

# PINEDALE REGION

## HABITAT PROJECTS

### Wyoming Range Front Aspen Treatments (WYFAT)

In 1990, the BLM completed a landscape survey along the eastern slopes of the Wyoming Range and concluded that 9,000 acres of aspen were in need of management. Specifically, the BLM found conifers were encroaching 3,000 acres of aspen that were in severe risk of being lost while an additional 6,000 acres of aspen were also at risk of dying due to old age and lack of disturbance. As a result, the WYFAT project was developed recently between BLM, RMEF, and WGFD to increase the health of aspen stands and adjacent vegetation communities for wildlife benefit (Figure 1).

On December 15, 2006, BLM and RMEF signed a stewardship contract to improve 9,000 acres of aspen over 10 years with use of mechanical methods and/or prescribed fire. The goals are to reduce conifer and sagebrush encroachment, increase stem density and forage production of aspen, diversify the vegetative composition in key areas, and reduce elk dependency on supplemental forage. Approximately 900 acres within the Maki and Red Canyon allotments have been scheduled for mechanical treatments in 2007 (Figure 2).

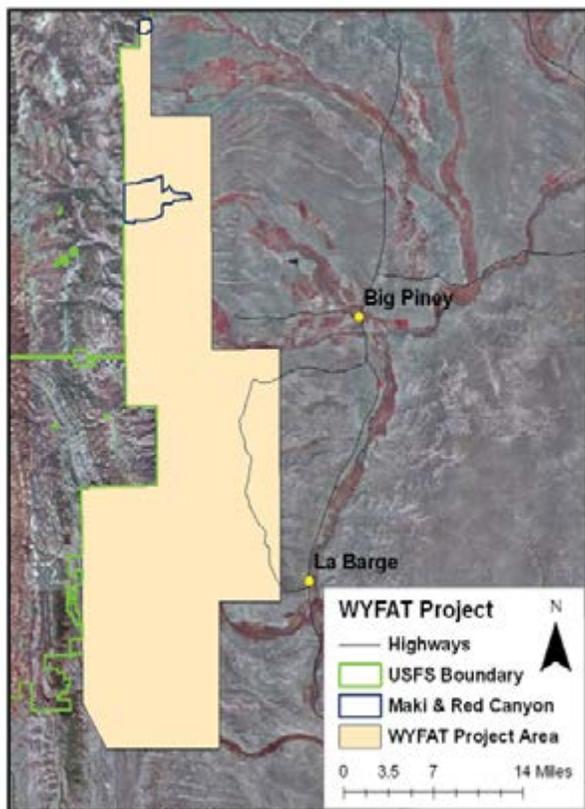


Figure 1. Map of the WYFAT project area and work sites for 2007.



Figure 2. Conifer encroachment of aspen stands in the Red Canyon allotment.

- 9 different treatments were applied to 30-acre plots.
- 1000 acres Monument Ridge RX Burn.
- 114 adult female elk were captured on Scab Creek, Soda Lake, and Bench Corral feedgrounds.
- Data from old habitat treatments can provide excellent information.
- JIO established in Pinedale.
- 300-acre treatment with the Lawson Aerator.
- Final phase of imagery project between BLM, WGFD, and the University of Wyoming Geographic Information Science Center was completed.
- WYFAT project was developed.
- WHAM surveys conducted in the Maki Creek drainage.

### Maki Creek Aspen Regeneration

This project is in cooperation with the USFS and aims to improve the North Cottonwood grazing allotment by:

1. Enhancing aspen regeneration on 1,100 acres of aspen stands.
2. Increasing vigor and production of adjacent vegetation communities.
3. Reducing dependency of elk on Jewett feedground, and the risk of intraspecific transmission of brucellosis and CWD within elk on and adjacent to the feedground.

Fieldwork began in 2005 with the felling and limbing of approximately 100 acres of conifers that had encroached on the aspen. Funding was secured from WWNRT (\$60,000) and WGFD Trust Fund (\$25,000) in 2006 to treat another 1,000 acres in 2007 (Figure 3). A prescribed burn is planned to follow these mechanical treatments in spring of 2008 to remove standing and downed fuel and rejuvenate aspen. Pre-burn data of aspen was collected in 2006 to quantify regeneration, and browse use relative to distance from Jewett feedground (Table 1).



Figure 3. One year after conifer cutting.

Table 1. Aspen pre-treatment data within the Maki Creek project area. Aspen regeneration in these stands is low and very few plants are growing into the canopy.

<b>Maki Creek Aspen Regeneration</b> (N = 189, 1/100 ac plots)	
Height Class (ft)	Mean Relative %
0 to 1	17.8
1 to 3	64.5
3 to 6	15.4
6 to 10	1.4
>10	0.8

### Monument Ridge Prescribed Burn

The Monument Ridge prescribed burn project comprises approximately 11,000 acres of mixed aspen-conifer and sagebrush vegetation types that are in late successional stages on the Bridger-Teton National Forest (BTNF). Monument Ridge provides important spring-summer forage and parturition habitat for mule deer, elk, moose, and several other wildlife species. Burning will improve the vigor and production of these vegetative communities to maintain healthy wildlife that use this area.

The first of six units (approx. 1000 acres) was burned in late September of 2006, which was primarily sagebrush with a few stringers of aspen-conifer mix throughout. Cattle grazing operations were temporarily modified to rest this burn unit in 2005 to increase fine fuels for carrying fire and two more years post-burn to allow for rest. A good mosaic was accomplished in the sagebrush areas, but moisture reduced the fire's effectiveness on the aspen stands (Figure 4). Burn severity monitoring was conducted a couple weeks after implementation and post-burn monitoring will be completed in the summer of 2007.



Figure 4. The prescribed burn created a mosaic pattern in the sagebrush community.

## Cottonwood Watershed Projects

### Triple Peak Forage Reserve Project

A grazing permittee in the Cottonwood, North Piney and Greys River watersheds has agreed to waive his grazing permits on 5 allotments for 2,726 AUMs of domestic sheep use back to the BTNF. Department personnel provided information to Trout Unlimited, other NGOs, the USFS, and the grazing permittee on the importance of these watersheds for aquatic and terrestrial wildlife. Cooperative efforts with the NGOs to raise funding for this project and coordination with the USFS are on-going. The project will provide long-term protection to important native cutthroat habitat, as well as habitat for numerous other wildlife species. Extensive coordination efforts resulted in a management agreement mutually acceptable to the USFS, permittee, and NGOs.

