is a no surface occupancy stipulation for oil and gas leasing. However, even if adopted, this management prescription is subject to change with revised land use plans. Therefore, the protection it affords is subject to change.</p>
The estimated costs of administering the river, including costs for acquiring lands and interests	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands within the river corridor (30% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 32% of the corridor of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing sell. The high percentage of private lands would make acquisition prohibitive.</p>
The extent to which administration costs would be shared by local and state governments	<p>State and local governments would not share costs of managing this river segment.</p>
Lower Green River	
Characteristics which do or do would not make it a worthy addition to the	<p>Recreational and fish values were identified as outstandingly remarkable on this segment of the Green River, and make it a</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
NWSRS	<p>worthy addition to the NWSRS. The river and the presence of numerous waterfowl and wildlife species provide good opportunities for fishing, hunting, waterfowl viewing, camping, rafting and canoeing in an attractive pastoral setting. The two endangered fish species found in this segment of the Green River are the humpback chub and the Colorado squawfish.</p>
Land ownership and current use	<p>Of the 29.6 miles of shoreline in this segment, 26.8 are BLM, and 2.8 are private. Within the river corridor, 77% of the land is BLM, 20% is State, and 3% is private.</p> <p>This river is used extensively for recreation, including canoeing, floating, fishing, hunting, wildlife and waterfowl viewing, and for exploring historical sites. Livestock grazing occurs along its banks.</p> <p>Very few intrusions are visible from the river. Oil and gas wells can be seen near Parget Draw. Roads access the river corridor at Parget Draw, near Willow Creek, Moon Bottom, Four Mile Draw, Nine Mile Creek, and both sides of the river at Sand Wash. BLM has a Ranger Station, Campground and Boat Ramp at Sand Wash. A buried pipeline crosses the river near Four Mile Draw.</p>
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated.	<p>Congressional designation would provide permanent protection specifically of free-flowing condition of the river, its water quality and outstandingly remarkable values.</p> <p>Inclusion of a river into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively affect the outstandingly remarkable fish and recreational values of the area, and are in keeping with the Congressional classification of "scenic". Of course, this is subject to valid existing rights.</p> <p>Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed.</p> <p>Local municipalities, industries and other water users have expressed concerns that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments but also upstream or downstream of these segments. However, for the reasons discussed below, congressional designation of the Lower Green River into the NWSRS would be expected to have no effect on water use, allocation, or flow regimes.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>Under normal operations, reservoir releases through Flaming Gorge power plant, the primary influence of river flows outside of spring run-off flows, range from 800 to 4,600 cubic feet per second (cfs). These flows adhere to the interim operating criteria for Flaming Gorge Dam established by the Bureau of Reclamation in September 1974. Under these criteria, the Bureau of Reclamation agreed to provide (1) a minimum flow of 400 cfs at all times; (2) flows of 800 cfs under normal circumstances and for the foreseeable future; and (3) flows exceeding 800 cfs when compatible with other Colorado River Storage Project reservoir operations. These minimum flows are maintained to enhance the use of the river for fishing, fish spawning, and boating.</p> <p>Currently, however, the Bureau of Reclamation is evaluating recommendations by the Upper Colorado River Endangered Fish Recovery Program, a cooperative effort between the States of Colorado, Utah, and Wyoming, several federal agencies, and environmental, energy and water user organizations, to modify releases to better facilitate recovery of endangered fish (identified as components of the outstandingly remarkable fish value for the Green River). These recommendations, if implemented, would honor the minimum flow requirements while providing water releases of sufficient magnitude and, with the proper timing and duration, to assist in the recovery of the endangered fishes and their designated critical habitat. The BLM supports these recommendations and recognizes that the proposed minimum flow release from Flaming Gorge dam would be sufficient to maintain and/or enhance the values for which the river is eligible.</p> <p>Because this minimum flow release would be adequate to maintain the outstandingly remarkable values, BLM sees no need for and would not pursue a federal reserved water right in any recommendation that is forwarded to Congress.</p> <p>Failure of Congress to include the Lower Green River in the NWSRS could result in degradation of the recreational values for which the river was determined eligible, depending upon the management prescriptions selected through this planning effort. However, even if ACEC and VRM Class II designations are made and no surface occupancy stipulations applied to mineral leasing, such prescriptions are temporary and could be changed through plan amendment or plan revision. Failure of Congress to include the Lower Green River in the NWSRS would have little effect on the outstandingly remarkable fish values, as they would continue to be protected by the Endangered Species Act.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>The county, local agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be affected.</p> <p>The State of Utah has also expressed concerns regarding the designation of the Green River. They are supportive of designating portions of the Green River only if the Department of Interior does not seek to acquire a federal reserved water right to ensure a minimal instream flow for the river. The State</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>recognizes that the proposed minimum flow releases from Flaming Gorge Dam would be sufficient to maintain and/or enhance the river values which make the river eligible for designation and that no change in water use or allocation would be necessary.</p> <p>Members of the Uintah and Ouray Indian Reservation Ute Tribal Council have expressed concerns pertaining to the effects of designation on potential use of Tribal lands.</p> <p>The environmental community is strongly supportive of designation of this segment of the Green River. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p> <p>The Price Field Office supports designation of a contiguous segment of the Green River and would share administration of the river.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>The BLM would be capable of managing this river segment if it were designated, particularly with adequate funding. Congressional designation of the Green River into the NWSRS would Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational and other management of the area would improve. Designation would promote national and public recognition of the values associated with this river and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.</p> <p>On the other hand, the free-flowing nature of this river segment is not currently at risk, and the recreational outstandingly remarkable values could be effectively managed without congressional designation with the protective land use prescriptions being considered in the Proposed RMP/FEIS, including no surface occupancy for oil and gas leasing, ACEC designation, and VRM Class II. However, such management prescriptions are subject to change through plan amendment or revision. Therefore, the protection they would afford the river values is subject to change. Failure of Congress to include the Lower Green River in the NWSRS would have little effect on the outstandingly remarkable fish values, as they would continue to be protected by the Endangered Species Act.</p>
<p>The estimated costs of administering the river, including costs for acquiring lands and interests</p>	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. Approximately 3% of the corridor of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing sell.</p>
<p>The extent to which administration costs would be shared by local and state governments</p>	<p>State and local governments would not share costs of managing the river.</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
Nine Mile Creek, Segment A	
<p>Characteristics which would or would not do or do not make it a worthy addition to the NWSRS</p>	<p>Scenic and cultural values were identified as outstandingly remarkable, and make this segment a worthy addition to the NWSRS. The steep, brown, tan and gray walls of Nine Creek Canyon were created over time by the perennial creek, and frame the excellent, varied scenery from aspen groves to desert flora. Balanced rocks and small window arches can be seen. The alluvial bottomlands were historically farmed with irrigation from the creek. Nine Mile Canyon is significant internationally, nationally, and locally. Its prehistoric rock art is world renowned. The remains of the Fremont culture are properly more visible in Nine Mile canyon than anywhere else. Over 1000 sites have been recorded in the canyon over the last 100 years. Nine Mile Canyon has been proposed for an archeological district on the National register of Historic Places.</p>
<p>Land ownership and current use</p>	<p>Of the 16.4 miles of shoreline in this segment, 11.3 are BLM, 2.3 are State and 2.8 are private. Within the river corridor, 66% of the land is BLM, 18% is State, and 16% is private.</p> <p>This creek is integral to this world-class cultural area, which is a destination area for visitors exploring cultural sites. Livestock grazing occurs along its banks, and there is some oil and gas exploration activity in the area.</p> <p>Intrusions exist along the river corridor; irrigated fields, homes, corrals, fences, roads, and a buried natural gas pipeline parallels the corridor</p>
<p>Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated</p>	<p>Congressional designation of Nine Mile Creek, Segment A into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its outstandingly remarkable scenic and cultural values. Failure to include this river segment in the NWSRS could result in deterioration of these values, especially if mineral development occurs.</p> <p>Inclusion of this stream into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values (scenic and cultural) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively affect the outstandingly remarkable values or recreational tentative classification. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible, especially scenic values, depending upon the management prescriptions selected through this planning effort. However, even if ACEC or VRM Class II designations are made or portions of the corridor are closed to leasing, such prescriptions are temporary and could be changed through plan amendment or plan revision. Cultural values are protected to some degree by various laws and regulations.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be affected.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>Manageability of Nine Mile Creek Segment A, if designated, would be constrained due to the percentage of public lands within the stream corridor. Any development of State or private lands within the corridor would diminish the overall scenic qualities of the area. Such development would probably not exceed standards for the segment's recreational classification.</p> <p>If this segment is not designated into the NWSRS, its free-flowing nature and scenic outstandingly remarkable values could be at some risk due to the high percentage and possible development of State and private lands within the corridor. However, the outstandingly remarkable cultural values would be protected to some degree by cultural laws and regulations.</p> <p>Other means of protecting relevant and important values within the corridor that are being considered in this plan revision effort include designating the corridor as VRM Class II and closing it oil and gas leasing. However, even if adopted, these management prescriptions are subject to change with revised land use plans. Therefore, the protection they afford is subject to change.</p>
<p>The estimated costs of administering the river, including costs for acquiring lands and interests</p>	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands (18% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 16% of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing to sell.</p>
<p>The extent to which administration costs</p>	<p>State and local governments would not share costs of</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
would be shared by local and state governments	managing the river.
Nine Mile Creek, Segment B	
Characteristics which do or do would or would not make it a worthy addition to the NWSRS	Scenic and cultural values were identified as outstandingly remarkable, and make this segment a worthy addition to the NWSRS. The steep, brown, tan and gray walls of Nine Mile Canyon were created over time by the perennial creek, and frame the excellent, varied scenery from aspen groves to desert flora. Balanced rocks and small window arches can be seen. The alluvial bottomlands were historically farmed with irrigation from the creek. Nine Mile Canyon is significant internationally, nationally, and locally. Its prehistoric rock art is world renowned. The remains of the Fremont culture are properly more visible in Nine Mile canyon than anywhere else. Over 1000 sites have been recorded in the canyon over the last 100 years. Nine Mile Canyon has been proposed for an archeological district on the National register of Historic Places.
Land ownership and current use	Of the 6.5 miles of shoreline in this segment, 0 are BLM, 0.5 are State and 6.0 are private. Within the river corridor, 19% of the land is BLM, 16% is State, and 65% is private. This creek is integral to this world-class cultural area, which is a destination area for visitors exploring cultural sites. Livestock grazing occurs along its banks, and there is some oil and gas exploration activity in the area. Irrigated fields and a road parallel the stream for three miles on the western end of the corridor. A road crosses the stream near the Green River.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated	Congressional designation of Nine Mile Creek, Segment B into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its outstandingly remarkable scenic and cultural values. Failure to include this river segment in the NWSRS could result in deterioration of these values, especially if mineral development occurs. Inclusion of this stream into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values (scenic and cultural) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively affect the outstandingly remarkable values or recreational tentative classification. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed. Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible, especially scenic values, depending upon the management prescriptions selected through this planning effort. However, even if ACEC or VRM Class II designations are made or portions of the corridor are no surface occupancy for leasing, such prescriptions are temporary and could be changed through plan amendment or plan revision. Cultural values are protected to some degree by various laws and regulations.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily due to their concerns that current and potential water use of this or any eligible stream could be affected.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>Manageability of Nine Mile Creek Segment B, if designated, would be constrained due to the low percentage of public lands within the stream corridor. Any development of State or private lands within the corridor would diminish the overall scenic qualities of the area. Such development would probably not exceed standards for the segment's recreational classification.</p> <p>If this segment is not designated into the NWSRS, its free-flowing nature and scenic outstandingly remarkable values could be at some risk due to the high percentage and possible development of State and private lands within the corridor. However, the outstandingly remarkable cultural values would be protected to some degree by cultural laws and regulations.</p> <p>Other means of protecting relevant and important values within the corridor that are being considered in this plan revision effort include designating portions of the corridor as VRM Class II, ACECs, and closing it oil and gas leasing. However, even if adopted, these management prescriptions are subject to change with revised land use plans. Therefore, the protection they afford is subject to change</p>
<p>The estimated costs of administering the river, including costs for acquiring lands and interests</p>	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands (16% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 65% of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	the lands as a need and the private landowners were willing to sell. Because of the very large percentage of private lands, costs of acquisition would be prohibitive.
The extent to which administration costs would be shared by local and state governments	State and local governments would not share costs of managing the river.
White River, Segment A	
Characteristics which would or would not make it a worthy addition to the NWSRS	Recreational, scenic/geologic, fish and wildlife/habitat and historic values were identified as outstandingly remarkable, and make the White River a worthy addition to the NWSRS. The White River is a favorite canoeing destination for people from all over the State and beyond. The river's Class II rapids are exciting enough to attract advanced kayakers, yet gentle enough to bring novice canoers and families to float through remarkable solitude. Towering 800-foot sandstone cliffs were cut by the White River. Broad sloping terraces, sandstone walls, butte's, pinnacles and eroded towers create fascinating shapes and textures. Fossil beds exposed by the river display a unique variety of ancient life forms. The White River provides critical habitat for the endangered Colorado River squaw fish. Other threatened, endangered, or sensitive fish species in the river include razorback sucker, flannel mouth sucker and the bony tail chub. Threatened, endangered, or sensitive animal species in the river corridor include the Yellow-Billed Cuckoo, Peregrine Falcon, and the Bald Eagle. Other wildlife that can be found in the corridor and utilize the river include mule deer, pronghorn antelope, cougar, beaver, muskrat, porcupine, bobcat, coyote, gray fox, red fox, and resident and migratory birds such as Golden Eagle, Canadian Goose, Mallard Duck and Flycatchers. Many pivotal historic events occurred in the White River. Canyon. Chronicles of early explorers such as Friar Velez de Escalante, John Wesley Powell, Frederick Dellenbaugh, and Kit Carson described the unique topography of the White River.
Land ownership and current use	Of the 24 miles of shoreline in this segment, 8 are BLM, 1 is State, 5 are Tribal, and 10 are private. Within the river corridor, 41% of the land is BLM, 8% is Indian Trust, 10% is State, and 41% is private. This river segment is used extensively for recreation, including canoeing, floating, fishing, hunting, wildlife and waterfowl viewing, and for exploring historical sties. Livestock grazing occurs along its banks, and there is some oil and gas exploration activity in the area. Access and roads exist in places along this segment. A bridge crosses private land.
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated	Congressional designation of the White River, Segment A into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its recreational, scenic, geologic, fish and wildlife/habitat, and historic outstandingly remarkable values. Failure to include this river segment in the NWSRS could result in deterioration of these values, especially if mineral development or dam

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>development occurs.</p> <p>Inclusion of this river segment into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values or free-flowing condition. No dam construction would be allowed on the currently permitted dam site on this segment. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively affect the outstandingly remarkable values or scenic tentative classification. Because scenery is one of the outstandingly remarkable values, it is unlikely that such developments would be allowed. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. None are currently proposed.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible, especially the free-flowing nature (due to the potential damming of the river segment), and the scenic values, depending upon the management prescriptions selected through this planning effort. However, even if ACEC, VRM Class II, and no surface occupancy for leasing designations are made, such prescriptions are temporary and could be changed through plan amendment or plan revision. Fish values would continue to be protected by the Endangered Species Act under any circumstances.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>State and local governments, and the Ute Tribe are unsupportive of congressional designation of this river segment. Opposition to designation is primarily due to concerns that current and potential water use of this or any eligible stream could be affected. There is strong support for designation from the environmental community.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>The BLM would be capable of managing this river segment if it were designated, particularly with adequate funding. Congressional designation of the White River into the NWSRS would improve Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational and other</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>management of the area would improve. Designation would promote national and public recognition of the values associated with this river and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.</p> <p>Without congressional designation, the free-flowing nature of this river segment would be at risk from potential development of a dam. However, because adequate flow must be allowed to maintain the endangered fish species, there could be enough flow to maintain recreational values as well. Other outstandingly remarkable values could be effectively protected without congressional designation with the protective land use prescriptions being considered in the Vernal RMP/EIS, including no surface occupancy for oil and gas leasing, ACEC and VRM Class II designation. However, such management prescriptions are subject to change through plan amendment or revision. Therefore, the protection they would provide is also subject to change. Outstandingly remarkable fish values would be largely protected by the Endangered Species Act under any circumstances.</p>
<p>The estimated costs of administering the river, including costs for acquiring lands and interests</p>	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands (10% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, 41% of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing to sell.</p>
<p>The extent to which administration costs would be shared by local and state governments</p>	<p>State and local governments would not share costs of managing this river segment.</p>
<p>White River Segment B</p>	
<p>Characteristics which would or would not make it a worthy addition to the NWSRS</p>	<p>Recreational, scenic/geologic, fish and wildlife/habitat and historic values were identified as outstandingly remarkable, and make the White River a worthy addition to the NWSRS. The White River is a favorite canoeing destination for people from all over the State and beyond. The river's Class II rapids are exciting enough to attract advanced kayakers, yet gentle enough to bring novice canoers and families to float through remarkable solitude. Towering 800-foot sandstone cliffs were cut by the White River. Broad sloping terraces, sandstone walls, butte's, pinnacles and eroded towers create fascinating shapes and textures. Fossil beds exposed by the river display a unique variety of ancient life forms. The White River provides critical habitat for the endangered Colorado River squaw fish. Other threatened, endangered, or sensitive fish species in the river include razorback sucker, flannel mouth sucker and the bony tail chub. Threatened, endangered, or sensitive animal species in the river corridor include the Yellow-Billed Cuckoo, Peregrine Falcon and the Bald Eagle. Other wildlife that can be found in the corridor and utilize the river include mule deer,</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>pronghorn antelope, cougar, beaver, muskrat, porcupine, bobcat, coyote, gray fox, red fox, and resident and migratory birds such as Golden Eagle, Canadian Goose, Mallard Duck and Flycatchers. Many pivotal historic events occurred in the White River Canyon. Chronicles of early explorers such as Friar Velez de Escalante, John Wesley Powell, Frederick Dellenbaugh, and Kit Carson described the unique topography of the White River.</p>
<p>Land ownership and current use</p>	<p>All 10 shoreline miles in this segment are managed by BLM. Within the river corridor, 99.6% of the land is BLM and 0.4% is State.</p> <p>This river segment is used extensively for recreation, including canoeing, floating, fishing, hunting, wildlife and waterfowl viewing, and for exploring historical sites. Livestock grazing occurs along its banks, and there is substantial oil and gas exploration activity on the table lands above the river canyon. This segment of the river appears primitive in nature with few human developments.</p>
<p>Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated</p>	<p>Congressional designation of the White River, Segment B into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its recreational, scenic, geologic, fish and wildlife/habitat, and historic outstandingly remarkable values. Failure to include this river segment in the NWSRS could result in deterioration of these values, especially if mineral development or dam development upstream in Segment A occurs.</p> <p>Inclusion of this river segment into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values or free-flowing condition. There is no dam development proposed on this segment. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively affect the outstandingly remarkable values or wild tentative classification. Because scenery is one of the outstandingly remarkable values, it is unlikely that such developments would be allowed. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. Development of a dam upstream (currently proposed within Segment A) would be allowed only if those parameters could be met.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible, especially the free-flowing</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>nature (due to the potential damming of a portion of an upstream segment), and the scenic values, depending upon the management prescriptions selected through this planning effort. However, even if the river corridor was designated as an ACEC with VRM Class II management, and was closed to mineral leasing, such prescriptions are temporary and could be changed through plan amendment or plan revision. Some fish and wildlife values would continue to be protected by the Endangered Species Act under any circumstances.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>State and local governments, and the Ute Tribe are unresponsive of congressional designation of this river segment. Opposition to designation is primarily due to concerns that current and potential water use of this or any eligible stream could be affected. There is strong support for designation from the environmental community.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>The BLM would be capable of managing this river segment if it were designated, particularly with adequate funding. Congressional designation of the White River into the NWSRS would improve Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational and other management of the area would improve. Designation would promote national and public recognition of the values associated with this river and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.</p> <p>Without congressional designation, the free-flowing nature of this river segment is somewhat at risk from potential development of a dam upstream in Segment A. However, because adequate flow must be allowed to maintain the endangered fish species, there could be enough flow to maintain recreational values as well. Other outstandingly remarkable values could be effectively managed without congressional designation with the protective land use prescriptions being considered in this planning effort, such as no surface occupancy for oil and gas leasing, ACEC and VRM Class I or II designation. However, such management prescriptions are subject to change through plan amendment or revision. Therefore, the protection they would provide is also subject to change. Fish values would be protected by the Endangered Species Act in any case.</p>
<p>The estimated costs of administering the river, including costs for acquiring lands and interests</p>	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands (0.4% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that.</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
The extent to which administration costs would be shared by local and state governments	State and local governments would not share costs of managing the river segment.
White River Segment C	
Characteristics which would or would not make it a worthy addition to the NWSRS	<p>Recreational, scenic/geologic, fish and wildlife/habitat and historic values were identified as outstandingly remarkable, and make the White River a worthy addition to the NWSRS. The White River is a favorite canoeing destination for people from all over the state and beyond. The rivers Class II rapids are exciting enough to attract advanced kayakers, yet gentle enough to bring novice canoers and families to float through remarkable solitude. Towering 800-foot sandstone cliffs were cut by the White River. Broad sloping terraces, sandstone walls, butte's, pinnacles and eroded towers create fascinating shapes and textures. Fossil beds exposed by the river display a unique variety of ancient life forms. The White River provides critical habitat for the endangered Colorado River squaw fish. Other threatened, endangered, or sensitive fish species in the river include razorback sucker, flannel mouth sucker and the bony tail chub. Threatened, endangered, or sensitive animal species in the river corridor include the Yellow-Billed Cuckoo, Peregrine Falcon and the Bald Eagle. Other wildlife that can be found in the corridor and utilize the river include mule deer, pronghorn antelope, cougar, beaver, muskrat, porcupine, bobcat, coyote, gray fox, red fox, and resident and migratory birds such as Golden Eagle, Canadian Goose, Mallard Duck and Flycatchers. Many pivotal historic events occurred in the White River. Canyon. Chronicles of early explorers such as Friar Velez de Escalante, John Wesley Powell, Frederick Dellenbaugh, and Kit Carson described the unique topography of the White River.</p>
Land ownership and current use	<p>Of the 10 miles of shoreline in this segment, 6 are BLM, 4 are State, and <1 are Tribal. Within the river corridor, 56% of the land is BLM, 43% is State, 1% is Tribal, and <1% is private. This river segment is used extensively for recreation, including canoeing, floating, fishing, hunting, wildlife and waterfowl viewing, and for exploring historical sties. Livestock grazing occurs along its banks, and there is some oil and gas exploration activity in the area. Access and roads exist in places along this segment.</p>
Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated	<p>Congressional designation of the White River, Segment C into the NWSRS would provide permanent protection specifically of free-flowing condition of the river, its water quality and its recreational, scenic, geologic, fish and wildlife/habitat and historic outstandingly remarkable values. Failure to include this river segment in the NWSRS could result in deterioration of these values, especially if mineral development or dam development upstream in Segment A occurs. Inclusion of this river segment into the NWSRS could preclude dams or other water-related projects if they would occur within the designated segment and have direct and/or adverse effects on the outstandingly remarkable values or free-flowing condition. There is no dam development proposed on this</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>segment. Other projects on federal lands within the designated river area such as construction of roads, pipelines or other structures would only be allowed if it is determined that they would not negatively affect the outstandingly remarkable values or scenic tentative classification. Because scenery is one of the outstandingly remarkable values, it is unlikely that such developments would be allowed. Of course, this is subject to valid existing rights. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish or wildlife values within the designated segment. Development of a dam upstream (currently proposed within Segment A) would be allowed only if those parameters could be met.</p> <p>Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.</p> <p>Failure of Congress to include this river segment in the NWSRS could result in degradation of the values for which the river was determined eligible, especially the free-flowing nature (due to the potential damming of a portion of an upstream segment), and the scenic values, depending upon the management prescriptions selected through this planning effort. However, even if the river corridor was designated as an ACEC with VRM Class II management, and was closed to mineral leasing, such prescriptions are temporary and could be changed through plan amendment or plan revision. Some fish and wildlife values would continue to be protected by the Endangered Species Act under any circumstances.</p>
<p>Interest of federal, public, state, tribal, local, or other public entity in designation or non-designation, including sharing of administration of the river</p>	<p>State and local governments, and the Ute Tribe are unresponsive of congressional designation of this river segment. Opposition to designation is primarily due to concerns that current and potential water use of this or any eligible stream could be affected. There is strong support for designation from the environmental community.</p> <p>There are no contiguous National Park Service or Forest Service segments, so there would be no federal partners to manage the river. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation, and may be willing to volunteer their services.</p>
<p>Manageability of the river if designated, and other means of protecting values</p>	<p>Manageability of White River Segment C, if designated, would be constrained due to the high percentage of non-public lands within the stream corridor. Any development of State, Tribal, or private lands within the corridor would diminish the overall scenic qualities of the area. Such development could exceed standards for the segment's scenic classification.</p> <p>Without congressional designation, the free-flowing nature of this river segment is somewhat at risk from potential development of a dam upstream in Segment A. However,</p>

Table 5. Suitability Considerations by Eligible River Segment.

Suitability Considerations	Consideration Applied to Eligible River
	<p>because adequate flow must be allowed to maintain the endangered fish species, there could be enough flow to maintain recreational values as well. Possible ACEC designation is also being considered for this area in the land use planning process, and if designated could have some protective value for the outstandingly remarkable values. However, such management prescriptions are subject to change through plan amendment or revision. Therefore, the protection they would provide is also subject to change. Most outstandingly remarkable fish values would be protected by the Endangered Species Act in any event.</p>
<p>The estimated costs of administering the river, including costs for acquiring lands and interests</p>	<p>The initial costs of administration for the first three years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and may include additional studies and monitoring as well as additional BLM presence in the area. State lands (43% of the segment) could be identified for possible acquisition through exchange, so no funding would be needed for that. However, <1% of the segment is private, and funding would be necessary for purchase if the management plan were to identify acquiring the lands as a need and the private landowners were willing to sell. Because of the high percentage of private lands, costs could be prohibitive.</p>
<p>The extent to which administration costs would be shared by local and state governments</p>	<p>State and local governments would not share costs of managing the river segment.</p>

APPENDIX D. NATIONAL REGISTRY SITES AND DISTRICTS

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APPENDIX D. NATIONAL REGISTRY SITES AND DISTRICTS

PROPOSED National Register Sites & Districts: VFO Resource Management Plan

SITE #	Description	County	Notes
No site number	Little Hole National Register District.	Dagget	Proposed.
No site number	Rainbow town site.	Uintah	One of the Gilsonite towns. Also a train stop. Other Gilsonite towns may be included (i.e. Bonanza, Ignatio, Little Bonanza, Rector, and Watson) as well as Gilsonite mining camps (i.e. Harrison and China Wall).
42UN1801	Uintah Railway.	Uintah	Colorado portion is currently listed.
42UN1802	Dragon town site.	Uintah	One of the Gilsonite towns. Also a train stop.
42UN251; 42UN252; 42UN479	Blue Mountain Petroglyph National Register District.	Uintah	Archaic Period horizontal petroglyphs, unique to district.
42UN419; 42UN420; 42UN422	Archaic period/Fremont period pictograph/petroglyph sites.	Uintah	Steinaker area.
42DC539-543	Castle Peak Traditional Properties.	Duchesne	
42UN967	Ute/Fremont petroglyph site along the Green River.	Uintah	Displays several periods of Ute occupation in the central basin.
42UN1076	Rock shelter.	Uintah	This shelter has not been vandalized to date. May provide a cultural and environmental chronology for the Book Cliffs.
42UN1017	Ute Petroglyph Site, known as the "Augusi Panel."	Uintah	Special site in 19th century Ute lore.
42UN1619	Large (40+ acre) Fremont village site.	Uintah	
42UN2558	White River Stage Stop.	Uintah	A stop along the stage route from Dragon to Vernal.

