Guidelines for Monitoring the Establishment of Riparian Grazing Systems

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This monitoring document outlines methods that will assess current riparian conditions and quantify changes in a riparian area under new management. The monitoring plan outlined here is fairly involved and requires some technical expertise, and for that reason this publication is intended for those with technical experience in rangeland management, specifically UC Cooperative Extension (UCCE) advisors, Natural Resources Conservation Service (NRCS), U.S. Forest Service, and Bureau of Land Management staff, and professional rangeland managers. A secondary audience of land owners and managers can benefit from this information if they are willing to invest time and effort into learning the necessary tools.

Appendixes C1 and C3 at the end of the publication are blank forms that you can copy and use for your own data collection. We have also provided filled-out samples of these and other useful forms to give you a better idea of how to use them.

WHY MONITOR?

When establishing a new riparian grazing system, one would like to be able to compare the success of the new system with the old. Such a comparison can provide validation that the “new and improved” management system is positively affecting riparian health and is a successful project, or that more management changes need to be implemented in order to obtain desired goals, it is through the systematic monitoring of specific conditions that a land manager can assemble this kind of information. The decision left to the manager is, “What tools should I use to assess and monitor my riparian area?” There are a number of ways for managers to conduct their own monitoring, but up until now little guidance has been available as to which tools will best show the results of changes in riparian management. The paragraphs that follow provide an outline for monitoring that is based upon published methods that will provide feedback to changes in riparian grazing management.

SHOULD I MONITOR THE SAME THINGS AS MY NEIGHBOR?

There are distinct benefits to using the same monitoring methods on your property as are used on neighboring properties. If a number of land managers were to implement changes to their riparian areas and each were to select a different set of monitoring tools, they would not be able to compare the relative changes in riparian health between their areas. If, on the other hand, they were to use a common set of monitor tools to observe and record changes in the same items at all sites, they would be able to share information and learn from one another’s efforts.
HOW SOON WILL I SEE RESULTS?

Some changes in riparian health can be documented in the short term (a few months to a year), depending on the status of the area at the time you implement management changes. Some changes in riparian health will be observed over the long term (2 years or more). For example, within a year there could be an increase in willow growth (short term), but a change in the tree canopy will not occur for many years (long term). Please see Appendix A for more information.

GETTING STARTED

Before starting, please review all of the published protocols and make sure that you receive any necessary training. Appendix B of this publication is a sequential outline of the steps necessary to complete the monitoring described here. If you do require training, please contact a UCCE, NRCS, or Resource Conservation District (RCD) office for assistance, possibly including assistance in getting the necessary equipment. The methods do require time and effort, especially during the first year when you first establish the transects. The time required can range from a half day to a full day for two people. Two two-person teams can divide the work and complete the monitoring in less time. It is important that you allow adequate time to collect the necessary data.

ESTABLISHING PERMANENT MONITORING TRANSECTS

To successfully document riparian health changes, you need to be able to examine the same geographical points repeatedly over time. This will ensure that apparent changes in riparian health are the actual results of management and not simply the unique conditions peculiar to different sites. You will need to select a representative section of the riparian area for monitoring; a total of 360 linear feet is required. Six transect lines going across the riparian area and spaced 72 feet apart are established perpendicular to the creek and can be marked using a variety of items such as existing fence posts, lengths of rebar, or wooden stakes painted a unique color (see Figures 1 and 2). When selecting the marker, give particular thought to the way the pasture is used, the marker’s visibility, and its likely permanence over time. If you relate the markers to a benchmark (a permanent fixture such as a tree or large rock), it will be easier for you to find the location of missing markers later on. Record the bearing and distance from the benchmark to each marker.

Transects should encompass upland vegetation on both sides of the creek in order to document whether the width of the riparian vegetation area is increasing or decreasing over time. Because of this, transect lengths will vary from site to site. For example, transects for a mountain meadow system may be 200 feet long, whereas for an intermittent creek in the San Joaquin Valley they may be only 50 feet long. Once you have established the transects, you are ready to begin gathering data.

VEGETATION

To characterize the vegetation, use the USDA Forest Service’s Greenline protocol. It is a standard system for classifying and characterizing vegetation and is well suited to
Figure 2. Examples of transects in the field at different sites (not drawn to scale): a has a limited riparian area and so requires shorter transects, while the transects in b cross the entire meadow.
the kind of work we are discussing. This protocol has been published, and you should make yourself familiar with its methods and seek out assistance and training if necessary. There is one change that you can make to the Greenline protocol to make it easier to use: key the vegetation according to functional groups instead of species to allow for ease of use while still providing documentation of trends in vegetation succession.

Greenline consists of three components. The first component, vegetation cross-section composition, provides information on the width of the riparian area. All six cross-sections are considered for this component. The second, greenline composition, was developed for perennial mountain meadows, but is useful for other systems. It documents changes in the permanent greenline along the stream. For example, annual systems may consist of oak trees as the permanent green vegetation. One would expect perennial grasses and other woody species to increase along the stream as management changes were implemented, thus providing a new greenline. The third component, woody species regeneration, accounts for any increases in willows, aspen, alders, or other woody plants that tend to provide more stability and canopy cover for the stream. The latter two components are conducted along the permanent vegetation areas of Transect 1 to 6 on both sides of the stream.

