

# **Rangeland Condition Assessment**

## **Introduction**

This assessment of rangeland vegetation and condition was part of the multi-party collaboration that occurred through the Wallowa County Community Planning Process to assess watershed condition in the Upper Joseph Creek Watershed (UJCW).

Representatives<sup>1</sup> from Wallowa Resources, US Forest Service, The Nature Conservancy, Nez Perce Tribe, OSU Extension, the International Center for the Advancement of Pastoral Systems, Natural Resources Conservation Service and local landowners directed the assessment to include:

A. *Vegetation Classification*

Classified vegetation to plant community and seral stage by sampling and analyzing grass and forest steppe rangeland on private and USFS ground in the UJCW and on similar rangeland in an adjacent watershed.<sup>2</sup>

B. *Range Mapping Research*

Historical methods of range mapping were very accurate but, most often, time consuming and limited in scale. We evaluated the efficacy of using high-resolution satellite imagery and statistical analysis in combination with range inventory data and local knowledge to create a watershed scale range map for identifying plant community and seral stage. We hope that this process will be a learning tool or potential model for other rangeland mapping efforts.

C. *Input from Permittees/Private Landowners*

Sought input from private landowners and permittees in the UJCW to capture local knowledge and management experience.

The above activities will aid in developing recommendations for sustaining and/or improving biological, ecological, economic, and land-use values of the UJCW; improving the capacity of cooperators to identify pertinent issues affecting the watershed; and to implement improvements, manage, and monitor the UJCW in the future.

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<sup>1</sup> Participants in the Rangeland Working Group are listed in *Appendix 2: Participants*.

<sup>2</sup> For detailed information, see *Appendix 8: Rangeland Relationships in the Upper Joseph Creek Watershed (Sheehy & Hale, 2004)*.

## Results<sup>3</sup>

### A. Vegetation Classification

Evaluation of field site measurements obtained during the summer of 2002 indicated that most grass steppe plant communities in the UJCW were represented by multiple seral stages (Johnson and Simon, 1987) (Table V-1).

Table VI-1. Seral stage of vegetation in the Upper Joseph Creek Watershed as indicated by field site evaluation (% of total).

	Idaho Fescue Series	Bluebunch Wheatgrass Series	Scabland Series	Shrub Series	Oldfield Communities	Meadow Communities	Annual Grass Communities
V. Early	23	0	4.2	10	100	0	100
Early	18.2	14.3	44.6	40	0	88.9	0
Mid	40.5	71.4	37.5	50	0	11.1	0
Late	18.2	14.3	13.4	0	0	0	0

Idaho Fescue and Bluebunch Wheatgrass series dominate rangeland in the UJCW.

Observations include:

- Vegetation in the majority of field sites in these plant communities was in mid or late seral stages.
- The majority of sites in the Idaho Fescue series in the very early seral stage are Kentucky Bluegrass or Wyeth's Buckwheat disclimax communities.
- Nearly 45% of the Scabland series sites were early seral, however, the mid and late seral stages together exceed 50%.
- Among sites measured in shrub communities, the majority of sites had vegetation in early and mid seral stages.

### B. Range Mapping Research

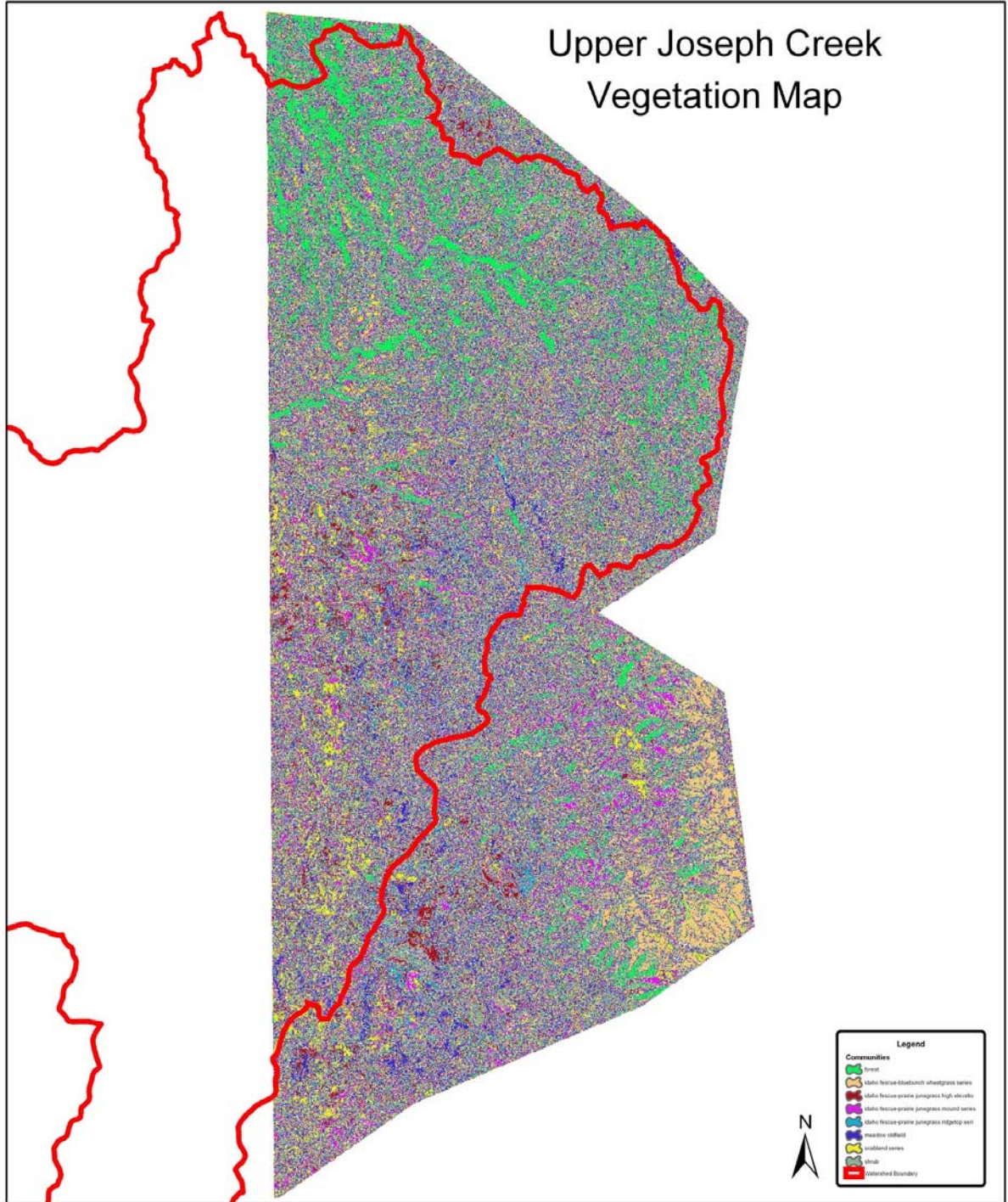
The final output from spatial classification of vegetation and ground surface attributes of the UJCW will be a vegetation map at 1:100,000 scale resolution (Figure V- 1). Mapping units of the vegetation maps will be plant communities (Level II) and seral stages (Level I). The Level II vegetation map output will only spatially define plant communities and will be accessible to the general public. The Level I vegetation map output will spatially define plant communities and seral stages within plant communities. Level I vegetation maps of privately owned rangeland in the UJCW will only be available to the landowner.