Note: The Gilsonite towns, mining camps, and railroad would also be eligible as a Cultural Landscape Theme nomination, probably as one nomination.

Note: Ute-affiliated sites will need to be closely coordinated with the Ute Tribe's various bands.

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**APPENDIX E. WITHDRAWAL AND CLASSIFICATIONS IDENTIFIED IN
THE VERNAL APPROVED RMP**

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APPENDIX E. WITHDRAWAL AND CLASSIFICATIONS IDENTIFIED IN THE VERNAL APPROVED RMP

Withdrawal Type	Serial Number	Acreage	Segregative Effect
National Science Foundation	U-11462	2,312	Public Land Laws, Mining Laws, and the Mineral Leasing Laws
Oil Shale	U-2036	Total Acres Unknown	Public Land and Mining Laws
	U-49399		
Public Water Reserves	U-0141806 (#107)	40	Public Land Laws & Nonmetalliferous Mining Location
	U-41556 (#152)	263	
	U-41597 (#107)	40	
	U-41628 (#107)	40	
	U-41659 (#107)	171	
	U-41660 (#107)	200	
	U-52455 (#107)	960	
	U-63972 (#107) (U-0144914)	182	
	U-63973 (#107)		
	U-63974 (#107) (U-0143422)	80	Public Land Laws & Nonmetalliferous Mining Location
	U-63975 (#16) (U-41551C)	280	
Reclamation	U-011167		
	U-026185	957	Public Land and Mining Laws
	U-1361	80	
	U-18619	220	
	U-42905	70	
	U-42905	80	
	U-42919	6,161	
Recreation/Administration Site Classifications	U-5338	307	
	U-060709	112	Public Land Laws
	U-041339	40	
Water Power (Powersite Classifications)	U-42950 (#42)	3,346	Public Land Laws
	U-42951 (#107)	48	
	U-42984 (CL #93)	9,218	
	U-42995 (#411)	277	
	U-42948 (#107)	750	
	Book Cliffs	6,633	
Watershed Protection	U-42874	750	Public Land Laws, Mining Laws, and the Mineral Leasing Laws

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APPENDIX F. BLM UTAH STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING MANAGEMENT

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APPENDIX F. BLM UTAH STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING MANAGEMENT

BLM has developed the following Fundamentals of Rangeland Health and Their Companion Rules: Standards for Rangeland Health and Guidelines for Grazing Management for BLM in Utah ([BLM-UT-GI-97-001-4000] U.S. Department of Interior Bureau of Land Management, Utah State Office 1997).

FUNDAMENTALS OF RANGELAND HEALTH

As provided by regulations, developed by the Secretary of the Interior on February 22, 1995, the following conditions must exist on BLM lands:

- Watersheds are in, or making significant progress toward, properly functioning physical condition, including their upland, riparian/wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, and timing and duration of flow.
- Ecological processes, including the hydrologic cycle nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
- Water quality complies with State water quality standards and achieves, or is making significant progress towards achieving established BLM management objectives such as meeting wildlife needs.
- Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered Species, Federal proposed, Category 1 and 2 Federal candidate and other special status Species.

In 1997, the BLM in Utah developed rules to carry out the Fundamentals of Rangeland Health. These are called Standards for Rangeland Health and Guidelines for Grazing Management.

Standards spell out conditions to be achieved on BLM Lands in Utah, and **Guidelines** describe practices that will be applied in order to achieve the Standards.

STANDARDS FOR RANGELAND HEALTH

Standard 1. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.

As indicated by:

- a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.
- b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.
- c) The appropriate amount, type, and distribution of vegetation reflecting the presence of
 - (1) the Desired Plant Community IDPCI, where identified in a land use plan, or
 - (2) where the PVC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological conditions.

Standard 2. Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform.

As indicated by:

- a) Stream bank vegetation consisting of or showing a trend toward species with root masses capable of withstanding high stream flow events. Vegetative cover adequate to protect stream banks and dissipate stream flow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.
- b) Vegetation reflecting: Desired Plant Community, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover, and other habitat needs for dependent animal species.
- c) Revegetating point bars: lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.
- d) Active floodplain.

Standard 3. Desired species, including native, threatened, endangered, and special status species, are maintained at a level appropriate for the site and species involved.

As indicated by:

- a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.
- b) Habitats connected at a level to enhance species survival.

- c) Native species reoccupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of nonnative species.
- d) Appropriate amount, type, and distribution of vegetation reflecting the presence of
 - (1) the Desired Plant Community DPC, where identified in a land use plan conforming to these Standards, or
 - (2) where the DPC is identified a community that equally sustains the desired level of productivity and properly functioning ecologic processes.

Standard 4. BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and groundwater.

As indicated by:

- a) Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters.
- b) Macro-invertebrate communities that indicate water quality meets aquatic objectives.

Because BLM Lands provide forage for grazing of wildlife, wild horses and burros, and domestic livestock, the following rules have been developed to assure that such grazing is consistent with the Standards listed here.

1. BLM will continue to coordinate monitoring water quality activities with other Federal, State and technical agencies.

GUIDELINES FOR GRAZING MANAGEMENT

1. Grazing management practices will be implemented that:
 - a) Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions;
 - b) Promote attainment or maintenance of proper functioning condition riparian/wetland areas, appropriate stream channel morphology, desired soil permeability and permeability and infiltration, and appropriate soil conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow.
 - c) Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow;
 - d) Maintain viable and diverse populations of plants and animals appropriate for the site,
 - e) Provide or improve within the limits of site potentials, habitat for Threatened or Endangered Species;

- f) Avoid grazing management conflicts with other species that have the potential of becoming protected or special status species;
 - g) Encourage innovation, experimentation and the ultimate development of alternatives to improve rangeland management practices;
 - h) Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving the Standards.
2. Any spring or seep developments will be designed and constructed to protect ecological process and functions and improve livestock, wild horse and wildlife distribution.
 3. New rangeland projects for grazing will be constructed in a manner consistent with the Standards. Considering economic circumstances and site limitations, existing rangeland projects and facilities that conflict with the achievement or maintenance of the Standards will be relocated and/or modified.
 4. Livestock salt blocks and other nutritional supplements will be located away from riparian/wetland areas or other permanently located, or other natural water sources. It is recommended that the locations of these supplements be moved every year.
 5. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands nonintrusive, nonnative plant species are appropriate for use where native species
 - (a) are not available,
 - (b) are not economically feasible,
 - (c) cannot achieve ecological objectives as well as nonnative species, and/or
 - (d) cannot compete with already established native species
 6. When rangeland manipulations are necessary, the best management practices, including biological processes, fire and intensive grazing, will be utilized prior to the use of chemical or mechanical manipulations.
 7. When establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience is to be considered. Aesthetic and scenic values, water, campsites and opportunities for solitude are among those considerations.
 8. Feeding of hay and other harvested forage (which does not refer to miscellaneous salt, protein, and other supplements) for the purpose of substituting for inadequate natural forage will not be conducted on BLM lands other than in
 - (a) emergency situations where no other resource exists and animal survival is in jeopardy,
or

- (b) situations where the Authorized Officer determines such a practice will assist in meeting a Standard or attaining a management objective.
9. In order to eliminate, minimize, or limit the spread of noxious weeds,
 - (a) only hay cubes, hay pellets, or certified weed-free hay will be fed on BLM lands, and
 - (b) reasonable adjustments in grazing methods, methods of transport, and animal husbandry practices will be applied.
 10. To avoid contamination of water sources and in advertent damage to non-target species, aerial application of pesticides will not be allowed within 100 feet of a riparian wetland area unless the product is registered for such use by the EPA.
 11. On rangelands where a standard is not being met, and conditions are moving toward meeting the standard, grazing may be allowed to continue. On lands where a standard is not being met, conditions are not improving toward meeting the standard or other management objectives, and livestock grazing is deemed responsible, administrative action with regard to livestock will be taken by the Authorized Officer pursuant to CUR 4180.2(c).
 12. Where it can be determined that more than one kind of grazing animal is responsible for failure to achieve a Standard, and adjustments in management are required, those adjustments will be made to each kind of animal, based on interagency cooperation as needed, in proportion to their degree of responsibility.
 13. Rangelands that have been burned, reseeded or otherwise treated to alter vegetative composition will be closed to livestock grazing as follows:
 - a) burned rangelands, whether by wildfire or prescribed burning, will be ungrazed for a minimum of one complete growing season following the burn; and
 - b) rangelands that have been reseeded or otherwise chemically or mechanically treated will be ungrazed for a minimum of two complete growing seasons.
 14. Conversions in kind of livestock (such as from sheep to cattle) will be analyzed in light of Rangeland Health Standards. Where such conversions are not adverse to achieving a Standard, or they are not in conflict with BLM land use plans, the conversion will be allowed.

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APPENDIX G. OVERVIEW OF ACEC RELEVANCE AND IMPORTANCE VALUES

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APPENDIX G. OVERVIEW OF ACEC RELEVANCE AND IMPORTANCE VALUES

INTRODUCTION

Section 202 (c) (3) of the Federal Land Policy and Management Act (FLPMA) requires that priority be given to the designation and protection of areas of critical environmental concern (ACECs). FLPMA Section 103 (a) defines ACECs as public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

The BLM requested nominations for areas that the public believed met ACEC criteria in the Federal Register, Vol. 66, No. 48, March 12, 2001, Notice of Intent, Environmental Impact Statement, Vernal Resource Management Plan, Utah.

Nominations for ACECs were reviewed by an interdisciplinary team of BLM specialists to see if they meet mandatory relevance and importance criteria.

RELEVANCE AND IMPORTANCE CRITERIA

To be considered for designation as an ACEC, an area must meet the requirements of relevance and importance as described in the Code of Federal Regulations (43 CFR 1610.7.2). The definitions for relevance and importance are as follows:

RELEVANCE

An area is considered relevant if it contains one or more of the following:

1. A significant historic, cultural or scenic value (for example: rare or sensitive archaeological resources and religious or cultural resources important to Native American Indians).
2. A fish and wildlife resource (for example: habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).
3. A natural process or system (for example: endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities; rare geologic features).
4. A natural hazard (for example: areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the resource management planning process that it has become part of the natural process.

IMPORTANCE

The value, resource, system, process, or hazard described above must have substantial significance to satisfy the importance criteria. This generally means it is characterized by one or more of the following:

1. Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
2. Have qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
3. Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of the Federal Land Policy and Management Act.
4. Have qualities that warrant highlighting in order to satisfy public or management concerns about safety and public welfare.
5. Poses a significant threat to human life and safety or to property.

CURRENTLY DESIGNATED ACECS

The Diamond Mountain RMP/ROD designated seven ACECs totaling 165,944 acres. These are:

- Browns Park,
- Lears Canyon,
- Lower Green River,
- Nine Mile Canyon,
- Pariette Wetlands,
- Red Creek Watershed,
- Red Mountain-Dry Fork.

These will all be carried forward as ACECs in the Vernal RMP. However, Browns Park ACEC will be reduced in size from 52,721 acres to 18,490 acres so that it is configured to match the Browns Park SRMA. The Nine Mile Canyon ACEC is changed from 44,181 acres to 44,168 acres as calculations used to determine sum totals have changed due to different technology. The total number of acres carried forward in the Approved RMP is 131,700 acres.

POTENTIAL ACECS BEING CONSIDERED IN THE VERNAL RMP

External nominations were received as part of the RMP scoping process. BLM's interdisciplinary team completed the relevance and importance review of all nominated ACECs. Six areas totaling 476,679 acres were determined to have relevance and importance and were identified as potential ACECs. In some cases the interdisciplinary team review resulted in additional resource concerns and different boundary configurations for some potential ACECs from what was identified in the nominations.

On December 17, 2001, the Southern Utah Wilderness Alliance (SUWA) submitted ACEC nominations for Bitter Creek, Cliff Creek, Cliff Ridge, Coyote Basin, and the Lower Green River. Of these, Bitter Creek, Coyote Basin, and the Lower Green River were determined to meet the mandatory criteria and are considered as potential ACECs in this planning effort. Some

of these potential ACECs were modified by BLM resource specialists to better meet resource needs.

On February 10, 2003, SUWA submitted proposals for Dragon/Atchee/Davis Canyons, Lower Bitter Creek, Main Canyon, Nine Mile Canyon, Sweetwater Watershed, and White River. Main Canyon and White River were determined to meet the mandatory criteria. The Sweetwater Watershed was integrated into a previous BLM proposal and became the Bitter Creek potential ACEC. SUWA's nomination for Nine Mile Canyon resulted in a potential ACEC for Nine Mile Canyon that is an expansion of the existing Nine Mile Canyon ACEC.

On January 21, 2003, the Center for Native Ecosystems submitted proposals to protect the white-tailed prairie dog and its associated ecosystem in Coyote Basin, Kennedy Wash, Myton Bench, Shiner, and Snake John. These nominations were integrated into a previous BLM proposal and became the potential Coyote Basin Complex Research Natural Area/ACEC.

The six potential ACECs and the two potential expansion ACECs are discussed below.

BITTER CREEK AND BITTER CREEK-P.R. SPRINGS

Relevance Criteria: The area has relevance due to the existence of an old growth forest, significant cultural and historic resources, important watershed, and critical ecosystem for wildlife and migratory birds.

Importance Criteria: The relevant values described above have substantial significance due to qualities that make it fragile, sensitive, rare, irreplaceable, exemplary, and unique.

The ancient pinyon forest is over 1200 years old, and includes the Utah champion pinyon, which is irreplaceable. Within the unit is the ancestral home of the Northern Ute Tribe when they were relocated from Colorado in the late 1800s. Many features, including graves, are within the potential ACEC, but specific locations are not known. Also in the potential ACEC is the most extensive wetland in the multi-state Book Cliffs. It exists because of a uniquely perched water table. This wetland and surrounding watershed is unique as a critical ecosystem for migratory birds and a wide variety of wildlife.

COYOTE BASIN

Relevance Criteria: This area has relevance due to the existence of an important white-tailed prairie dog complex.

Importance Criteria: This area is a critical ecosystem for the white-tailed prairie dog, and is one of 25 white-tailed prairie dog complexes nominated for ACEC status in the Western states. It has substantial significance due to qualities that make it exemplary, fragile, irreplaceable, rare, sensitive, and unique. This species occupies only an estimated eight percent of the area it once occupied, and most of this is on BLM administered lands. The white-tailed prairie dog is particularly vulnerable to adverse change from a variety of current causes. The U.S. Fish and Wildlife Service is currently being petitioned to list this species.

FOUR MILE WASH

Relevance Criteria: This area has relevance due to the existence of high value scenery, important riparian ecosystem, and special status fish.

Importance Criteria: The relevant values described above have substantial significance due to qualities that make them exemplary, fragile, irreplaceable, rare, sensitive, and unique. This exemplary canyon and adjacent landscape provides spectacular scenery viewed by increasing numbers of visitors from many states and countries. The lush riparian vegetation is rare in this desert ecosystem.

Critical habitat for four endangered fish is located within the potential ACEC. These include the Colorado pikeminnow (*Ptychocheilus lucius*), Bonytail (*Gila elegans*), Humpbacked chub (*Gila cypha*), and the Razorback sucker (*Xyrauchen texanus*).

LOWER GREEN RIVER EXPANSION

Relevance Criteria: This area has relevance due to the existence of significant riparian habitat and outstanding scenic values.

Importance Criteria: The relevant values described above have substantial significance due to qualities that make them exemplary, fragile, irreplaceable, rare, sensitive, and unique. This area is an extension of the currently designated Lower Green River Corridor ACEC, where the significance of these important resources has been recognized.

MAIN CANYON

Relevance Criteria: This area has relevance due to the existence of important cultural and historic resources, and natural systems.

Importance Criteria: The relevant values described above have substantial significance due to qualities that make them exemplary, fragile, irreplaceable, rare, sensitive, and unique. Within the area there are numerous sites associated with the historic Northern Ute migration route along Main Canyon. In addition, there is a recently discovered historic inscription from the early French fur trade era. This area has been the focus of several past proposals to manage it in a way that would accentuate its exemplary natural systems. It is a part of a larger area that was first proposed as a Book Cliffs National Conservation Area, and then became the focus of a 1998 cooperative project of the BLM and the Utah Division of Wildlife Resources (UDWR) known as the Book Cliffs Conservation Initiative. Most of the potential ACEC is within the Winter Ridge Wilderness Study Area.

MIDDLE GREEN RIVER

Relevance Criteria: This area has relevance due to the existence of an important riparian ecosystem and high value scenery.

Importance Criteria: The relevant values described above have substantial significance due to qualities that make it exemplary, fragile, irreplaceable, rare, sensitive, and unique. The river and adjacent landscape provide spectacular scenery viewed by increasing numbers of visitors from many states and countries. The lush riparian vegetation is rare in this desert ecosystem.

NINE MILE CANYON EXPANSION

Relevance Criteria: This area has relevance due to the existence of significant cultural resources, special status plant species, and high quality scenery.

Importance Criteria: The relevant values described above have substantial significance due to qualities that make them exemplary, fragile, irreplaceable, rare, sensitive, and unique. This area is an extension of the currently designated Nine Mile Canyon ACEC, where the significance of these important resources has been recognized.

WHITE RIVER

Relevance Criteria: The area has relevance due to the existence of unique geological formations, high value scenery, significant historical events, and riparian ecosystem.

Importance Criteria: The relevant values described above have substantial significance due to qualities that make it exemplary, fragile, irreplaceable, rare, sensitive, and unique. An area of unique, spectacular rock spires, named “Goblin City” by the John Wesley Powell 1869 expedition is a major destination point for White River boaters. A cottonwood grove campsite, now used by boaters, is the place where Powell Expedition members camped and explored the nearby fragile geological formations. The river and adjacent landscape provide spectacular scenery viewed by increasing numbers of visitors from several states. The lush riparian vegetation is rare in this desert ecosystem.

RELEVANCE AND IMPORTANCE SUMMARY - ALL AREAS

Currently designated ACECs and nominated areas that were evaluated by BLM resource specialists for relevance and importance are listed in the table below, along with determinations and rationale. Those nominated areas that do not meet both relevance and importance criteria are not considered as potential ACECs in the Vernal RMP/EIS.

Table 1. Relevance and Importance Summary – All Areas

Nominated Area or Currently Designated ACEC	Nominator	Determination and Rationale
Bitter Creek (nominated area)	BLM/SUWA	State significant old growth forest, cultural and historic resources, watershed, critical ecosystems for migratory birds meet relevance and importance criteria.
Browns Park (currently designated ACEC)	BLM	High value scenery, wildlife habitat, cultural, and historic resources meet relevance and importance criteria.
Cliff Creek (nominated area)	SUWA	Cultural resources and natural systems have relevance, but do not qualify under the importance criteria because they do not have substantial significance.
Cliff Ridge (nominated area)	SUWA	Scenic values and natural systems have relevance, but do not qualify under the importance criteria because they do not have substantial significance.
Coyote Basin-Myton Bench (nominated area)	CNE (Center for Native Ecosystems)/SUWA	Critical ecosystem for white-tailed prairie dog meets relevance and importance criteria.

Nominated Area or Currently Designated ACEC	Nominator	Determination and Rationale
Four Mile Wash (nominated area)	BLM	High value scenery, riparian ecosystem, special status fish meets relevance and importance criteria.
Lears Canyon (currently designated ACEC)	BLM	Relict plant communities meet relevance and importance criteria.
Lower Bitter Creek (nominated area)	SUWA	The natural system has relevance, but does not quality under the importance criteria because it does not have substantial significance.
Lower Green River (currently designated ACEC and nominated area)	BLM/SUWA	Significant riparian habitat and outstanding scenic values meet relevance and importance criteria.
Main Canyon (nominated area)	SUWA	Cultural, historic resources and natural systems meet relevance and importance criteria.
Middle Green River (nominated area)	BLM	High value riparian ecosystem meets relevance and importance criteria.
Nine Mile Canyon (currently designated ACEC and nominated area)	BLM/SUWA	Nationally significant Fremont, Ute, Archaic rock art and structures, and special status plant habitat meet relevance and importance criteria.
Pariette Wetlands (currently designated ACEC)	BLM	Special status bird and plant habitat, wetlands ecosystem meet relevance and importance criteria.
Red Creek Watershed (currently designated ACEC)	BLM	Regionally significant critical watershed meets relevance and importance criteria.
Red Mountain-Dry Fork (currently designated ACEC)	TNC (The Nature Conservancy)	Relict plant communities, high value archaeological and paleontological sites, watershed, and crucial deer and elk habitat meet relevance and importance criteria
White River (nominated area)	SUWA	Unique geologic formations, high value scenic vistas, and riparian ecosystem meet relevance and importance criteria.

APPENDIX H. DISTURBANCES AND FRAGMENTATION OF WILDLIFE HABITAT

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APPENDIX H. DISTURBANCES AND FRAGMENTATION OF WILDLIFE HABITAT

Table 1. Mineral Development Land Categorization Proposed in Mule Deer Overall Habitat

Oil and Gas Development	
Standard Stipulation	824,429 (44%)
Timing and Controlled Surface Use	777,539 (42%)
No Surface Occupancy	83,416 (4%)
No Leasing	177,376 (10%)
Other Minerals (Open)	
Mineral Material	389,668 (87%)
Phosphate	75,466 (83%)
Gilsonite	1,666 (98%)

Table 2. Mineral Development Land Categorization Proposed In Mule Deer Crucial Winter Range Habitat

Oil and Gas Development	
Standard Stipulation	28 (0.01%)
Timing and Controlled Surface Use	305,867 (82%)
No Surface Occupancy	10,272 (3%)
No Leasing	54,814 (15%)
Other Minerals (Open)	
Mineral Material	117,184 (85%)
Phosphate	58,384 (87%)
Gilsonite	258 (100%)

Table 3. Mineral Development Land Categorization Proposed in Mule Deer Migration Corridor Habitat

Oil and Gas Development	
Standard Stipulation	0 (0%)
Timing and Controlled Surface Use	47,091 (100%)
No Surface Occupancy	0 (0%)
No Leasing	0 (0%)
Other Minerals (Open)	
Mineral Material	0 (0%)
Phosphate	0 (0%)
Gilsonite	0 (0%)

Table 4. Mineral Development Land Categorization Proposed In Rocky Mountain Elk Overall Habitat

Oil and Gas Development	
Standard Stipulation	321,433 (28%)
Timing and Controlled Surface Use	586,641 (52%)
No Surface Occupancy	48,284 (4%)
No Leasing	178,614 (16%)
Other Minerals (Open)	
Mineral Material	224,303 (84%)
Phosphate	73,530 (85%)
Gilsonite	558 (98%)

Table 5. Mineral Development Land Categorization Proposed In Rocky Mountain Elk Crucial Winter Range Habitat

Oil and Gas Development	
Standard Stipulation	185 (0.1%)
Timing and Controlled Surface Use	269,022 (74%)
No Surface Occupancy	14,384 (4%)
No Leasing	82,042 (22%)
Other Minerals (Open)	
Mineral Material	56,094 (86%)
Phosphate	26,706 (91%)
Gilsonite	97 (100%)

Table 6. Mineral Development Land Categorization Proposed In Pronghorn Habitat

Oil and Gas Development	
Standard Stipulation	530,979 (69%)
Timing and Controlled Surface Use	195,420 (25%)
No Surface Occupancy	20,207 (3%)
No Leasing	21,923 (3%)
Other Minerals (Open)	
Mineral Material	168,851 (92%)
Phosphate	27,910 (87%)
Gilsonite	642 (97%)

Table 7. Mineral Development Land Categorization Proposed In Bighorn Sheep Habitat

Oil and Gas Development	
Standard Stipulation	93,023 (21%)
Timing and Controlled Surface Use	228,616 (53%)
No Surface Occupancy	32,740 (8%)
No Leasing	80,663 (19%)
Other Minerals (Open)	
Mineral Material	55,563 (85%)
Phosphate	10,574 (79%)
Gilsonite	504 (98%)

Table 8. Mineral Development Land Categorization Proposed In Moose Habitat

Oil and Gas Development	
Standard Stipulation	46,365 (41%)
Timing and Controlled Surface Use	29,070 (25%)
No Surface Occupancy	3,328 (3%)
No Leasing	35,261 (31%)
Other Minerals (Open)	
Mineral Material	24,715 (80%)
Phosphate	12,802 (90%)
Gilsonite	0 (0%)

Table 9. Mineral Development Land Categorization Proposed In Black Bear Habitat

Oil and Gas Development	
Standard Stipulation	60,254 (24%)
Timing and Controlled Surface Use	128,388 (52%)
No Surface Occupancy	11,429 (5%)
No Leasing	47,815 (19%)
Other Minerals (Open)	
Mineral Material	24,287 (83%)
Phosphate	4,972 (99.5%)
Gilsonite	0 (0%)

Table 10. Mineral Development Land Categorization Proposed In Ring-necked Pheasant Habitat

Oil and Gas Development	
Standard Stipulation	26,251 (48%)
Timing and Controlled Surface Use	11,996 (22%)
No Surface Occupancy	16,116 (29%)
No Leasing	624 (1%)
Other Minerals (Open)	
Mineral Material	16,381 (66%)
Phosphate	887 (100%)
Gilsonite	0 (0%)

Table 11. Mineral Development Land Categorization Proposed In Rio Grande Turkey Habitat

Oil and Gas Development	
Standard Stipulation	88,683 (56%)
Timing and Controlled Surface Use	37,991 (24%)
No Surface Occupancy	9,625 (6%)
No Leasing	22,538 (14%)
Other Minerals (Open)	
Mineral Material	33,249 (87%)
Phosphate	65 (12%)
Gilsonite	167 (100%)

Table 12. Mineral Development Land Categorization Proposed In Blue Grouse Habitat

Oil and Gas Development	
Standard Stipulation	16,686 (7%)
Timing and Controlled Surface Use	158,930 (69%)
No Surface Occupancy	6,130 (3%)
No Leasing	49,400 (21%)
Other Minerals (Open)	
Mineral Material	4,977 (74%)
Phosphate	16,490 (72%)
Gilsonite	0 (0%)

Table 13. Mineral Development Land Categorization Proposed In Chukar Habitat

Oil and Gas Development	
Standard Stipulation	23,267 (17%)
Timing and Controlled Surface Use	43,147 (31%)
No Surface Occupancy	17,146 (12%)
No Leasing	55,981 (40%)
Other Minerals (Open)	
Mineral Material	22,498 (64%)
Phosphate	23,388 (65%)
Gilsonite	0 (0%)

Table 14. Mineral Development Land Categorization Proposed In Greater Sage-Grouse Wintering Habitat

Oil and Gas Development	
Standard Stipulation	98,067 (41%)
Timing and Controlled Surface Use	98,679 (42%)
No Surface Occupancy	4,832 (2%)
No Leasing	35,095 (15%)
Other Minerals (Open)	
Mineral Material	71,668 (87%)
Phosphate	16,100 (64%)
Gilsonite	148 (100%)

Table 15. Mineral Development Land Categorization Proposed In Greater Sage-grouse Brooding Habitat

Oil and Gas Development	
Standard Stipulation	288,942 (36%)
Timing and Controlled Surface Use	412,653 (51%)
No Surface Occupancy	21,092 (3%)
No Leasing	91,085 (11%)
Other Minerals (Open)	
Mineral Material	183,838 (88%)
Phosphate	50,184 (81%)
Gilsonite	456 (100%)

Table 16. Mineral Development Land Categorization Proposed In White-tailed Prairie Dog/Black-footed Ferret Habitat

Oil and Gas Development	
Standard Stipulation	104,308 (84%)
Timing and Controlled Surface Use	18,753 (15%)
No Surface Occupancy	1,083 (1%)
No Leasing	13 (0.01%)
Other Minerals (Open)	
Mineral Material	48,195 (99%)
Phosphate	0 (0%)
Gilsonite	93 (97%)

Table 17. Mineral Development Land Categorization Proposed In Mexican Spotted Owl (Canyon) Habitat

Oil and Gas Development	
Standard Stipulation	1,234 (11%)
Timing and Controlled Surface Use	2,335 (22%)
No Surface Occupancy	1,286 (12%)
No Leasing	6,002 (55%)
Other Minerals (Open)	
Mineral Material	97 (81%)
Phosphate	225 (68%)
Gilsonite	0 (0%)

Table 18. Mineral Development Land Categorization Proposed In Mexican Spotted Owl (Forest) Habitat

Oil and Gas Development	
Standard Stipulation	15,449 (39%)
Timing and Controlled Surface Use	10,944 (28%)
No Surface Occupancy	624 (2%)
No Leasing	12,410 (31%)
Other Minerals (Open)	
Mineral Material	4,634 (81%)
Phosphate	568 (88%)
Gilsonite	0 (0%)

Table 19. Mineral Development Land Categorization Proposed In Ferruginous Hawk Nesting Habitat¹

Oil and Gas Development	
Standard Stipulation	39,225 (77%)
Timing and Controlled Surface Use	11,037 (22%)
No Surface Occupancy	524 (1%)
No Leasing	42 (0.1%)
Other Minerals (Open)	
Mineral Material	15,862 (98%)
Phosphate	0 (0%)
Gilsonite	0 (0%)

¹ These calculations are to show an approximation of land management in the habitat type used by nesting ferruginous hawks. Calculations are based on areas associated within the ½ mile buffer around known active and inactive ferruginous hawk nests in the VPA. However, the areas within the ½ mile buffer zone for active and inactive ferruginous hawk nests will actually be managed under the special stipulations for raptors outlined in Chapter 4 of the PRMP.