**VISUAL ASSESSMENTS**

Visual assessments are valuable for providing a quick examination of the habitat and hydrologic condition of a system. We recommend that you use two assessments: the U.S. Department of the Interior Bureau of Land Management’s Proper Functioning Condition (PFC) and the University of California Cooperative Extension’s Riparian Health Assessment for Rangelands (RHAR). Published protocols and training opportunities are available for each method, and you should make sure to be familiar with the protocols and properly trained before you undertake these assessments.

The reason for using two assessments is that together they enable you to capture more information regarding the riparian system. There is some overlap between the two assessments, but when you use both you get a comprehensive picture.

It is important to note that not all streams have the same habitat potential. Ward et al. (2001) found that stream morphology affects the streams’ habitat potential. For this reason, you should make comparisons only within the same morphology classification. Measurements to determine the Rosgen classification (a stream morphology classification system) (Rosgen 1996) should be recorded on the Riparian Grazing Case Study Data Sheet included in this packet.

**PHYSICAL PARAMETERS**

The Riparian Grazing Case Study Data Sheet outlines the physical parameters you will have to observe and record. Some equipment is necessary for completion of this data sheet, but if you work with NRCS, RCD, or UCCE offices, this should not be a problem. To begin, you will measure the channel morphology cross-section at both the downstream and upstream transects (transects 1 and 6). Please refer to MacDonald et al. (1991) for the detailed description that begins on page 109. The equipment you will need consists of a stadia rod and scope. Take a reading at every break in slope or every 2 feet (Figure 3). Input the raw data into a computer spreadsheet program and generate a graphical representation of the stream cross-section (see Figures 4 and 5).
Figure 4. Measurements taken in the field can be converted to a graphical representation of the channel morphology. Labeling the banks and thalweg (the deepest part of the channel) helps keep the graph in perspective.

Figure 5. Actual site described graphically in Figure 4. The tape can be seen stretched across the stream, and left and right banks as well as thalweg are highlighted for reference.
Take canopy readings along transects, using a densiometer (Figure 6). Again, for specialized equipment and training in its use please contact a local NRCS, RCD, or UCCE office. The densiometer readings will indicate whether canopy cover is increasing.

You also want to document current air and water temperatures, and it is best if you take your readings in the same spot each time. Just select an arbitrary point along one transect and record the location on the data sheet.

**HABITAT PARAMETERS**

The habitat parameters include calculating the total linear feet of pools (water is deeper and slower moving), riffles (faster and shallower), and runs (sections where water depth and velocity remain more even) (Figure 7). This provides information on the three basic habitat features that are available to fish. In addition, you need to examine specific habitat features. A complete description of all of the parameters under the Fish Shelter Ratings section can be found in Flosi et al. (1998).

In determining the percent substrate exposed, you must carefully examine habitat substrates such as boulders, cobbles, woody debris, and the like. This information will vary from year to year with different flow regimes, artificial and natural, but it is important in determining how much habitat is potentially available to fish and macroinvertebrates.

Collect specific information regarding three of the riffles in the reach. Consult the protocol for macroinvertebrate collections published by the California Department of Fish and Game (1999) for details. Even though you will not actually sample the macroinvertebrates, the information you collect can provide insight on potential habitat and should certainly be recorded. Length of the riffle as well as average width, depth, and velocity can all easily be recorded with the help of a tape measure, a stopwatch, and a float, such as an orange or a twig. Substrate complexity and embeddedness are examined for each riffle. Using RHAR, substrate complexity refers to question 5, Macroinvertebrate Habitat, and embeddedness refers to the High Gradient form, question 9. You will also estimate the percentage of each substrate's size and the degree of its consolidation for each riffle. Finally, you will use a clinometer to determine the gradient of the riffle.

**MANAGEMENT SURVEY**

Last of all, you will complete a management questionnaire. The Riparian Grazing Case Study Management Survey (Appendix C1) will help you as the manager outline current (new management) and historic management (previous management) as well as the watershed's characteristics, your goals for the riparian area, and your monitoring practices. The survey should be completed in detail since it will provide a road map of what management practices have been implemented. When you know what management practices are implemented, you have a better idea of what practices may improve a riparian area. Without this information, you will have a hard time comparing manage-
ment changes over time. Complete a new survey each time you change your management methods and you will build up a detailed, useful history.

WHEN SHOULD I REVISIT THE SITE?
You should revisit the case study site on a regular basis, though you will not have to collect data every year. You can expect to repeat the assessments every couple of years, when you implement management changes, or when you notice drastic changes during regular visits to the area.

CONCLUSIONS
By standardizing the data that you collect when you modify riparian grazing management, you will be able to compare various management systems and share ideas with other managers on what management practices have been successful and which have not. This kind of shared experience is one of the best learning opportunities available to land managers. For this reason, it is important that you take the necessary time and care when you gather your data. If you collect good data at the beginning, you can put it to good use for years to come.