The down payment of \$104,952, which is one-half of the total cost, was made in September 2006. Balance of payment and project completion are anticipated in June 2007, pending available funding. USFS will then close the 5,115 acre cutthroat trout area (North Piney Lake and Lake Creek drainage) to livestock grazing and place about 53,560 acres into Emergency Forage Reserve (i.e. grassbank) status, with strict language/terms/conditions under which this portion of the allotment complex could be grazed by domestic sheep. The acres below 9,700 feet may be available by 2008 for grazing 3 out of every 10 years pending data collection to evaluate the existing vegetative condition and ground cover. To complete the action the USFS will adopt a management plan for the forage reserve. The final vegetative criteria and monitoring methods, time frames, and locations will be cooperatively developed with TU, WGFD, the USFS, and other project proponents once the final payment is made.

Snake River cutthroat trout (SRC) habitat will be improved in 63 stream miles of portions of the Greys River drainage within the Snake River Watershed. Colorado River Cutthroat (CRC) will benefit from improved conditions in 99 miles of historical stream habitat.

### Maki Creek Watershed WHAM surveys and Aspen Treatment Projects

The Aquatic Habitat Biologist coordinated with BFH personnel, USFS, and the Regional Fisheries Biologist to assess watershed and aspen community conditions in portions of this drainage. WHAM assessments and evaluations of specific aspen stands were conducted in July. Examples of several key aspen stands in need of regeneration and important from a watershed health perspective were delineated on a map and presented to the USFS for consideration to add to their treatment plans (Figure 5).



Figure 5. Conifer encroached aspen stand adjacent to Maki Creek – high priority for regeneration.

## **LaBarge Creek Watershed Projects**

### **Nameless Creek Riparian Exclosure**

Maintenance needs were completed on both the upper and lower portions of the Nameless Creek exclosure in June and July. Once again, the need for long-term maintenance, reconstruction, or improved management was discussed with the USFS. A meeting and site visit to evaluate this situation and other management concerns in this watershed was scheduled in June. However, the USFS cancelled and a follow up meeting was never rescheduled.

### **Presentation of WHAM method and LaBarge Example at AFS Meeting**

The Aquatic Habitat Biologist prepared and presented an overview of the WHAM assessment method with examples of results from the 2000-2002 surveys in the LaBarge watershed at CO/WY AFS Meeting in March.

### **LaBarge Watershed and Habitat Report**

Level 1 WHAM data for LaBarge tributaries collected in 2001 and 2002 was manually summarized into a word document. This information was then summarized into a more brief report. Numerous USFS documents, including the current and original AMP, Landscape Area Assessments, and stream surveys were reviewed and various relevant information referenced in this report. Completion of this report is anticipated in June 2007.

## **Green River Corridor Projects**

### **Jerry Moore Cooperative Habitat Projects**

The Aquatic Habitat biologist continued to work closely with Moore, his consultant (John Dahlke), and lessee, to implement a successful grazing strategy on Moore's 120-acre riparian pasture in May. A stocking rate similar to 2005 had no noticeable impact on woody riparian vegetation. However, once again use by wildlife, presumably mostly moose, appeared very heavy. The cottonwood suckers in the four big game proof exclosures constructed in 2004 continued to show gains in height while unprotected suckers and seedlings remained suppressed from repeated browsing.

### **BLM / JIO Alkali Creek Watershed Assessment / Restoration Project**

The BLM proposed a potential restoration / Jonah Field mitigation project on Alkali Creek. This small, warm-water stream flows into the Green River approximately 2 miles below its confluence with the New Fork River. Assuming good permittee support and cooperation the project area and allotment has potential to become a forage reserve. Potential benefits from restoration of the riparian habitats and watershed function are high.

### **40-Rod Creek – Daniel hatchery Project**

In August a potential habitat improvement project on 40-Rod Creek above the Daniel Hatchery unit was evaluated with Hatchery and HAMS personnel.

### **Anselmi Property Project**

A proposed habitat improvement project on Anselmi property located in the upper Green River (adjacent to the Warren Bridge PAA) was discussed with a consultant and local contractor, who had been contacted by the landowners. A letter of consent was sent to the COE regarding the Nationwide permit.

## **New Fork River Corridor Projects**

### **Riparian Browse Use and Recruitment Monitoring**

Ungulate use on aspen, cottonwood and willow inside and outside of big game and wildlife proof exclosures was measured again in May and June 2006. Results are being summarized and will be discussed with the landowner and the NRCS. Future management recommendations and browse use monitoring will be addressed at that time.

### Wyoming 3 Bar Ranch Conservation and Enhancement Opportunity

Habitat improvement and conservation opportunities as well as fisheries management issues were discussed with a representative (Mr. John Bove) for the new owners of the former Pete Olsen (“3 Bar”) Ranch located at the confluence of the Green & New Fork Rivers. A follow up letter summarizing our discussions with Mr. Bove was prepared and sent to him in December. Grazing permits in the Blue Rim Desert and Mesa common Allotments are associated with this ranch. The concept of placing these AUMs into “forage reserve” status was discussed with Mr. Bove.

### East Fork River (Wheeler Ranch) Habitat Enhancement Project

Riparian and fisheries habitat improvement opportunities on the Gosar Family’s “Wheeler Ranch” located on the East Fork River were evaluated and discussed with the landowners (Pete & Kevin Gosar) and Tom Wesche (HabiTech, Inc.). Mr. Wesche worked with Gosar’s to prepare a detailed project proposal and specific plans for various opportunities discussed on site with them in September. A letter of support for this project was prepared and sent to the ACOE.

### Little Flattop Prescribed Burn

Approximately 945 acres of aspen and aspen-conifer were burned in May of 2006 on the BTNF14 miles north of Pinedale as a collaborative project between USFS and WGFD (Figure 6). Another 880 acres will be treated within the Wood Draw unit in the spring of 2007. This area provides parturition habitat and summer range for elk, mule deer, moose, as well as habitat for grouse and other bird species (Figure 7).



Figure 6. Fire burns through aspen in the Willow Rim burn unit in 2006.