Table 20. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The VPA And Road Effects Zones Associated With These Fragments

Vernal Planning Area								
Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments created by roads or pipelines	4,485	383	99.6	86.6	736	2,194	93.6	85.6
Fragments outside the	2,849	492	81.2	85.4	696	1,891	76.3	84.2

Table 20. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The VPA And Road Effects Zones Associated With These Fragments

Vernal Planning Area								
Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
660-foot road effects zone								
Fragments outside the 1,320-foot road effects zone	2,394	477	66.1	84.1	593	1,803	62.0	82.7
Fragments outside the 2,640-foot road effects zone	1,510	505	44.2	81.3	413	1,728	41.4	79.6

Table 21. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The Manila-Clay Basin RFD Area, And Road Effects Zones Associated With These Fragments

Manila-Clay Basin RFD Area								
Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments created by roads or pipelines	234	225	99.6	70.2	26	1,807	89.1	66.8
Fragments outside the 660-foot road effects zone	104	117	82.2	66.7	24	1,662	75.6	63.0
Fragments outside the 1,320-foot road effects zone	90	401	68.5	63.3	25	1,359	64.4	60.9
Fragments outside the 2,640-foot road effects zone	55	459	47.8	56.9	18	1,287	43.9	52.6

Table 22. Functional Habitat Loss Created By Proposed Roads And Pipelines On BLM Lands In The Manila-Clay Basin RFD Area

	Approved RMP
Road and Pipeline Densities (mi/mi ²)	1.48
Percent outside a Functional Habitat Loss - 660' zone	86%
Percent outside a Functional Habitat Loss - 1,320' zone	75%
Percent outside a Functional Habitat Loss - 2,640' zone	57%

Table 23. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The Tabiona-Ashley Valley RFD Area, And Road Effects Zones Associated With These Fragments

Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments created by roads or pipelines	1,233	297	99.7	70.8	165	2,044	91.8	68.2
Fragments outside the 660-foot road effects zone	715	431	83.9	69.1	155	1,864	78.6	66.8
Fragments outside the 1,320-foot road effects zone	559	467	71.0	67.5	136	1,797	66.5	69.4
Fragments outside the 2,640-foot road effects zone	370	506	50.9	PRMP:64.3	102	1,714	47.6	PRMP:61.6

Table 24. Functional Habitat Loss Created By Proposed Roads And Pipelines On BLM Lands In The Tabiona-Ashley Valley RFD Area

	Approved RMP
Road and Pipeline Densities (mi/mi ²)	1.48
Percent outside a Functional Habitat Loss - 660' zone	88%
Percent outside a Functional Habitat Loss - 1,320' zone	79%
Percent outside a Functional Habitat Loss - 2,640' zone	63%

Tabiona-Ashley Valley RFD Area (367,419 acres)

Table 25. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The Altamont-Bluebell RFD Area, And Road Effects Zones Associated With These Fragments

Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments created by roads or pipelines	64	224	99.7	98.7	10	1,280	89.0	96.7
Fragments outside the 660-foot road effects zone	45	266	83.4	98.9	9	1,172	73.3	98.7
Fragments outside the 1,320-foot road effects zone	35	287	69.8	99.3	9	1,003	62.8	99.1
Fragments outside the 2,640-foot road effects zone	32	218	48.5	100	8	805	44.8	100

Table 26. Functional Habitat Loss Created By Proposed Roads And Pipelines On BLM Lands In The Altamont-Bluebell RFD Area

	Approved RMP
Road and Pipeline Densities (mi/mi ²)	1.34
Percent outside a Functional Habitat Loss - 660' zone	85%
Percent outside a Functional Habitat Loss - 1,320' zone	72%
Percent outside a Functional Habitat Loss - 2,640' zone	51%

Altamont-Bluebell RFD Area (14,375 acres)

Table 27. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The Monument Butte-Red Wash RFD Area, And Road Effects Zones Associated With These Fragments

Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments created by roads or pipelines	2,071	306	99.5	94.9	359	1,624	91.6	94.6
Fragments outside the 660-foot road effects zone	1,234	396	76.8	94.5	298	1,508	70.6	94.09
Fragments outside the 1,320-foot road effects zone	1,052	357	60.0	94.1	227	1,510	53.9	93.3
Fragments outside the 2,640-foot road effects zone	604	376	35.7	92.7	144	1,429	32.3	91.8

Table 28. Functional Habitat Loss Created By Proposed Roads And Pipelines On BLM Lands In The Monument Butte-Redwash RFD Area

	Approved RMP
Road and Pipeline Densities (mi/mi ²)	2.45
Percent outside a Functional Habitat Loss - 660' zone	78%
Percent outside a Functional Habitat Loss - 1,320' zone	61%
Percent outside a Functional Habitat Loss - 2,640' zone	39%

Monument Butte-Redwash RFD Area (636,185 acres)

Table 29. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The West Tavaputs Plateau RFD Area, And Road Effects Zones Associated With These Fragments

Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments created by roads or pipelines	213	845	99.7	87.5	59	2,987	97.7	86.4
Fragments outside the 660-foot road effects zone	189	815	85.3	87.0	61	2,435	82.3	85.6
Fragments outside the 1,320-foot road effects zone	172	763	72.7	PRMP: 86.5	56	2,251	69.9	PRMP: 84.6
Fragments outside the 2,640-foot road effects zone	135	693	51.9	PRMP: 85.3	47	1,902	49.5	PRMP: 82.9

Table 30. Functional Habitat Loss Created By Proposed Roads And Pipelines On BLM Lands In The West Tavaputs Plateau RFD Area

	Approved RMP
Road and Pipeline Densities (mi/mi ²)	1.27
Percent outside a Functional Habitat Loss - 660' zone	86%
Percent outside a Functional Habitat Loss - 1,320' zone	74%
Percent outside a Functional Habitat Loss - 2,640' zone	53%

West Tavaputs Plateau RFD Area (180,467 acres)

Table 31. Habitat Fragments Created By Existing Roads And Pipelines On BLM Lands In The East Tavaputs Plateau RFD Area, And Road Effects Zones Associated With These Fragments

Fragment Categories	All Fragments				Fragments 250 Acres or Greater			
	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development	Number	Average Size (acres)	% of Total Area	% Open to Minerals Development
Fragments created by roads or pipelines	867	545	99.7	89.0	167	2,714	95.6	88.2
Fragments outside the 660-foot road effects zone	562	702	83.1	88.0	149	2,543	80.0	87.0
Fragments outside the 1,320-foot road effects zone	486	673	70.0	86.9	140	2,235	66.0	86.1
Fragments outside the 2,640-foot road effects zone	387	577	47.0	84.4	119	1,780	44.7	83.7

Table 32. Functional Habitat Loss Created By Proposed Roads And Pipelines On BLM Lands In The East Tavaputs Plateau RFD Area

	Approved RMP
Road and Pipeline Densities (mi/mi ²)	85.0
Percent outside a Functional Habitat Loss - 660' zone	90%
Percent outside a Functional Habitat Loss - 1,320' zone	82%
Percent outside a Functional Habitat Loss - 2,640' zone	66%

East Tavaputs Plateau RFD Area (474,288 acres)

WILDLIFE**Table 33. Migratory Birds Species On The USFWS Species Of Concern List, State Of Utah Special Status Species List, And The Partners In Flight High-Priority Bird Species List**

Common Name	Scientific Name	USFWS Species of Concern	State of Utah Special Status Species	Partners in Flight High-Priority Bird Species	Primary Breeding Habitat	Secondary Breeding Habitat	Winter Habitat
American Avocet	<i>Recurvirostra americana</i>	X		X	Wetland	Playa	Migrant
American White Pelican	<i>Pelecanus erythrorhynchos</i>		X	X	Water	Wetland	Migrant
Black-Chinned Sparrow	<i>Spizella atrogularis</i>	X			Low Desert Scrub	High Desert Scrub	Migrant
Black-necked Stilt	<i>Himantopus mexicanus</i>			X	Wetland	Playa	Migrant
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>	X		X	Pinyon-Juniper	Mountain Shrub	Migrant
Bobolink	<i>Dolichonyx oryzivorus</i>		X	X	Wet Meadow	Agriculture	Migrant
Brewer's Sparrow	<i>Spizella breweri</i>	X		X	Shrub-steppe	High Desert Scrub	Migrant
Broad-tailed Hummingbird	<i>Selasphorus platycercus</i>			X	Lowland riparian	Mountain Riparian	Migrant
Ferruginous Hawk	<i>Buteo regalis</i>	X	X	X	Pinyon-Juniper	Shrub-steppe	Grassland
Flammulated Owl	<i>Otus flammeolus</i>	X			Ponderosa Pine	Sub-Alpine Conifer	Migrant
Gambel's Quail	<i>Callipepla gambelii</i>			X	Low Desert Scrub	Lowland riparian	Low Desert Scrub
Golden Eagle	<i>Aquila chrysaetos</i>	X			Cliff	High Desert Scrub	High Desert Scrub
Grey Vireo	<i>Vireo vicinior</i>	X		X	Pinyon-Juniper	Northern Oak	Migrant
Greater sage-Grouse	<i>Centrocercus urophasianus</i>	X	X	X	Shrub-steppe	Shrub-steppe	Shrub-steppe
Lewis' Woodpecker	<i>Melanerpes lewis</i>	X	X	X	Ponderosa Pine	Lowland riparian	Northern Oak

Table 33. Migratory Birds Species On The USFWS Species Of Concern List, State Of Utah Special Status Species List, And The Partners In Flight High-Priority Bird Species List

Common Name	Scientific Name	USFWS Species of Concern	State of Utah Special Status Species	Partners in Flight High-Priority Bird Species	Primary Breeding Habitat	Secondary Breeding Habitat	Winter Habitat
Loggerhead Shrike	<i>Lanius ludovicianus</i>	X			High Desert Scrub	Pinyon-Juniper	High Desert Scrub
Long-billed Curlew	<i>Numenius americanus</i>	X	X	X	Grassland	Agriculture	Migrant
Mountain Plover	<i>Charadrius montanus</i>	X		X	High Desert Scrub	High Desert Scrub	Migrant
Northern Harrier	<i>Circus cyaneus</i>	X			Wet Meadow	High Desert Scrub	Agriculture
Peregrine Falcon	<i>Falco peregrinus</i>	X			Cliff	Lowland riparian	Wetland
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	X			Pinyon-Juniper	Ponderosa Pine	Pinyon-Juniper
Prairie Falcon	<i>Falco mexicanus</i>	X			Cliff	High Desert Scrub	Agriculture
Pygmy Nuthatch	<i>Sitta pygmaea</i>	X			Ponderosa Pine	Aspen	Ponderosa Pine
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	X			Aspen	Mixed Conifer	Mountain Riparian
Sage Sparrow	<i>Amphispiza belli</i>	X		X	Shrub-steppe	High Desert Scrub	Low Desert Scrub
Snowy plover	<i>Charadrius alexandrinus</i>	X			Playa	Playa	Migrant
Swainson's Hawk	<i>Buteo swainsoni</i>	X			Agriculture	Aspen	Migrant
Three-toed Woodpecker	<i>Picoides tridactylus</i>		X	X	Sub-Alpine Conifer	Lodgepole Pine	Sub-Alpine Conifer
Virginia's Warbler	<i>Vermivora virginiae</i>	X		X	Northern Oak	Pinyon-Juniper	Migrant
Williamson Sapsucker	<i>Sphyrapicus thyroideus</i>	X			Sub-Alpine Conifer	Aspen	Migrant
Wilson's Phalarope	<i>Phalaropus tricolor</i>	X			Wetland	Water	Migrant

Table 33. Migratory Birds Species On The USFWS Species Of Concern List, State Of Utah Special Status Species List, And The Partners In Flight High-Priority Bird Species List

Common Name	Scientific Name	USFWS Species of Concern	State of Utah Special Status Species	Partners in Flight High-Priority Bird Species	Primary Breeding Habitat	Secondary Breeding Habitat	Winter Habitat
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	X	X	X	Lowland riparian	Agriculture	Migrant

APPENDIX I. VISUAL RESOURCES MANAGEMENT (VRM) CLASS OBJECTIVES

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APPENDIX I. VISUAL RESOURCES MANAGEMENT (VRM) CLASS OBJECTIVES

Class I – The objective of Class I is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and should not attract attention.

Class II – The objective of Class II is to retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III – The objective of Class III is to partially retain the existing character of the landscape. The level of change to the landscape should be moderate. Management activities may attract the attention of the casual observer, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV – The objective of Class IV is to provide for management activities that require major modifications to the existing character of the landscape. The level of change to the landscape can be high. The management activities may dominate the view and may be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic visual elements of form, line, color, and texture.

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APPENDIX J. GRAZING ALLOTMENTS

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APPENDIX K. SURFACE STIPULATIONS APPLICABLE TO ALL SURFACE-DISTURBING ACTIVITIES

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APPENDIX K. SURFACE STIPULATIONS APPLICABLE TO ALL SURFACE-DISTURBING ACTIVITIES

This appendix lists surface stipulations referred to throughout the Approved RMP. Surface stipulations will be appended, where applicable, to land use authorizations, permits, and leases issued on BLM administered lands.

DESCRIPTION OF SURFACE STIPULATIONS

Table 1 shows resources of concern and stipulations including exceptions, modifications, and waivers.

Three surface stipulations could be applied to land use authorizations:

- (1) controlled surface use (CSU)
- (2) no surface occupancy (NSO)
- (3) timing limitation (TL).

Areas identified as CSU will require surface disturbing activities be authorized only according to the controls or constraints specified. Controls will be applicable to all surface use activities such as identified above. CSU areas will be open to public utilities.

Areas identified, as NSO will be closed to any surface disturbing activity, such as oil and gas wells, guzzler development, recreation facility or trail construction, range improvements, etc., unless specific program decisions within the Approved RMP exempt surface disturbing activities from the decision. NSO areas will be avoidance areas for location of public utilities and closed to new road construction.

Areas identified for TL stipulations will be closed to surface disturbing activities during the identified time frames. Timing limitation stipulation areas will be open to operational and maintenance activities, including associated vehicle travel, during the closed period unless otherwise specified in the stipulation.

EXCEPTIONS, MODIFICATIONS, AND WAIVERS

Surface stipulations could be excepted, modified, or waived by the authorized officer.

- An exception exempts the holder of the land use authorization document from the stipulation on a one-time basis.
- A modification changes the language or provisions of a surface stipulation, either temporarily or permanently.
- A waiver permanently exempts the surface stipulation.

The environmental analysis document prepared for proposed surface disturbing activity also will need to address proposals to exempt, modify, or waive a surface stipulation. To exempt, modify, or waive a stipulation, the environmental analysis document will have to show that:

- (1) the circumstances or relative resource values in the area had changed following issuance of the lease,
- (2) less restrictive requirements could be developed to protect the resource of concern, and
- (3) operations could be conducted without causing unacceptable impacts.

Table 1. Resources of Concern and Stipulations including Exceptions, Modifications, and Waivers

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
Air Quality	Planning Area Wide		All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NO _x per horsepower-hour. Exception: This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower. Modification: None Waiver: None
Air Quality	Planning Area Wide		All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO _x per horsepower-hour. Exception: None. Modification: None Waiver: None
Cultural Resources	Four Mile Wash area (Section 18, T10S, R19E)	CSU/NSO/TL	To protect traditional sacred properties, the area will be open for oil and gas leasing and other surface disturbing activities subject to timing and controlled surface-use stipulations or NSO. Exception: Permit excavation of cultural resources sites in NSO areas. Modification: None Waiver: None
Cultural Resources	Little Hole and Devils Hole areas	CSU/TL	Surface disturbing activities will be subject to controlled surface use stipulations. Exception: None Modification: None Waiver: None
Cultural Resources	Uinta foothills area	CSU/NSO/TL	The area will be open for oil and gas leasing and other surface disturbing activities subject to timing

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			and controlled surface-use stipulations or NSO. Exception: Permit excavation of cultural resources sites in NSO areas. Modification: None Waiver: None
Cultural Resources	Upper Willow Creek area of the Book Cliffs	CSU/TL	To preserve the unique representation of the Archaic period, the surface disturbing activities will be subject to timing and controlled surface use stipulations. Exception: None Modification: None Waiver: None
Fragile Soils/Slopes	Planning Area Wide	CSU	The surface operating standards for oil and gas exploration and development (Gold Book) will be used as a guide for surface-disturbing proposals on steep slopes/hillsides. Exception: None Modification: None Waiver: None
Fragile Soils/Slopes	Planning Area Wide	CSU	If surface-disturbing activities cannot be avoided on slopes from 21-40% a plan will be required. The plan will be approved by BLM prior to construction and maintenance and include: <ul style="list-style-type: none"> • An erosion control strategy • GIS modeling • Proper survey and design by a certified engineer. Exception: None Modification: None Waiver: None
Fragile Soils/Slopes	Planning Area Wide	NSO	For slopes greater than 40%, allow NSO. Exception: If after an environment analysis the authorized officer determines that it will cause undue or unnecessary degradation to pursue other placement alternatives, surface occupancy in the NSO area may be authorized. Additionally a plan will be submitted by the operator and approved by BLM prior to construction and maintenance and include:

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			<ul style="list-style-type: none"> • An erosion control strategy • GIS modeling • Proper survey and design by a certified engineer. <p>Modification: Modifications also may be granted if a more detailed analysis, i.e. Order I, soil survey conducted by a qualified soil scientist finds that surface disturbance activities could occur on slopes greater than 40% while adequately protecting the area from accelerated erosion.</p> <p>Waiver: None</p>
Lands and Realty	Planning Area Wide	NSO	<p>Recreation & Public Purposes (R&PP) lease areas will be unavailable for leasing or open to leasing subject to NSO stipulations.</p> <p>Exception: Surface use could only occur with the concurrence of the R&PP holder.</p> <p>Modification: None</p> <p>Waiver: None</p>
Light and Sound	Areas Adjacent to Dinosaur National Monument	CSU	<p>Minimize noise and light pollution adjacent to Dinosaur National Monument using best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to direct noise away from the monument. Additionally, there will be a requirement to reduce light pollution by using methods such as limiting height of light poles, timing of lighting operations (meaning limiting lighting to times of darkness associated with drilling and work over or maintenance operations), limiting wattage intensity, and constructing light shields. However, this requirement is not applicable if it affects human health and safety.</p> <p>Movement of operations to mitigate sound and light impacts will be required to be at least 200 m from the Monument boundary for VRM Classes II, III and IV.</p> <p>Exception: An exception may be granted if a determination is made that natural barriers or view sheds will meet these mitigation objectives or if human health and safety were adversely affected.</p> <p>Modification: None</p> <p>Waiver: None</p>

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
Non-WSA areas with Wilderness Characteristics	Beach Draw, Bourdette Draw, Bull Canyon, Cold Spring Mountain, Daniels Canyon, Dead Horse Pass, Diamond Breaks, Diamond Mountain, Lower Flaming Gorge, Moonshine Draw, Mountain Home, Stuntz Draw, Vivas Cake Hill, White River, Wild Mountain	NSO	<p>Closed to oil and gas leasing, except for the White River area that will be open to leasing, subject to major constraints, such as an NSO stipulation.</p> <p>Closed to solid mineral leasing.</p> <p>Closed to disposal of mineral materials.</p> <p>Closed to woodland product harvest.</p> <p>Avoidance area for rights-of-way.</p> <p>OHVs will be limited to designated routes.</p> <p>No motorized vehicles will be allowed to travel on a single path up to 300 feet from designated routes to access a camp.</p> <p>Retain public lands in federal ownership.</p> <p>When compatible with the goals and objectives for management of non-WSA lands with wilderness characteristics:</p> <ul style="list-style-type: none"> Permit vegetation and fuel treatments using prescribed fire, mechanical and chemical treatments, and other actions compatible with the Healthy Lands Initiative (HLI). <p>Exception: White River area will be open to leasing, subject to NSO stipulation. Permit construction of wildlife water and livestock facilities, and minimal recreation facilities. Authorize reasonable access to non-BLM managed lands.</p> <p>Modification: None</p> <p>Waiver: None</p>
Recreation	Planning Area wide	NSO	<p>Developed recreation sites will be closed to the shooting of firearms, grazing, and all forms of surface-disturbing activities.</p> <p>Exception: An exemption will be granted if the disturbance were related to recreational infrastructure support.</p> <p>Modification: None</p> <p>Waiver: None</p>
Recreation	Pelican Lake SRMA	NSO	<p>Pelican Lake SRMA will be closed to surface-disturbing activities.</p> <p>Exception: An exemption will be granted if the disturbance were related to recreational infrastructure support.</p> <p>Modification: None</p>

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			Waiver: None
Recreation	White River SRMA	NSO	<p>No surface disturbing activities within line of sight from the centerline of the White River, up to one-half mile on either side of the river, from where the river enters Section 28, T10S R23E to where it leaves Section 18, T10S R23E.</p> <p>Exception: An exemption will be granted if the disturbance complemented recreational goals and objectives.</p> <p>Modification: None</p> <p>Waiver: None</p>
Riparian Floodplains and Public Water Reserves	Planning Area Wide	NSO	<p>Allow no new surface-disturbing activities within active floodplains, wetlands, public water reserves, or 100m of riparian areas. Keep construction of new stream crossings to a minimum.</p> <p>Exception: An exception could be authorized if:</p> <ul style="list-style-type: none"> a) there are no practical alternatives b) impacts could be fully mitigated, or c) the action is designed to enhance the riparian resources. <p>Modification: None</p> <p>Waiver: None</p>
River Corridors	Upper Green River	NSO	<p>Line of sight from the centerline, up to ½ mile along both sides of the river from the National Forest boundary to the Colorado State line will be managed as NSO.</p> <p>Exception: An exemption will be granted if the disturbance were related to recreational infrastructure support.</p> <p>Additionally, an exception may be granted if a future Right of Way is placed within the existing ROW corridor—near the head of Little Swallow Canyon where existing pipelines cross the Green River.</p> <p>Modification: None</p> <p>Waiver: None</p>

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
River Corridors	Lower Green River	NSO	<p>Line of sight from the centerline, up to ½ mile along both sides of the Lower Green River, between the trust land boundary at Ouray and the Carbon County line will be managed as NSO.</p> <p>Exception: Future facilities will be placed within the existing ROW corridor near the Four Mile Bottom area where an existing pipeline crosses the Green River.</p> <p>Modification: None</p> <p>Waiver: None</p>
River Corridors	White River	NSO	<p>Line of sight from the centerline, up to ½ mile along both sides of the river from where the river enters T. 10 S., R. 24 E. to where the river leaves Section 18 T. 10 S, R 23 E will be managed as NSO.</p> <p>Exception: Exempted are recognized utility corridors.</p> <p>Modification: None</p> <p>Waiver: None</p>
Special Designations	Browns Park ACEC	CSU/NSO/TL	<p>For oil and gas leasing:</p> <ul style="list-style-type: none"> • Zero acres will be open to leasing subject to the terms and conditions of the standard lease form. • Approximately 3,137 acres will be open to leasing subject to moderate constraints such as timing limitations and controlled surface use. • Approximately 5,014 acres will be open to leasing subject to major constraints such as NSO stipulations. • Approximately 10,188 acres will be unavailable for leasing. <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p>
Special Designations	Lears Canyon ACEC	NSO	<p>For oil and gas leasing:</p> <ul style="list-style-type: none"> • Zero acres will be open to leasing subject to the terms and conditions of the standard lease form. • Zero acres will be open to leasing subject to moderate constraints such as timing

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			<p>limitations and controlled surface use.</p> <ul style="list-style-type: none"> • 1,375 acres will be open to leasing subject to major constraints such as NSO stipulations. • Zero acres will be unavailable for leasing. <p>Exception: None Modification: None Waiver: None</p>
Special Designations	Lower Green River Corridor and Lower Green River Expansion	CSU/NSO/TL	<p>For oil and gas leasing within the Lower Green River Corridor:</p> <ul style="list-style-type: none"> • Zero acres will be open to leasing subject to the terms and conditions of the standard lease form. • Approximately 71 acres will be open to leasing subject to moderate constraints such as timing limitations and controlled surface use. • Approximately 8,079 acres will be open to leasing subject to major constraints such as NSO stipulations. • Zero acres will be unavailable for leasing. • Surface disturbing activities within the Lower Green River Corridor and Lower Green River Expansion will be subject to NSO within line of sight or up to one-half mile from the centerline of the river, whichever is less for both areas. <p>Exception: An exemption will be granted if the disturbance complemented recreational goals and objectives. Modification: None Waiver: None</p>
Special Designations	Nine Mile Canyon	CSU/NSO/TL	<p>For oil and gas leasing:</p> <ul style="list-style-type: none"> • Approximately 26,797 acres will be open to leasing subject to the terms and conditions of the standard lease form. • Approximately 209 acres will be open to leasing subject to moderate constraints such as timing limitations and controlled surface use. • Approximately 27,162 acres will be open to

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			leasing subject to major constraints such as NSO stipulations. <ul style="list-style-type: none"> • Zero acres will be unavailable for leasing. Exception: None Modification: None Waiver: None
Special Designations	Pariette Wetlands ACEC	NSO	For oil and gas leasing: <ul style="list-style-type: none"> • Zero acres will be open to leasing subject to the terms and conditions of the standard lease form. • Zero acres will be open to leasing subject to moderate constraints such as TLs and CSUs. • About 10,437 acres will be open to leasing subject to major constraints such as NSO stipulations. • Zero acres will be unavailable for leasing. Exception: None Modification: None Waiver: None
Special Designations	Red Creek Watershed ACEC	CSU/NSO/TL	The area will be open to moderate constraints such as timing limitations and controlled surface use and major constraints such as NSO stipulations. <ul style="list-style-type: none"> • Approximately 6,899 will be open to leasing subject to the terms and conditions of the standard lease form. • Approximately 12,362 acres will be open to leasing subject to moderate constraints such as TLs and CSU. • Approximately 162 acres will be open to leasing subject to major constraints such as NSO stipulations. • Approximately 5,052 acres will be unavailable for leasing. Exception: None Modification: None Waiver: None
Special	Red Mountain – Dry Fork	CSU/NSO/TL	For oil and gas leasing: <ul style="list-style-type: none"> • Approximately 495 acres will be open to