To assess initial mapping unit accuracy, a ground-truth survey to validate the computer map was conducted during late summer, 2003. Field data from ground-truthing were related to the mapping units from the satellite image and a table of comparison values was created. Generally, it appeared that the mapping units correlate with what was found on the ground. While a more thorough accuracy assessment and further field verification will need to be completed in the future, the range group generally agreed that with on the ground interpretation by knowledgeable range professionals, the map can be used to identify open water, forests/shrubs/grass, landscape level vegetation patterns, moisture/soil gradients, areas of very high annual grass cover, and plant community/seral

<sup>3</sup> See Appendix 8 (Sheehy & Hale, 2004) for methodology and specific results.

stage. The map maybe useful to identify old fields and deep soil areas, predict plant cover and erodability, or combine with other information/analyses (e.g., trend). The map cannot be used to identify vegetation at a small scale or noxious species at a fine scale.

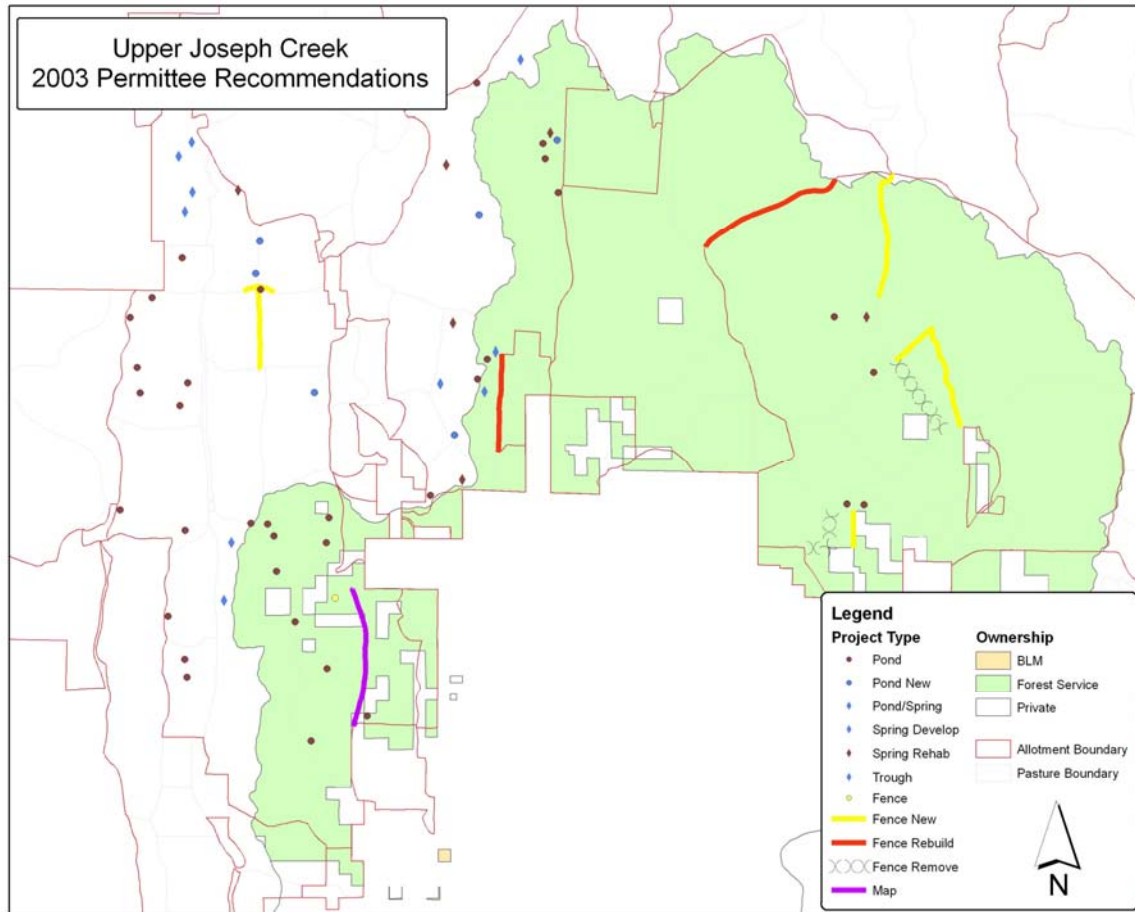
Figure V- 1. Illustration of Upper Joseph Creek Watershed Plant Communities (Level II) map