REFERENCES


### Appendix A

#### Riparian Grazing Case Study Monitoring Tools

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Short- or long-term trend</th>
<th>Parameter quantified</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLM Proper Functioning Condition</td>
<td>Long-term</td>
<td>Hydrologic function</td>
</tr>
<tr>
<td>UCCE Riparian Health Assessment for Rangelands</td>
<td>Long-term</td>
<td>Trout and macroinvertebrate habitat and hydrologic function</td>
</tr>
<tr>
<td>Greenline: Vegetation Cross-section Composition</td>
<td>Short- and long-term</td>
<td>Width of the riparian area</td>
</tr>
<tr>
<td>Greenline: Greenline Composition</td>
<td>Short- and long-term</td>
<td>Change in greenline vegetation</td>
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<tr>
<td>Greenline: Woody Species Regeneration</td>
<td>Short- and long-term</td>
<td>Change in woody species along the greenline</td>
</tr>
<tr>
<td>Channel Morphology Cross-section</td>
<td>Long-term</td>
<td>Change in width and depth of the channel</td>
</tr>
<tr>
<td>Densiometer</td>
<td>Long-term</td>
<td>Amount of canopy</td>
</tr>
<tr>
<td>Habitat Types</td>
<td>Short- and long-term</td>
<td>Three basic habitat types for fish</td>
</tr>
<tr>
<td>Physical Parameters</td>
<td>Short- and long-term</td>
<td>Variety of physical parameters</td>
</tr>
</tbody>
</table>
Appendix B

Check Sheet for Establishing Case Studies

I. Ahead of time
   a. Review protocols
   b. Receive training if necessary
   c. Gather required equipment
      i. Stadia rod
      ii. Hand lens
      iii. Tape (300-ft if possible)
      iv. Densiometer
      v. Stakes, sledgehammer, and paint
      vi. Compass
      vii. Clinometer
   viii. Make copies of necessary forms
       1. Six Vegetation Cross-section sheets
       2. One Greenline form
       3. One Woody Species Regeneration form
       4. One RHAR form
       5. One PFC form
       6. One Riparian Case Study Data Sheet
       7. One Riparian Grazing Case Study Management Survey

II. At site
   a. Select representative section within one Rosgen type
   b. Establish transects (Figure 1)
      i. Record distance and bearing from benchmark
   c. Begin Greenline (three parts)
      i. Vegetation cross-section transects
         1. Record canopy reading on densiometer at mid-channel for each transect
      ii. Greenline composition transect
      iii. Woody species regeneration belt transect
   d. Complete visual assessments (RHAR and PFC)
   e. Complete channel morphology cross-sections (Transsects 1 and 6)
   f. Complete Riparian Grazing Case Study Data Sheet
      i. Air and water temperature
      ii. Stream morphology data (widths and depths)
      iii. Feet of riffles, pools, and runs
      iv. Fish shelter ratings
      v. Riffle data
   g. Complete Management Survey
Appendix C1
Riparian Grazing Case Study Management Survey page 1

General Information
Ranch: ____________________________
Name: ____________________________
Address: __________________________
City, State, ZIP: _____________________
Phone number: _____________________
E-mail: ___________________________

Ownership:
☐ Private
☐ U.S. Forest Service
☐ Other public

How long under current ownership?

If public-owned, is there regular communication with USFS or BLM Range Con?
☐ Yes
☐ No

Type of operation:
☐ Cow-calf
☐ Stocker
☐ Sheep
☐ Farming
☐ Horses

Total size and number of pastures:
-----------------------------------------------

Watershed Characteristics
Upstream watershed land uses:
☐ Urban
☐ Logging
☐ Ranching
☐ Farming
☐ Wildlands
☐ Recreation
☐ Roads
☐ Non-urban residential

Predominant ownership of watershed:
☐ Private
☐ U.S. Forest Service
☐ BLM
☐ Public

Past land disturbances in the watershed:
☐ Mining
☐ Floods
☐ Fire
☐ Logging
☐ Landslides

Management Unit of Concern
Name: ____________________________
County: ___________________________

Ownership:
☐ Private
☐ U.S. Forest Service
☐ Other public

How long under current ownership?

If public-owned, are there standards in place?
☐ Yes
☐ No

What are the standards?
☐ Utilization ___ %
☐ Stubble height ______ inches
☐ Browse _____ %
☐ Trampling _____ %
☐ RDM ______ lbs/acre

Who monitors them?
☐ Range Con
☐ Rancher

Size and number of pastures in unit:
Acres: ____________________________
Number of pastures: ________________

How many pastures contain a section of creek?