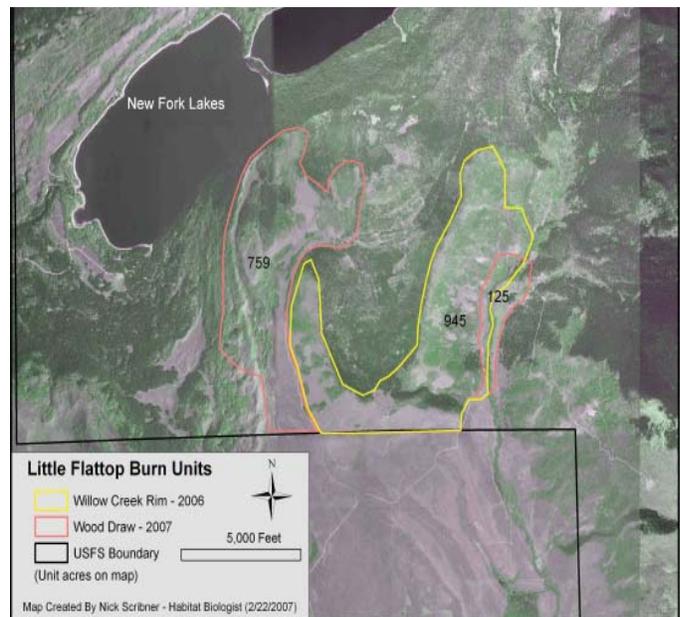


Figure 7. Map of the Little Flattop project area.

### Mesa Sagebrush Enhancement Project

A cooperative research/mitigation project with BLM and Questar that began in 2005, continued in 2006 with additional data collection by a University of Idaho graduate student and the implementation phase. Goals for this project include increasing age class diversity of sagebrush, increase cover and production of existing perennial grass and forb species, and determine which treatment type is the most effective at producing such results in Wyoming big sagebrush communities.

In August and September, 9 different treatments were applied to 30-acre plots. The treatments included low mowing (6 in.), high mowing (12 in.), mowing with forb seeding, Lawson Aerator, Dixie harrow, chaining, light Spike 20P (0.1 lbs/ac), heavy Spike 20P (0.2 lbs/ac), and a prescribed burn (Figure 8). In 2007, each plot will be split in half and fenced to exclude cattle grazing, and then have post-treatment data collected by the graduate student. Monitoring will continue years 2, 3, 5, and 10 after the treatment.



Figure 8A. Lawson Aerator treatment.



Figure 8B. Before the aerator treatment (right side of picture), and immediately after (left side of picture).

### Ryegrass Mowing Project

In partnership between the WGFD and BLM, approximately 1,100 acres of the Ryegrass Individual and James Ryegrass allotment complex (3,200 ac) are to be mowed from 2005-2009. The goal is to increase sagebrush age diversity and increase herbaceous production by mowing in a mosaic pattern to provide a variety of habitats for various needs of wildlife such as sage grouse, mule deer, antelope, elk, and other species. A total of 300 acres of sagebrush was mowed in 2005 by the BLM with another 400 acres planned for each 2007 and 2009. Each treatment will receive 2 years of rest post-treatment from cattle grazing. Data will be collected year 1, 2, and 5 post-treatment on both a control and treated plot to determine if objectives are being met. Several types of data were collected in 2005 (pre-treatment) and 2006 (1-yr post-treatment) from control and treatment sites and differences were observed (Figure 9). The percentage of mountain big sagebrush within various growth form categories was altered substantially by mowing; suggesting that mowing successfully altered the age diversity of sagebrush throughout the treatment area.

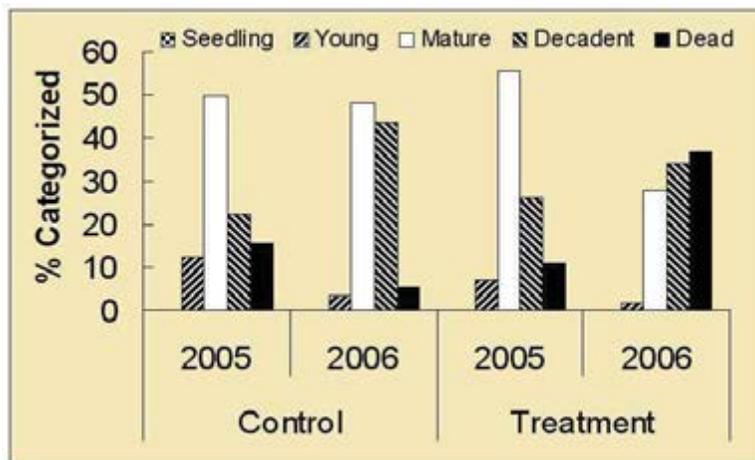


Figure 9. Percentage of mountain big sagebrush categorized on control and treatment sites in the Ryegrass Individual allotment.

Estimates of herbaceous production declined substantially on control and treatment sites in 2006, likely reflecting lack of significant precipitation during the growing season (Table 2). Species richness, particularly forbs, on both sites declined in 2006, and estimates of percent basal cover remained nearly constant with the exception of “litter” (increase) and “plant” (decrease), further emphasizing effects of drought.

Table 2. Estimates of herbaceous production (lb/ac) on control and mowed sites in the Ryegrass Individual allotment.

Year	Yr Post Trt	Production (lb/ac)			
		Mow		Control	
		Forb	Grass	Forb	Grass
2005	0	133.5	185.3	139.5	166.6
2006	1	45.9	70.9	43.4	101.5

**Kemmerer BLM Resource Management Plan Revision**

The BLM released a draft “Final Preferred Alternative” to the cooperating agencies in January. Numerous regional comments and recommendations pertaining to a wide variety of on-going concerns were prepared, consolidated, and then sent to Habitat Protection. Significant portions of this effort both directly and indirectly involved other RMP revisions so have implications on a statewide basis. Examples of some of these efforts include: reviewing and disseminating information from various BLM policy manuals, reviewing and commenting on the Department’s “Mitigation Strategy” document, and reviewing, discussing and disseminating information related to various stream classification methods.

Kemmerer BLM notified cooperating agencies on February 23, 2007 that they were instructed to fast track this RMP process. The next opportunity for cooperator review on the Preliminary Draft Environmental Impact Statement (PDEIS) is scheduled for late March and early April 2007. The BLM anticipates publishing the PDEIS for public review in late June 2007.