### C. Permittee/Private Landowner Input

USFS allotment permittees<sup>4</sup> met in December 2003 to develop recommendations for range restoration improvements that would facilitate animal distribution, improve the availability of clean water, and improve rangeland conditions in the UJCW. Locations for those recommendations are illustrated in Figure V - 2. The recommendations are addressed specifically in the recommendations section with priority ratings 1-3, 1 being the most urgent.

Figure V - 2. Illustration of Upper Joseph Creek Watershed Permittee recommendations map.



<sup>4</sup> Permittees/Allotments: Doug McDaniel (Cougar and Vigne), Rod Childers (Swamp), Tom Birkmaier (Cougar and Swamp), Scott McClaren (Swamp, Doe Creek, and Chesnimnus), Paul Yost (Cougar), Charles Bornstedt (Chesnimnus), and King Williams (Chesnimnus).

## Recommendations

### A. General recommendations

#### 1. Management considerations

The following are intended as general goals and tools to use for future management of public and private land in the UJCW:

#### Goals and Rationale:

- Maintain the social, economic and cultural values of livestock production –  
The rangeland group recognizes the economic, social, and cultural value associated with livestock production. Long-term stewardship by people with a vested interest in the ecological health and productivity of a place is essential.
- Control noxious weeds –  
Noxious weeds compete with and can dominate previously healthy landscapes degrading their productivity, diversity, and viability. Integrated management should work to prevent, control, eradicate and reduce the potential spread of weeds.
- Revegetation of early seral areas –  
These sites are particularly susceptible to noxious weed invasion and can be subject to higher rates of erosion than later seral stages. However, there is a normal and natural presence of very early and early seral stages that is within HRV and the resilient range for the landscape. Some early seral sites may, by nature, have low potential for revegetation. Where very early seral stages are the result of past and/or present management, or they are in areas subject to high risk of weed invasion, they should be revegetated with appropriate perennial vegetation for current management objectives. Sites should be evaluated on a site-by-site basis for causal factors, weed risk and appropriate revegetation species and potential. All early and very early seral sites should be closely monitored for noxious weed presence and treated accordingly.
- Improve vegetative cover/condition of riparian area hot spots –  
In riparian areas identified as having been degraded of their ecological function by historic uses, utilization should be limited (by herding, barriers – Large Woody Debris, or fencing, change in the time of use, etc.) Condition could be enhanced by revegetation (e.g. grasses or shrubs) if appropriate. Sites should be evaluated on a site-by-site basis for causal factors and appropriate actions.
- Upland water development and enhancement –  
Water sources are essential to dispersing livestock use patterns. Clean water sources also can improve wildlife habitat. Where possible, water sources should be developed in a manner that protects the sources and the associated vegetation. Sites should be evaluated considering cost, maintenance requirements, and use potential.

- Maintain and/or enhance native plant communities, T&E and S plant habitat –  
Grazing practices should, at minimum, maintain these goals and improve them where practical.
- Improve productivity of old-field sites –  
Old-field sites within the watershed are often weedy and/or dominated by single species of non-native grasses. These areas could be improved by the addition of other grasses and forbs to improve forage production and weed resistance. Old-fields have the potential to be used for intensive grazing areas that may allow for relieving grazing pressure from sensitive areas. These sites could also serve as areas to investigate methods of reestablishing native species.
- Improve and diversify forage opportunities –  
Management that expands current forage opportunities (e.g., thinning of overstocked forest stands) is encouraged because it provides livestock with a greater variety of options and can disperse usage. Potentially, increasing forage opportunities could allow for an increase in livestock numbers.
- Improve livestock distribution –  
The UJCW provides ample forage for wildlife species and domestic livestock. It is recognized that in specific areas/times livestock can cause damage to riparian and rangeland resources. These “hot spots” will be addressed by improving spatial and temporal distribution of cattle, fencing, or placement of woody debris, etc.

Tools:

- Weed treatment (including inventory, control, revegetation, and monitoring)
- Prescription fire
- Thinning in the timber zone
- Fencing and/or barriers (riparian and allotment)
- Off-stream water development
- Prescription grazing
- Revegetation
- Improved co-management of allotments (explore vacant allotment uses i.e., grass banks, reissuance of allotments)
- Alternatives to traditional management (e.g., pastoral grazing systems, altering season of use)
- Increase herding (riders)
- Livestock herding and behavioral conditioning
- Multi-species grazing
- Incidental take permits (allows grazing along riparian areas during spawning)

Table V - 2. Partial list of potential rangeland management tools in the Upper Joseph Creek Watershed.