Are there any written plans for the unit?
☐ Ranch plan
☐ Water quality plan
☐ Economic plan
☐ EQIP
☐ AOI
☐ EA/EIS; IS/EIR
☐ Conservation agreement
☐ Land use plan
☐ Other

Goals for riparian pasture:
☐ Increase/maintain production
☐ Increase/maintain profit
☐ Maintain/improve water quality
☐ Aesthetics
☐ Sustainability
☐ Increase biodiversity
☐ Decrease weeds
☐ Improve/maintain fishery

Have you created a separate riparian pasture specifically to obtain achieve your goals?
☐ Yes
☐ No

If yes, how long did you allow the new pasture to rest before grazing was reintroduced?
☐ One season
☐ One year
☐ Two years
☐ Three years
☐ Four or more years

Are temporary exclosures utilized to meet your goals in the riparian area?
☐ Yes
☐ No

Riparian concerns that you have:
☐ Fish habitat
☐ Wildlife habitat
☐ Waterfowl habitat
☐ Water quality
ANR Publication 8094  
Riparian Grazing Case Study Management Survey  

☐ Biomass production  ☐ TMDL
☐ Endangered Species Act

Use of pasture:
☐ Holding area  ☐ Calving
☐ Watering site  ☐ Grazing
☐ Gathering  ☐ Bedding
☐ Exclosure

Indicators used to move livestock in and out of riparian area (unit of concern):
☐ Dormant season of key plants
☐ Invasion of undesirable plants/Shading of desirables
☐ Bank soil moisture
☐ Presence and/or life cycle of key wildlife species?
☐ Browse on key woody vegetation
☐ Accumulation of litter layer
☐ RDM level
☐ Likelihood of floods/spring runoff
☐ Utilization of herbaceous vegetation
☐ Time of year (calendar dates)
☐ Rest period of other pastures

Current Management, Costs (days of labor/year), and Possible Cost Sharing, (for the particular pasture, not the entire ranch)

Type of operation and length of time under current operation.
☐ Cow-calf  ☐ Stocker  ☐ Sheep
☐ Farming  ☐ Horses

Breed/type of animal: _______________________
Number of animals (range and average):
_____________________________________________________________________

Season of use:
☐ Spring  ☐ Summer
☐ Fall  ☐ Winter
Average in and out dates, or time between rotations:
_____________________________________________________________________

Grazing system:
_____________________________________________________________________

Livestock distribution
☐ Herding  ☐ Drift fence
☐ Trails  ☐ Temporary exclosures

Off-site  ☐ Feed or  ☐ Salt/minerals

If you use off-site feeding and/or salt/minerals:
How far is the off-site feed/salt/minerals from the stream? (closest 1/2 mile is fine) _________________

Do you observe evidence of livestock using off-site feed/salt/minerals?
☐ Yes  ☐ No

In your opinion/observation has the off-site feed/salt/minerals reduced time livestock spend in the riparian area?
☐ Yes  ☐ No

Is off-site water available:
☐ Yes  ☐ No

If yes:  ☐ Natural  ☐ Human-made
Type of human-made:
☐ Pipeline  ☐ Troughs
☐ Tanks  ☐ Well
☐ Pond

How far is the off-site water from the stream? (closest 1/2 mile is fine) _________________

Do you observe evidence of livestock using off-site water?
☐ Yes  ☐ No

In your opinion/observation has the off-site water reduced time livestock spend in the riparian area?
☐ Yes  ☐ No

Brush Management
☐ Fire  ☐ Chemical  ☐ Mechanical

Are you performing brush management practices to obtain/achieve your riparian goals?
☐ Yes  ☐ No
Road Management
☐ Maintenance  ☐ Construction
☐ Culverts

Are you performing road management practices to obtain/achieve your riparian goals?
☐ Yes  ☐ No

Fencing
Type of fencing used:
☐ Barbed wire  ☐ Electric, 5-strand
☐ Electric, 3-strand  ☐ Electric, 2-strand
☐ Electric, 1-strand  ☐ Temp. electric

☐ Range seeding

Stream crossings (interim):
☐ For livestock
☐ For roads (equipment, truck)
If for livestock, are they hardened?
☐ Yes  ☐ No
How often are they utilized?

Have they reduced damage to the stream banks in your opinion?
☐ Yes  ☐ No

If for roads, are they hardened?
☐ Yes  ☐ No
How often are they used?
Are they  ☐ County?  ☐ Private?

☐ Prescribed burning for forage improvement
☐ Irrigation water management
☐ Pasture clipping
☐ Sediment basins
☐ Grazingland mechanical treatments (renovating, contour furrowing, pitting)
☐ Length of time under current management?

Restoration Efforts
Has there been any restoration in the unit?
☐ Yes  ☐ No

If so, what was the objective?
☐ Decrease erosion
☐ Capture sedimentation
☐ Improve habitat
☐ Sustainability of the system

What restoration practices were utilized?
☐ Stream corridor improvement
☐ Bank protection
☐ Structural (such as rock riprap)
☐ Bioengineering(either solely vegetation such as willows, or a combination of vegetation and structural)
☐ Stream channel stabilization
☐ Grade stabilization
☐ Riparian planting for wildlife habitat
☐ Wildlife habitat in the upland
☐ Critical area planting for erosion
☐ Landslide treatments
☐ Do you purposely cull animals that “hug the stream” (“riparian huggers”)?
☐ Does anyone stock fish?