**Strategic Habitat Plan Implementation**

The Pinedale Aquatic Habitat Biologist continued to aggressively promote development of forage reserves and creation of additional WHMAs and other large-scale conservation opportunities in the region. These efforts are being pursued to help increase opportunities to implement landscape and watershed scale projects in the Region as promoted in the Strategic Habitat Plan. The primary opportunity pursued was the Triple Peak Forage Reserve Project, reported on under the Cottonwood Watershed Projects. Another opportunity consisted of completing HAEP forms for two adjacent properties located in the upper Green River and submitting these to the property rights team for review. One property owner is primarily only interested in a conservation easement. The second, related landowners, have their property listed for sale on the open market, but indicated an interest in a wide variety of conservation opportunities.

**Lower Bear River Watershed Projects**

**Smithsfork Allotment**

The Pinedale Aquatic Habitat biologist participated in the BLM’s scheduled fall monitoring tour on September 13, 2006. Livestock impacts in portions of the allotment visited during the tour appeared to be similar to the past year’s, or slightly lower. However, upper Coal and East Coal Creeks, in the Coal/Dipper pasture, were

used very heavily. Numerous cattle were not removed after the planned use period so regrowth was kept grazed off. Use on willows in these areas was also very high, but was not measured. Also, utilization levels were very high near an upland water development at a spring source located between Coal and East Coal Creeks (Figure 10). The enclosure fence protecting the spring and tank valve had not been properly maintained. Therefore, the spring source area was severely trampled as well as the area where the tank had overflowed. The Little Muddy Creek riparian enclosure fence appeared to have been intentionally cut at the northwest corner. Repairs were made following the tour.



Figure 10. Improperly Maintained Spring Development Between Coal and East Coal Creeks.



Figure 11. Downstream end of Coal Creek Enclosure, July 2006.

Data collected on September 13, 2006 in cooperation with the BLM and permittees is available in the BLM's Annual Smithsfork Allotment Monitoring Report for 2006. Results of this monitoring effort documented that use levels on willows exceeded the 40% use criteria in the AMP.

The enclosures on Coal and Huff Creeks were both maintained and functioned properly in 2006 (Figure 11).

The results of these evaluations, monitoring methods used, and the need to better maintain fences and enclosures as well as other issues and concerns were discussed with the BLM Assistant Manager following the tour. While current BLM management has demonstrated a commitment to resolving these on-going concerns, numerous problems remain in this important area.

### **Klein Creek Project**

Numerous willow and cottonwood cuttings were planted inside the Klein Creek head cut control project enclosure on May 17, 2006. A very high number of these cuttings showed good preliminary indications of successful establishment on September 12, 2006. Assuming good winter survival rates they should become well established in 2007. Although the primary head cut control structure will require some minor maintenance, the enclosure fence remained in excellent condition.

### **Raymond Watershed**

For the second year in a row very little evidence of livestock use was observed in the Raymond watershed when the area was visited on September 12, 2007. Livestock management and use levels in this watershed will continue to be monitored to evaluate if additional fencing is necessary and evaluate long-term recovery of this important watershed.

### **Huff Creek Head Cut Control Project**

Following numerous attempts to schedule a visit with the private landowners on Huff Creek where the lower of two head cuts are active (Figure 12), verbal permission was gained in October to stabilize the head cut site and construct an enclosure to protect the area from cattle grazing. With assistance from the Casper regional Aquatic Habitat Biologist, a preliminary project plan has been prepared and will be presented to the landowner for final approval before submitting it to the COE for a 404 permit.

Assuming permit approval and availability of an adequate labor force, stabilization work and enclosure construction are expected to be completed on both Huff Creek head cuts in 2007.

### **Giraffe Creek Prestige Pond Project**

Investment oriented landowners submitted a pond development project on Salt Basin Creek (a tributary of Giraffe Creek) for 404 permit approval (Figure 13). Preliminary concerns that the pond could impede movement of Bear River cutthroat (BRC) in this tributary were confirmed when several BRC were found above the proposed dam site on November 8, 2006. Additional preliminary evaluations on this property revealed that habitat conditions in this tributary, as well as Giraffe Creek, are highly degraded due to a wide variety of past and present human caused disturbances. Concerns and options were reiterated with the project proponent. Unfortunately, we have heard informally that the landowners went ahead with construction of this pond during the winter of 2006-2007.

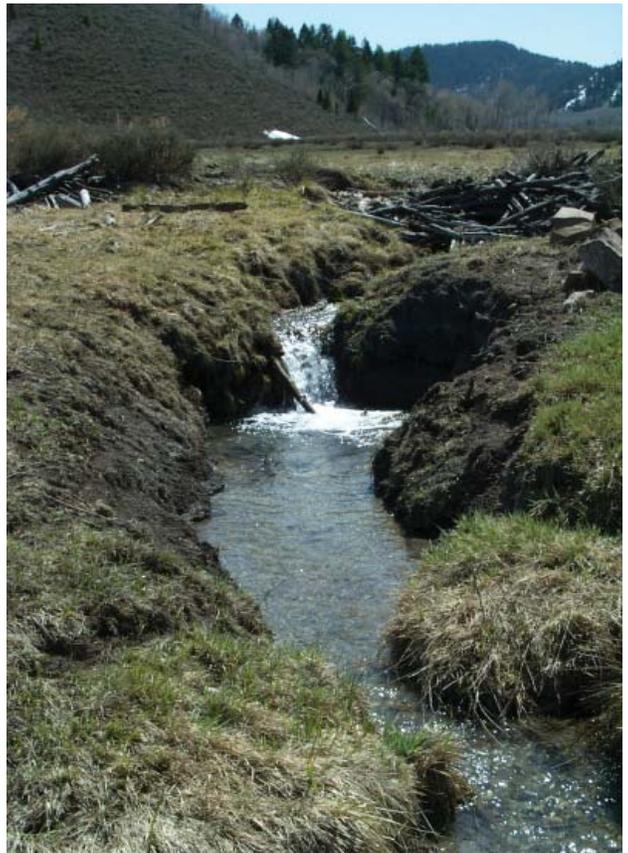


Figure 12. Active head cut on state land parcel of Huff Creek



Figure 13. Overview of Giraffe Creek below the confluence with Salt Basin Creek tributary