<b>Improvement Type</b>	<b>Improvement Category</b>	<b>Potential Project Implementation</b>	<b>Implementation Factors</b>
Physical	Water Development	<ol style="list-style-type: none"> <li>1. Spring and tank development and rehabilitation.</li> <li>2. Riparian zone exclusion fencing.</li> <li>3. Change stream dynamics in the riparian zone.</li> </ol>	<ol style="list-style-type: none"> <li>1. Implement during summer and fall seasons; periodic maintenance required.</li> <li>2. Implement during summer and fall seasons; annual maintenance and periodic replacement of materials needed; costly; needs to address large wild herbivore use as well as livestock; creation of riparian pastures may be more cost and management efficient.</li> <li>3. Implement during summer and fall seasons; stream placement of materials or planting of vegetation costly; periodic maintenance required;</li> </ol>
	Fencing	<ol style="list-style-type: none"> <li>1. Grazing management fencing including perimeter, cross fencing, and grazing system.</li> <li>2. Enclosure &amp; protection fencing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Implement conceivably within a season but more likely implementation will extend over several years due to cost and time factors; annual maintenance needed.</li> <li>2. Implement as needed prior to implementation of the project; costly; annual maintenance as needed.</li> </ol>
	Seeding	<ol style="list-style-type: none"> <li>1. Mechanical seeding degraded native range.</li> <li>2. Mechanical reseeding depleted Oldfields and older rangeland seedings.</li> <li>3. Site specific seedings (seed production enclosures, seed dispersal stations, experimental plots, broadcast seeding, etc.).</li> <li>4. Mechanical interseeding.</li> </ol>	<ol style="list-style-type: none"> <li>1. Two-year exclusion from grazing to ensure stand establishment required; periodic reseeding required depending on seeded species and site; more intensive management required.</li> <li>2. Two-year exclusion from grazing to ensure stand establishment required; periodic reseeding required depending on seeded species and site; protection required.</li> <li>3. Exclusion from grazing needed; protection related to seeding objectives.</li> <li>4. One year exclusion from grazing required; protection not required.</li> </ol>
	Control of invasive species.	<ol style="list-style-type: none"> <li>1. Herbicide &amp; pesticide control of herbivore competitors and invasive species.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expensive; control of invasive species requires multi-year application.</li> </ol>
	Burning	<ol style="list-style-type: none"> <li>1. Large-scale burning to increase forage quality and reduce potential for wildfire.</li> <li>2. Small-scale burning at specific sites for specific purposes</li> </ol>	<ol style="list-style-type: none"> <li>1. Periodic application of treatment required; inherent danger of losing control of fire; costly; negative and positive impacts not fully understood for grass steppe communities; grazing may achieve the same objectives.</li> <li>2. Periodic application of treatment required; inherent danger of losing control of fire; costly; negative and positive impacts not fully understood for grass steppe communities; grazing may achieve the same objectives.</li> </ol>
Animal Management	Grazing management.	<ol style="list-style-type: none"> <li>1. Herding &amp; pastoral grazing strategies for direct control of livestock grazing.</li> <li>2. Mixed species grazing for effective weed control.</li> <li>3. Forage backgrounding to improve nutrient content for</li> </ol>	<ol style="list-style-type: none"> <li>1. Implementation is seasonal and annual; higher costs of production should be expected.</li> <li>2. Herding and some pastoral strategies needed required; constraints on using some livestock breeds probable.</li> <li>3. Herding and some pastoral strategies needed required; constraints on using some</li> </ol>

Improvement Type	Improvement Category	Potential Project Implementation	Implementation Factors
		<p>other species and during other seasons.</p> <p>4. Implement grazing systems such as rest-rotation, deferred, and intensive.</p>	<p>livestock breeds probable.</p> <p>4. Requires increased knowledge of plant-animal relationships; may require increased inputs of materials and/or labor; increased cost because of greater inputs of labor, materials and management.</p>
	Change herbivore numbers	<p>1. Ensure proper herbivore stocking rates.</p> <p>2. Adjust herbivore stocking rates to fit seasonal and annual forage production.</p> <p>3. Reduce, restrict, or eliminate herbivore grazers.</p>	<p>1. Both private and public rangeland in the UJCW are grazed relative to overt or implicit stocking rates; changing stocking rates can be difficult unless "slack" has been previously introduced to the livestock production system, i.e., forage banks, allotments grazed in alternate years, etc. The ability to graze CRP may offer slack (flexibility).</p> <p>2. Difficult to accomplish for the same reasons as above, also because of contractual obligations and economic hardships to the producer.</p> <p>3. Many non-livestock herbivores use both forest and grass steppe rangeland; reducing or eliminating livestock only may not facilitate rangeland improvement; may upset predator-prey relations or interfere with mutually beneficial interactions between animal and plant resources; should only be used in situations where the need is obvious to all stakeholders.</p>
Indirect Enhancement	Rest	<p>1. Seasonal and annual rest periods may enhance over-utilized rangeland.</p> <p>2. Forage banks and alternate seasonal and annual use of pastures.</p>	<p>1. Requires increased management of large herbivores; knowledge of plant-animal relationships.</p> <p>2. Requires creation of "slack" in the system; non-use of some pastures may concentrate use by all herbivores on used pastures by diminishing nutrient availability on rested pastures, i.e., elk may follow cattle because of forage backgrounding.</p>
	Tree Harvest	<p>1. Release of herbaceous understory vegetation providing forage enhanced by removing tree overstory.</p>	<p>1. High potential in forest steppe; sequential, planned tree harvest throughout the forest needed to ensure availability of herbaceous vegetation; should be used as a grazing management tool only in forest communities that have potential for significantly increasing growth of herbaceous understory vegetation.</p>
	Grass banks	<p>1. Grass banks can be used as alternate pastures to reduce grazing pressure during adverse environmental conditions or to allow improvements to be implemented on other rangeland pastures</p>	<p>1. Difficult to reduce stocking rate to create enough slack to permit grass banks unless created outside the current livestock production system; in the UJCW vacant allotments or TNC rangeland have potential to be used as grass banks.</p>
	Fertilization	<p>1. Fertilization of high yielding sites to increase forage production.</p>	<p>1. Requires a cost/benefit analysis; previous research indicates fertilization of native rangeland is not cost efficient; should be tested during Oldfield rehabilitation.</p>