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
Designations	Complex ACEC		<p>leasing subject to the terms and conditions of the standard lease form.</p> <ul style="list-style-type: none"> • Approximately 21,994 acres will be open to leasing subject to moderate constraints such as timing limitations and controlled surface use. • Approximately 1,988 acres will be open to leasing subject to major constraints such as NSO stipulations. • Zero acres will be unavailable for leasing. <p>Exception: None Modification: None Waiver: None</p>
<p>Special Status Species</p> <p>Black-footed Ferret</p>	PMZ area	CSU/TL	<p>BLM will manage the black-footed ferret consistent with the Black-footed Ferret Reintroduction Plan Amendment (UT-080-1999-02) and those portions of the Cooperative Plan for the Reintroduction and Management of Black-footed Ferret in Coyote Basin, Uintah County, Utah that are consistent with this plan amendment.</p> <p>New power lines constructed through the PMZ will be raptor proof.</p> <p>Management activities within the PMZ will be conducted with the objective of maintaining at least 10,000 acres of prairie dog colonies. According to the Service and the UDWR, a minimum of 8,000 acres is acceptable as long as the ferret habitat rating (the number of ferret families the habitat can support) does not fall below 50% of the 1989 levels. Whenever possible, such activities will avoid prairie dog habitat. Otherwise, activities will be designed to impact the smallest area possible and/or those areas with the lowest prairie dog densities. The creation of additional prairie dog habitat (e.g. burning vegetation and drilling new holes, etc.) will be required only if the disturbance or development reduces the prairie dog acreage below the 8,000 acre threshold.</p> <p>The period between breeding and emergence of young is a period of "sensitivity" for ferrets. This period extends from March 1 to July 15. The period between birth and emergence of young is a period of "critical" importance for successful ferret productivity. This period extends from May 1 to July 15.</p>

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			<p>Activities involving the development or construction of temporary or permanent surface disturbances will be prohibited within 1/8 mile boundaries of known home ranges of female ferrets during the "critical" period from May 1 thru July 15. The home ranges will be determined from data obtained from radio collared animals. Previously existing or permitted operations which may occur within these boundaries will continue normal operations; however, no new surface disturbances will be initiated at these sites during the "critical" period.</p> <p>If a ferret is discovered at a commercial facility (e.g. Gilsonite mine, well pad, power plant), it will then be decided by the Service and UDWR, if removal of the ferret was necessary and, if so, removal will be initiated within 48 hours. If the targeted animal(s) cannot be captured within 72 hours of the commencement of trapping activities, such activities will cease and be replaced by a monitoring program to ascertain the status of the animal(s). Further attempts to remove the subject animal(s) will be based on this monitoring.</p> <p>If ferrets are discovered at the site of a proposed commercial operation, then mitigation in the form of: delay of activities, movement of ferret(s), off-site prairie dog habitat development, redesign of activities, or any combination of the above will be required. The course of events chosen will be determined cooperatively by the operator, UDWR, the Service, and land management agencies.</p> <p>Exception: Retrofitting of existing poles and towers to raptor proof standards will not be required. Maintenance or construction of previously existing or permitted operations can continue. Ephemeral surface disturbance (disturbance in prairie dog habitat for less than six months, after which it again becomes or can be made suitable for prairie dog use), such as prescribed fire or herbicide treatment, may be conducted within 1/8 mile of the boundary of the home range of a female from March 1 to May 1. In general, the disturbance should be completed before the critical period begins. The Service, UDWR, and the land management agencies will determine if this exemption applies. Normal travel and surveying activities will not be restricted.</p> <p>Modification: None</p> <p>Waiver: None</p>

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
Special Status Species Bald Eagle Winter Habitat	Planning Area Wide	CSU	Protect and restore cottonwood bottoms for bald eagle winter habitat along the Green and White Rivers, at Pelican Lake, and at the Cliff Creek Bald Eagle roost site, as well as any new roost sites discovered in the future. Exception: None Modification: None Waiver: None
Special Status Species Raptors - Buffers	Planning Area Wide	CSU/NSO/TL	Raptor management will be guided by the use of "Best Management Practices for Raptors and Their Associated Habitats in Utah" (Utah BLM, 2006, Appendix A), utilizing seasonal and spatial buffers, as well as mitigation, to maintain and enhance raptor nesting and foraging habitat, while allowing other resource uses. Exception: None Modification: Criteria that will need to be met, prior to implementing modifications to the spatial and seasonal buffers in the "Raptor BMPs", will include the following: <ol style="list-style-type: none"> 1. Completion of a site-specific assessment by a wildlife biologist or other qualified individual. See example (Attachment 1 of the Raptor BMPs in Appendix A) 2. Written documentation by the BLM Field Office Wildlife Biologist, identifying the proposed modification and affirming that implementation of the proposed modification(s) will not affect nest success or the suitability of the site for future nesting. Modification of the "BMPs" will not be recommended if it is determined that adverse impacts to nesting raptors will occur or that the suitability of the site for future nesting will be compromised. 3. Development of a monitoring and mitigation strategy by a BLM biologist, or other raptor biologist. Impacts of authorized activities will be documented to determine if the modifications were implemented as described in the environmental documentation or Conditions of Approval, and were adequate to protect the nest site. Should adverse impacts be identified during monitoring of an activity, BLM will follow an appropriate course of action, which may include cessation or modification of activities that will avoid, minimize or mitigate the

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			<p>impact, or, with the approval of UDWR and the Service, BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report will be completed and forwarded to UDWR for incorporation into the Natural Heritage Program (NHP) raptor database.</p> <p>Waiver: None</p>
Special Status Species Sage Grouse	Planning Area Wide	CSU	<p>Within ½ mile of known active leks, use the best available technology such as installation of multi-cylinder pumps, hospital sound reducing mufflers, and placement of exhaust systems to reduce noise.</p> <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p>
Special Status Species Sage Grouse	Planning Area Wide	NSO	<p>No surface-disturbing activities within 1/4 mile of active sage grouse leks year round.</p> <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p>
Special Status Species Sage Grouse	Planning Area Wide	CSU	<p>No permanent facilities or structures within 2 miles of sage grouse leks when possible.</p> <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p>
Special Status Species Sage Grouse	Planning Area Wide	TL	<p>No surface-disturbing activities within 2 miles of active sage grouse leks from March 1-June 15.</p> <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p>
Special Status Species White-tailed Prairie Dog	The following potential ACEC as described in the Proposed Resource Management Plan. The area	CSU	<p>Do not allow surface-disturbing activities within 660 feet of prairie dog colonies identified within prairie dog habitat. No permanent aboveground facilities are allowed within the 660-foot buffer.</p> <p>Exception: An exception may be granted if the applicant submits a plan that indicates that impacts of the proposed action can be adequately mitigated or, if due to the size of the town, there is no reasonable location to develop a lease and</p>

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
	consists of the: <ul style="list-style-type: none"> • Coyote Basin Complex (which includes the Coyote Basin, Kennedy Wash, Shiner, and Snake John sub-complexes) • Myton Bench Complex 		avoid colonies the Field Manager will allow for loss of prairie dog colonies and/or habitat to satisfy terms and conditions of the lease. Modification: The Field Manager may modify the boundaries of the stipulation area if portions of the area does not include prairie dog habitat or active colonies are found outside the current defined area, as determined by the BLM. Waiver: May be granted if, in the leasehold, it is determined that habitat no longer exists or has been destroyed.
Vegetation	Old growth pinion pine	NSO	Allow NSO within the 160 acres containing old growth pinion pines Exception: None Modification: None Waiver: None
Vegetation	Relict Vegetation Areas	NSO	Allow NSO in Lears Canyon ACEC (1,375 acres). Exception: None Modification: None Waiver: None
Vegetation	Relict Vegetation Areas	NSO	Allow NSO within relic vegetation area on Red Mountain. Exception: None Modification: None Waiver: None
Visual Resources	Planning Area Wide	CSU/NSO/TL	Visual resource management activities will comply with BLM Handbook 8410-1. Within VRM I areas, very limited management activity will be allowed, with the objective of preserving the existing character of the landscape, allowing for natural ecological changes. The level of change to the landscape should be very low and must not attract attention. Within VRM II areas, surface-disturbing activities will retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			<p>should not attract attention of the casual observer. Any change to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.</p> <p>Within VRM III areas, surface-disturbing activities will partially retain the existing character of the landscape. The allowable level of change will be moderate, may attract attention, but should not dominate the view of a casual observer. Landscape changes should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.</p> <p>Within VRM IV areas, surface-disturbing activities are allowed to dominate the view and be the major focus of viewer attention. Major modifications to the existing character of the landscape are allowed. But, every attempt should be made to minimize and mitigate the impacts.</p> <p>Exception: Exempted are recognized utility corridors.</p> <p>Modification: None</p> <p>Waiver: None</p>
Wildlife Antelope Fawning Areas	Antelope Flat	TL	<p>Do not allow activities that will result in adverse impacts to antelope from May 1 through June 30 on currently identified 7,800 acres.</p> <p>Exception: An exemption will apply if antelope are not present, or impacts could be mitigated through other management actions. Additionally this restriction will not apply to maintenance and operation of existing facilities.</p> <p>Modification: None</p> <p>Waiver: None</p>
Wildlife Crucial Elk Calving and Deer Fawning Habitat	Planning Area Wide	TL	<p>In order to protect crucial elk calving and deer fawning habitat, exploration, drilling, and other development activity will not be allowed from May 15 to June 30.</p> <p>Exception: This restriction will not apply to maintenance and operation of existing facilities. This stipulation may be excepted if either the resource values change or the lessee/operator demonstrates to BLMs satisfaction that adverse impact can be mitigated.</p> <p>Modification: None</p>

Resource of Concern	Applicable Area	Stipulation Code	Stipulation Description
			Waiver: None
Wildlife Deer Migration Corridors	Monument and McCook Ridges	TL	<p>Allow no surface-disturbing activities from April 15-May 31 within McCook and Monument Ridge mule deer migration corridors.</p> <p>Exception: This stipulation may be excepted if either the resource values change or the lessee/operator demonstrates to BLMs satisfaction that adverse impact can be mitigated.</p> <p>Modification: None</p> <p>Waiver: None</p>
Wildlife Crucial Deer and Elk Winter Range	Planning Area Wide	TL	<p>Do not allow activities that will result in adverse impacts to deer and elk within crucial winter range from December 1-April 30. (p. 2-93)</p> <p>Exception: This restriction will not apply if deer and/or elk are not present, or if it is determined through analysis and coordination with UDWR that impacts could be mitigated. Factors to be considered will include snow depth, temperature, snow crusting, location of disturbance, forage quantity and quality, animal condition, and expected duration of disturbance.</p> <p>Modification: The stipulation could be modified based on findings of collaborative monitoring and analysis. For example, the winter range configuration and time frames could be changed if current animal use patterns are determined to be inconsistent with the dates and boundaries established.</p> <p>Waiver: This stipulation could be waived if it is determined through collaborative monitoring and analysis that the area is not crucial winter range or that timing restrictions are unnecessary.</p>
Wildlife Wildlife Habitat	Crucial deer winter range	CSU	<p>Within crucial deer winter range, no more than 10% of such habitat will be subject to surface disturbance and remain un-reclaimed at any given time.</p> <p>Exception: This stipulation may be excepted if either the resource values change or the lessee/operator demonstrates to BLMs satisfaction that impacts can be mitigated.</p> <p>Modification: None</p> <p>Waiver: None</p>

**APPENDIX L. UTAH'S THREATENED AND ENDANGERED SPECIES
LEASE NOTICES FOR OIL AND GAS AND BLM-COMMITTED
CONSERVATION MEASURES**

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APPENDIX L. UTAH'S THREATENED AND ENDANGERED SPECIES LEASE NOTICES FOR OIL AND GAS AND BLM-COMMITTED CONSERVATION MEASURES

L.1 UTAH'S THREATENED AND ENDANGERED SPECIES NOTICES

The following oil and gas lease notices were developed in consultation with USFWS and are specific to the VPA.

L.1.1 LEASE NOTICE: BLACK-FOOTED FERRET

The Lessee/Operator is given notice that the lands in this parcel may contain occupied black-footed ferret habitat, an endangered species under the Endangered Species Act classified as an experimental, nonessential population in the state of Utah. Avoidance and minimization measures that should be followed are included within the *Cooperative Plan for the Reintroduction and Management of Black-footed Ferrets in Coyote Basin, Uintah County, Utah* published by the Utah Division of Wildlife Resources in September, 1996. [Please note: the VFO will follow the minimization measures outlined in the *Northeastern Region Black-footed Ferret Management Plan*, published by the Utah Division of Wildlife Resources in April, 2007.] These measures may be updated based on the best available scientific data as it becomes available.

L.1.2 LEASE NOTICE-ENDANGERED FISH OF THE UPPER COLORADO RIVER DRAINAGE BASIN

The Lessee/Operator is given notice that the lands in this parcel contain Critical Habitat for the Colorado River fish (bonytail, humpback chub, Colorado pikeminnow, and razorback sucker) listed as endangered under the Endangered Species Act (ESA), or these parcels have watersheds that are tributary to designated habitat. Critical habitat was designated for the four endangered Colorado River fishes on March 21, 1994 (59 FR 13374-13400). Designated critical habitat for all the endangered fishes includes those portions of the 100-year floodplain that contain primary constituent elements necessary for survival of the species. Avoidance or use restrictions may be placed on portions of the lease. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the ESA. Integration, of and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA, Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All surveys must be conducted by qualified individual(s);
2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated;

3. Water production will be managed to ensure maintenance or enhancement of riparian habitat;
4. Avoid loss or disturbance of riparian habitats;
5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers;
6. Conduct watershed analysis for leases in designated critical habitat and overlapping major tributaries in order to determine toxicity risk from permanent facilities;
7. Implement the Utah Oil and Gas Pipeline Crossing Guidance (from BLM National Science and Technology Center);
8. Drilling will not occur within 100-year floodplains of rivers or tributaries to rivers that contain listed fish species or critical habitat; and,
9. In areas adjacent to 100-year flood plains, particularly in systems prone to flash floods, analyze the risk for flash floods to impact facilities, and use closed loop drilling, and pipeline burial or suspension according to the Utah Oil and Gas Pipeline Crossing Guidance, to minimize the potential for equipment damage and resulting leaks or spills.

Water depletions from *any* portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect or adversely modify the critical habitat of the four resident endangered fish species, and must be evaluated with regard to the criteria described in the Upper Colorado River Endangered Fish Recovery Program. Formal consultation with USFWS is required for all depletions. All depletion amounts must be reported to BLM.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

L.1.3 LEASE NOTICE: LISTED PLANT SPECIES

The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for federally listed plant species under the Endangered Species Act (ESA). The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease:

1. Site inventories:
 - a. Must be conducted to determine habitat suitability;
 - b. Are required in known or potential habitat for all areas proposed for surface disturbance prior to initiation of project activities, at a time when the plant can be detected, and during appropriate flowering periods;
 - c. Documentation should include, but not be limited to individual plant locations and suitable habitat distributions; and,
 - d. All surveys must be conducted by qualified individuals.

2. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
3. Project activities must be designed to avoid direct disturbance to populations and to individual plants:
 - a. Designs will avoid concentrating water flows or sediments into plant occupied habitat;
 - b. Construction will occur down slope of plants and populations where feasible; if well pads and roads must be sited upslope, buffers of 100 feet minimum between surface disturbances and plants and populations will be incorporated;
 - c. Where populations occur within 200 feet of well pads, establish a buffer or fence the individuals or groups of individuals during and post-construction;
 - d. Areas for avoidance will be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.); and,
 - e. For surface pipelines, use a 10-foot buffer from any plant locations:
 - I. If on a slope, use stabilizing construction techniques to ensure the pipelines don't move towards the population.
4. For riparian/wetland-associated species (e.g. Ute ladies-tresses), avoid loss or disturbance of riparian habitats.
5. Ensure that water extraction or disposal practices do not result in change of hydrologic regime.
6. Limit disturbances to and within suitable habitat by staying on designated routes.
7. Limit new access routes created by the project.
8. Place signing to limit ATV travel in sensitive areas.
9. Implement dust abatement practices near occupied plant habitat.
10. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area.
11. Post construction monitoring for invasive species will be required.
12. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in plant habitat. Ensure that such directional drilling does not intercept or degrade alluvial aquifers.
13. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

L.1.4 LEASE NOTICE: MEXICAN SPOTTED OWL

The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for Mexican spotted owl, a federally listed species. The Lessee/Operator is given notice that the lands in this lease contain Designated Critical Habitat for the Mexican spotted owl, a federally listed species. Critical habitat was designated for the Mexican spotted owl on August 31, 2004 (69 FR 53181-53298). Avoidance or use restrictions may be

placed on portions of the lease. Application of appropriate measures will depend whether the action is temporary or permanent, and whether it occurs within or outside the owl nesting season.

A temporary action is completed prior to the following breeding season leaving no permanent structures and resulting in no permanent habitat loss.

A permanent action continues for more than one breeding season and/or causes a loss of owl habitat or displaces owls through disturbances (i.e. creation of a permanent structure).

The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the Endangered Species Act (ESA). Integration of, and adherence to these measures, will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA, Section 7 consultation at the permit stage.

Current avoidance and minimization measures include the following:

1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s).
2. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the conservation measures below if project activities occur within 0.5 mile of suitable owl habitat. Determine potential effects of actions to owls and their habitat.
 - a. Document type of activity, acreage and location of direct habitat impacts, type and extent of indirect impacts relative to location of suitable owl habitat.
 - b. Document if action is temporary or permanent.
3. Lease activities will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
4. Water production will be managed to ensure maintenance or enhancement of riparian habitat.
5. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and eliminate drilling in canyon habitat suitable for Mexican Spotted Owl nesting.
6. For all temporary actions that may impact owls or suitable habitat:
 - a. If the action occurs entirely outside of the owl breeding season (March 1–August 31), and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
 - b. If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity must be delayed until outside of the breeding season.
 - c. Rehabilitate access routes created by the project through such means as raking out scars, re-vegetation, gating access points, etc.
7. For all permanent actions that may impact owls or suitable habitat:

Survey two consecutive years for owls according to accepted protocol prior to commencing activities.

- a. If owls are found, no actions will occur within 0.5 mile of identified nest site. If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC).
- b. Avoid drilling and permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied.
- c. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims. Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5-mile buffer for suitable habitat, including canyon rims.
- d. Limit disturbances to and within suitable habitat by staying on approved routes.
- e. Limit new access routes created by the project.

Additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS between the lease sale stage and lease development stage to ensure continued compliance with the ESA.

L.1.5 LEASE NOTICE: CANADA LYNX

The Lessee/Operator is given notice that the lands in this parcel contain potential habitat for Canada lynx, a federally listed species. Avoidance or use restrictions may be placed on portions of the lease. Application of appropriate measures will depend on the nature of the proposed development, as well as proposed timing and location. The following avoidance and minimization measures have been designed to ensure activities carried out on the lease are in compliance with the ESA. Integration of, and adherence to these measures will facilitate review and analysis of any submitted permits under the authority of this lease. Following these measures could reduce the scope of ESA, Section 7 consultation at the permit stage.

Current avoidance and minimization measures are generally adapted from the standards and guidelines listed in Chapter 7 (Conservation Measures) of the LCAS (Ruediger 2000) and include the following:

1. Surveys will be required prior to operations unless species occupancy and distribution information is complete and available. All Surveys must be conducted by qualified individual(s), and be conducted according to protocol.
2. Based on data and information gathered in item 1, lease activities within, or in proximity to, occupied lynx habitats will require monitoring throughout the duration of the project. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, Section 7 consultation reinitiated.
3. Avoid all surface disturbing actions within occupied denning habitat.
4. Avoid construction and surface disturbing actions in proximity to potential denning habitat during the breeding season (mid-April to July).
5. Activities involved with routine maintenance and operation will only occur during daytime hours, when lynx are least active.

6. Where technically and economically feasible, wells will be remotely monitored within lynx habitat.
7. Limit disturbance to and within suitable habitat by staying on approved access routes.
8. Limit new access routes created by the project.
9. Dirt and gravel roads traversing lynx habitat (particularly those that could become highways) should not be paved or otherwise upgraded (e.g., straightening of curves, widening of roadway etc.) in a manner that is likely to lead to significant increases in traffic volume, traffic speed, increased width of the cleared ROW, or would foreseeably contribute to development or increases in human activity in lynx habitat. When these types of upgrades are proposed, a thorough analysis of potential direct and indirect impacts to lynx and lynx habitat should be conducted.
10. Minimize impacts to habitats that support lynx prey.
11. Where technically and economically feasible, use directional drilling or multiple wells from the same pad to reduce surface disturbance and to minimize or eliminate drilling in suitable lynx habitat.

Additional measures may also be employed to avoid or minimize effects to the species at the development stage and will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

L.1.6 LEASE NOTICE: UINTA BASIN HOOKLESS CACTUS (SCLEROCACTUS GLAUCUS [= BREVISPINUS AND WETLANDICUS])

The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for the Uinta Basin hookless cactus, under the Endangered Species Act (ESA). The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease:

In order to minimize effects to the federally threatened Uinta Basin hookless cactus, the BLM in coordination with the USFWS, developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat¹ prior to any ground disturbing activities to determine if suitable Uinta Basin hookless cactus habitat is present.
2. Within suitable habitat², site inventories will be conducted to determine occupancy. Inventories:

¹ *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

² *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Uinta Basin hookless cactus. Habitat descriptions can be found in the U.S. Fish and Wildlife Service's 1990 Recovery Plan and Federal Register Notices for the Uinta Basin hookless cactus (<http://www.fws.gov/endangered/wildlife.html>).

- a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
 - b. Will be conducted in suitable and occupied³ habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods:
 - i. *Sclerocactus brevispinus* surveys should be conducted March 15th to June 30th, unless extended by the BLM
 - ii. *Sclerocactus wetlandicus* surveys can be done any time of the year, provided there is no snow cover,
 - c. Will occur within 115' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 100' from the perimeter of disturbance for the proposed well pad including the well pad,
 - d. Will include, but not be limited to, plant species lists and habitat characteristics, and
 - e. Will be valid until March 15th the following year for *Sclerocactus brevispinus* and one year from the survey date for *Sclerocactus wetlandicus*.
3. Design project infrastructure to minimize impacts within suitable habitat²:
- a. Reduce well pad size to the minimum needed, without compromising safety,
 - b. Limit new access routes created by the project,
 - c. Roads and utilities should share common right-of-ways where possible,
 - d. Reduce width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
 - e. Place signing to limit off-road travel in sensitive areas,
 - f. Stay on designated routes and other cleared/approved areas, and
 - g. All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.
4. Within occupied habitat³, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
- a. Follow the above (#3) recommendations for project design within suitable habitats,
 - b. Buffers of 100 feet minimum between the edge of the right of way (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated,
 - c. Surface pipelines will be laid such that a 100 foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring techniques when the pipeline crosses the habitat to ensure the pipelines don't move towards the population,
 - d. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.),

³ *Occupied habitat* is defined as areas currently or historically known to support Uinta Basin hookless cactus; synonymous with "known habitat."

- e. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
 - f. Designs will avoid concentrating water flows or sediments into occupied habitat,
 - g. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
 - h. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.
5. Occupied Uinta Basin hookless cactus habitats within 100' of the edge of the surface pipelines' right-of-ways, 100' of the edge of the roads' right-of-ways, and 100' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the USFWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the USFWS.
 6. Reinitiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for the Uinta Basin hookless cactus is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

L.1.7 LEASE NOTICE: UTE LADIES'-TRESSES (SPIRANTHES DILUVIALIS)

The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for Ute ladies'-tresses under the Endangered Species Act (ESA). The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease:

In order to minimize effects to the federally threatened Ute ladies'-tresses, the BLM in coordination with the USFWS, developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. Ute ladies'-tresses habitat is provided some protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Although plants, habitat, or populations may be afforded some protection under these regulatory mechanisms, the following conservation measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area, including areas where hydrology might be affected by project activities, within potential habitat⁴ prior to any ground disturbing activities to determine if suitable Ute ladies'-tresses habitat is present.
2. Within suitable habitat⁵, site inventories will be conducted to determine occupancy. Inventories:
 - a. Must be conducted by qualified individual(s) and according to BLM and USFWS accepted survey protocols,
 - b. Will be conducted in suitable and occupied⁶ habitat for all areas proposed for surface disturbance or areas that could experience direct or indirect changes in hydrology from project activities,
 - c. Will be conducted prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods (usually August 1st and August 31st in the Uintah Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or USFWS botanist or demonstrating that the nearest known population is in flower),
 - d. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
 - e. Will include, but not be limited to, plant species lists, habitat characteristics, source of hydrology, and estimated hydroperiod, and
 - f. Will be valid until August 1st the following year.
3. Design project infrastructure to minimize direct or indirect impacts to suitable habitat² both within and downstream of the project area:
 - a. Alteration and disturbance of hydrology will not be permitted,
 - b. Reduce well pad size to the minimum needed, without compromising safety,
 - c. Limit new access routes created by the project,
 - d. Roads and utilities should share common right-of-ways where possible,
 - e. Reduce width of right-of-ways and minimize the depth of excavation needed for the road bed,
 - f. Construction and right-of-way management measures should avoid soil compaction that would impact Ute ladies' tresses habitat,
 - g. Off-site impacts or indirect impacts should be avoided or minimized (i.e. install berms or catchment ditches to prevent spilled materials from reaching occupied or suitable habitat through either surface or groundwater),
 - h. Place signing to limit off-road travel in sensitive areas,

⁴ *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

⁵ *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain Ute ladies'-tresses. Habitat descriptions can be found in Recovery Plans and Federal Register Notices for the species at <<http://www.fws.gov/endangered/wildlife.html>>.

⁶ *Occupied habitat* is defined as areas currently or historically known to support Ute ladies'-tresses; synonymous with "known habitat."

- i. Stay on designated routes and other cleared/approved areas, and
 - j. All disturbed areas will be re-vegetated with species approved by USFWS and BLM botanists.
4. Within occupied habitat³, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
 - a. Follow the above (#3) recommendations for project design within suitable habitats,
 - b. Buffers of 300 feet minimum between right of way (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated,
 - c. Surface pipelines will be laid such that a 300-foot buffer exists between the edge of the right of way and the plants, using stabilizing and anchoring techniques when the pipeline crosses habitat to ensure the pipelines don't move towards the population,
 - d. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.),
 - e. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
 - f. Designs will avoid altering site hydrology and concentrating water flows or sediments into occupied habitat,
 - g. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, with berms and catchment ditches to avoid or minimize the potential for materials to reach occupied or suitable habitat, and
 - h. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.
 5. Occupied Ute ladies'-tresses habitats within 300' of the edge of the surface pipelines' right-of-ways, 300' of the edge of the roads' right-of-ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Habitat impacts include monitoring any changes in hydrology due to project related activities. Annual reports shall be provided to the BLM and the USFWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.
 6. Reinitiation of section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for the Ute ladies'-tresses is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

L.1.8 LEASE NOTICE: CLAY REED-MUSTARD (SCHOENOCRAMBE ARGILLACEA)

The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for clay reed-mustard under the Endangered Species Act (ESA). The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease:

In order to minimize effects to the federally threatened clay reed-mustard, the BLM in coordination with the USFWS developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat⁷ prior to any ground disturbing activities to determine if suitable clay reed-mustard habitat is present.
2. Site inventories will be conducted within suitable habitat⁸ to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site specific distances will need to be approved by USFWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories:
 - a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
 - b. Will be conducted in suitable and occupied⁹ habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually May 1st to June 5th, in the Uintah Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),
 - c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
 - d. Will include, but not be limited to, plant species lists and habitat characteristics, and

⁷ *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

⁸ *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <<http://www.fws.gov/endangered/wildlife.html>>.

⁹ *Occupied habitat* is defined as areas currently or historically known to support clay reed-mustard; synonymous with "known habitat."