## Habitat Mitigation Biologist

### Habitat Projects

The Record of Decision for the Jonah Infill Drilling Project (March 14, 2006) was responsible for the establishment of the Jonah Interagency Office (JIO) in Pinedale. The 4 personnel hired for the JIO are from the Department of Environmental Quality, Bureau of Land Management, Department of Agriculture and Wyoming Game and Fish Department. The objective for the JIO is “to evaluate the effectiveness of guidelines, mitigation, BMP’s and monitoring.” The Charter established for the office contains the following:

**PURPOSE** – “The Jonah Interagency Office (Project Office) will provide the services necessary to execute plans, monitoring, and other activities necessary to assure the effectiveness of land management recommendations, reclamation actions, and mitigation in the vicinity of the Jonah natural Gas Field in accordance with the Record of Decision (ROD) for the Jonah Infill Drilling Project. In addition the Project Office will provide oversight of funds available for reclamation monitoring and mitigation (offsite and onsite).” Wildlife mitigation efforts focus on those species impacted in the Jonah Field, which are primarily sagebrush obligates and dependents. Emphasis is being placed on sagegrouse and pronghorn.

The Charter also lists the scope of work for the Project Office to include the following:

- Oversee the selection and effectiveness of 30,000 – 90,000 acres of offsite mitigation
- Inspect and verify compliance on up to 15,000 acres of surface reclamation
- Inspect and monitor reclamation on up to 3100 new well locations
- Insure compliance with the Wyoming DEQ Air Quality and Water Quality rules and regulations
- Monitor big game and sage grouse populations
- Assure habitat restoration
- Monitor livestock utilization of existing permits
- Validate, coordinate, and oversee research
- Coordinate transportation planning
- Assure vegetation surveys/Invasive species control
- Provide information to the respective agencies and public regarding impacts, monitoring data, and mitigation success

The duties and activities of the Project Office are managed and oversight provided by the Managers’ Committee, which is made up of the agency heads or representative from each of the Agencies involved (Figure 14).

In conjunction with the establishment of the JIO, Operators provided funding for both the operation of the office as well as off-site mitigation. The Operators provided a total of \$24.5 million, with \$8 million for funding the office and “other” mitigation and monitoring needs, and \$16.5 million for off-site wildlife mitigation projects.

Highlights for the past year include the following:

- Receiving, reviewing and ranking 19 project proposals submitted for funding consideration for wildlife and “other” mitigation.
- Preparation of “reclamation criteria” for both “rollover” and final reclamation.
- Oversight of Air and Water regulations; including field evaluations of facilities related to development.

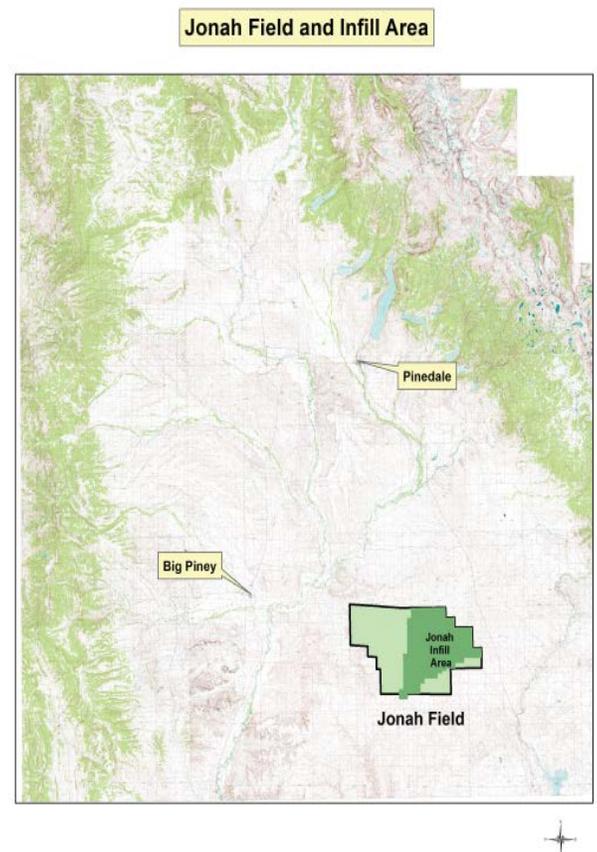


Figure 14. Jonah Infill Area

- Coordination/communication with agencies, private landowners and publics pertaining to goals and mission of JIO.
- Preparation of off-site mitigation goals and strategies relating to wildlife, air quality, land use/recreation, land use/livestock grazing, and cultural/historic resources.
- Working with The Nature Conservancy on issues related to the prioritization of key areas for wildlife mitigation.

### Project Proposals

When the JIO was established, mitigation guidelines for the office primarily involved operating the office similarly to the Governor’s Wildlife and Natural Resource Trust, with project proposals being submitted by outside interests for addressing mitigation needs.

In the spring of 2006, nineteen project proposals were submitted to JIO for funding. JIO developed ranking criteria and used it to rank projects relative to their merit of meeting mitigation needs. Site visits also occurred on many of the projects, along with proponents of those projects. Of the nineteen submissions, 6 were either funded or partially funded (refer to Table 3). Those not funded were either not “on-the-ground” improvement projects, or were projects that required added research to determine some of the various needs, and how they may relate to the mitigation needs.