2. *USFS Mapping*

Upper Joseph Creek allotment/pasture maps need to be field verified and updated. For example, several ponds and springs are mapped in the wrong place, missing from the map, or show up when they no longer exist.

Table V - 3. Mapping recommendations from Upper Joseph Creek Watershed permittees.

Project ID #	Allotment	Pasture	Location	Priority	Description
2	Cougar	Muddy	T3N R46E NW1/4 Sec07	3	remove spring from map
4	Cougar	Muddy	T3N R46E SE1/4 Sec07	3	remove trough from map
5	Cougar	Muddy	T3N R46E NW1/4 Sec18	3	remove trough from map
7	Cougar	Muddy	T3N R46E NW1/4 SE1/4 Sec07	3	remove pond from map
32	Swamp	Davis Creek	T3N R45E SE1/4 Sec13	3	remove pond from map
48	Swamp	Elk Creek	T2N R45E N1/2 Sec3	3	Elk/Dorrance pasture fence needs remapped
51	Swamp	Upper Swamp	T2N R45E SW1/4 NE1/4 Sec9	3	remove pond from map
52	Swamp	Upper Swamp	T2N R45E NW1/4 NE1/4 Sec9	3	remove pond from map
53	Swamp	Upper Swamp	T2N R45E NW1/4 NW1/4 Sec9	3	remove pond from map
54	Swamp	Upper Swamp	T3N R45E SE1/4 NW1/4 Sec31	3	remove pond from map
57	Chesnimnus			3	several ponds not shown on the map - many need cleaned
64	Chesnimnus	Poison	T3N R47E W1/2 NE1/4 Sec5	3	two ponds not shown end of Mitchell Ridge to ponds across creek off of Road

3. *Research/Analysis*

- Analyze current satellite image to determine acres of each community type in the mapped area
- Obtain satellite coverage (scale to be determined) of the west portion of the watershed, cross walk current reflectance values/communities to new the image and analyze for acreage across the watershed
- Develop confidence levels for different scales of the vegetation map
- Study the relationship of soil turnover by small rodents and community stability of Idaho Fescue mounds and communities in the Bluebunch Wheatgrass series
- Consideration should be given to applied research initiatives to track succession of Oldfields towards native communities to determine potential for successfully restoring native communities.
- Designing and implementing an improvement treatment should be considered with regard to potential impacts throughout the watershed, not just for the site at which the treatment will be implemented.
- Research efficacy and economics of reseeding Oldfields with native grasses.
- Work with the National Riparian Team to develop appropriate management and restoration goals and objectives with monitoring protocols.

4. Proposed future consideration/emphasis area (to be field verified & defined)

Table V- 4. Policy recommendations from Upper Joseph Creek Watershed permittees.

Project ID #	Allotment	Pasture	Project Type	Priority	Description	Notes
13	Vigne	Peavine	Policy	1	Policy change to allow Peavine pasture early grazing every 2nd year if possible - at least every third year	Right now not allowed in before July 1
68	Chesnimnus		Policy	3	New grazing plan: Poison to Sterling/Cayuse/Berland to Devils Run to S. Fork	Poison is better pasture for spring or fall grazing (fish issues) June or September; Cayuse/Sterling may not need reseeding if change rotation; cattle would utilize grass better in North Poison if it was spring pasture
72	Chesnimnus		Policy	3	Please close the gate signs	

- Implement improvements and management activities that maintain and improve the condition of meadow/riparian habitats. Creation of riparian pastures rather than riparian exclosures should be considered, and if exclusion fencing is selected, fence structure should consider exclusion of large wild herbivores as well as domestic livestock.