Historic Management and Costs (for the particular area)
Type of operation and length of time under historic operation.
☐ Cow-calf  ☐ Stocker  ☐ Sheep
☐ Farming  ☐ Horses

Breed/type of animal: ________________
Number of animals (range and average):

Season of use:
☐ Spring  ☐ Summer
☐ Fall  ☐ Winter

Average in and out dates, or time between rotations:

Grazing system description:

Appendix C1 (continued)
Riparian Grazing Case Study Management Survey page 3
Livestock distribution

- Herding
- Drift fence
- Trails
- Temporary exclosures
- Off-site
- Feed or
- Salt/minerals

If you used off-site feeding and/or salt/minerals,

- How far was the off-site feed/salt/minerals from the stream? (closest 1/2 mile is fine) _________________________

- Did you observe evidence of livestock using off-site feed/salt/minerals?
  - Yes
  - No

In your opinion/observation did the off-site feed/salt/minerals reduced time livestock spend in the riparian area?

- Yes
- No

Was off-site water available:

- Yes
- No

If yes:

- Natural
- Human-made

Type of human-made:

- Pipeline
- Troughs
- Tanks
- Well
- Pond

- How far was the off-site water from the stream? (closest 1/2 mile is fine)
  _________________________

- Did you observe evidence of livestock using off-site water?
  - Yes
  - No

In your opinion/observation did the off-site water reduced time livestock spend in the riparian area?

- Yes
- No

Brush management (314)

- Fire
- Chemical
- Mechanical

- Did you performing brush management practices to obtain/achieve your riparian goals?
  - Yes
  - No

Road management

- Maintenance
- Construction
- Culverts

Fencing (382)

- Barbed wire
- Electric, 5-strand
- Electric, 3-strand
- Electric, 2-strand
- Electric, 1-strand
- Temp. electric
- Range Seeding

Stream crossings (interim):

- For livestock
- For roads (equipment, truck)

If for livestock, were they hardened?

- Yes
- No

- How often were they utilized?
  _________________________

- Did they reduced damage to the stream banks in your opinion?
  - Yes
  - No

If for roads, were they hardened?

- Yes
- No

- How often are they used? ___________

Are they

- County?
- Private?

Prescribed burning for forage improvement
- Irrigation water management
- Pasture clipping
- Sediment basins
- Grazingland mechanical treatments (renovating, contour furrowing, pitting)
- Length of time under historic management?
  _________________________

Restoration Efforts

- Was there any historic restoration in the unit?
  - Yes
  - No

If so, what was the objective?

- Decrease erosion
- Capture sedimentation
- Improve habitat
Sustainability of the system

What restoration practices were utilized:
- Stream corridor improvement
- Bank protection
- Structural (such as rock riprap)
- Bioengineering (either solely vegetation such as willows, or a combination of vegetation and structural)
- Stream channel stabilization
- Grade stabilization
- Riparian planting for wildlife habitat
- Wildlife habitat in the upland
- Critical area planting for erosion
- Landslide treatments
- Did you purposely cull animals that “hug the stream” (Riparian Huggers)?
- Did anyone stock fish? _____________

Current Monitoring

Types of monitoring, number of points and how often:

<table>
<thead>
<tr>
<th>Frequency (per yr)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual:</td>
<td>________</td>
</tr>
<tr>
<td>Photo:</td>
<td>________</td>
</tr>
<tr>
<td>Stream temp:</td>
<td>________</td>
</tr>
<tr>
<td>Sediment:</td>
<td>________</td>
</tr>
<tr>
<td>Nutrient:</td>
<td>________</td>
</tr>
<tr>
<td>Habitat:</td>
<td>________</td>
</tr>
<tr>
<td>Pathogens:</td>
<td>________</td>
</tr>
<tr>
<td>Wildlife:</td>
<td>________</td>
</tr>
</tbody>
</table>

Objectives of monitoring:
- Establish base lines
- Document management over time
- Monitor wildlife/fisheries habitat
- Monitor vegetation: weeds and desirable grasses
- Protect ranching interests against environmental concerns

How are monitoring data used?
- To make management decisions
- Stored for future use
- Shared with agencies (Regional Board, NRCS, UCCE, RCD, FS, BLM, F&G, etc.)
Riparian Grazing Case Study Management Survey

General Information
Ranch: VIC E-Example Site
Name: Agronomy, Range Science
Address: One Sarvis Ave
City, State, ZIP: Davis, CA 95616
Phone number: (530) 752-4031
E-mail: 

Ownership:
☑ Private
☐ U.S. Forest Service
☐ BLM
☐ Other public
How long under current ownership?
96 years

If public-owned, is there regular communication with USFS or BLM Range Con?
☐ Yes
☐ No

Type of operation:
☑ Cow-calf
☐ Stocker
☐ Sheep
☐ Farming
☐ Horses
Total size and number of pastures: 34.25 acres 15 pastures

Watershed Characteristics
Upstream watershed land uses:
☐ Urban
☐ Logging
☑ Ranching
☐ Farming
☐ Wildlands
☐ Recreation
☑ Roads
☐ Non-urban residential

Predominant ownership of watershed:
☑ Private
☐ U.S. Forest Service
☐ BLM
☐ Public
Past land disturbances in the watershed:
☑ Mining
☐ Floods
☒ Fire
☐ Logging
☐ Landslides