Table 3. JIO -- July 2006 Project Proposals Evaluation Results

#### Jonah Interagency Office -- July 2006 Project Proposals Evaluation Results

Project Name	Contact	Amount Requested	Description of Project	Evaluation Results	Amount Approved
Lander Trail Well Wildlife and Stockwater Development	Square Top Grazing Assn.	\$19,500	Improvement of existing well and conversion to solar. New storage tank with fencing for watering area for wildlife and offsite livestock watering.	<b>Approved</b> with minor modifications	\$19,500
Muddy Creek Water Well	Square Top Grazing Assn.	\$11,500	Repair and improve existing well; replace windmill with generator, overflow pit and fencing for wildlife watering.	<b>Approved</b> with minor modifications	\$11,500
Square Top Water Well #1	Square Top Grazing Assn.	\$25,500	Drill new well; equip with solar pump and storage and stock watering tank, water overflow pit with fencing for wildlife watering.	<b>Approved</b> with minor modifications	\$25,500
Sand Draw Water Well #1, 2 and 3	Rendezvous Ranch	\$76,500	Drill 3 new water wells, with solar pumping system, storage and stock water tanks, and drinking facilities for wildlife.	<b>Approved</b> with minor modifications	\$76,500
Sand Draw water well #4	Rendezvous Ranch	\$25,700	Drill new water well with solar pump, storage and stock tank and drinking facilities for wildlife	<b>Approved</b> with minor modifications	\$25,700
Jonah Raptor Nest Platform Project	BLM – Pinedale Field Office	\$5,025	Construction and placement of nesting platforms for ferruginous hawks.	<b>Partially approved</b> - for platforms outside the JIDPA boundary	\$2,153
Jonah Integrated Resource Management and Mitigation Program: Data Gap Evaluation and Recommendations	North Wind, Inc.	\$96,750	Development of GIS based strategy for assessing cumulative effects on Anticline and Jonah. Development of a comprehensive database and incorporation of all relevant GIS info from various entities.	<b>Disapproved</b> - 1) redundant to current effort fully funded by BP and 2) not mitigation	\$0
Double Bar E Ranch	Green River Valley Land Trust	\$1,000,000	Conservation easement for maintaining open space and agricultural values with associated wildlife benefits.	<b>Deferred to next cycle</b> - need more info on mineral rights, potential to maintain some habitat types	\$0

Funded projects, other than the raptor perch, were primarily water development projects for both livestock and wildlife and involve either drilling a new well, or modifying an existing well. All of these included an area

fenced off for wildlife that will also have water applied to it. This water will provide an area for wildlife water, as well as provide additional benefits related to the development of “riparian areas” and the associated benefits to sagegrouse brood-rearing, and other animals, which will benefit from these.

The raptor perch proposal was submitted by the BLM and the perches for off-site areas were approved for funding. These will provide moveable perches primarily for Ferruginous Hawks, to replace some of those where development is disrupting the normal nesting activities.

### Reclamation Criteria

The Record of Decision for the Jonah Infill Project caps total disturbance for the field at 14,030 acres, or approximately 46% of the area. In addition, when reclaimed areas meet certain criteria (rollover criteria) they will be credited back against the total disturbed acres, up to 6,304 acres. The JIO drafted both “rollover” criteria as well as final criteria. The intent was to incorporate a diversity of species and vegetative forms into the criteria in order to provide for shrubs and forbs, as well as graminoid species which may duplicate an earlier successional stage of the existing communities, and hopefully, which will succeed to a similar community that currently exists in the field (Figures 15 and 16).

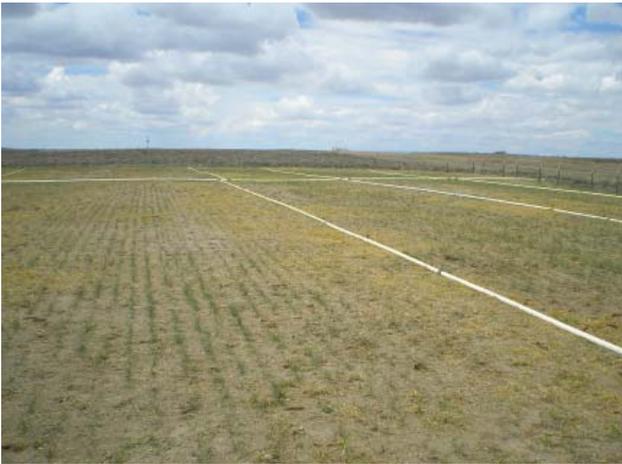


Figure 15. Jonah field reclamation illustrating the use of water for establishing vegetation.



Figure 16. Reclamation illustrating both grass and shrub response.

Rollover reclamation objectives included:

1. Rollover reclamation credit requires establishment of viable site-stabilizing plant growth (e.g., resistant to wind and water erosion) and a plant community that approximates surrounding or ecologically comparable vegetative composition to the maximum extent possible.
2. Final reclamation requires a range of species composition, diversity, cover and production equal to pre-disturbance levels.

Specifics of the Rollover Criteria are as follows:

Erosion Control:

- The site must be in stable condition as indicated by the Erosion Control Classification System (BLM Tech Note 346). The percentage of bare ground must be equal to or less than the reference site.

Vegetative Criteria:

1. Native Forbs: The average density or frequency of forbs must be a minimum of 75% of the reference site. Diversity of forbs on a reclaimed site must be equal to or greater than the reference site.
2. Native Shrubs: The average density or frequency of the shrub component must be at least 50% of the reference site. This includes both shrubs and half shrubs (e.g. winterfat, fringed sage, etc.), but rabbitbrush

cannot account for more than 10% density or frequency of total shrub composition used to meet criteria. At least 15% density or frequency of the shrub component must be the dominant species from reference site. The diversity of shrubs must be equal to or greater than the reference site. Individual shrub plants younger than 3 years old will not count towards roll-over.

3. Native Grasses: Reclaimed sites must have a minimum of 3 native perennial grass species present, 2 of which must be bunch grass species.
4. Non-Native Weeds: Sites must be free from all species listed on the Wyoming or Federal noxious weed list. All state and federal laws regarding noxious weeds must be followed. Other highly competitive invasive species such as cheatgrass and other weedy brome grasses are also prohibited.
5. Plant Vigor: Plants must be resilient as evidenced by well-developed root systems, flowers, and seed heads. All sites must exhibit the sustainability of the above desired attributes after the removal of external influences. A minimum of 1 growing season without external influences (irrigation, mat pads, fences, etc.) may satisfy this requirement.

Final criteria are similar, but express the needs from the perspective of a more advanced vegetative community (successionally), and a greater percentage of both forbs and shrubs compared to the reference site.

### **Off-site Mitigation Goals and Objectives**

As a part of the JIO efforts to better describe and relate to others the types of projects that we are interested in funding, a plan with goals and objectives for various resources was compiled. For wildlife, the following goals and objectives were included:

#### **Goal**

Maintain, preserve and/or enhance up to 90,000 acres of sagebrush-steppe habitat for native wildlife, with emphasis on sage grouse, antelope, and Species of Greatest Conservation Need (SGCN) species.