5. Plant community improvements

- Idaho Fescue-Prairie Junegrass (ridgetop)
  - Plant communities in very early and early seral stages unless dominated by Kentucky bluegrass should be considered for mechanical seeding of native bunchgrass plants.
  - As part of an UJCW management plan, deferment of livestock grazing to fall season grazing in alternate years should be considered.
  - Degraded sites should be identified and treated through grazing modification and seeding.
- Idaho Fescue-Prairie Junegrass (mounds)
  - Grazing mound communities before soil stabilizes should be avoided because of unstable soil stability characteristics.
  - Mounds are highly susceptible to churning caused by frost heaving and hoof action and grazing should be avoided during this period.
- Idaho Fescue-Prairie Junegrass (mounds-Kentucky Bluegrass disclimax)
  - Manage with other communities forming the Mound-Intermound complex.
  - Mounds dominated by Kentucky bluegrass can be grazed heavier than mounds dominated by native perennial grasses.
- Idaho Fescue-Prairie Junegrass (mounds-Wyeth’s Buckwheat disclimax)
  - Manage with other communities forming the Mound-Intermound complex.
- Idaho Fescue-Prairie Junegrass (high elevation)
  - Manage this community similar to and with other steep sloped Idaho Fescue communities.

- Idaho Fescue-Bluebunch Wheatgrass (ridgetop)
  - Early season use by large herbivores should be avoided.
  - The community can be easily degraded by overgrazing.
  - Difficult to use fire in this community because of low vegetation cover.
- Idaho Fescue-Bluebunch Wheatgrass/Silky Lupine
  - Community is suitable for livestock use but best for domestic sheep use.
  - Winter grazing by multiple large herbivores can damage plant community and promote weedy forbs.
  - Fire can damage perennial bunchgrasses and promote weedy forbs.
- Idaho Fescue-Bluebunch Wheatgrass/Snake River Phlox
  - Manage community in coordination with other steep sloped Idaho fescue communities in the Idaho fescue series.
- Common Snowberry/Idaho Fescue-Prairie Junegrass
  - Manage with Idaho Fescue-Prairie Junegrass (high elevation) steppe community
- Idaho Fescue-Timber Oatgrass-Sedge
  - Community should be managed in conjunction with dominate adjacent communities in the Idaho fescue series.
- Bluebunch Wheatgrass/Wyeth's Buckwheat
  - Manage to maintain Bluebunch Wheatgrass on the site.
  - Reduction of early season use may improve Bluebunch Wheatgrass and onion grass.
- Bluebunch Wheatgrass-Onespike Oatgrass
  - Management of the community should focus on importance of the community to large wild herbivores in spring because of southerly aspect.
  - Manage the community to maintain Bluebunch Wheatgrass.
  - Large herbivore use should be initiated after soils dry to avoid creating terracettes.
  - Use of the community by large herbivores should follow seed set.
- Bluebunch Wheatgrass-Sandberg's Bluegrass (basalt)
  - Management of the community should focus on proper grazing to sustain Bluebunch Wheatgrass.
  - Large herbivore grazing should end before boot stage and not resume until after flowering.
- Bluebunch Wheatgrass-Sandberg's Bluegrass (scabland)
  - Manage as a community associated with Idaho Fescue-Prairie Junegrass communities, especially the mound community.
  - Grazing of the mound-intermound complex by large herbivores should occur only after scabland soils are dry and flowering of bunchgrasses on both mounds and intermounds has occurred.
- Stiff Sagebrush/Sandberg's Bluegrass
  - Manage as a community associated with Idaho Fescue-Prairie Junegrass communities, especially the Mound and Ridgetop communities.
  - Grazing of the mound-intermound complex by large herbivores should occur only after scabland soils are dry and flowering of bunchgrasses on both mounds and intermounds has occurred.
  - Maintain Stiff Sagebrush as a component of the community because of the high value diversity potential of the shrub within the prairie habitat.

- Sandberg's Bluegrass-Onespike Oatgrass (scabland)
  - Manage as a community associated with Idaho Fescue-Prairie Junegrass communities, especially the Mound and Ridgetop communities.
  - Grazing of the mound-intermound complex by large herbivores should occur only after scabland soils are dry and flowering of bunchgrasses on both mounds and intermounds has occurred.
- Douglas' Buckwheat/Sandberg's Bluegrass
  - Manage similar to other scabland communities.
  - Domestic livestock use should be timed to occur when soils are dry and flowering/seed set of Sandberg's bluegrass has occurred.
- Common Snowberry-Rose
  - Manage to maintain shrub stands but monitor (especially the Rose component) to prevent invasive tendencies of the shrubs.
- Mountain Snowberry
  - Manage to maintain current stands of mountain snowberry where they occur.
  - Utilize primarily by wildlife by insuring timing of domestic livestock use does not conflict with important wildlife events such as "elk calving."
  - Manage to maintain the diversity offered by mountain snowberry.
  - Promote natural reseeding with existing vegetation.
- Ninebark-Common Snowberry
  - Manage to maintain current stands of Ninebark-Common snowberry where they occur.
  - Utilize primarily by wildlife by insuring timing of domestic livestock use does not conflict with important wildlife events such as "elk calving."
- Oldfields
  - Reseeding Oldfields to best adapted introduced or native forage species should be part of a management plan for the UJCW.
  - Highly productive Oldfields should be used to reduce grazing pressure on native communities during implementation of native community improvement alternatives.
- Meadow/Riparian
  - Meadows and Riparian areas require coordinated management with upland grass steppe.
  - Management focus should be not only on protection/exclusion but also on shifting timing and density of large herbivore use.
  - Trials to establish deciduous woody growth forms to stabilize riparian areas and diversify habitat should be initiated.
- Annual Grass
  - Manage to increase establishment potential and sustainability of caespitose bunchgrasses in stands with high density of Cheatgrass and Ventenata.
  - Initiate applied research initiatives to study Ventenata to increase information about invasive potential and habit requirements.