Management Unit of Concern
Name: Vic Example Creek
County: Yolo
Ownership:
☑ Private
☐ Private lease
☐ U.S. Forest Service
☐ BLM
☐ Other public
How long under current ownership?
96 years

If public-owned, are there standards in place?
☐ Yes
☐ No

What are the standards?
☐ Utilization ___%  ☐ Stubble height _____ inches
☐ Browse ___%  ☐ Trampling ___%
☐ RDM _____lbs/acre  

Who monitors them?
☐ Range Con
☐ Rancher

Size and number of pastures in unit:
Acres: 34.8
Number of pastures: 1
How many pastures contain a section of creek?
1

Are there any written plans for the unit?
☑ Ranch plan
☑ Water quality plan
☑ Economic plan
☐ EQIP
☐ AOI
☐ EA/EIS; 15/EIR
☐ Conservation agreement
☐ Land use plan
☐ Other

Goals for riparian pasture:
☐ Increase/maintain production
☐ Increase/maintain profit
☒ Maintain/improve water quality
☐ Aesthetics
☒ Sustainability
☐ Increase biodiversity
☐ Decrease weeds
☐ Improve/maintain fishery

Have you created a separate riparian pasture specifically to obtain these goals?
☑ Yes
☐ No
If yes, how long did you allow the new pasture to rest before grazing was reintroduced?
☐ One season
☒ Two years
☐ Three years
☐ Four or more years

Are temporary exclusions utilized to meet your goals in the riparian area?
☐ Yes
☒ No

Riparian concerns that you have:
☑ Fish habitat
☐ Wildlife habitat
☒ Waterfowl habitat
☐ Water quality
Riparian Grazing Case Study Management Survey

- biomass production
- TMDL
- endangered species act

Use of pasture:
- holding area
- calving
- watering site
- grazing
- gathering
- bedding
- enclosure

Indicators used to move livestock in and out of riparian area (unit of concern):
- dormant season of key plants
- invasion of undesirable plants/shading of desirables
- bank soil moisture
- presence and/or life cycle of key wildlife species
- browse on key woody vegetation
- accumulation of litter layer
- RDM level
- likelihood of floods/spring runoff
- utilization of herbaceous vegetation
- time of year (calendar dates)
- rest period of other pastures

Current Management, Costs (days of labor/year), and Possible Cost Sharing, (for the particular pasture, not the entire ranch)

Type of operation and length of time under current operation:
- cow-calf
- stocker
- sheep

Number of animals (range and average):

Season of use:
- spring
- summer
- fall
- winter

Average in and out dates, or time between rotations:

Grazing system:

Livestock distribution:
- herding
- drift fence
- trails
- temporary exclosures

Off-site feed or:
- salt/minerals

If you use off-site feeding and/or salt/minerals:
- how far is the off-site feed/salt/minerals from the stream? (closest 1/2 mile is fine)

Do you observe evidence of livestock using off-site feed/salt/minerals?
- yes
- no

In your opinion/observation has the off-site feed/salt/minerals reduced time livestock spend in the riparian area?
- yes
- no

Is off-site water available?
- yes
- no

If yes:
- natural
- human-made

Type of human-made:
- pipeline
- troughs
- tanks
- well
- pond

How far is the off-site water from the stream? (closest 1/2 mile is fine)

Do you observe evidence of livestock using off-site water?
- yes
- no

In your opinion/observation has the off-site water reduced time livestock spend in the riparian area?
- yes
- no

Brush Management:
- fire
- chemical
- mechanical

Are you performing brush management practices to obtain/achieve your riparian goals?
- yes
- no
Riparian Grazing Case Study Management Survey

If so, what was the objective?
- Decrease erosion
- Capture sedimentation
- Improve habitat
- Sustainability of the system

What restoration practices were utilized?
- Stream corridor improvement
- Bank protection
- Structural (such as rock riprap)
- Bioengineering (either solely vegetation such as willows, or a combination of vegetation and structural) 3 days willows plantings
- Stream channel stabilization
- Grade stabilization
- Riparian planting for wildlife habitat
- Wildlife habitat in the upland
- Critical area planting for erosion
- Landslide treatments
- Do you purposely cull animals that “hug the stream” (“riparian huggers”)?
- Does anyone stock fish?

Historic Management and Costs (for the particular area)
Type of operation and length of time under historic operation.
- Cow-calf
- Stocker
- Sheep
- Farming
- Horses

Breed/type of animal: English

Number of animals (range and average): 50-100 normally 72

Season of use:
- Spring
- Summer
- Fall
- Winter

Average in and out dates, or time between rotations:

1/1 → 12/31

Grazing system description:
Continuous grazing system.