- e. Will be valid until May 1st the following year.
3. Design project infrastructure to minimize impacts within suitable habitat²:
 - a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - b. Reduce well pad size to the minimum needed, without compromising safety,
 - c. Limit new access routes created by the project,
 - d. Roads and utilities should share common right-of-ways where possible,
 - e. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
 - f. Place signing to limit off-road travel in sensitive areas, and
 - g. Stay on designated routes and other cleared/approved areas.
 4. Within occupied habitat³, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
 - a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - b. Follow the above recommendations (#3) for project design within suitable habitats,
 - c. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged,
 - d. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas,
 - e. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from May 1st to June 5th (flowering period); dust abatement applications will be comprised of water only,
 - f. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - g. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population ; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - h. Construction activities will not occur from May 1st through June 5th within occupied habitat,

- i. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.),
 - j. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
 - k. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
 - l. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.
5. Occupied clay reed-mustard habitats within 300' of the edge of the surface pipelines' right of ways, 300' of the edge of the roads' right of ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the USFWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.
 6. Reinitiation of section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for the shrubby reed-mustard is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

L.1.9 LEASE NOTICE: SHRUBBY REED-MUSTARD (*SCHOENOCRAMBE (=GLAUCOCARPUM) SUFFRUTESCENS*)

The Lessee/Operator is given notice that the lands in this parcel contain suitable habitat for shrubby reed-mustard under the Endangered Species Act (ESA). The following avoidance and minimization measures have been developed to facilitate review and analysis of any submitted permits under the authority of this lease:

In order to minimize effects to the federally endangered shrubby reed-mustard, the BLM in coordination with the USFWS developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat¹⁰ prior to any ground disturbing activities to determine if suitable shrubby reed-mustard habitat is present.

¹⁰ *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

2. Within suitable habitat¹¹, site inventories will be conducted to determine occupancy. Inventories:
 - a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
 - b. Will be conducted in suitable and occupied¹² habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (April 15th to August 1st, unless extended by the BLM),
 - c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
 - d. Will include, but not be limited to, plant species lists and habitat characteristics, and
 - e. Will be valid until April 15th the following year.
3. Design project infrastructure to minimize impacts within suitable habitat²:
 - a. Reduce well pad size to the minimum needed, without compromising safety,
 - b. Limit new access routes created by the project,
 - c. Roads and utilities should share common right-of-ways where possible,
 - d. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
 - e. Place signing to limit off-road travel in sensitive areas, and
 - f. Stay on designated routes and other cleared/approved areas.
4. Within occupied habitat³, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
 - a. Follow the above (#3) recommendations for project design within suitable habitats,
 - b. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant,
 - c. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15th to May 30th (flowering period); dust abatement applications will be comprised of water only,
 - d. The edge of the well pad should be located at least 300' away from plants,
 - e. Surface pipelines will be laid such that a 300 foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring

¹¹ Suitable habitat is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain shrubby reed-mustard; habitat descriptions can be found in the Federal Register 52(193):37416-37420 and in the U.S. Fish and Wildlife Service's 1994 Utah Reed-Mustards Recovery Plan (<http://www.fws.gov/endangered/wildlife.html>).

¹² Occupied habitat is defined as areas currently or historically known to support shrubby reed-mustard; synonymous with "known habitat."

- techniques when the pipeline crosses the white shale strata to ensure the pipelines don't move towards the population,
- f. Construction activities will not occur from April 15th through May 30th within occupied habitat,
 - g. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.),
 - h. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
 - i. Designs will avoid concentrating water flows or sediments into occupied habitat,
 - j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
 - k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.
5. Occupied shrubby reed-mustard habitats within 300' of the edge of the surface pipeline right of ways, 300' of the edge of the road right of ways, and 300' from the edge of well pads shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the USFWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.
6. Reinitiation of section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for the shrubby reed-mustard is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

L.2 BLM-COMMITTED CONSERVATION MEASURES

BLM-committed conservation measures, which would be incorporated into the RMP, are binding species-specific measures intended to protect species, and minimize the potential for adverse impacts that may result from the implementation of BLM authorized activities on special status species. This is not a comprehensive list, in that other modified versions of these measures may be imposed for any BLM authorized activity following further analyses or reviews, and/or consultation and coordination with USFWS on specific actions.

L.2.1 COMMITTED MITIGATION IDENTIFIED IN CHAPTER 2 OF THE APPROVED RMP AND THOSE RESULTING FROM CONSULTATION ON EXISTING LAND USE PLANS

1. In consultation with USFWS and Utah Division of Wildlife Resources (UDWR), apply species-specific protective stipulations on federal actions to avoid or minimize adverse effects on federally listed, proposed, or candidate species or suitable habitat for the same species.
2. Maintain adequate baseline information regarding the extent of special status species to make informed decisions, evaluate the effectiveness of management actions, and assess progress toward recovery. Implement species-specific conservation measures to avoid or mitigate adverse impacts on known populations and their habitats of BLM special status plant and animal species on BLM administered lands.
3. In areas where multiple resources are potentially affected by surface disturbance (e.g., crucial-value wildlife habitat, livestock pastures, threatened and endangered and special status species habitat, and occupied wild horse and burro range), coordinate implementation of any offsite mitigation with other affected agencies and the overlapping resource values.
4. Cooperate with the USFWS, other agencies, and universities to develop plans for federally listed plant and animal species.
5. Work with the UDWR to identify and improve special status fish passage and habitat connectivity. Maintain or improve habitat for reintroduction of special status fish species to streams. Maintain special status plant species communities in natural patterns on a landscape scale.
6. Follow guidelines and implement management recommendations presented in species recovery or conservation plans or alternative management strategies developed in consultation with USFWS.
7. Use emergency actions where use threatens known communities of Special Status plant or animal species.
8. Prohibit surface disturbances that may affect listed species or critical habitat of plants or animals (T&E or Candidate) without consultation or conference (ESA Section 7) between the BLM and USFWS.
9. Continue to work with USFWS and others to ensure that plans and agreements are updated to reflect the latest scientific data.

L.2.2 SPECIES SPECIFIC BLM-COMMITTED CONSERVATION MEASURES

As part of the approved RMP, the BLM has included conservation measures to minimize or eliminate adverse impacts to federally listed species. These measures are listed by species and are extrapolated from the *Biological Opinion for the Existing Utah BLM RMP*, the *Amendment of Informal Oil & Gas Lease Sales Consultation (05-0215)* and the *Utah BLM RMP Biological Opinion (6-UT-07-F-0018) Conservation Measures*.

L.2.3 UTE LADIES'-TRESSES

In order to minimize effects to the federally threatened Ute ladies'-tresses, the BLM in coordination with the USFWS, developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the ESA. Ute ladies'-tresses habitat is provided some protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Although plants, habitat, or populations may be afforded some protection under these regulatory mechanisms, the following conservation measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area, including areas where hydrology might be affected by project activities, within potential habitat¹³ prior to any ground disturbing activities to determine if suitable habitat is present.
2. Within suitable habitat¹⁴, site inventories will be conducted to determine occupancy. Inventories:
 - a. Must be conducted by qualified individual(s) and according to BLM and USFWS accepted survey protocols;
 - b. Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance or areas that could experience direct or indirect changes in hydrology from project activities;
 - c. Will be conducted prior to initiation of project activities and within the same growing season, at a time when the plant can be detected, and during appropriate flowering periods (usually August 1st and August 31st in the Uinta Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or USFWS botanist or demonstrating that the nearest known population is in flower);
 - d. Will occur within 300 feet from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300 feet from the perimeter of disturbance for the proposed well pad including the well pad;
 - e. Will include, but not be limited to, plant species lists, habitat characteristics, source of hydrology, and estimated hydroperiod; and
 - f. Will be valid until August 1st the following year.

¹³ Potential habitat is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

¹⁴ Suitable habitat is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain . Habitat descriptions can be found in Recovery Plans and Federal Register Notices for the species at (<http://www.fws.gov/endangered/wildlife.html>).

3. Design project infrastructure to minimize direct or indirect impacts to suitable habitat both within and downstream of the project area:
 - a. Alteration and disturbance of hydrology will not be permitted;
 - b. Reduce well pad size to the minimum needed, without compromising safety;
 - c. Limit new access routes created by the project;
 - d. Roads and utilities should share common right-of-ways where possible;
 - e. Reduce width of right-of-ways and minimize the depth of excavation needed for the road bed;
 - f. Construction and right-of-way management measures should avoid soil compaction that would impact Ute ladies' tresses habitat;
 - g. Off-site impacts or indirect impacts should be avoided or minimized (i.e. install berms or catchment ditches to prevent spilled materials from reaching occupied or suitable habitat through either surface or groundwater);
 - h. Place signing to limit off-road travel in sensitive areas;
 - i. Stay on designated routes and other cleared/approved areas; and,
 - j. All disturbed areas will be re-vegetated with species approved by USFWS and BLM botanists.

4. Within occupied habitat¹⁵, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
 - a. Follow the above (#3) recommendations for project design within suitable habitats;
 - b. Buffers of 300 feet minimum between right of way (roads and surface pipelines) or surface disturbance (well pads) and plants and populations will be incorporated;
 - c. Surface pipelines will be laid such that a 300-foot buffer exists between the edge of the right-of-way and the plants, using stabilizing and anchoring techniques when the pipeline crosses habitat to ensure the pipelines don't move towards the population;
 - d. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.);
 - e. Where technically and economically feasible, use directional drilling or multiple wells from the same pad;
 - f. Designs will avoid altering site hydrology and concentrating water flows or sediments into occupied habitat;
 - g. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, with berms and catchment ditches to avoid or minimize the potential for materials to reach occupied or suitable habitat; and,
 - h. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

¹⁵ Occupied habitat is defined as areas currently or historically known to support; synonymous with "known habitat."

5. Occupied habitats within 300 feet of the edge of the surface pipelines' ROW, 300 feet of the edge of the roads' ROWs, and 300 feet from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Habitat impacts include monitoring any changes in hydrology due to project related activities. Annual reports shall be provided to the BLM and the USFWS. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the USFWS.
6. Reinitiation of Section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the USFWS to ensure continued compliance with the ESA.

L.2.4 UINTA BASIN HOOKLESS CACTUS (*SCLEROCACTUS GLAUCUS* [=*S. WETLANDICUS* AND *S. BREVISPINUS*])

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Uinta Basin hookless cactus (*Sclerocactus glaucus*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the USFWS.

1. Prior to surface disturbing activities in habitat for the species, presence/absence surveys of potentially affected areas will be conducted in accordance with established protocols.
2. Appropriate avoidance/protection/mitigation will be used to manage potential impacts of similar subsequent projects. These measures should include, but are not be limited to:
 - a. the stabilization of soils to minimize or avoid impacts related to soil erosion;
 - b. marking/flagging of suitable and/or occupied habitat (including predetermined buffers) prior to development to avoid trampling by crew members or equipment during disturbance related activities; and
 - c. require project proponents to conduct surveys and monitoring actions using BLM-approved specialists to document population effects and individual impacts.
3. BLM shall continue to document new populations of Uinta Basin hookless cactus as they are encountered.

4. To assist and support recovery efforts, BLM will minimize or avoid surface disturbances in habitats that support the species.
5. BLM will encourage and assist project proponents in development and design of their proposed actions in order to avoid direct disturbance to suitable habitat, populations, or individuals where feasible. Designs should consider water flow, slope, appropriate buffer distances, possible fencing needs, and pre-activity flagging of sensitive areas that are planned for avoidance.
6. BLM will consider emergency OHV closure or additional restrictions to protect, conserve, and recover the species.
7. In areas where dispersed recreational uses are identified as threats to populations of the species, BLM will consider the development of new recreational facilities/opportunities that concentrate dispersed recreational use away from habitat, especially occupied habitat.
8. Cultural and paleontological survey/recovery technicians (i.e., archeologists and/or paleontologists), conducting work in the vicinity of known populations, will be educated in the identification of listed species in order to avoid inadvertent trampling or removal during survey, mapping, or excavation of cultural or paleontological resources.
9. Areas of viable habitat, near populations considered for prescribed burning, will be surveyed according to established protocols for new or undocumented populations of the species.
10. Lands being considered for exchange or disposal that contain suitable habitat for the species will be surveyed for undocumented populations, according to established protocols, prior to approval of such disposal. Lands supporting populations shall not be disposed of unless it is determined that the action will not threaten the survival and recovery of the species in accordance with the ESA and BLM *Guidance and Policy Manual 6840 (Special Status Species Management)*.
11. The BLM will encourage the avoidance of key habitats during livestock herding and trailing activities on BLM-administered lands. (Key habitats are those that are deemed necessary for the conservation of the species including, but not necessarily limited to, designated critical habitat and other occupied or unoccupied habitats considered important for the species survival and recovery as determined in coordination with the USFWS).

L.2.5 CLAY REED-MUSTARD (*SCHOENOCRAMBE ARGILLACEA*)

In order to minimize effects to the federally threatened clay reed-mustard, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of

and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the Endangered Species Act (ESA). The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat¹⁶ prior to any ground disturbing activities to determine if suitable clay reed-mustard habitat is present.
2. Site inventories will be conducted within suitable habitat¹⁷ to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, "avoidance areas"); in such cases, in general, 300' buffers will be maintained between surface disturbance and avoidance areas. However, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat. Where conditions allow, inventories:
 - a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
 - b. Will be conducted in suitable and occupied¹⁸ habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same growing season, at a time when the plant can be detected (usually May 1st to June 5th, in the Uintah Basin; however, surveyors should verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower),
 - c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
 - d. Will include, but not be limited to, plant species lists and habitat characteristics, and
 - e. Will be valid until May 1st the following year.
3. Design project infrastructure to minimize impacts within suitable habitat²:
 - a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - b. Reduce well pad size to the minimum needed, without compromising safety,
 - c. Limit new access routes created by the project,

¹⁶ *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

¹⁷ *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard; habitat descriptions can be found in Federal Register Notice and species recovery plan links at <<http://www.fws.gov/endangered/wildlife.html>>.

¹⁸ *Occupied habitat* is defined as areas currently or historically known to support clay reed-mustard; synonymous with "known habitat."

- d. Roads and utilities should share common right-of-ways where possible,
 - e. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
 - f. Place signing to limit off-road travel in sensitive areas, and
 - g. Stay on designated routes and other cleared/approved areas.
4. Within occupied habitat³, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
- a. Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat (avoidance areas) and incorporate 300' buffers, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - b. Follow the above recommendations (#3) for project design within suitable habitats,
 - c. To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into the project design; appropriate placement of fill is encouraged,
 - d. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant and 300' from avoidance areas,
 - e. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from May 1st to June 5th (flowering period); dust abatement applications will be comprised of water only,
 - f. The edge of the well pad should be located at least 300' away from plants and avoidance areas, in general; however, site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - g. Surface pipelines will be laid such that a 300' buffer exists between the edge of the right of way and plants and 300' between the edge of right of way and avoidance areas; use stabilizing and anchoring techniques when the pipeline crosses suitable habitat to ensure pipelines don't move towards the population; site specific distances will need to be approved by FWS and BLM when disturbance will occur upslope of habitat,
 - h. Construction activities will not occur from May 1st through June 5th within occupied habitat,
 - i. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.),
 - j. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
 - k. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and
 - l. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.

5. Occupied clay reed-mustard habitats within 300' of the edge of the surface pipelines' right of ways, 300' of the edge of the roads' right of ways, and 300' from the edge of the well pad shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.
6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the shrubby reed-mustard is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

L.2.6 SHRUBBY REED-MUSTARD (*SCHOENOCRAMBE [=GLAUCOCARPUM] SUFFRUTESCENS*)

In order to minimize effects to the federally endangered shrubby reed-mustard, the Bureau of Land Management (BLM) in coordination with the U.S. Fish and Wildlife Service (Service) developed the following avoidance and minimization measures. Integration of and adherence to these measures will help ensure the activities carried out during oil and gas development (including but not limited to drilling, production, and maintenance) are in compliance with the Endangered Species Act (ESA). The following avoidance and minimization measures should be included in the Plan of Development:

1. Pre-project habitat assessments will be completed across 100% of the project disturbance area within potential habitat¹⁹ prior to any ground disturbing activities to determine if suitable shrubby reed-mustard habitat is present.
2. Within suitable habitat²⁰, site inventories will be conducted to determine occupancy. Inventories:
 - a. Must be conducted by qualified individual(s) and according to BLM and Service accepted survey protocols,
 - b. Will be conducted in suitable and occupied²¹ habitat for all areas proposed for surface disturbance prior to initiation of project activities and within the same

¹⁹ *Potential habitat* is defined as areas which satisfy the broad criteria of the species habitat description; usually determined by preliminary, in-house assessment.

²⁰ *Suitable habitat* is defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain shrubby reed-mustard; habitat descriptions can be found in the Federal Register 52(193):37416-37420 and in the U.S. Fish and Wildlife Service's 1994 Utah Reed-Mustards Recovery Plan (<http://www.fws.gov/endangered/wildlife.html>).

- growing season, at a time when the plant can be detected (April 15th to August 1st, unless extended by the BLM),
- c. Will occur within 300' from the centerline of the proposed right-of-way for surface pipelines or roads; and within 300' from the perimeter of disturbance for the proposed well pad including the well pad,
 - d. Will include, but not be limited to, plant species lists and habitat characteristics, and
 - e. Will be valid until April 15th the following year.
3. Design project infrastructure to minimize impacts within suitable habitat²:
 - a. Reduce well pad size to the minimum needed, without compromising safety,
 - b. Limit new access routes created by the project,
 - c. Roads and utilities should share common right-of-ways where possible,
 - d. Reduce the width of right-of-ways and minimize the depth of excavation needed for the road bed; where feasible, use the natural ground surface for the road within habitat,
 - e. Place signing to limit off-road travel in sensitive areas, and
 - f. Stay on designated routes and other cleared/approved areas.
 4. Within occupied habitat³, project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts to populations and to individual plants:
 - a. Follow the above (#3) recommendations for project design within suitable habitats,
 - b. Construction of roads will occur such that the edge of the right of way is at least 300' from any plant,
 - c. Roads will be graveled within occupied habitat; the operator is encouraged to apply water for dust abatement to such areas from April 15th to May 30th (flowering period); dust abatement applications will be comprised of water only,
 - d. The edge of the well pad should be located at least 300' away from plants,
 - e. Surface pipelines will be laid such that a 300 foot buffer exists between the edge of the right of way and the plants, use stabilizing and anchoring techniques when the pipeline crosses the white shale strata to ensure the pipelines don't move towards the population,
 - f. Construction activities will not occur from April 15th through May 30th within occupied habitat,
 - g. Before and during construction, areas for avoidance should be visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.),
 - h. Where technically and economically feasible, use directional drilling or multiple wells from the same pad,
 - i. Designs will avoid concentrating water flows or sediments into occupied habitat,
 - j. Place produced oil, water, or condensate tanks in centralized locations, away from occupied habitat, and

²¹ *Occupied habitat* is defined as areas currently or historically known to support shrubby reed-mustard; synonymous with "known habitat."

- k. Minimize the disturbed area of producing well locations through interim and final reclamation. Reclaim well pads following drilling to the smallest area possible.
5. Occupied shrubby reed-mustard habitats within 300' of the edge of the surface pipeline right of ways, 300' of the edge of the road right of ways, and 300' from the edge of well pads shall be monitored for a period of three years after ground disturbing activities. Monitoring will include annual plant surveys to determine plant and habitat impacts relative to project facilities. Annual reports shall be provided to the BLM and the Service. To ensure desired results are being achieved, minimization measures will be evaluated and may be changed after a thorough review of the monitoring results and annual reports during annual meetings between the BLM and the Service.
6. Reinitiation of section 7 consultation with the Service will be sought immediately if any loss of plants or occupied habitat for the shrubby reed-mustard is anticipated as a result of project activities.

Additional site-specific measures may also be employed to avoid or minimize effects to the species. These additional measures will be developed and implemented in consultation with the U.S. Fish and Wildlife Service to ensure continued compliance with the ESA.

L.2.7 MEXICAN SPOTTED OWL (*STRIX OCCIDENTALIS LUCIDA*)

The following list of measures provides species-specific guidance, intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Mexican spotted owl (*Strix occidentalis lucida*). This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of section 7 consultation with the Service.

1. BLM will place restrictions on all authorized (permitted) activities that may adversely affect the Mexican spotted owl in identified PACs, breeding habitat, or designated critical habitat, to reduce the potential for adverse impacts to the species. Restrictions and procedures have been adapted from guidance published in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (USFWS 2002b), as well as coordination between BLM and the Service. Measures include:
 - a. Surveys, according to USFWS protocol, will be required prior to any disturbance related activities that have been identified to have the potential to impact Mexican spotted owl, unless current species occupancy and distribution information is complete and available. All surveys must be conducted by USFWS certified individuals, and approved by the BLM authorized officer.

- b. Assess habitat suitability for both nesting and foraging using accepted habitat models in conjunction with field reviews. Apply the appropriate conservation measures below if project activities occur within 0.5 mile of suitable owl habitat, dependent in part on if the action is temporary²² or permanent²³:

For all temporary actions that may impact owls or suitable habitat:

- i. If action occurs entirely outside of the owl breeding season, and leaves no permanent structure or permanent habitat disturbance, action can proceed without an occupancy survey.
- ii. If action will occur during a breeding season, survey for owls prior to commencing activity. If owls are found, activity should be delayed until outside of the breeding season.
- iii. Eliminate access routes created by a project through such means as raking out scars, revegetation, gating access points, etc.

For all permanent actions that may impact owls or suitable habitat:

- i. Survey two consecutive years for owls according to established protocol prior to commencing of activity.
 - ii. If owls are found, no actions will occur within 0.5 mile of identified nest site.
 - iii. If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC).
 - iv. Avoid placing permanent structures within 0.5 mile of suitable habitat unless surveyed and not occupied.
 - v. Reduce noise emissions (e.g., use hospital-grade mufflers) to 45 dBA at 0.5 mile from suitable habitat, including canyon rims (Delaney et al. 1997). Placement of permanent noise-generating facilities should be determined by a noise analysis to ensure noise does not encroach upon a 0.5 mile buffer for suitable habitat, including canyon rims.
 - vi. Limit disturbances to and within suitable owl habitat by staying on designated routes.
 - vii. Limit new access routes created by the project.
2. The BLM will, as a condition of approval (COA) on any project proposed within identified PACs, designated critical habitat, or within spatial buffers for Mexican spotted owl nests (0.5 mile), ensure that project proponents are notified as to their responsibilities for rehabilitation of temporary access routes and other temporary

²² Temporary activities are defined as those that are completed prior to the start of the following raptor breeding season, leaving no permanent structures and resulting in no permanent habitat loss.

²³ Permanent activities continue for more than one breeding season and/or cause a loss of owl habitat or displaces owls through disturbances (e.g., creation of a permanent structure including but not limited to well pads, roads, pipelines, and electrical power lines).

- surface disturbances, created by their project, according to individual BLM Field Office standards and procedures, or those determined in the project-specific Section 7 Consultation.
3. The BLM will require monitoring of activities in designated critical habitat, identified PACs, or breeding habitats, wherein it has been determined that there is a potential for take. If any adverse impacts are observed to occur in a manner, or to an extent that was not considered in the project-specific Section 7 Consultation, then consultation must be reinitiated.
 - a. Monitoring results should document what, if any, impacts to individuals or habitat occur during project construction/implementation. In addition, monitoring should document successes or failures of any impact minimization, or mitigation measures. Monitoring results would be considered an opportunity for adaptive management, and as such, would be carried forward in the design and implementation of future projects.
 4. For all survey and monitoring actions:
 - a. Reports must be provided to affected field offices within 15 days of completion of survey or monitoring efforts.
 - b. Report any detection of Mexican spotted owls during survey or monitoring to the authorized officer within 48 hours.
 5. The BLM will, in areas of designated critical habitat, ensure that any physical or biological factors (i.e., the primary constituent elements), as identified in determining and designating such habitat, remains intact during implementation of any BLM-authorized activity.
 6. For all BLM actions that "*may adversely affect*" the primary constituent elements in any suitable Mexican spotted owl habitat, BLM will implement measures as appropriate to minimize habitat loss or fragmentation, including rehabilitation of access routes created by the project through such means as raking out scars, revegetation, gating access points, etc.
 7. Where technically and economically feasible, use directional drilling from single drilling pads to reduce surface disturbance, and minimize or eliminate needing to drill in canyon habitats suitable for Mexican spotted owl nesting.
 8. Prior to surface disturbing activities in Mexican spotted owl PACs, breeding habitats, or designated critical habitat, specific principles should be considered to control erosion. These principles include:
 - a. Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.

- b. Avoid surface disturbance in areas with high erosion hazards to the greatest extent possible. Avoid mid-slope locations, headwalls at the source of tributary drainages, inner valley gorges, and excessively wet slopes such as those near springs. In addition, avoid areas where large cuts and fills would be required.
 - c. Locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.
9. Project developments should be designed, and located to avoid direct or indirect loss or modification of Mexican spotted owl nesting and/or identified roosting habitats.
 10. Water production associated with BLM authorized actions should be managed to ensure maintenance or enhancement of riparian habitats.

L.2.8 BONYTAIL (*GILA ELEGANS*), COLORADO PIKEMINNOW (*PTYCHOCEILUS LUCIUS*), HUMPBACK CHUB (*GILA CYPHA*), AND RAZORBACK SUCKER (*XYRAUCHEN TEXANUS*)

The following list of measures provides species-specific guidance intended to avoid, minimize, or reduce potential adverse impacts from implementation of BLM actions under the authority of current Utah BLM LUPs on the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker, herein referred to as the Colorado River fishes. This list is not comprehensive. Additional conservation measures, or other modified versions of these measures, may be applied for any given BLM-authorized activity upon further analysis, review, coordination efforts, and/or appropriate levels of Section 7 consultation with the USFWS.

1. Monitoring of impacts of site-specific projects authorized by the BLM will result in the preparation of a report describing the progress of each site-specific project, including implementation of any associated reasonable and prudent measures or reasonable and prudent alternatives. This will be a requirement of project proponents and will be included as a condition of approval (COA) on future proposed actions that have been determined to have the potential for take. Reports will be submitted annually to the USFWS–Utah Field Office, beginning after the first full year of implementation of the project, and shall list and describe:
 - a. Any unforeseen direct or indirect adverse impacts that result from activities of each site-specific project;
 - b. Estimated levels of impact or water depletion, in relation to those described in the original project-level Consultation effort, in order to inform the USFWS of any intentions to reinstate Section 7 consultation; and,
 - c. Results of annual, periodic monitoring which evaluates the effectiveness of any site-specific terms and conditions that are part of the formal Consultation process. This will include items such as an assessment of whether

implementation of each site-specific project is consistent with that described in the BA, and whether the project has complied with terms and conditions.

2. The BLM shall notify the USFWS immediately of any unforeseen impacts detected during project implementation. Any implementation action that may be contributing to the introduction of toxic materials or other causes of fish mortality must be immediately stopped until the situation is remedied. If investigative monitoring efforts demonstrate that the source of fish mortality is not related to the authorized activity, the action may proceed only after notification of USFWS authorities.
3. Unoccupied, suitable habitat areas should be protected in order to preserve them for future management actions associated with the recovery of the Endangered Colorado River Fish, as well as approved reintroduction, or relocation efforts.
 - a. BLM will avoid impacts where feasible, to habitats considered most representative of prime suitable habitat for these species.
 - b. Surface-disturbing activities will be restricted within 1/4 mile of the channel centerline of the Colorado, Green, Duchesne, Price, White, and San Rafael Rivers.
 - c. Surface-disturbing activities proposed to occur within floodplains or riparian areas will be avoided unless there is no practical alternative or the development would enhance riparian/aquatic values. If activities must occur in these areas, construction will be designed to include mitigation efforts to maintain, restore, and/or improve riparian and aquatic conditions. If conditions could not be maintained, offsite mitigation strategies should be considered.
4. BLM will ensure project proponents are aware that designs must avoid as much direct disturbance to current populations and known habitats as is feasible. Designs should include:
 - a. protections against toxic spills into rivers and floodplains;
 - b. plans for sedimentation reduction;
 - c. minimization of riparian vegetation loss or degradation;
 - d. pre-activity flagging of critical areas for avoidance;
 - e. design of stream-crossings for adequate passage of fish; and,
 - f. measures to avoid or minimize impacts on water quality at the 25-year frequency runoff
5. Prior to surface-disturbing activities, specific principles will be considered to control erosion. These principles include:
 - a. Conduct long-range transportation planning for large areas to ensure that roads will serve future needs. This will result in less total surface disturbance.
 - b. Avoid, where possible, surface disturbance in areas with high erosion hazards.