#### **Objectives**

1. Achieve a landscape mosaic of native vegetation species diversity and successional stages capable of supporting all native wildlife species.
2. Provide a variety of habitat block sizes designed to support sustainable populations of native wildlife.
3. Provide water sources sufficient to support a high distribution of wildlife species across the landscape.
4. Maintain migration corridors sufficient to allow unimpeded seasonal movements of migratory wildlife.
5. Work with various partners to solicit/develop projects that accomplish goals via project proposal submissions.
6. Work with landowners, agencies and other potential partners (permittees, livestock groups, Natural Resource Conservation Service, Soil Conservation Districts, Ducks Unlimited, Rocky Mountain Elk Foundation, various conservation organizations, etc.) to implement various practices to enhance/improve/protect sagebrush habitats and habitat needs for sagebrush dependent/obligate species. Refer to later sections for examples of desirable projects.
7. Specific strategies were also included in the planning effort, as well as project ideas and all were posted on the JIO website ([http://www.wy.blm.gov/jonah\\_office/index.htm](http://www.wy.blm.gov/jonah_office/index.htm)).

## TNC Habitat Prioritization

As part of the efforts targeted at off-site mitigation, British Petroleum (BP) funded The Nature Conservancy to use their modeling expertise for examining areas that would be best suited for off-site mitigation for those species impacted by the Jonah Infill drilling. Figure 17 illustrates the results of these efforts, which combine species needs/habitats, oil and gas (development) potential, and landscape integrity modeling. Species included for the modeling and prioritization effort on the first draft included: burrowing owl, cedar rim thistle, mountain plover, pronghorn (migration), pygmy rabbit, sage grouse (occupied leks, winter/nesting/early brood-rearing habitat), sage sparrow, white-tailed prairie dogs and Wyoming big sagebrush. Minimum viable sizes of habitat were also included in the analysis. After discussion, it was suggested that TNC reduce the size of some of their minimum viable habitat requirements, and also run a model specifically for sagegrouse and pronghorn, to compliment what they have done so far, and “loosen” up the sideboards for potential mitigation purposes.

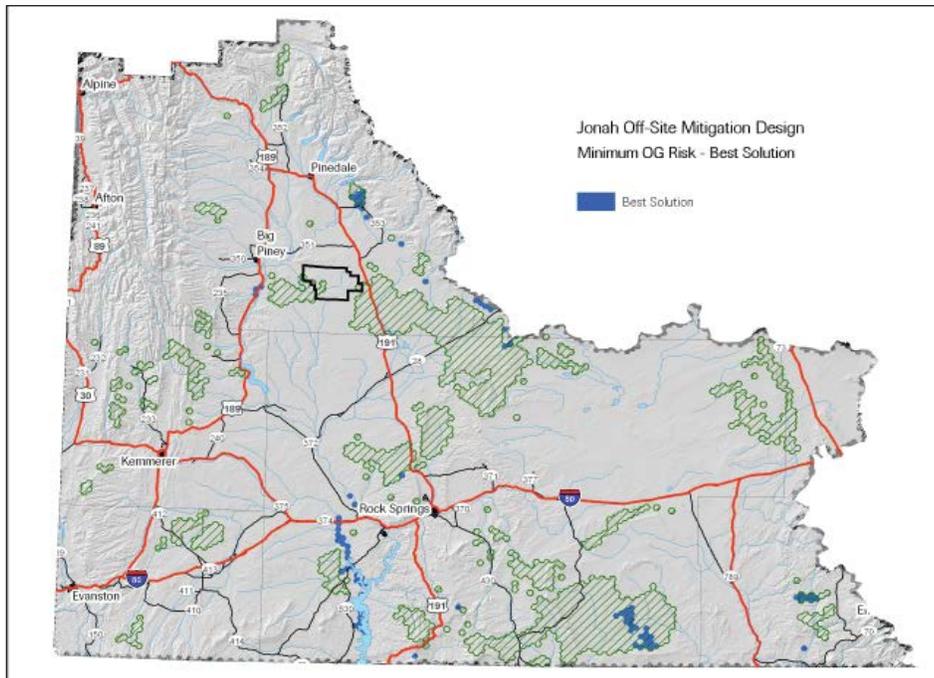


Figure 17. TNC draft analysis illustrating “best solution” and areas for secondary consideration in mitigation planning.

Future models will be provided by late March, and will be utilized as another tool for aiding in the mitigation process.

## Monitoring Planning

Part of the JIO duties relate to the establishment of monitoring criteria for the Jonah Field. These relate mostly to wildlife and reclamation, and plans were developed which are in a draft stage at this point. Once completed, they will be available on the JIO website.

## Southwest Wyoming Imagery Project

The final phase of this collaborative imagery project between BLM, WGFD, and the University of Wyoming Geographic Information Science Center was completed in 2006. A WGFD habitat intern spent the summer ground truthing nearly 100 points on the draft landcover map. The BLM GIS specialist used the ground truthing points to improve the classification accuracy of the landcover map before finalizing. In addition, other imagery items were completed and made available for use including snow depth and change detection analyses that can detect changes in vegetation over the past 20 years.

**Cooperative Seeding Trials (2)**

Two seeding trials have been initiated over the past couple years to test various seed mixtures, seeding rates, and planting methods to determine the best reclamation practices for oil and gas associated disturbances. In October 2006, personnel from the BLM, NRCS, WGFD, Questar, and the Sublette County Conservation District planted 25 different shrub and 3 grass species on .70 acres of disturbed ground (Figure 18). A fence was constructed around the site prior to seeding to eliminate big game and cattle. The planting methods included an aerial broadcaster and cone planters that deposited seed at specific depths in randomized rows or plots. Data on germination, survival, vigor, canopy cover, and palatability will be collected for up to 15 years beginning in 2007.



Figure 18. A belt seeder is used to plant a row of shrubs for the Questar shrub trial.

In October 2005, a similar seeding trial was implemented on a Shell lease to test 72 (32 grass, 24 forbs, 16 shrubs) seed varieties (Table 4). Four seeding methods were used: cone seeder, broadcast, Truax drill, and hydro-seeding. The first of 5 years of monitoring was conducted in June 2006 to evaluate the various seeding methods and seed species. Success after year 1 was limited since the site had only received 1.8 inches of precipitation from October 2005 to July 2006.

Table 4. Germination rates for the Shell seeding trial.