Occasionally some removed or more added
**Riparian Grazing Case Study Management Survey**

<table>
<thead>
<tr>
<th>Environment Management Practices</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Livestock distribution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Herding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Trails</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off-site, Feed or Salt/minerals</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>2 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you used off-site feeding and/or salt/minerals, how far was the off-site feed/salt/minerals from the stream? (closest 1/2 mile is fine)</td>
<td>100 yards</td>
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</tr>
<tr>
<td>Did you observe evidence of livestock using off-site feed/salt/minerals?</td>
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<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In your opinion/observation did the off-site feed/salt/minerals reduced time livestock spend in the riparian area?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was off-site water available?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If yes: ☐ Natural ☐ Human-made</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of human-made:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Pipeline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Troughs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Pond</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How far was the off-site water from the stream? (closest 1/2 mile is fine)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you observe evidence of livestock using off-site water?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In your opinion/observation did the off-site water reduced time livestock spend in the riparian area?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brush management (314)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Fire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Chemical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Mechanical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you performing brush management practices to obtain/achieve your riparian goals?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Culverts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you performing road management practices to obtain/achieve your riparian goals?</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fencing (382)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of fencing used:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Barbed wire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Electric, 3-strand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☒ Electric, 2-strand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Temp. electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Range Seeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stream crossings (interim):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ For livestock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ For roads (equipment, truck)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If for livestock, were they hardened?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How often were they utilized?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did they reduced damage to the stream banks in your opinion?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If for roads, were they hardened?</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How often are they used?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are they ☐ County? ☐ Private?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Prescribed burning for forage improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Irrigation water management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Pasture clipping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Sediment basins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Grazingland mechanical treatments (renovating, contour furrowing, pitting)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Length of time under historic management?</td>
<td>97 years +</td>
<td></td>
</tr>
<tr>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Restoration Efforts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was there any historic restoration in the unit?</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If so, what was the objective?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Decrease erosion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Capture sedimentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Improve habitat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Riparian Grazing Case Study Management Survey page 5

☐ Sustainability of the system
What restoration practices were utilized:
☐ Stream corridor improvement
☐ Bank protection
☐ Structural (such as rock riprap)
☐ Bioengineering (either solely vegetation such as willows, or a combination of vegetation and structural)
☐ Stream channel stabilization
☐ Grade stabilization
☐ Riparian planting for wildlife habitat
☐ Wildlife habitat in the upland
☐ Critical area planting for erosion
☐ Landslide treatments
☐ Did you purposely cull animals that "hug the stream" (Riparian Huggers)?
☐ Did anyone stock fish? ___________

Current Monitoring
Types of monitoring, number of points and how often:

<table>
<thead>
<tr>
<th>Frequency (per yr)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual: daily when cattle present, plus 4 times throughout year.</td>
<td></td>
</tr>
<tr>
<td>Photo: 2 spots</td>
<td>4 spots</td>
</tr>
<tr>
<td>Stream temp:</td>
<td></td>
</tr>
<tr>
<td>Sediment</td>
<td></td>
</tr>
<tr>
<td>Nutrient</td>
<td></td>
</tr>
<tr>
<td>Habitat: once every other year</td>
<td></td>
</tr>
<tr>
<td>Pathogens:</td>
<td></td>
</tr>
<tr>
<td>Wildlife: visual counts</td>
<td></td>
</tr>
</tbody>
</table>

Objectives of monitoring:
☐ Establish base lines
☐ Document management over time
☐ Monitor wildlife/fisheries habitat
☐ Monitor vegetation: weeds and desirable grasses
☐ Protect ranching interests against environmental concerns

How are monitoring data used?
☐ To make management decisions
☐ Stored for future use
☐ Shared with agencies (Regional Board, NRCS, UCCE, RCD, FS, BLM, F&S, etc.)
<table>
<thead>
<tr>
<th>Stream: __________________________</th>
</tr>
</thead>
</table>

**Channel Morphology Cross-Sections**

<table>
<thead>
<tr>
<th>Upstream</th>
<th>Downstream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ft.</td>
<td>Depth</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Date/Time:** ____________________

**Completed by:** ____________________

**Densiometer Readings**

<table>
<thead>
<tr>
<th>Tran1</th>
<th>Tran2</th>
<th>Tran3</th>
<th>Tran4</th>
<th>Tran5</th>
<th>Tran6</th>
</tr>
</thead>
<tbody>
<tr>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
<td>u</td>
</tr>
<tr>
<td>d</td>
<td>d</td>
<td>d</td>
<td>d</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>l</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>l</td>
<td>l</td>
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<tr>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
<td>r</td>
</tr>
</tbody>
</table>

**Tran1, Tran2, Tran3, Tran4, Tran5, Tran6**

- **Air Temp:** ____________________
- **Water Temp:** ____________________
- **Description of Site:** ____________________
- **Bankfull Width:** ____________________
- **Bankfull Depth:** ____________________
- **Flood-prone Width:** ____________________
- **Flood-prone Depth:** ____________________
- **Slope:** ____________________

**Habitat Type**

<table>
<thead>
<tr>
<th>ft/step:</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Pools:** ____________________
- **Riffles:** ____________________
- **Runs:** ____________________
### Transect Locations:

(Lat., Long., distance and bearing from Bench Mark, etc.)