- c. Avoid mid-slope location of drill pads, headwalls at the source of tributary drainages, inner valley gorges, excessively wet slopes such as those near springs and avoid areas where large cuts and fills would be required.
 - d. Design and locate roads to minimize roadway drainage areas and to avoid modifying the natural drainage areas of small streams.
6. Where technically and economically feasible, project proponents will use directional drilling or multiple wells from a single pad to reduce surface disturbance and eliminate drilling in suitable riparian habitat. Ensure that such drilling does not intercept or degrade alluvial aquifers. Drilling will not occur within 100 year floodplains that contain listed fish species or their designated critical habitats.
 7. The Utah Oil and Gas Pipeline Crossing Guidance (BLM National Science and Technology Center), or other applicable guidance, will be implemented for oil and gas pipeline river/stream crossings.
 8. In areas adjacent to 100-year floodplains, particularly in systems prone to flash floods, BLM will analyze the risk for flash floods to impact facilities. Potential techniques may include the use of closed loop drilling and pipeline burial or suspension as necessary to minimize the potential for equipment damage and resultant leaks or spills.
 9. Water depletions from any portion of the Upper Colorado River drainage basin above Lake Powell are considered to adversely affect the critical habitat of these endangered fish species. Section 7 consultation will be completed with the USFWS prior to any such water depletions.
 10. Design stream-crossings for adequate passage of fish (if present), minimum impact on water quality, and at a minimum, a 25-year frequency run-off.

L.3 CONSERVATION MEASURES FROM THE BIOLOGICAL OPINION FOR THE UTAH BLM LAND USE PLANS AMENDMENTS BA AND FIRE MANAGEMENT PLANS BAS

Firefighter and public safety is the first priority in every fire management activity. Setting priorities among protecting human communities, community infrastructure, other property and improvements, and natural and cultural resources must be based on the values to be protected, human health and safety, and costs of protection. The Applicant Committed Resource Protection Measures will apply to the species covered in this consultation, unless a threat to human life or property exists.

During the wildfire suppression activities, the Incident Commander has the final decision-making authority for suppression operations and tactics, including implementation of resource protection operations, thereby minimizing or avoiding many effects to federally protected species. However, in the event that measures cannot be implemented during fire suppression operations due to safety concerns, some effects may

occur to federally protected species. In these cases, BLM would initiate emergency consultation with the USFWS for these fire suppression efforts.

L.3.1 LAND USE PLAN AMENDMENT

The project proponent commits to the following resource protection measures as identified in the March 4, 2005 Biological Assessment. These measures have been developed as part of the proposed action to provide statewide consistency in reducing the effects of fire management activities on listed, proposed, and candidate species and their habitats. Resource protection measures for fire management practices use the following codes to represent which actions fit within each of the measures:

SUP: wildland fire suppression,

WFU: wildland fire use for resource benefit,

RX: prescribed fire,

NF: non-fire fuel treatments,

ESR: Emergency Stabilization and Rehabilitation

L.3.1.1 MEASURES DESIGNED TO PROTECT AIR QUALITY INCLUDE:

- A-1:** Evaluate weather conditions, including wind speed and atmospheric stability, to predict impacts from smoke from prescribed fires and wildland fire uses. Coordinate with Utah Department of Environmental Quality for prescribed fires and wildland fire use (RX, WFU).
- A-2:** When using chemical fuels reduction methods, follow all label requirements for herbicide application (NF).

L.3.1.2 MEASURES DESIGNED TO PROTECT SOIL AND WATER QUALITY INCLUDE:

- SW-1:** Avoid heavy equipment use on highly erosive soils (soils with low soil loss tolerance), wet or boggy soils and slopes greater than 30%, unless otherwise analyzed and allowed under appropriate NEPA evaluation with implementation of additional erosion control and other soil protection mitigation measures. (SUP, WFU, RX, NF, ESR)
- SW-2:** There may be situations where high intensity fire will occur on sensitive and erosive soil types during wildland fire, wildland fire use or prescribed fire. If significant areas show evidence of high severity fire, then evaluate area for soil erosion potential and downstream values at risk and implement appropriate or necessary soil stabilization actions such as mulching or seeding to avoid excessive wind and water erosion. (SUP, WFU, RX)
- SW-3:** Complete necessary rehabilitation on fire lines or other areas of direct soil disturbance, including but not limited to water barring fire lines, covering and mulching fire lines with slash, tilling and/or sub soiling compacted areas, scarification of vehicle tracks, OHV closures, seeding and/or mulching for erosion protection. (SUP, WFU, RX)

- SW-4:** When using mechanical fuels reduction treatments, limit tractor and heavy equipment use to periods of low soil moisture to reduce the risk of soil compaction. If this is not practical, evaluate sites, post treatment and if necessary, implement appropriate remediation, such as sub soiling, as part of the operation. (NF)
- SW-5:** Treatments such as chaining, plowing and roller chopping shall be conducted as much as practical on the contour to reduce soil erosion. (NF, ESR)
- SW-6:** When using chemical fuel reduction treatments follow all label directions, additional mitigations identified in project NEPA evaluation and the Approved Pesticide Use Permit. At a minimum, provide a 100-foot-wide riparian buffer strip for aerial application, 25 feet for vehicle application and 10 feet for hand application. Any deviations must be accordance with the label. Herbicides would be applied to individual plants within 10 feet of water where application is critical. (NF)
- SW-7:** Avoid heavy equipment in riparian or wetland areas. During fire suppression or wildland fire use, consult a Resource Advisor before using heavy equipment in riparian or wetland areas. (SUP, WFU, RX, NF, ESR)
- SW-8:** Limit ignition within native riparian or wetland areas. Allow low-intensity fire to burn into riparian areas. (RX)
- SW-9:** Suppress wildfires consistently with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] water bodies. Do not use retardant within 300 feet of water bodies. (SUP, WFU)
- SW-10:** Plan and implement projects consistent with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] water bodies. Planned activities should take into account the potential impacts on water quality, including increased water yields that can threaten fisheries and aquatic habitat; improvements at channel crossings; channel stability; and downstream values. Of special concern are small headwaters of moderate to steep watersheds, erosive or saline soils; multiple channel crossings; at-risk fisheries, and downstream residents. (RX, NF, ESR)

L.3.1.3 MEASURES DESIGNED TO PROTECT VEGETATION INCLUDE:

- V-1:** When restoring or rehabilitating disturbed rangelands, non-intrusive, non-native plant species are appropriate for use when native species:
- (1) are not available;
 - (2) are not economically feasible;
 - (3) cannot achieve ecological objectives as well as non-native species; and/or
 - (4) cannot compete with already established native species. (RX, NF, ESR)
- V-2:** In areas known to have weed infestations, aggressive action should be taken in rehabilitating fire lines, seeding and follow-up monitoring and treatment to reduce the spread of noxious weeds. Monitor burned areas and treat as

necessary. All seed used would be tested for purity and for noxious weeds. Seed with noxious weeds would be rejected. (SUP, WFU, RX, NF, ESR)

L.3.1.4 MEASURES DESIGNED TO PROTECT SPECIAL STATUS SPECIES (INCLUDING THREATENED AND ENDANGERED SPECIES) INCLUDE:

- SSS-1:** Initiate emergency Section 7 consultation with United States Fish and Wildlife Service (Service) upon the determination that wildfire suppression may pose a potential threat to any listed threatened or endangered species or adverse modification of designated critical habitat. (SUP)
- SSS-2:** Prior to planned fire management actions, survey for listed threatened, endangered, and non-listed sensitive species. Initiate Section 7 consultation with the Service as necessary if a proposed project may affect any listed species. Review appropriate management, conservation and recovery plans and include recovery plan direction into project proposals. For non-listed special status plant and animal species, follow the direction contained in the BLM 6840 Manual. Ensure that any proposed project conserves non-listed sensitive species and their habitats and ensure that any action authorized, funded, or carried out by BLM does not contribute to the need for any species to become listed. (RX, NF, ESR)
- SSS-3:** Incorporate site-specific conservation measures identified in this BA. (SUP, WFU, RX, NF, ESR)

L.3.1.5 MEASURES DESIGNED TO PROTECT FISH AND WILDLIFE RESOURCES INCLUDE:

- FW-1:** Avoid treatments during nesting, fawning, spawning, or other critical periods for wildlife or fish. (RX, NF, ESR)
- FW-2:** Avoid if possible or limit the size of, wildland fires in important wildlife habitats such as, mule deer winter range, riparian and occupied sage grouse habitat. Use Resource Advisors to help prioritize resources and develop Wildland Fire Situation Analyses (WFSAs) and Wildland Fire Implementation Analyses (WFSAs) and Wildland Fire Implementation Plans (WFIPs) when important habitats may be impacted. (SUP, WFU)
- FW-3:** Minimize wildfire size and frequency in sagebrush communities where sage grouse habitat objectives will not be met if a fire occurs. Prioritize wildfire suppression in sagebrush habitat with an understory of invasive, annual species. Retain unburned islands and patches of sagebrush unless there are compelling safety, private property and resource protection or control objectives at risk. Minimize burn out operations (to minimize burned acres) in occupied sage-grouse habitats when there are not threats to human life and/or important resources. (SUP)
- FW-4:** Establish fuel treatment projects at strategic locations to minimize size of wildfires and to limit further loss of sagebrush. Fuel treatments may include green stripping to help reduce the spread of wildfires into sagebrush communities. (RX, NF)

- FW-5:** Use wildland fire to meet wildlife objectives. Evaluate impacts to sage grouse habitat in areas where wildland fire use for resource benefit may be implemented. (WFU, RX)
- FW-6:** Create small openings in continuous or dense sagebrush (>30% canopy cover) to create a mosaic of multiple-age classes and associated understory diversity across the landscape to benefit sagebrush-dependent species. (WFU, RX, NF)
- FW-7:** On sites that are currently occupied by forests or woodlands, but historically supported sagebrush communities, implement treatments (fire, cutting, chaining, seeding, etc.) to re-establish sagebrush communities. (RX, NF)
- FW-8:** Evaluate and monitor burned areas and continue management restrictions until the recovering and/or seeded plant community reflect the desired condition. (SUP, WFU, RX, ESR)
- FW-9:** Utilize the Emergency Stabilization and Rehabilitation program to apply appropriate post fire treatments within crucial wildlife habitats, including sage grouse habitats. Minimize seeding with non-native species that may create a continuous perennial grass cover and restrict establishment of native vegetation. Seed mixtures should be designed to re-establish important seasonal habitat components for sage grouse. Leks should not be re-seeded with plants that change the vegetation heights previously found on the lek. Forbs should be stressed in early and late brood-rearing habitats. In situations of limited funds for emergency stabilization and rehabilitation actions, prioritize rehabilitation of sage grouse habitats. (ESR)

L.3.1.6 MEASURES DESIGNED TO PROTECT WILD HORSES AND BURROS INCLUDE:

- WHB-1:** Avoid fencing that would restrict access to water. (RX, NF, ESR)

L.3.1.7 MEASURES DESIGNED TO PROTECT CULTURAL RESOURCES INCLUDE:

- CR-1:** Cultural Resource Advisors should be contacted when fires occur in areas containing sensitive cultural resources. (SUP)
- CR-2:** Wildland fire use is discouraged in areas containing sensitive cultural resources. A Programmatic Agreement is being prepared between the Utah State Historic Preservation Office, BLM, and the Advisory Council to cover the finding of adverse effects to cultural resources associated with wildland fire use. (WFU)
- CR-3:** Potential impacts of proposed treatments should be evaluated for compliance with the National Historic Preservation Act (NHPA) and the Utah Statewide Protocol. This should be conducted prior to the proposed treatment. (RX, NF, ESR)

L.3.1.8 MEASURES DESIGNED TO PROTECT PALEONTOLOGY RESOURCES INCLUDE:

- P-1:** Planned projects should be consistent with BLM Manual and Handbook H-8270-1, Chapter III (A) and III (B) to avoid areas where significant fossils are

known or predicted to occur or to provide for other mitigation of possible adverse effects. (RX, NF, ESR)

- P-2:** In the event that paleontological resources are discovered in the course of surface fire management activities, including fires suppression, efforts should be made to protect these resources. (SUP, WFU, RX, NF, ESR)

L.3.1.9 MEASURES DESIGNED TO PROTECT FORESTRY RESOURCES INCLUDE:

- F-1:** Planned projects should be consistent with HFRA Section 102(e)(2) to maintain or contribute to the restoration of old-growth stands to a pre-fire suppression condition and to retain large trees contributing to old-growth structure. (SUP, WFU, RX, NF)
- F-2:** During planning, evaluate opportunities to utilize forest and woodland products prior to implementing prescribed fire activities. Include opportunities to use forest and woodland stands, consider developing silvicultural prescriptions concurrently with fuel treatments prescriptions. (RX, NF)

L.3.1.10 MEASURES DESIGNED TO PROTECT LIVESTOCK GRAZING RESOURCES INCLUDE:

- LG-1:** Coordinate with permittees regarding the requirements for non-use or rest of treated areas. (SUP, WFU, RX, NF, ESR)
- LG-2:** Rangelands that have been burned by wildfire, prescribed fire, or wildland fire use, would be ungrazed for a minimum of one complete growing season following the burn. (SUP, WFU, RX)
- LG-3:** Rangelands that have been re-seeded or otherwise treated to alter vegetation composition, chemically or mechanically, would be ungrazed for a minimum of two complete growing seasons. (RX, NF, ESR)

L.3.1.11 MEASURES DESIGNED TO PROTECT RECREATION AND VISITOR SERVICES INCLUDE:

- Rec-1:** Wildland fire suppression efforts would preferentially protect Special Recreation Management Areas and recreation site infrastructure in line with fire management goals and objectives. (SUP)
- Rec-2:** Vehicle tracks created off of established routes would be obliterated after fire management actions in order to reduce unauthorized OHV travel. (SUP, WFU, RX, NF, ESR)

L.3.1.12 MEASURES DESIGNED TO PROTECT LAND AND REALITY RESOURCES INCLUDE:

- LR-1:** Fire management practices would be designed to avoid or otherwise ensure the protection of authorized rights-of-way and other facilities located on the public lands, including coordination with holders of major rights-of-way systems within rights-of-way corridors and communication sites. (WFU, RX, NF, ESR)

LR-2: Fire management actions must not destroy, deface, change or remove to another place any monument or witness tree of the Public Land Survey System. (SUP, WFU, RX, NF, ESR)

L.3.1.13 MEASURES DESIGNED TO MINIMIZE IMPACTS CONFOUNDED BY HAZARDOUS WASTE INCLUDE:

HW-1: Recognize hazardous wastes and move fire personnel to a safe distance from dumped chemicals, unexploded ordnance, drug labs, wire burn sites, or any other hazardous wastes. Immediately notify BLM Field Office hazmat coordinator or state hazmat coordinator upon discovery of any hazardous materials, following the BLM hazardous materials contingency plan. (SUP, WFU, RX, NF, ESR)

L.3.1.14 MEASURES DESIGNED TO PROTECT MINERAL RESOURCES INCLUDE:

M-1: A safety buffer should be maintained between fire management activities and at-risk facilities. (SUP, WFU, RX)

L.3.1.15 MEASURES DESIGNED TO PROTECT WILDERNESS AND WILDERNESS STUDY AREAS (WSAs) INCLUDE:

Wild-1: The use of earth-moving equipment must be authorized by the field office manager. (SUP, WFU, RX, ESR)

Wild-2: Fire management actions would rely on the most effective methods of suppression that are least damaging to wilderness values, other resources and the environment, while requiring the least expenditure of public funds. (SUP, WFU)

Wild-3: A Resource Advisor should be consulted when fire occurs in Wilderness and WSAs. (SUP, WFU)

L.3.2 ADDITIONAL RESOURCE PROTECTION MEASURES

In addition to the Resource Protection Measures listed under the LUP, the Vernal Support Center has instituted the following measures into their FMP.

L.3.2.1 MEASURES DESIGNED TO PROTECT CULTURAL RESOURCES INCLUDE:

CR-4: The implementation of ground-disturbing wildland fire suppression activities and wildland fire use will be prohibited or curtailed in areas where significant and sensitive cultural resource sites are known or suspected to occur. The application of fire retardant will be prohibited in areas known or suspected to contain rock art. (SUP, WFU)

CR-5: If prudent and feasible, areas of traditional cultural concern to Native American groups will be protected during wildland fire suppression activities. If areas of traditional cultural concern are impacted by wildland fires or wildland fire suppression, the BLM would work with affected parties to mitigate impacts. (WFU, RX, SUP)

- CR-6:** If Native American human remains are discovered on BLM lands during wildland fire suppression, wildland fire use, prescribed fire, non-fire fuels treatments, and emergency stabilization and rehabilitation activities, the BLM will follow procedures identified in the Native American Graves Protection and Repatriation Act and 43 CFR Part 10. If BLM fire suppression activities or emergency stabilization and rehabilitation activities extend onto private or state land, and Native American human remains are discovered, the provisions of the appropriate state laws will be adhered to. (SUP, WFU, RX, NF, ESR)
- CR-7:** Previously unidentified cultural resources that are identified during the course of project implementation will be avoided until they are documented, evaluated, appropriate notification procedures have been accomplished, and proper management recommendations and requirements have been agreed upon. (SUP, WFU, RX, NF, ESR)

L.3.2.2 MEASURES DESIGNED TO PROTECT NATIVE AMERICAN RELIGIOUS CONCERNS INCLUDE:

- NAT-1:** Consultation will be completed on a site-by-site basis. (SUP, WFU, RX, NF, ESR)

L.3.2.3 MEASURES DESIGNED TO PROTECT WATER QUALITY INCLUDE:

- SW-4:** Plan and implement projects taking into account the potential impacts on water quality, including increased water yields that can threaten fisheries and aquatic habitat, improvements at channel crossings, channel stability, and downstream values. Of special concern are small headwaters of moderate to steep watersheds, erosive soils, multiple channel crossings, at-risk fisheries, and downstream residents. (SUP, WFU, RX, NF, ESR)

L.3.2.4 MEASURES DESIGNED TO PROTECT WILDERNESS AND WILDERNESS STUDY AREAS (WSAs) INCLUDE:

- Wild-4:** Minimum Impact Suppression Tactics (MIST) must be employed in the FMU to preserve the Wilderness Study Unit present. (SUP)
- Wild-5:** Restoration and rehabilitation techniques will be developed that are consistent with guidelines described in BLM Handbook 8550-1 Interim Management Policy for Lands under Wilderness Review. (ESR)

L.3.2.5 MEASURES DESIGNED TO PROTECT FISH AND WILDLIFE RESOURCES INCLUDE:

- FW-10:** Seed mixtures should be designed to reestablish important seasonal habitat components for sage grouse. Leks should not be reseeded with plants that change the vegetation height previously found on the lek. Forbs should be stressed in early and late brood-rearing habitats. In situations of limited funds for emergency stabilization and rehabilitation actions, prioritize rehabilitation of sage grouse habitats. (ESR)

FW-11: Vegetation treatments would consider the Western Association of Fish and Wildlife Agencies Guidelines for Management of Sage Grouse Populations and Habitats and State and Local Conservation Plans. This is in accordance with the Memorandum of Understanding among the Western Association of Fish and Wildlife Agencies, Forest Service, Bureau of Land Management, and U.S. Fish and Wildlife Service regarding sage grouse management. (WFU, RX, NF, ESR)

L.3.3 OTHER MANAGEMENT PRACTICES

Other Management Practices are specific measures and practices which are considered at the project-specific level, on a case by case basis. These practices should be implemented wherever possible, to reduce possible adverse affects, advance the protection, conservation, and recovery of special status species. The management practices would allow flexibility for resource managers to implement protective measures for special status species.

L.3.3.1 CULTURAL RESOURCES AND PALEONTOLOGICAL RESOURCES

Archeologists can be educated and taught how to identify special status species in order to avoid trampling during excavations and fence construction efforts.

L.3.3.2 ENERGY AND MINERAL DEVELOPMENT

Surface restrictions should be placed in and around known populations of special status species.

L.3.3.3 FIRE MANAGEMENT

Areas should also be analyzed when a wildfire determination is being made to either let it burn or suppress the fire.

L.3.3.4 FORESTRY AND WOODLANDS RESOURCE MANAGEMENT

Individuals obtaining permits for posts, firewood, and Christmas trees would be directed to areas that do not contain known occupied habitat of special status species.

L.3.3.5 LANDS AND REALTY MANAGEMENT

Road construction, maintenance and right-of-way corridors shall be restricted in known populations of special status species.

L.3.3.6 RECREATION

OHV use should be designated as limited to existing roads and trails where known special status species populations exist.

L.3.3.7 VEGETATION RESOURCE MANAGEMENT

The use of herbicides, chemical treatments and habitat manipulations should be restricted within special status species populations and habitat.

L.3.3.8 WILD HORSE AND BURRO MANAGEMENT

The herding and trapping of wild horses and burros in special status species populations and habitat should be avoided to reduce additional trampling caused by such activities.

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**APPENDIX M. UTAH PUBLIC LANDS STUDY—KEY SOCIAL SURVEY
FINDINGS FOR DAGGETT, DUCHESNE AND UINTAH COUNTIES**

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APPENDIX M. UTAH PUBLIC LANDS STUDY—KEY SOCIAL SURVEY FINDINGS FOR DAGGETT, DUCHESNE AND UINTAH COUNTIES

A statewide social survey was conducted by Utah State University in 2007 to assess the ways in which Utah residents use and value public land resources, and their views about public land management. Random samples of residential households were selected in each of the state's 29 counties. Sampled households were contacted by mail, and a randomly-selected adult from the household was asked to participate in the survey. Self-completion questionnaires were distributed to potential survey participants using a multiple-wave survey administration procedure. The discussion that follows is focused on key survey results obtained for Daggett County (n = 41 survey responses), Duchesne County (n = 108 survey responses), and Uintah County (n = 119 survey responses).¹

ECONOMIC LINKAGES TO PUBLIC LANDS

One major focus of the survey questionnaire involved assessment of the various ways in which Utahans may engage in economic activities that are linked directly or indirectly to public land resources in the state.

PERMIT-BASED ECONOMIC ACTIVITIES

As indicated in Table 1, only a minority of survey respondents in Daggett, Duchesne, or Uintah Counties reported that a portion of their household income is directly linked to activities that involve permitted uses of lands or resources administered by the U.S. Forest Service, the Bureau of Land Management (BLM), other federal agencies, or the State of Utah. In Daggett County reports of income derived from permit-based economic activities on public lands most often involved activities involving land administered by the Bureau of Land Management (12.2%). In Duchesne County these types of economic linkage to public lands were reported most often for activities involving land administered by the State of Utah (13.9%), followed by the Bureau of Land Management (11.1%). In Uintah County such linkages were most frequently reported for permit-based activities involving Bureau of Land Management lands (21.8%) and lands administered by the State of Utah (14.3%) Overall, these types of connections to public lands in Utah appear to be most prevalent among residents of Uintah County, and least prevalent among those living in Daggett County.

¹ The number of respondents for Daggett County is small in part because the commercial firm that provided random samples of residential mailing addresses for the statewide survey was able to identify only 183 potentially valid residential addresses in that county. In addition, 110 of the questionnaire packets that were mailed to addresses included in the sample were returned as undeliverable. As a result of this unexpectedly small sample size, results for Daggett County should be interpreted cautiously.

Table 1. Percentage of Survey Respondents Reporting that a Portion of Household Income is Directly Linked to Permitted Use of Public Lands or Resources

	Uintah County	Daggett County	Duchesne County
BLM	21.8%	4.9%	11.1%
Forest Service	12.2%	5.6%	8.4%
Other Federal Agency	0.0%	6.5%	7.6%
State of Utah	2.6%	13.9%	14.3%

The data reported in Table 2 reflect the percentage of respondents reporting these types of permit-based economic linkages to public lands who also indicated that 25% or more of their total household income is derived from those activities. Since in many cases the number of respondents reporting such economic linkages was small, these values are based on a limited number of cases and as a consequence need to be interpreted with caution. Nevertheless, it is clear that in all three of these counties the survey respondents who reported participation in permit-based economic activities on public lands often rely fairly heavily on those activities as sources of household income.

Table 2. Percentage of Survey Respondents Reporting Permit-based Economic Activities on Public Lands Who Indicated that 25% or More of Their Household Income is Derived from those Activities

	Uintah County	Daggett County	Duchesne County
BLM	88.5%	50.0%	75.0%
Forest Service	60.0%	66.7%	40.0%
Other Federal Agency	0.0%	67.1%	67.7%
State of Utah	100.0%	20.0%	52.9%

HOUSEHOLD PARTICIPATION IN SELECTED COMMERCIAL ACTIVITIES

The next series of questions asked respondents to indicate whether they or members of their households participate in any of a number of commercial activities that, while commonly associated with public land use, can involve the use of either public or private lands. Results summarized in Table 3 indicate that for any of these activities only a minority of survey respondents in Daggett, Duchesne or Uintah counties reported participation. Among Daggett County respondents the activities reported most frequently were participation in commercial firewood cutting (10% of responses), in oil and gas exploration or development (10%), and in miscellaneous other commercial activities (10.8%). In Duchesne County the activities identified most often included participation in oil and gas exploration or development (26.9%) and livestock grazing or related work (12.3%). In Uintah County the most commonly-reported commercial activities were participation in oil and gas exploration or development (31.4%), livestock grazing and related work (12.7%), and commercial firewood cutting (11.9%). On balance, the response patterns indicate that there is a higher level of engagement in most of these types of resource-based commercial activities among residents of Uintah County than is the case in either Daggett County or Duchesne County.

Table 3. Percentage Of Survey Respondents Reporting That They Or Members Of Their Households Participate In Selected Resource-based Commercial Activities, On Either Public Or Private Lands

	Daggett County	Duchesne County	Uintah County
Commercial firewood cutting	10.0%	5.6%	11.9%
Film making/commercial photography	0.0%	0.0%	0.8%
Livestock grazing and related work	2.5%	12.3%	12.7%
Logging, post & pole cutting, or other timber-related work	2.5%	3.7%	6.8%
Mining of coal, uranium or other solid minerals	0.0%	1.9%	5.2%
Mining of sand, gravel, or other construction materials	0.0%	4.7%	5.1%
Oil & gas exploration/development	10.0%	26.9%	31.4%
Operating an outfitting or guiding business	5.0%	1.9%	3.4%
Other commercial activities	10.8%	3.1%	2.8%

HOUSEHOLD INVOLVEMENT IN BUSINESSES LINKED TO RECREATION/TOURISM

Survey respondents were also asked whether they or any member of their household operates or works at a business linked to recreation or tourism activity that is influenced by the presence of public lands and resources. The percentage of respondents indicating involvement in such businesses was highest in Daggett County (22.5%). In contrast, relatively few survey respondents from either Duchesne County (8.3%) or from Uintah County (8.0%) said “yes” to this question. When asked to assess how important activities and uses linked to public lands are to the success of this business, over three-fourths (77.8%) of Daggett County respondents, over one-fifth (22.2%) of Duchesne County respondents, and over two-fifths (44.4%) of Uintah County respondents who did report involvement in such businesses said that the influence of public lands is “extremely important.”

HOUSEHOLD INVOLVEMENT IN BUSINESSES LINKED TO COMMODITY PRODUCTION

A similar question asked about the involvement of survey participants and members of their households in business that provide services and supplies to farming or ranching operations, logging firms, or other commercial enterprises that use or process natural resources located on public lands. Not a single respondent from Daggett County reported this type of economic linkage involving their household. One out of ten (10.2%) respondents from Duchesne County and two out of ten (21.2%) respondents from Uintah County reported that they or a household member was involved in some way with this type of business.

OWNERSHIP OF PROPERTY OR ASSETS WITH VALUES INFLUENCED BY NEARBY PUBLIC LANDS

When asked whether they own land, buildings, or other assets that they believe have a monetary value that is significantly influenced by the presence and condition of nearby public lands, 67.5% of Daggett County respondents, 29.6% of Duchesne County respondents, and 18.4% of Uintah County respondents said “yes.” Those who did perceive the existence of such a relationship were then asked to identify specific types of assets that they own and that they believe have a value influenced by the close proximity of public lands. Respondents in all three of these counties most frequently cited their permanent residential property (63.4% in Daggett County, 20.4% in Duchesne County, and 9.2% in Uintah County).