## B. Projects

1. *Proposed future projects (to be field verified & defined)*
  - In forested areas of the watershed, developing a sequential program to open forest overstory canopies to allow optimal response of herbaceous understory vegetation should be considered.

- Weeds: prioritize and perform weed inventories and follow-up treatment.
- Improve capacity of Oldfields to produce forage. The rationale for this conclusion is: (1) Oldfields are, and will remain in a very early seral stage for an indefinite time period because of the past severe disturbance to soils and native vegetation; (2) insufficient information on methods and the time required to restore Oldfields to native bunchgrass communities currently exists, and (3) developing the capacity of Oldfields to produce quality forage for livestock and large wild herbivores can induce flexibility in livestock management and be used to reduce grazing pressure on native bunchgrass communities.

2. Site specific

Table V - 5. Fence project recommendations from Upper Joseph Creek Watershed permittees.

Project ID #	Allotment	Pasture	Location	Priority	Description	Notes
12	Cougar	Muddy	T3N R46E Sec 7 & 18	1	fence on east side of Muddy Pasture needs rebuilt	Kooch Boundary Fence
24	Swamp	Snake Canyon/ Barney Flat	T3N R45E E1/2 E1/2 Sec 5& 8	1	new fence	Witch's Tit to Baker Knob and Ton Ridge to Rims (T-shape)
47	Swamp	Elk Creek	T2N R45E NW1/4 NE1/4 Sec3	3	fence off pond in Dorrance Pasture and gate so that it can be used in Elk as well	improve utilization in north end of Elk Pasture
61	Chesnimnus	Berland	T3N R47E SW1/4 NW1/4 Sec14, NW to NW1/4 SE1/4 Sec3, SW to NE1/4 NE1/4 Sec9	3	extend Berland fence to 4690 rd	Sterling/Cayuse/Berland is a spring pasture and too little for the same number of cattle that go into larger pasture later
62	Chesnimnus	Sterling/ Vance	T3N R47E eastern edge of sec29; from SW corner sec29 east 1/2 mile, north on 1/2 section line through section center 2/3 mile	3	extend Vance Knoll fence to Cayuse; remove corner between Sterling and Vance	
63	Chesnimnus	Cayuse/ Berland	T3N R47E NE1/4 SE1/4 Sec17; SE1/4 NW1/4 Sec21	3	gate water gaps to allow complete separation of Cayuse and Berland	
67	Chesnimnus	Poison	T4N R46E from SE1/4 SE1/4 Sec26 northeast to T4N R47E SW1/4 NE1/4 Sec20	3	Hollow Log to Poison Point Fence needs rebuilt	Mark suggests potentially changing fence location, and trading for grass elsewhere
69	Chesnimnus	Poison/ Devils Run	T4N R47E SW1/4 SE1/4 Sec33 north to SE1/4 NE1/4 Sec21	3	New fence from mouth of Summit Creek to 46 road	right now, just drift fences
90	Chesnimnus	Poison			add riparian pasture fence	site to be announced

Table V- 6. Pond project recommendations from Upper Joseph Creek Watershed permittees.

Project ID #	Allotment	Pasture	Location	Site Name	Priority	Description	Notes
6	Cougar	Muddy	T3N R46E SE1/4 NE1/4 Sec07		3	fix and fence dike, clean	
9	Cougar	Muddy	T3N R46E SE1/4 Sec07		3	clean	
11	Cougar	Muddy	T3N R45E SE1/4 SE1/4Sec13		3	need pond built	
15	Vigne		T3N R46E NE1/4 Sec 17		3	Pond on private ground	follow up with Doug for clarification
16	Vigne		T3N R46E NE1/4 Sec20		3	Pond on private ground	follow up with Doug for clarification
22	Swamp	Lower Swamp	T4N R45E NE1/4 SE1/4 Sec 32	Rachel Pond	1	build pond	
23	Swamp	Baker Gulch	T4N R45E SE1/4 SE1/4 Sec29	Rachel Pond	1	build pond	very close to fence
25	Swamp	Barney Flat	T4N R45E SE1/4 SE1/4 Sec32		1	clean	possibly move if install fence between Snake Canyon and Barney Flat (Project ID #24)
26	Swamp	Lower Davis	T3N R45E NW1/4 SE1/4 Sec7		3	clean	on top of Starvation
27	Swamp	Lower Davis	T3N R45E SE1/4 NW1/4 Sec18		3	clean	on top of Starvation
28	Swamp	Lower Davis	T3N R45E NE1/4 Sec1		3	clean	
29	Swamp	Lower Davis	T3N R45E SW1/4 Sec12		3	clean	
30	Swamp	Lower Davis	T3N R45E SW1/4 Sec1		3	clean	
31	Swamp	Lower Davis	T3N R45E NW1/4 Sec13		3	clean	
33	Swamp	Davis Creek	T3N R45E NW1/4 Sec25	Chico Pond	3	clean	
34	Swamp	Davis Creek	T3N R45E SW1/4 Sec30		3	clean	
35	Swamp	Miller	T3N R45E NE1/4 NE1/4 Sec16	Trump Pond	3	develop new site	
36	Swamp	Beef	T3N R45E NW1/4 SE1/4 Sec29		3	clean	on fence between Beef and Little Elk Creek pastures
37	Swamp	Little Elk Creek	T3N R45E SW1/4 SW1/4 Sec28		3	clean	not shown on the map
38	Swamp	Little Elk Creek	T3N R45E NW1/4 SW1/4 Sec28	Frog Pond	3	clean	
39	Swamp	Little Elk Creek	T3N R45E NE1/4 SW1/4 Sec27		3	clean	
40	Swamp	Little Elk Creek	T3N R45E NW1/4 Sec34		3	fix breach	
41	Swamp	Elk Creek	T3N R45E NE1/4 NE1/4 Sec21	Two Track	1	clean	at Baker Corner; other ponds in