2006 Shell seeding trial evaluation (N = 72 plots)		
Plant Type	Germination Rate %	Range %
Grass (N = 32)	16	2 to 31
Forbs (N = 24)	4	.04 to 12
Shrubs (N = 16)	1	.04 to 5

**Evaluation of Old BLM Treatments**

Data from old habitat treatments can provide excellent information on what we can expect for future conditions of treatments implemented today. However, data collection efforts were not consistently performed prior to the 1990s and BLM biologists conducted several habitat treatments prior to that time. Most of them occurred between 1960-1980, primarily as sagebrush eradication treatments (i.e., 2-4D) to increase forage for grazing operations. As a result, a collaborative effort to locate and collect data on these treatments was initiated in 2006.

Personnel from the BLM, WGFD, and Wyoming Wildlife Consultants began an effort in 2006 to locate old treatments on the ground, map them, and start to collect vegetation data. To assist with this effort, we requested retired BLM biologist Jack Welch who worked in Pinedale from 1965-1972 to assist with locating treatment sites from a list of all known habitat treatments in Sublette County. Pictures, anecdotal data, and GPS points were recorded for 16 treatment sites that were located (Figure 19). This effort will continue in 2007 with additional mapping, searching for historical data, and prioritization and collection of field data.



Figure 19. A treatment from 1975 mowed 2,500 + acres in 60-100' strips. Mowed areas appeared to have better herbaceous and sagebrush production than unmowed areas.

## Elk VIT Research

In January of 2006, a 2-yr cooperative research project was initiated among the WGFD, University of Wyoming (UW), Iowa State University (ISU), and USFS with financial assistance from the WGFD, ISU, and the Wildlife/Livestock Disease Partnership. The goals of this project were to determine 1) abortion, birth, and seroprevalence rates, and 2) abortion and parturition locations and associated habitat conditions in elk from a spectrum of winter foraging opportunities.

From January to March of 2006, 114 adult female elk were captured on Scab Creek, Soda Lake, and Bench Corral feedgrounds and the Buffalo Valley area north of Jackson, WY. Ninety-six of 114 (84%) female elk were determined to be pregnant and subsequently fitted with vaginal radio transmitters (VIT). VITs were used to facilitate location of parturition sites in these animals. At each parturition site and 2 randomly located sites within 200m of the parturition site, we quantified macro- and microhabitat vegetation attributes for comparison to assess selectivity of parturition sites. Macrohabitat variables were derived from GIS coverages and included vegetation cover type, distance to edge, elevation, aspect, land ownership (USFS, BLM, state, private), distance to nearest cattle operation, and distance to water. Microhabitat variables included canopy cover; concealment cover; shrub species and density; tree species, age, and distance to VIT; and nutritional content of various forage species.

Throughout the project area, parturition sites occurred in a wide variety of habitat types (Table 5 and Figure 20). These values will be compared to availability of these habitat types on a landscape scale to determine selection. Only 6 of 80 (8%) parturition sites occurred in WGFD delineated parturition areas. Further analysis of all other macrohabitat variables is pending. Microhabitat variables that differed significantly between parturition and reference sites were primarily canopy and concealment cover. Additional analysis of all microhabitat variables using a conditional logistic regression model will occur following data collection in 2007 and may elucidate significant associations of microhabitat variables to parturition sites.

Table 5. Habitat types associated with elk parturition sites in western Wyoming.

	Aspen	Conifer	Sage	Willow	Aspen/ Conifer	Aspen/ Willow	Conifer/ Sage	Other
Bench Corral	14	18	9	18	27	5	4	5
Scab Creek	0	50	50	0	0	0	0	0
Soda Lake	38	52	0	0	10	0	0	0
Buffalo Valley <sup>a</sup>	10	24	19	19	14	0	0	14

<sup>a</sup>The sample size for this analysis combines 11 free ranging and 9 feedline animals.



Figure 20. A stereotypical elk parturition site in the Wyoming Range, western Wyoming.

## O Bar Y Aerator Project

Project planning began with this private landowner in fall of 2006 to implement a 300-acre treatment with the Lawson Aerator. Project implementation is anticipated for fall of 2007. The landowner's goals are to reduce the density of decadent sagebrush cover and increase the production of forbs to attract wildlife such as mule deer and sage grouse to the property. The project area lies in the Upper Green River Valley, which is a critical migration corridor for antelope, moose, and other wildlife species.

### **Voorhees Wetland Project, LaBarge WY**

Habitat & Access Development Crew personnel installed an Agri-drain inline water control structure and 60 feet of pipe (Figure 21). This project was implemented to eliminate a carp infestation and thus increase the water quality to encourage nesting trumpeter swans to return to the wetlands. Agri-drain and pipe were provided by non-game.

### **Mesa Sagebrush Enhancement, Pinedale Anticline**

Habitat & Access Development Crew personnel treated 30 acres each with the Lawson aerator and Dixie harrow (Figure 22 and 23). This was a project to study various treatment types for mitigation purposes along the Pinedale anticline and was performed in cooperation with the BLM, UW, UI, and Questar.



Figure 21. Agri-drain installation.



Figure 22. Lawson aerator treatment.



Figure 23. Dixie harrow treatment.

## **WILDLIFE HABITAT MANAGEMENT AREAS**

### **Huston Public Access Area Projects**

Primary development of this 30-acre acquisition, which provides for public hunting/ fishing and enhancement of riparian habitat, was completed in 2002.

Although maintenance work is still needed on the lower grade control sill in the developing channel, we determined that this work could be postponed until a more comprehensive habitat / restoration plan can be developed for this 1.5 mile reach of river. Mobilization of equipment would cost more than the actual maintenance work. Future opportunities involving other landowners include stabilization of additional cut-off channels and eroding banks, and construction of a more functional irrigation diversion structure for the Ada Ditch.

### **Half Moon WHMA Forage Reserve**

Half moon WHMA was used again in 2006 as a forage reserve to provide rest on USFS land that was burned to improve forage opportunities for elk and other wildlife near the Soda Lake WHMA. That treatment (i.e., Fremont II prescribed burn) was conducted in September of 2005 and burned 1,330 acres including 400 acres on the Soda Lake WHMA. A total of 120 cow/calf pairs and 5 bulls were allowed to graze from July 1 to September 15, and this was the final year that treatment would need rest.