PERCEIVED IMPORTANCE OF PUBLIC LANDS FOR OVERALL QUALITY OF LIFE

Survey participants were also asked to report how important they think fifteen different types of public land resources and resource uses are for the overall quality of life experienced by people living in their communities. Table 4 summarizes response patterns to this series of questions for Daggett, Duchesne and Uintah counties, with a focus on the percentage of respondents from each county who indicated that they consider a particular type of resource use to be “very important” for local quality of life.

Table 4. Percentage Of Survey Respondents Indicating That Selected Public Land Resource Uses Are “Very Important” To The Overall Quality Of Life In Their Community

	Daggett County	Duchesne County	Uintah County
Grazing of livestock on public lands	68.4%	77.0%	67.3%
Water resources used to irrigate crops and pastures	84.2%	95.1%	94.5%
Water resources used to supply homes and businesses	90.0%	80.8%	90.3%
Water resources that provide important fish/wildlife habitat	87.5%	79.6%	75.9%
Energy resources such as oil, gas, coal or uranium	55.3%	81.2%	83.0%
Sand, gravel or other minerals used in building and construction industries	32.4%	37.4%	46.8%
Forested areas that provide timber used by logging operations and lumber mills	57.9%	45.9%	47.7%
Areas where trees or other vegetation provide important wildlife habitat	82.1%	69.2%	72.1%
Areas that attract tourism and recreational activity	82.1%	55.4%	57.1%
Opportunities to enjoy off-road vehicles, snowmobiling, or other motorized recreation	61.5%	39.2%	60.9%

Table 4. Percentage Of Survey Respondents Indicating That Selected Public Land Resource Uses Are “Very Important” To The Overall Quality Of Life In Their Community

	Daggett County	Duchesne County	Uintah County
Opportunities to enjoy hiking, backpacking, cross-country skiing, horseback riding, or other types of non-motorized recreation	66.7%	56.7%	55.5%
Opportunities to hunt for wild game	80.0%	65.0%	66.7%
Opportunities to fish in area lakes, streams and rivers	95.0%	74.0%	70.5%
Undeveloped landscapes where motorized access and resource development are restricted	47.2%	46.5%	40.8%
Areas managed to maintain biodiversity and protect habitat for sensitive or important plants or wildlife	44.7%	35.6%	42.2%

In Daggett County only three of the fifteen types of public land resource use presented in this question were considered “very important” by fewer than one-half of respondents (sand/gravel or other construction-related mineral development, undeveloped landscapes where motorized access and development are restricted, and areas managed to maintain biodiversity and protect plant or wildlife habitat). At the same time, over three-fourths of Daggett County respondents considered water resources used to irrigate crops and pastures, water resources used to supply homes and businesses, water resources used to supply fish and wildlife habitat, areas where trees or other vegetation provide important wildlife habitat, areas that attract tourism and recreation opportunity, opportunities to hunt for wild game, and opportunities to fish in area lakes, streams and rivers to be “very important” to the local quality of life.

In Duchesne County five of these resource uses were considered “very important” by fewer than one-half of respondents (sand/gravel or other construction-related mineral development, timber production, opportunities to enjoy off-road vehicles, snowmobiling, or other motorized recreation, undeveloped landscapes where motorized access and resource development are restricted, and areas managed to maintain biodiversity and to protect habitat). Conversely, five resource uses – grazing of livestock on public lands, water resources used to irrigate crops and pastures, water resources used to supply homes and businesses, water resources used to provide important fish and wildlife habitat, and energy resources such as oil, gas, coal or uranium -- were considered “very important” to the local quality of life by more than three-fourths of Duchesne County respondents.

Four of the resource uses included in this list were considered to be “very important” to the overall quality of life by fewer than one-half of respondents living in Uintah County (sand/gravel or other construction-related mineral development, timber production, undeveloped landscapes where motorized access and resource development are restricted, and areas managed to maintain biodiversity and to protect habitat). Four of the resource uses included in the list -- water resources used to irrigate crops and pastures, water resources used to supply homes and businesses, water resources used to provide important fish and wildlife habitat, and energy

resources such as oil, gas, coal or uranium -- were considered to be very important by more than three-fourths of Uintah County respondents.

RECREATIONAL USES OF PUBLIC LANDS

Survey participants were also asked to report whether they had participated in any of a broad range of outdoor recreation activities and other non-commodity use activities on Utah public lands during the prior twelve months. Results from this series of questions are reported in Table 5 and Table 6. These findings clearly indicate that there is widespread participation in many of these public land activities among residents of Daggett, Duchesne, and Uintah Counties.

Table 5 reports the extent of reported participation in thirty different outdoor recreation activities. Among survey participants living in Daggett County, more than one-half reported participation in ten of these activities -- camping, picnicking, day hiking, bird watching, wildlife viewing, nature photography, motor boating, fishing, visiting historical sites, and driving for pleasure/sightseeing on public lands -- during the preceding twelve months. In Duchesne County over half of respondents reported that they had participated in six of these activities -- camping, picnicking, wildlife viewing, fishing, visiting historical sights, and sightseeing/driving for pleasure. One-half or more of Uintah County respondents reported participation during the prior 12 months in nine of the activities -- camping, picnicking, day hiking, wildlife viewing, hunting, fishing, visiting historical sites, ATV riding, and driving for pleasure/sightseeing on public lands.

Table 5. Percentage Of Survey Respondents Reporting Participation In Selected Recreation Activities On Utah Public Lands During The Past Twelve Months

	Daggett County	Duchesne County	Uintah County
4-wheel driving/jeeping	40.0%	20.2%	39.3%
ATV riding	39.0%	31.7%	50.0%
Backcountry skiing/snowboarding	7.7%	5.9%	1.9%
Backpacking	23.1%	19.6%	17.3%
Bird watching	53.8%	26.5%	29.0%
Camping	68.3%	64.5%	75.4%
Canoeing/kayaking	15.4%	5.9%	10.2%
Day hiking	72.5%	41.0%	54.9%
Dirt bike riding	7.7%	3.9%	15.7%
Fishing	82.9%	60.6%	67.8%
Hang gliding	0.0%	1.9%	0.0%
Horseback riding	20.5%	26.2%	24.8%
Hunting	43.9%	39.4%	52.6%
Jet skiing	7.7%	3.9%	8.3%
Motor boating	56.1%	20.4%	40.2%
Mountain bike riding	27.5%	9.6%	13.8%
Mountain climbing	17.5%	15.2%	17.4%

Table 5. Percentage Of Survey Respondents Reporting Participation In Selected Recreation Activities On Utah Public Lands During The Past Twelve Months

	Daggett County	Duchesne County	Uintah County
Nature photography	61.5%	33.7%	40.2%
Orienteering/geo-caching	7.7%	6.9%	7.5%
Picnicking	82.5%	75.0%	79.7%
Resort skiing/snowboarding	12.8%	11.5%	6.5%
River rafting	47.5%	9.8%	26.1%
Rock climbing	12.8%	9.5%	15.6%
Rock hounding	27.5%	25.2%	27.8%
Sightseeing/pleasure driving	85.4%	79.6%	81.9%
Snowshoeing	7.7%	5.8%	4.7%
Snowmobiling	17.9%	9.7%	13.8%
Swimming	45.0%	24.3%	47.8%
Visiting historical sites	70.7%	55.1%	64.9%
Wildlife viewing	82.5%	61.3%	72.6%

Table 6. Percentage Of Survey Respondents Reporting Participation In Selected Non-commodity Use Activities On Utah Public Lands During The Past Twelve Months

	Daggett County	Duchesne County	Uintah County
Collecting firewood for home use	67.5%	26.2%	23.9%
Collecting fossils, rocks or minerals	25.6%	20.4%	22.0%
Collecting material for craft projects	35.0%	16.7%	21.8%
Collecting plants for home landscaping	12.5%	6.9%	9.2%
Collecting rocks for home landscaping	50.0%	26.7%	33.3%
Cutting Christmas trees	37.5%	21.4%	36.0%
Gathering berries, herbs or wild foods	5.1%	8.9%	12.8%
Gathering pinyon nuts	10.3%	14.7%	13.6%
Gathering wild mushrooms	5.1%	1.0%	0.9%

Responses to a question focusing on participation in a variety of non-commodity use activities on public lands are summarized in Table 6. Among this list of activities, Daggett County respondents were most likely to report that they participate in collection firewood for home use, collecting rocks for home landscaping, cutting Christmas trees, collecting materials for craft projects, and collecting fossils, rocks or minerals. In Duchesne County the activities identified most often included collecting rocks for home landscaping, collecting firewood for home use, cutting Christmas trees, and collecting fossils, rocks or minerals. In Uintah County respondents most frequently indicated participation in cutting Christmas trees, collecting rocks for home

landscaping, collecting firewood for home use, collecting material for craft projects, and collecting fossils, rocks or other minerals from public land areas.

Respondents were also asked to identify the one or two activities from the lists presented in these questions that they participate in most often, and to provide detail on where they engage in those activities. Among Daggett County respondents the first of these activities listed by respondents most often involved fishing (35.0% of responses), followed by camping (10.0%). In Duchesne County the first listed activity most often involved camping (29.5% of responses), followed by fishing (13.7%). In Uintah County the activities listed most frequently were camping (29.2% of responses), fishing (12.3%), and sightseeing/pleasure driving (11.3%). When asked to indicate where they participate in the first-listed of their “most frequently pursued” activities, 95% of Daggett County respondents, 74.5% of Duchesne County respondents, and 86.3% of Uintah County respondents who answered the question identified a location within the county where they live.

ATTITUDES AND PREFERENCES REGARDING PUBLIC LAND MANAGEMENT

Two similar sets of survey questions focused on respondents’ attitudes and preferences regarding the extent to which various natural resource use activities or management practices should be reduced or increased by those responsible for managing public lands in Utah. Response patterns to these questions are summarized in Table 7 and Table 8.

The data presented in Table 7 indicate that Daggett County respondents were considerably more likely to prefer an increase rather than a decrease in timber harvest levels, protection of important fish and wildlife habitat, thinning of forested areas to reduce wildfire risk, and development of water storage and delivery systems on Utah public lands. On the other hand, attitudes were more evenly split between preferences for reducing and preferences for increasing mineral exploration/extraction, designation of wilderness areas, exploration for and development of oil and gas resources, livestock grazing, and designation of wild and scenic rivers. Daggett County respondents were also considerably more likely to prefer a reduction rather than an increase in management efforts to protect endangered species.

Among Duchesne County residents respondents were more considerably likely to prefer an increase rather than a decrease in mineral exploration/extraction, timber harvest, oil and gas development, protection of fish and wildlife habitat, use of controlled burns to improve ecological conditions, thinning of forested areas to reduce wildfire risk, livestock grazing, and development of water storage and delivery systems. To a lesser extent they also were more likely to see an increase rather than a decrease in protection of endangered species and designation of wild and scenic rivers, yet at the same time they were more likely to prefer a reduction as opposed to an increase in designation of wilderness areas.

Uintah County respondents were considerably more likely to express a preference for an increase rather than a decrease in public land management that would involve mineral exploration/extraction, timber harvest, exploration for/development of oil and gas resources, protection of fish and wildlife habitat, use of controlled burns to improve ecological conditions, thinning of forested areas to reduced wildfire risk, livestock grazing, and development of water

storage and delivery systems. They were somewhat more likely to prefer a reduction as opposed to an increase in designation of wilderness areas, protection of endangered species, and designation of wild and scenic rivers.

Results summarized in Table 8 indicate that Daggett County respondents were more likely to prefer an increase rather than a reduction in provision of road access to recreation areas, provision of hunting opportunities, development of trails for non-motorized recreation, regulations that restrict motorized vehicles to designated trails, regulations to limit noise and emissions from snowmobiles and ATVs, and development of visitor facilities that would encourage an increase in tourism levels. In Duchesne County respondents were considerably more likely to prefer an increase rather than a decrease in provision of road access to recreation areas, provision of hunting opportunities, development of trails for non-motorized recreation, regulations that require motorized vehicles to stay on designated trails, regulations that limit levels of noise and emissions from snowmobiles and ATVs, and development of visitor facilities that would encourage increased tourism. In Uintah County, responses indicated a stronger preference for increases rather than decreases in provision of road access to recreation areas, provision of hunting opportunities, development of trails for off-highway motorized recreation, development of trails for non-motorized recreation, implementation of regulations that would require motorized vehicles to remain on designated trails, implementation of noise and emission regulations for snowmobiles and ATVs, and development of facilities to attract increased tourism.

Table 7. Survey Respondents’ Attitudes Regarding The Extent To Which Various Activities Occurring On Utah Public Land Should Be Reduced Or Increased*

	Daggett County		Duchesne County		Uintah County	
	Reduce	Increase	Reduce	Increase	Reduce	Increase
Designation of wild and scenic rivers	30.8%	30.8%	19.1%	29.7%	25.0%	18.5%
Designation of wilderness areas	27.5%	32.5%	31.3%	21.9%	34.6%	21.5%
Developing water storage and delivery systems to meet needs of nearby communities	5.0%	52.5%	3.0%	77.8%	2.8%	73.1%
Exploration for/development of oil and gas resources	22.5%	30.0%	12.4%	45.4%	13.4%	55.3%
Livestock grazing	25.6%	20.5%	9.1%	30.3%	9.3%	32.7%
Mineral exploration/extraction	25.6%	25.6%	7.3%	40.6%	14.7%	43.1%
Protection of endangered species	40.0%	27.5%	23.5%	30.6%	34.8%	25.0%
Protection of important fish and wildlife habitat	10.2%	53.9%	9.2%	52.0%	7.2%	46.8%

Table 7. Survey Respondents’ Attitudes Regarding The Extent To Which Various Activities Occurring On Utah Public Land Should Be Reduced Or Increased*

	Daggett County		Duchesne County		Uintah County	
	Reduce	Increase	Reduce	Increase	Reduce	Increase
Thinning of forested areas to reduce wildfire risk	10.0%	65.0%	10.1%	53.5%	4.6%	60.2%
Timber harvest	12.5%	32.5%	13.5%	29.2%	16.7%	40.7%
Use of controlled burns to improve ecological conditions	35.0%	30.0%	15.8%	29.5%	7.4%	46.3%

* Original response categories were “major reduction” and “moderate reduction” (combined to create “reduce”) and “major increase” and “minor increase” (combined to create “increase”). “Stay about the same” responses not reported here.

Table 8. Survey Respondents’ Attitudes Regarding The Extent to Which The Emphasis Placed On Various Activities Occurring On Utah Public Land Should Be Reduced Or Increased By Public Land Managers*

	Daggett County		Duchesne County		Uintah County	
	Reduce	Increase	Reduce	Increase	Reduce	Increase
Developing visitor facilities to increase tourism	20.0%	37.5%	14.9%	38.6%	12.8%	42.2%
Developing trails for hiking, biking, and other non-motorized recreation	10.0%	47.5%	10.6%	43.3%	8.3%	46.8%
Developing trails for off-highway motorized recreation	32.5%	30.0%	30.1%	32.0%	17.4%	44.0%
Permitting of commercial guiding or outfitter services	28.2%	10.3%	16.2%	18.2%	20.8%	10.3%
Providing hunting opportunities	12.8%	33.3%	10.6%	27.8%	7.5%	47.7%
Providing road access to recreation areas	15.0%	35.0%	12.7%	40.2%	7.3%	41.8%
Regulations that require motorized vehicles to stay on designated trails	5.0%	55.0%	9.7%	49.5%	13.5%	45.9%
Regulations that limit levels of noise and emissions from snowmobiles and ATVs	15.4%	46.1%	16.2%	45.4%	21.1%	42.4%

* Original response categories were “major reduction” and “moderate reduction” (combined to create “reduce”) and “major increase” and “minor increase” (combined to create “increase”). “Stay about the same” responses not reported here.

"The State of Utah Public Lands Policy Coordination Office has asked that BLM refer readers to its website at **<http://governor.utah.gov/publiclands>** where it posts updated State of Utah socioeconomic information from time to time. The BLM does not participate in collecting or compiling this information. For purposes of this PRMP/FEIS, BLM has only relied on information specifically cited in the PRMP/FEIS text and included in this Appendix."

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**APPENDIX N. U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL
OPINION COVER LETTER (BO AVAILABLE ON CD)**

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PROJECT FILE



United States Department of the Interior FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

SURNAME

October 23, 2008

In Reply Refer To
FWS/R6
ES/UT
08-F-0057
6-UT-08-F-0025

Memorandum

To: Field Office Manager, Bureau of Land Management, Vernal Field Office, 170 South 500 East Vernal, UT 84078

From: Utah Field Supervisor, U.S. Fish and Wildlife Service, Ecological Services, West Valley City, Utah

Subject: Biological Opinion for BLM Resource Management Plan (RMP), Vernal Field Office (VFO)

This document transmits the U.S. Fish and Wildlife Service's (USFWS) Biological Opinion based on our review of potential activities described under the Resource Management Plan of the Utah Bureau of Land Management (BLM) Vernal Field Office (VFO) and their potential effects on the federally threatened Mexican spotted owl (*Strix occidentalis lucida*), Canada lynx (*Lynx canadensis*), Ute ladies'-tresses (*Spiranthes diluvialis*), Uinta Basin hookless cactus (*Sclerocactus glaucus*) and clay reed-mustard (*Schoenocrambe argillacea*); and federally endangered black-footed ferret (*Mustela nigripes*), bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), razorback sucker (*Xyrauchen texanus*) and shrubby reed-mustard (*Schoenocrambe suffrutescens*) in accordance with Section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Critical habitat was designated for the Mexican spotted owl on February 01, 2001 and was re-designated August 31, 2004 (66 FR 8530, 69 FR 53181). Critical habitat was designated for the listed Colorado fish (Colorado pikeminnow, humpback chub, bonytail, and razorback sucker) March 21, 1994 (59 FR 13374). Your August 22, 2008 request for formal consultation for all aforementioned species was received on August 25, 2008.

Vernal FO BLM Resource Management Plan proposed activities are categorized into the following 18 programs:

- Air Quality
- Cultural Resources
- Paleontological Resources
- Fire and Fuels Management

Lands and Realty Management
Livestock and Grazing Management
Minerals and Energy Resources
Recreation and Travel Management
Riparian and Wetland Resources
Soil and Water Resources
Special Designations Areas
Special Status Species Management
Vegetation Resources Management
Visual Resources Management
Wild Horse Management
Wildlife and Fisheries Management
Woodlands and Forestry Management
Non-WSA Lands with Wilderness Characteristics

This Biological Opinion and Conference Opinion is based on information provided in the August 22nd Biological Assessment, personal communications between the USFWS biologists and the BLM biologists, telephone conversations, email correspondence, conference calls, planning meetings, and other sources of information. A complete administrative record of this consultation is on file at this office.

Consultation History

This section summarizes significant steps in the consultation process. Additional correspondence, and email transmissions, that occurred between May 8, 2008, and September 25, 2008 are documented in the administrative record for this consultation.

- March 5, 2008: BLM electronically sent a draft Biological Assessment for the Vernal BLM Field Office Resource Management Plan to the USFWS for review;
- March 2008 through August 21, 2008: The USFWS reviewed and provided comments on the draft Biological Assessment;
- August 25, 2008: We received the final version of the VFO Biological Assessment and began formal consultation.

**APPENDIX O. LETTER FROM THE STATE OF UTAH REGARDING AIR
QUALITY MITIGATION STRATEGIES**

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State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

June 6, 2008

Selma Sierra
State Director
BLM Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

Dear Director Sierra:

This letter addresses air quality mitigation strategies for the six proposed Resource Management Plans being updated within the State of Utah. The state appreciates BLM's interest in this important issue.

It is the policy of the State of Utah to protect public health and the environment from the harmful effects of air pollution, to ensure that the air in Utah meets standards established under federal and state law, and to maintain an environment that is conducive to continued economic vitality and growth.

The Department of Interior monitors ozone at National Parks in the intermountain west, including: Mesa Verde National Park in Colorado, Grand Canyon National Park in Arizona, Great Basin National Park in Nevada, and Canyonlands National Park in Utah. These sites reflect conditions in areas that have not been subject to intensive development and are therefore generally indicative of background conditions. Monitoring data at these locations demonstrates a gradual upward trend in ozone levels, raising questions about ozone levels region-wide. The state believes additional information is needed regarding current conditions and the potential impacts from increasing development activity, including oil and gas activity. This information should inform future BLM decision making, but managers should not defer management actions in anticipation of better information.

Fortunately, ozone related impacts can be reduced if certain mitigation measures are required on new oil and gas related emission sources. In fact, several neighboring states currently encourage application of just such measures. BLM should include interim nitrogen oxide control measures provided by the state as a required condition of lease approval. These control measures are consistent with control measures suggested by neighboring states and jurisdictions. The state recognizes that performance standards will continue to evolve and supports technological flexibility, provided control measures are at least as effective as those in place elsewhere within the region at the time of site-specific authorization. Performance standards representing the current regional standard can be found in the *Four Corners Air*

Quality Task Force Report of Mitigation Options, DRAFT: Version 7, June 22, 2007. These standards are 2 g/bhp-hr for engines less than 300 HP and 1 g/bhp-hr for engines over 300 HP.

The State of Utah will continue to work with the BLM and others through efforts such as the Four Corners Task Force to address these issues. The state appreciates your cooperation in working to protect air quality related values. If you have any questions about our position, please contact me at (801) 537-9802.

Sincerely,

John Harja
Director
Public Lands Policy Coordination
5110 State Office Building
Salt Lake City, Utah 84114-1107
(801) 537-9802

Cheryl Heying
Director
Division of Air Quality
150 North, 1950 West
Salt Lake City, Utah 84114
(801) 536-4000

**APPENDIX P. STATE HISTORIC PRESERVATION OFFICE (SHPO)
CONSULTATION LETTER**

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State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

Department of Community and Culture

PALMER DePAULIS
Executive Director

State History

PHILIP F. NOTARIANNI
Division Director

July 17, 2008

Blaine Phillips
Bureau of Land Management
Vernal Field Office
170 South 500 East
Vernal UT 84078

RE: Vernal Field Office RMP

In reply, please refer to Case No. 08-0528

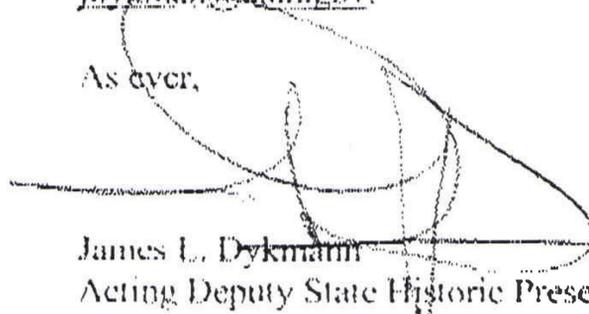
Dear Mr. Phillips:

The Utah State Historic Preservation Office received your request for our comment on the above referenced project.

We concur with your determinations made by BLM in the Vernal Field Office RMP. [Reference BLM Letter May 21, 2008: 8141 UT-082].

This letter serves as our comment on the determinations you have made, within the consultation process specified in §36CFR800.4. If you have questions, please contact me at (801) 533-3555 or jdykman@utah.gov.

As ever,


James L. Dykman
Acting Deputy State Historic Preservation Officer - Archaeology

STATE
HISTORY

UTAH STATE HISTORICAL SOCIETY
ARCHIVES
HISTORIC PRESERVATION
BUSINESS CENTER & OFFICE BLDG.

300 S. RIO GRANDE STREET, SALT LAKE CITY, UT 84101-1182 TELEPHONE 801 533-3500 FACSIMILE 801 533-3504 HISTORY@NHSC.GOV

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APPENDIX Q. APPROVED RMP MONITORING PLAN

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APPENDIX Q. APPROVED RMP MONITORING PLAN

Monitoring is the repeated observation and measurement of activities and conditions over time. BLM planning regulations (43 CFR Part 1610.4-9) call for monitoring resource management plans on a continual basis and establishing intervals and standards based on the sensitivity of the resource to the decisions involved. CEQ regulations implementing NEPA state that agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases (40 CFR Part 1505.2(c)). There are three types of monitoring. These include implementation, effectiveness, and validation monitoring.

- *Implementation Monitoring* – This type of monitoring is the most basic type and simply determines whether planned activities have been implemented in the manner prescribed by the plan. It may be called compliance monitoring. It documents BLM's progress toward full implementation of the land use plan decision. There are no specific thresholds or indicators required for this type of monitoring.
- *Effectiveness Monitoring* – The monitoring is aimed at determining if the implementation of activities has achieved the desired goals and objectives. Effectiveness monitoring asks the question: Was the specified activity successful in achieving the objective? This requires knowledge of the objectives established in the RMP as well as indicators that can be measured. Indicators are established by technical specialists in order to address specific questions, and thus avoid collection of unnecessary data. Success is measured against the benchmark of achieving the objectives (desired future conditions) established by the plan.
- *Validation Monitoring* – Validation monitoring is intended to ascertain whether a cause-and-effect relationship exists among management activities or resources being managed. It confirms whether the predicted results occurred and if assumptions and models used to develop the plan are correct. This type of monitoring may be done by contract with another agency, academic institution, or other entity, and is usually expensive and time consuming since results are not known for many years.

Since land use plan monitoring is the process of (1) tracking the implementation of land use planning decisions and (2) collecting and assessing data/information necessary to evaluate the effectiveness of land use planning decisions, monitoring related to the RMP will consist of implementation and effectiveness monitoring. All monitoring efforts will be documented in the Annual Monitoring Report for the Approved RMP.

The BLM will monitor the Approved Resource Management Plan (RMP) to determine whether the objectives set forth in this document are being met and if applying the land use plan direction is effective. Monitoring for each program area is outlined in the *Management Decision* section of the Approved RMP. If monitoring shows land use plan actions or best management practices are not effective, BLM may modify or adjust management without amending or revising the plan as long as assumptions and impacts disclosed in the analysis remain valid and broad-scale goals and objectives are not changed. Where the BLM considers taking or approving actions which will alter or not conform to overall direction of the plan, the BLM will prepare a plan amendment or revision and environmental analysis of appropriate scope.

The BLM will review the plan on a regular schedule in order to provide consistent tracking of accomplishments and provide information that can be used to develop annual budget requests to continue implementation. Land-use plan evaluations will be used by the BLM to determine if the decisions in the RMP, supported by the accompanying NEPA analysis, are still valid. Evaluation of the RMP will generally be conducted every five years per BLM policy, unless unexpected actions, new information, or significant changes in other plans, legislation, or litigation triggers an evaluation. Land Use Plan evaluations determine if decisions are being implemented, whether mitigation measures are satisfactory, whether there are significant changes in the related plans of other entities, whether there is new data of significance to the plan, and if decisions should be changed through amendment or revision. Evaluations will follow the protocols established by the BLM Land-use Planning Handbook H-1601-1 in effect at the time the evaluation is initiated.

Environmental Justice

The number and type of actions projected to result in disproportionate negative effects to minority or low income populations will be reported in the Annual Program Summary and Planning Update. This information will be identified from environmental documents completed for actions in the planning area.

Socioeconomics

BLM records will be used to determine the amounts of commodities generated from BLM lands providing economic benefit (barrels of oil produced, cubic feet of gas produced, AUMs, board feet, etc.) during the life of the Approved RMP. The recreation management information system and other site-specific information will be used to estimate visitor use levels. Employment levels in the Vernal Field Office will be tracked using BLM payroll records. These numbers will be documented in the Annual Report.

Tribal Consultation

At least one, general consultation and project coordination meeting will be held on an annual basis with the Ute Indian Tribe. Consultation meetings will be held with the appropriate representatives of other tribes as requested or as deemed necessary. Additional project specific coordination will be conducted as necessary, particularly for projects involving oil and gas development. The appropriate tribal representatives will also be maintained on the Field Office NEPA and project notification mailing lists. Dates of consultation meetings and other tribal contacts will be documented.