V - Rangeland Condition Assessment

Project ID #	Allotment	Pasture	Location	Site Name	Priority	Description	Notes
							area may need cleaned that aren't on map
42	Swamp	Little Elk Creek	T2N R45E S1/2 Sec4		1	clean	clean ponds in potholes
43	Swamp	Dorrance	T2N R45E NW1/4 SW1/4 Sec14		3	clean	
44	Swamp	Bennett	T2N R45E E1/2 SW1/4 Sec7		3	clean	
45	Swamp	Bennett	T2N R45E SE1/4 NW1/4 Sec7		3	clean	wet spot, possibly a spring development
46	Swamp	Elk Creek	T2N R45E N1/2 SW1/4 Sec10	Black Snag Pond	1	clean	draw across from black snag
49	Swamp	Little Elk Creek	T3N R45E NW1/4 SW1/4 Sec33		1	clean	
50	Swamp	Red Fir	T4N R45E E1/2 NW1/4 Sec31		3	clean	
55	Swamp	Upper Swamp	T2N R45E NW1/4 SW1/4 Sec9	Moonshine Pond	3	clean	
58	Chesnimnus	Berland/Poison	T3N R47E SE1/4 NW1/4 Sec9	Berland Reservoir	3	clean	
59	Chesnimnus	Cayuse	T3N R47E NW1/4 NW1/4 Sec28	Hilton Ridge	3	clean	
60	Chesnimnus	Cayuse	T3N R47E NE1/4 NE1/4 Sec29	Hilton Ridge	3	clean	
65	Chesnimnus	Poison	T3N R47E W1/2 NE1/4 Sec5		3	clean	
77	Cougar	Baldwin	T4N R46E NW1/4 NW1/4 Sec8		3	new pond or spring development	
78	Cougar	Baldwin	T4N R46E SE1/4 NW1/4 Sec7		3	enlarge and clean	include fence that would allow access from Hunting Camp & Baldwin Pasture
79	Cougar	Peavine	T4N R46E NW1/4 NE1/4 Sec20	S. Getchel Ridge Pond	3	clean and enlarge	
80	Cougar	Peavine	T4N R46E SW1/4 SE1/4 Sec17	N. Getchel Ridge Pond	3	clean and enlarge	
82	Cougar	Peavine	T4N R46E SE1/4 SE1/4 Sec17		3	need pond 1/4 mile southeast of Quirk Spring	
83	Cougar	Peavine	T4N R46E SE1/4 SE1/4 Sec20	Rock Pit Pond	1	clean out to make usable	
84	Cougar	Boner	T3N R46E NE1/4 NW1/4 Sec25		3	enlarge and clean	
86	Cougar	Cougar	T4N R46E SW1/4 NW1/4 Sec30		3	build new pond	

Table V- 7. Spring and trough project recommendations from Upper Joseph Creek Watershed permittees.

Project ID #	Allotment	Pasture	Location	Site Name	Priority	Description	Notes
1	Cougar	Muddy	T3N R45E SE1/4 Sec01		3	rehab spring	
3	Cougar	Muddy	T3N R46E SW1/4 Sec07	Joe Platz Springs	3	develop spring with trough	
8	Cougar	Muddy	T3N R45E SE1/4 Sec12		2	need water source found	
10	Cougar	Muddy	T3N R46E NE1/4 Sec07		2	need water source found	
17	Swamp	Buck	T4N R45E NE1/4 Sec19		3	develop spring with trough	
18	Swamp	Buck	T4N R45E NW1/4 Sec19		3	develop spring with trough	
19	Swamp	Buck	T4N R45E SE1/4 Sec19		3	develop spring with trough	on the line between Sec 19 & 30
20	Swamp	Buck	T4N R45E SE1/4 NW1/4 Sec30		3	develop spring with trough	
21	Swamp	Lower Swamp	T4N R45E SW1/4 SE1/4 Sec20		1	needs reconstruction	
66	Chesnimnus	Poison	T3N R47E SE 1/4 NW1/4 Sec4		3	west side of Mitchell	
70	Chesnimnus	Devils Run/South Fork			3	spring work in Devils Run/South Fork Chesnimnus (late grazing)	
75	Chesnimnus	Devils Run		Burnt Springs	3	rehab spring	
76	Chesnimnus	Devils Run			3	rehab spring at head of devils run	
81	Cougar	Peavine	T4N R46E NE1/4 SE1/4 Sec17	Quirk Spring	1	reconstruct	
85	Cougar	Boner	T3N R46E SE1/4 SE1/4 Sec24	Boner Spring	3	fenced off area needs to be cleaned of cattails	
87	Cougar	Cougar	T4N R46E		3	rehab spring	east of pond under Lone Spring Saddle
88	Swamp	Little Elk Creek	T3N R45E NW1/4 Sec5		1	find water sources & develop trough	new site
89	Swamp	Little Elk Creek	T3N R45E NW1/4 Sec32		2	find water sources & develop trough	new site