Monitoring – Best Management Practices

Surface disturbing projects will be periodically inspected to ensure that Best Management Practices (BMPs) for weed control and prevention of weeds are being followed.

Monitoring – Hazardous Materials

Site clean-ups will be monitored to protect and safeguard human health, prevent/restore environmental damage and to limit the BLM's liability. The performance of the clean-up contractor for all release on public lands will be monitored to ensure full compliance and damaged land restoration. HAZMAT monitoring data will be kept in monitoring files and in the BLM's site cleanup data base. All data will be collected at the time and place of the incident or until the cleanup is completed and there is no future threat to human health or environment. The number of site cleanups (if any) will be reported as required.

Monitoring – Abandoned Mine Lands (AMLIS)

Reclamation and mitigation work done on abandoned mine sites will be monitored to ensure compliance with laws and regulations and with the terms of the work order or contract.

Clean-up sites will be monitored to protect and safeguard human health, prevent/restore environmental damage and to limit the BLM's liability. This monitoring includes such things as conducting periodic water and soil sampling, monitoring for revegetation of reclaimed areas, dust control, erosion and other signs of potential danger to human health and harm to the environment.

The number of clean-up efforts in progress on BLM lands and the number of acres inventoried to identify AMLIS issues will be reported the Annual Monitoring Report for the Approved RMP.

Monitoring – Air Quality (AQ)

Monitoring of air quality and other conditions, conducted in coordination with the Environmental Protection Agency (EPA) and the Utah Department of Air Quality (UDAQ), will be used to determine whether BLM actions that may contribute to air quality concerns (e.g., oil and gas exploration and development or prescribed fire) may proceed or be deferred until conditions improve. The BLM is required to be in compliance with all local, state, federal and tribal air quality regulations and will do so with Utah regulations, including Utah Administrative Code (UAC) regulations as determined applicable by the State of Utah.

The number of BLM actions contributing to any violation of national air quality standards will be tracked annually (expected to generally be none given BLM's coordination with EPA and UDAQ). The number of areas/acres assessed will also be reported in the annual report.

The BLM will continue to cooperate with the EPA on the permitting of ROWs for the establishment of air monitoring stations, as appropriate, within Indian Country upon BLM managed lands.

The BLM will comply with UAC Regulations R307-205-5 through R307-205-7, which prohibit the use, maintenance, or construction of roadways without taking appropriate dust abatement measures. Inspections will be conducted periodically on BLM projects to ensure that the project is in compliance dust abatement control stipulations. The inspections will be summarized in the annual report.

Monitoring – Cultural Resources (CUL)

Periodic visitations of previously recorded cultural properties will be made by the cultural resource specialist or designated representative. The purpose of the visits will be to monitor the condition of the site(s) and document any noted disturbance or deterioration. The condition of the site and other data collected will be entered into the cultural data base. If the sites are listed on the National Register of Historic Places, or have been determined eligible for listing, consultation with the Deputy Preservation Officer and State Historic Preservation Officer will be conducted, when necessary, to determine the appropriate action to stop the deterioration of the site, provide mitigation, or, in the case of criminal removal or damage to site materials, determine the appropriate legal action to be taken.

A long-term monitoring program will be established for the Nine Mile Canyon ACEC in coordination with the Price Field Office. The monitoring program will include the visitation of a representative sample of cultural resource values within the designated ACEC to establish baseline information on the current condition of cultural resource values. Once the baseline condition assessment information has been compiled, the ACEC will be monitored on an annual basis to identify any potential adverse impacts that might occur and identify trends in resource condition and/or deterioration, and to determine whether any actions taking place in the area are causing detrimental changes to the cultural values deemed relevant and important. Any changes will be reported to the Field Manager.

A periodic review of the cultural resource program will be conducted to ensure that the program is meeting established parameters for proactive cultural resources inventory under Section 110 of the

National Historic Preservation Act. The number of acres inventoried by BLM under Section 110 and the number of outreach programs will be documented in the annual report.

Specific plans will be developed for culturally sensitive areas unless included in other integrated activity plans. Such plans will include protective measures, Native American Consultation, and regulatory compliance. The name and number of these plans will be documented in the annual report.

Ensure that all authorizations for land and resource use comply with Section 106 of the National Historic Preservation Act, consistent with and subject to the objectives established in the RMP for the proactive use of cultural properties in the public interest. The number of Section 106 consultations will be reported in the annual report.

Periodic inspections will be conducted in culturally sensitive areas such as the Uinta Foothills, Little Hole, Devils Hole, Upper Willow Creek, and non-WSA lands with wilderness characteristics to ensure cultural resources are not being impacted. The inspections will be in the annual report.

Excavation of cultural sites will be inspected periodically to ensure compliance with stipulations. The inspections will be documented in the annual report.

Monitoring – Fire Management (FIRE)

Monitoring will determine whether fire management strategies, practices, and activities are meeting resource management objectives and concerns. Fire management plans and policies will be updated as needed to keep current with national and state fire management direction. Scheduled program reviews (post-season fire review) will be conducted to evaluate fire management effectiveness in meeting goals and to re-assess program direction.

Pre-fire condition and post-fire effects will be determined by monitoring vegetative response to treatments and progress towards meeting objectives. Monitoring methods include but are not limited to: fuels and vegetation transects, photo points, density, cover and frequency plots, and ocular estimates. As available, applicable remote sensing data will also be incorporated into ecological condition monitoring. The number of acres in Condition Class 1, 2, and 3 will be re-evaluated during the watershed assessment process, and tracked and reported in the Annual Program Summary and Planning Update.

Wildfire rehabilitation effectiveness monitoring studies will be encouraged to determine whether emergency rehabilitation objectives are met. Monitoring requirements and methods will be project specific.

Prescribed burns will be consistent with the Utah Department of Environmental Quality (UDEQ) permitting process and timed to minimize smoke impacts.

Monitoring – Forage (FOR)

Periodic inspections will be completed in all localities to determine the amount of forage available for livestock, wildlife, and wild horses until the wild horses are gathered and removed. Results of monitoring will be used to adapt management strategies to prevent deterioration of rangelands, to achieve desired resource conditions, and to meet other resource objectives.

Monitoring – Lands and Realty Management (LAR)

Land use authorizations will be monitored by field examinations to ensure compliance with the terms and conditions of the authorizing document and the appropriate completed workload measures of accomplishment. On-the-ground monitoring will occur immediately upon issuance of the authorization and periodically throughout the life of the authorization.

Land ownership adjustment actions will be monitored by and the appropriate completed workload measures of accomplishment.

Access acquisition will be monitored through the BLM accomplishment tracking process. Management, realty personnel, and other key staff members in the Vernal Field Office will meet periodically to review program status. Existing easements and other acquisition documents will be reviewed periodically to ensure that both the landowner and the BLM are complying with the terms of the documents.

Withdrawal actions will be monitored through the BLM accomplishment tracking process. Management, realty personnel, and other key staff members in the Vernal Field Office will meet periodically to review program status.

Periodic on-the-ground inspections of the existing right-of-way corridors and use areas will be conducted to ensure they are being managed correctly and that conflicting uses are not occurring which could preclude the use of these locations for their intended purpose.

The Annual Report will include the following:

- The number of use authorizations monitored annually and the number of those in compliance with terms and conditions of the authorization in any given fiscal year.
- The number of acres acquired and/or disposed of through land exchanges, acquisitions, sales, and Recreation and Public Purpose Act patents.
- The number of easements acquired or renewed.
- All new withdrawals.
- Identified compliance issues in right-of-way corridors.

Monitoring – Livestock and Grazing (GRA)

Periodically, allotments will be assessed to ensure the number of allotments/acres that meet the Utah Rangeland Health.

Monitoring – Minerals (MIN, MLE, MLO, MSA)

Monitoring of oil and gas exploration, development, and production activities will be completed in accordance with the National Oil and Gas Strategy. New surface disturbance and reclaimed acres will be tracked.

Periodic field inspections of leasable mineral activities will be conducted to determine compliance with applicable laws, regulations, lease stipulations, and the requirements of approved exploration and development plans.

Periodic field inspections of mining operations will be done to ensure compliance with 43 CFR 3809, 3802 and 3715 and other regulations and conditions of approval

Periodic inspections of salable mineral operations will be done to ensure compliance with applicable laws, regulations, BLM policy contained in BLM Manual Section 3600 and Handbook H-3600- 1.

Monitoring – Non-WSA lands with Wilderness Characteristics (WC)

On-the-ground inspections of the delineated wilderness characteristics areas will be conducted periodically to determine to if any detrimental changes to identified values are occurring. The results of the inspections will be documented in the annual report. Any changes will be noted and reported to the Field Manager.

Inspections of areas with wilderness characteristics that were not delineated will be conducted periodically for compliance with approved action stipulations. The results of the inspections will be documented in the annual report.

Monitoring – Paleontology Resources (PAL)

A representative sample of major fossil-bearing localities will be visited annually to identify if any adverse impacts are occurring. The number of localities visited on an annual basis and their condition will be documented in the annual report.

Monitoring – Rangeland Improvements (RNI)

Rangeland improvement projects will be inspected periodically to ensure compliance with project conditions/stipulations. Any improvements to rangeland health due to the projects will be documented in the annual report.

Monitoring – Recreational Resources (REC, SRMA, TMD)

Monitoring of recreation resources will occur with emphasis placed on developed recreation sites and Special Recreation Management Areas. Monitoring will include regular patrols to check on signing, visitor use, recreation use-related impacts, and user conflicts. Monitoring will also emphasize identification of areas where there may be problems with compliance with rules and regulations resulting in user conflicts or resource damage. Actual visitor and/or vehicle counts will be documented at all developed recreation sites as sites are visited and then projected into an average visitor use.

Monitoring of Special Recreation Permits will be conducted for compliance with terms, conditions, and special stipulations, as well as monitoring and evaluation of compliance with administrative requirements. Average visitor use numbers at developed recreation sites will be reported in the annual report.

Designated roads and trails will be monitored to ensure compliance with the administrative goals of maintaining or meeting Utah Rangeland Health Standards. Designated dispersed campsites will be visited to ensure that motorized camping vehicles are using single paths to the campsite.

Monitoring – Riparian Resources (RIP)

Evaluations will be conducted to determine changes in miles/acres of riparian wetland in Proper Functioning Condition (PFC) proper functioning condition and to establish trends in plant composition, canopy, age class diversity, and utilization. Detrimental changes will be reported to the Field Manager. Documentation will be provided for the annual report.

Monitoring – Soil and Water Resources (SOLW)

Periodically, a representative number of ground-disturbing projects with the potential to affect soil and/or water resources will be evaluated to determine if Best Management Practices (BMPs) and identified mitigation measures were followed and how effective the practices and measures were in maintenance and/or restoration of the area's waters and soil quality.

Monitoring – Areas of Critical Environmental Concern (ACEC)

On-site monitoring of the designated ACEC areas for identified relevant and important criteria will be completed on a periodic basis. The designated ACEC areas are Browns Park, Lears Canyon, Lower Green River Corridor, Nine Mile Canyon, Pariette Wetlands, Red Creek Watershed, and Red Mountain- Dry Fork Complex. Monitoring will include visitation to the designated ACECs to establish baseline information concerning the relevant and important criteria values. Once the baseline condition assessment information has been compiled, the ACECs will be monitored at least once every four years to identify any potential adverse impacts that might be occurring; identify any trends or deterioration of the criteria values; and, to determine whether any actions taking place in the ACEC are causing any

detrimental changes to the values deemed relevant and important. Any changes will be noted and reported to the Field Manager.

Monitoring may include but not be limited to the: checking the travel routes to the area for road conditions, locked gates, and other obstructions; the condition of signs; for litter or weeds; and, for any deterioration of identified relevant values. The density and placement of facilities or land use authorizations proposed in the area will also be reviewed every two years to insure that the integrity of relevant and important values are protected and that surface disturbing activities are not resulting in habitat fragmentation. Any significant problems will be reported to the Field Manager.

Those potential ACEC areas that were not designated as ACECs include: Bitter Creek, Coyote Basin, Four Mile Wash, Lower Green River Expansion, Main Canyon, Middle Green River, and White River. Periodic on-site monitoring of these lands will occur to ensure that the relevant and important criteria values are maintained and protected by existing regulations, stipulations, and Best Management Practices.

Monitoring – Wild and Scenic Rivers (WSR)

Periodically, the Upper Green River and Lower Green River segments that were found suitable and recommended for designation will be monitored through on-the-ground visits to ensure that no impairment of outstandingly remarkable values within line of sight up to one-quarter mile from high water mark on each side of the segment has occurred. Changes will be documented and provided to the Field Manager and provided for the annual report.

Monitoring – Wilderness Study Areas (WSA)

Wilderness Study Areas will be monitored in accordance with direction provided in the *Interim Management Policy for Lands Under Wilderness Review* (BLM Handbook H- 8550-1). The policy requires monitoring of all WSAs, at least once per month during the months the area is accessible by the public. The number of visits and condition of the WSAs will be reported in the Annual Program Summary and Planning Update.

Monitoring – Special Status Species (SSS)

In coordination with the U.S. Fish and Wildlife Service (USFWS) and the Utah Division of Wildlife Resources (UDWR), fish populations and habitat assessments will be on a periodic basis to monitor populations and to track changes in streamside vegetation composition. This monitoring will be supplemented with data collected for riparian and wetland monitoring to determine if goals and objectives are being met. The data gathered will be tracked and reported in the Annual Program Summary and Planning Update, as will the number of habitat restoration or improvement projects initiated.

Surveys will be conducted to determine the distribution, resource conditions, and trends of special status plant species and representative habitats. This will include determining plant composition at the site, checking for invasion of exotic species, monitoring localized disturbances (from OHV use, livestock and wildlife use, recreational use, etc.), and determining trends in special status plant attributes.

The number of acres surveyed and trends identified will be reported in the Annual Program Summary and Planning Update. The number of acres inventoried annually for special status plants will also be reported.

Monitoring – Travel Management-Roads & Trails (TRC)

Travel management and OHV use monitoring within the planning area will focus on compliance with specific route and area designations and restrictions, with primary emphasis on those routes or areas causing the highest levels of user conflicts or adverse impacts to resources. Route or area closures will be regularly monitored for compliance. Findings will be reported in the annual report.

Monitoring – Vegetation Resources (VEG)

Ecological trends due to changes in vegetation composition over time will be measured through periodic rangeland health assessments. The number of allotments/acres that meet the established standards and the total number of allotments/acres assessed will be reported in the Annual Program Summary and Planning Update.

Periodically, a representative sample of known noxious weed sites identified for treatment will be visited each year and evaluated for weed control effectiveness. The monitoring visits and data collected will be documented in the annual report.

Monitoring – Visual Resource Management (VRM)

Any project design features or mitigation measures identified to address visual resource management concerns will be monitored to ensure compliance with established VRM classes. The number of areas/projects monitored for compliance with VRM objectives will be reported in the annual report.

Monitoring – Wild Horse Management (WHB)

The Bonanza Herd Area will be monitored periodically to document the presence, if any, of horses that are considered to be in trespass and subject to removal. The presence of horses will be reported to the Field Manager and the findings placed in the annual report.

The Hill Creek and Winter Ridge Horse Areas will be monitored periodically to determine the number of wild horses and any changes in forage and rangeland health. After the wild horses have been gathered and removed, the areas will be monitored periodically to document the presence, if any, of horses that are considered to be in trespass and subject to removal. The findings will be reported to the Field Manager and placed in the annual report.

Monitoring – Wildlife and Fisheries (WL)

Periodically monitor wildlife habitat. Assess changes in vegetation composition and condition on a landscape and watershed basis. Continue to monitor known populations of special status species, in conjunction with Federal, state and private agencies or organizations (bald eagle, peregrine falcon, sage grouse, pygmy rabbit, trumpeter swan, raptors). This information will be included in the annual report.

Monitoring – Woodlands and Forest Resources (WDF)

Pre-Treatment: Data will be collected within forest stand(s) or woodlands using the FORVIS data collection format. In commercial treatment units, the pre-treatment basal area of the live and dead component, the average stand diameter- at-breast height, the average stand total height, and fuel loading information will be collected. Estimated volume per acre or biomass tons per acre will be obtained, if applicable, in stands that will be treated. In commercial and non-commercial treatment units, photo point(s) will be established to show approximate percent cover, habitat types, and occurrence of insect infestations/diseases

Post-Treatment: Measurements as described above will be obtained after project implementation on any given unit to evaluate if stand objectives were reached. Representative sample(s) of established photo points will be periodically revisited on a 10 year cycle to document longer term trends. The number of acres treated and number of small sale/public use permits issued each fiscal year will be reported in the Annual Program Summary and Planning Update.

APPENDIX R. FLUID MINERALS BEST MANAGEMENT PRACTICES (BMPs)

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APPENDIX R- FLUID MINERALS BEST MANAGEMENT PRACTICES (BMPS)

Best Management Practices (BMP) are state-of-the-art mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. BMPs are applied to management actions to aid in achieving desired outcomes for safe, environmentally sound resource development by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. For each proposed action, a number of BMPs may be applied as necessary to mitigate expected impacts. The following typical environmental Best Management Practices (BMP) may be applied on individual Applications for Permit to Drill and associated rights-of-way in the Vernal Field Office on a case-by-case basis. These procedures are consistent with current national guidance and the Surface Operating Standards and Guidelines for Oil and Gas Development (Gold Book), 2007. This list is not all inclusive and may be modified over time as conditions change and new practices are identified.

- Interim reclamation of the well and access road will begin as soon as practicable after a well is placed in production. Facilities will be grouped on the pads to allow for maximum interim reclamation. Interim reclamation will include road cuts and fills and will extend to within close proximity of the wellhead and production facilities.
- All above ground facilities including power boxes, building doors, roofs, and any visible equipment will be painted a color selected from the latest national color charts that best allows the facility to blend into the background.
- All new roads will be designed and constructed to a safe and appropriate standard, “no higher than necessary” to accommodate intended vehicular use. Roads will follow the contour of the land where practical. Existing oil and gas roads that are in eroded condition or contribute to other resource concerns will be brought to BLM standards within a reasonable period of time.
- Final reclamation of all oil and gas disturbance will involve recontouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography and revegetating all disturbed areas.
- Raptor perch avoidance devices will be installed on all new powerlines and existing lines that present a potential hazard to raptors.
- All powerlines to individual well locations (excluding major power source lines to the operating oil or gas field) and all flow lines will be buried in or immediately adjacent to the access roads where feasible.
- In developing oil and gas fields, all production facilities may be centralized to avoid tanks and associated facilities on each well pad where necessary to address resource issues.
- Multiple wells will be drilled from a single well pad wherever feasible.
- Noise reduction techniques and designs will be used to reduce noise from compressors or other motorized equipment.
- Seasonal restrictions on public vehicular access will be evaluated where there are wildlife conflict or road damage/maintenance issues.
- Monitoring of wildlife to evaluate the effects of oil and gas development
- Avoiding placement of production facilities on hilltops and ridgelines;
- Screening facilities from view;
- Bioremediating oil field wastes and spills; and
- Using common utility or Right-of-Way corridors containing roads, powerlines, and pipelines.

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APPENDIX S. PUBLIC LANDS CONSIDERED FOR DISPOSAL

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APPENDIX S. PUBLIC LANDS CONSIDERED FOR DISPOSAL (AS IDENTIFIED ON FIGURE 6A)

Township and Range	Acres
T. 1 S., R. 23 E.	
Sec. 11, lots 1-4, S $\frac{1}{2}$ S $\frac{1}{2}$	326.4
Sec. 12, lots 1-4, S $\frac{1}{2}$ S $\frac{1}{2}$	324.8
Sec. 13, lots 1-2, NW $\frac{1}{4}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$	196.6
Sec. 14, NE $\frac{1}{4}$ NE $\frac{1}{4}$	40.0
T. 1 S., R. 24 E.	
Sec. 7, lot 4, SE $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$	159.4
Sec. 17, lots 1-2	68.1
Sec. 18, lots 1, 2, 4-10, S $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$	477.7
Sec. 19, NE $\frac{1}{4}$ NE $\frac{1}{4}$	41.6
Sec. 20, lot 2, SW $\frac{1}{4}$ NW $\frac{1}{4}$	40.1
T. 2 S., R. 24 E.	
Sec. 19, lot 4, E $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$	277.1
Sec. 20, SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$	285.6
Sec. 29, N $\frac{1}{2}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	445.4
Sec. 30, all	623.2
Sec. 31, W $\frac{1}{2}$	319.4
T. 3 S., R. 19 E.	
Sec. 4, SE $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$	119.8
Sec. 5, S $\frac{1}{2}$ S $\frac{1}{2}$	163.0
Sec. 7, E $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$	104.2
Sec. 8, N $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	536.5
Sec. 9, E $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	361.9
Sec. 10, W $\frac{1}{2}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$	202.1
Sec. 17, SW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$	328.1
Sec. 18, E $\frac{1}{2}$ E $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$	14.9
Sec. 19, SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ E $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$	7.2
Sec. 20, lots 2-3, W $\frac{1}{2}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$	232.0
Sec. 24, S $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$, S $\frac{1}{2}$	567.0
Sec. 25, N $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	487.8
Sec. 26, E $\frac{1}{2}$ SE $\frac{1}{4}$	83.3
Sec. 34, E $\frac{1}{2}$ SE $\frac{1}{4}$	82.0
Sec. 35, E $\frac{1}{2}$ NE $\frac{1}{4}$, S $\frac{1}{2}$	419.0
T. 3 S., R. 20 E.	
Sec. 17, NE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$ (north of the road)	54.7
Sec. 18, lot 2, SE $\frac{1}{4}$ NW $\frac{1}{4}$	78.7
Sec. 19, lot 6, SW $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$	161.3
Sec. 30, lots 2-4, E $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$	482.1
T. 3 S., R. 21 E.	
Sec. 12, SW $\frac{1}{4}$ SE $\frac{1}{4}$	40.0
Sec. 13, NE $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$	79.6
Sec. 23, W $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$	120.4
Sec. 30, lot 4	37.1

Township and Range	Acres
Sec. 31, lots 1-4, SW $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	473.4
T. 4 S., R. 19 E.	
Sec. 1, lots 1-6	232.6
T. 4 S., R. 20 E.	
Sec. 1, all	629.4
Sec. 12, NW $\frac{1}{4}$ NE $\frac{1}{4}$	39.8
T. 4 S., R. 21 E.	
Sec. 1, lots 1-4, S $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$	277.6
Sec. 4, SW $\frac{1}{4}$ SE $\frac{1}{4}$	40.3
Sec. 5, S $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$	26.0
Sec. 6, lots 1-7, S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$	512.8
Sec. 8, NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$	1.4
Sec. 9, SE $\frac{1}{4}$ NE $\frac{1}{4}$	30.9
Sec. 10, S $\frac{1}{2}$ NW $\frac{1}{4}$	41.3
Sec. 31, SE $\frac{1}{4}$	159.9
T. 4 S., R. 22 E.	
Sec. 1, lots 2-4, SW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$	483.6
Sec. 3, all	645.4
Sec. 4, all	641.8
Sec. 5, all	640.5
Sec. 6, lots 1-6, S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$	622.3
Sec. 7, lots 7, NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$	409.8
Sec. 8, lots 1, 2, 6, NE $\frac{1}{4}$, NW $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$	540.6
Sec. 9, all	667.7
Sec. 10, all	660.2
Sec. 11, all	644.6
Sec. 12, NW $\frac{1}{4}$, SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$	402.3
Sec. 13, NW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$	122.7
Sec. 14, all	658.8
Sec. 15, all	649.8
Sec. 17, E $\frac{1}{2}$	319.0
Sec. 21, all	657.3
Sec. 22, all	655.3
Sec. 23, all	652.6
Sec. 24, SW $\frac{1}{4}$ NW $\frac{1}{4}$	40.6
Sec. 25, lots 1, 2, W $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, W $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	123.8
Sec. 26, lots 2-7, 9-12, SW $\frac{1}{4}$	571.0
Sec. 27, all	652.1
Sec. 28, N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$	489.4
Sec. 34, NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$	407.1
Sec. 35, all	648.4
T. 5 S., R. 21 E.	
Sec. 4, SW $\frac{1}{4}$ SW $\frac{1}{4}$	40.0
Sec. 5, lot 5, SW $\frac{1}{4}$ NE $\frac{1}{4}$	80.3
Sec. 9, lots 1-2, W $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$	282.8
Sec. 15, lots 1-8	318.2
Sec. 22, lots 1-2, S $\frac{1}{2}$ NE $\frac{1}{4}$	157.9

Township and Range	Acres
Sec. 23, lots 4-5, S $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$	317.2
Sec. 25, lots 2, 3, 6, SW $\frac{1}{4}$ NE $\frac{1}{4}$	153.9
T. 5 S., R. 22 E.	
Sec. 1, all	648.1
Sec. 3, lots 1-2, S $\frac{1}{2}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	162.5
Sec. 11, N $\frac{1}{2}$, SE $\frac{1}{4}$	486.5
Sec. 12, all	644.1
Sec. 22, W2 SE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ S $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$	120.4
Sec. 23, SW $\frac{1}{4}$ SW $\frac{1}{4}$	40.4
Sec. 25, SW $\frac{1}{4}$ NW $\frac{1}{4}$	40.9
Sec. 26, NE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$	285.2
Sec. 27, NE $\frac{1}{4}$ NE $\frac{1}{4}$	40.3
T. 5 S., R. 23 E.	
Sec. 5, S $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	123.3
Sec. 6, lots 5-7, SE $\frac{1}{4}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	376.8
Sec. 7, lots 1-4, NE $\frac{1}{4}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ N $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ N $\frac{1}{2}$, W $\frac{1}{2}$ W $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$	594.0
Sec. 11, lot 1, NW $\frac{1}{4}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$	153.9
Sec. 15, N $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ S $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$	66.2
Sec. 22, NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$	3.8
T. 7 S., R. 19 E.	
Sec. 1, SE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$	81.6
T. 7 S., R. 20 E.	
Sec. 33, SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ SE $\frac{1}{4}$	124.4
T. 8 S., R. 17 E.	
Sec. 14, lot 1	12.1
Sec. 22, SW $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$	119.9
Sec. 23, lots 2-4, SW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$	392.4
T. 10 S., R. 11 E.	
Sec. 35, all	395.9
T. 11 S., R. 10 E.	
Sec. 8, lots 1, 3, 4	79.3
Sec. 9, lots 1-5	180.4
Sec. 10, lots 1-4	51.4
Sec. 11, lot 4	16.6
Sec. 20, N2NE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$	119.6
Sec. 29, W $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$	239.9
Sec. 30, E $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$	280.1
Sec. 31, N $\frac{1}{2}$ NE $\frac{1}{4}$, SW $\frac{1}{4}$ NE $\frac{1}{4}$	119.8
Sec. 33, N $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$	120.1
Sec. 34, lot 1	36.6
T. 11 S., R. 11 E.	
Sec. 11, NE $\frac{1}{4}$	160.1
Sec. 12, SW $\frac{1}{4}$ NW $\frac{1}{4}$	40.1
T. 11 S., R. 12 E.	
Sec. 15, NE $\frac{1}{4}$, S $\frac{1}{2}$	479.2
Sec. 19, NW $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$	79.9
Sec. 21, NW $\frac{1}{4}$ SW $\frac{1}{4}$	39.7

Township and Range	Acres
Sec. 22, W $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$	318.8
T. 11 S., R. 13 E.	
Sec. 29, SW $\frac{1}{4}$ SW $\frac{1}{4}$	39.9
Sec. 30, lot 4, SE $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$	120.0
Sec. 31, N $\frac{1}{2}$ NE $\frac{1}{4}$	79.8
T. 12 S., R. 24 E.	
Sec. 13, S $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$	199.2
T. 12 S., R., 25 E.	
Sec. 18, SW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$	277.6
Sec. 19, NW $\frac{1}{4}$	157.7
TOTAL ACREAGE	33,359.0