<table>
<thead>
<tr>
<th>Tran. 1:</th>
<th>Tran. 2:</th>
<th>Tran. 3:</th>
<th>Tran. 4:</th>
<th>Tran. 5:</th>
<th>Tran. 6:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Riparian Grazing Case Study Data Sheet

<table>
<thead>
<tr>
<th>Riffle 1</th>
<th>Riffle 2</th>
<th>Riffle 3</th>
<th>Fish Shelter Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>% undercut bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% swd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% lwd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% root mass</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% terr. veg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% aqua. veg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% boulder curtain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% boulder</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% bedrock ledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% Exposed Substrate</td>
</tr>
</tbody>
</table>

### Metrics

- **Riffle Length**: ______, ______, ______
- **Avg. Riffle Length**: ______, ______, ______
- **Avg. Riffle Depth**: ______, ______, ______
- **Riffle Velocity**: ______, ______, ______
- **Substrate Complexity**: ______, ______, ______
- **Embeddedness**: ______, ______, ______
- **Substrate Composition**:
  - % Fines: ______, ______, ______
  - % Gravel: ______, ______, ______
  - % Cobble: ______, ______, ______
  - % Boulder: ______, ______, ______
  - % Bedrock: ______, ______, ______
- **Substrate Consolidation**: ______, ______, ______
- **% Gradient**: ______, ______, ______
### Riparian Grazing Case Study Data Sheet

**Stream:** UCCE Example Creek

<table>
<thead>
<tr>
<th>Ft.</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2.61</td>
</tr>
<tr>
<td>9.0</td>
<td>2.62</td>
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<tr>
<td>13.2</td>
<td>4.83</td>
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<tr>
<td>17.4</td>
<td>11.71</td>
</tr>
<tr>
<td>19.0</td>
<td>13.61</td>
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<tr>
<td>28.0</td>
<td>13.93</td>
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<tr>
<td>30.0</td>
<td>14.43</td>
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<tr>
<td>34.0</td>
<td>14.31</td>
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<tr>
<td>39.0</td>
<td>14.21</td>
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<tr>
<td>45.0</td>
<td>13.51</td>
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<tr>
<td>57.0</td>
<td>3.72</td>
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<tr>
<td>60.0</td>
<td>1.74</td>
</tr>
<tr>
<td>71.0</td>
<td>1.34</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ft.</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.81</td>
</tr>
<tr>
<td>15.1</td>
<td>1.83</td>
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<tr>
<td>22.0</td>
<td>13.34</td>
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<tr>
<td>27.0</td>
<td>13.94</td>
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<td>30.0</td>
<td>14.64</td>
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<td>33.0</td>
<td>13.81</td>
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<td>41.0</td>
<td>12.34</td>
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<td>48.0</td>
<td>11.53</td>
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<td>8.81</td>
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<td>55.0</td>
<td>6.05</td>
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<tr>
<td>65.0</td>
<td>1.91</td>
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<tr>
<td>75.0</td>
<td>1.14</td>
</tr>
<tr>
<td>82.0</td>
<td>1.13</td>
</tr>
</tbody>
</table>

**Date/Time:** 09/02/01 11:00am

**Completed by:** Done, David, Theresa

**Densimeter Readings**

- Tran 1: u theatre, d theatre, r theatre, o theatre
- Tran 2: u theatre, d theatre, o theatre
- Tran 3: u theatre, d theatre, o theatre
- Tran 4: u theatre, d theatre, o theatre
- Tran 5: u theatre, d theatre, o theatre
- Tran 6: u theatre, d theatre, o theatre

**Air Temp:** 71°F

**Water Temp:** 58°F

**Description of Site:** Taken along Tran 1

- **Bankfull Width:** 10 ft
- **Bankfull Depth:** 2 ft
- **Flood-prone Width:** 30 ft
- **Flood-prone Depth:** 4 ft
- **Slope:** 2.5°

**Habitat Type**

- **Step:** 2.5
- **Total:**

**Pools:** 2, 3, 1, 5
- **Number of Steps:** 11 steps = 27.5'

**Riffles:** 4, 4, 7, 8, 1, 7, 5, 4
- **Number of Steps:** 40 steps = 100'

**Runs:** 4, 1, 5, 1, 1, 7, 5, 1, 1, 10, 14, 4, 20
- **Number of Steps:** 12 steps = 320'
Riparian Grazing Case Study Data Sheet

Transect Locations: (Lat., Long., distance and bearing from Bench Mark, etc.)

Tran. 1: N41°06’01.8” W120°22’11.3” left from rock outcrop bearing 210°

Tran. 2: N41°05’02.2” W120°22’10.1” 23.5 ft from bench mark bearing 194°

Tran. 3: N41°05’04.3” W120°22’8.8” 39.4 ft from bench mark bearing 183°

Tran. 4: N41°04’04.4” W120°22’07.9” 56.2 ft from bench mark bearing 179°

Tran. 5: N41°04’07.9” W120°22’06.5” 92.4 ft from bench mark bearing 163°

Tran. 6: N41°04’05.3” W120°22’05.3” 121.6 ft from bench mark bearing 167°

<table>
<thead>
<tr>
<th>Riffle Length</th>
<th>Riffle 1</th>
<th>Riffle 2</th>
<th>Riffle 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Riffle Length</td>
<td>17.2’</td>
<td>15’</td>
<td>8’</td>
</tr>
<tr>
<td>Avg. Riffle Depth</td>
<td>0.33’</td>
<td>0.33’</td>
<td>0.5’</td>
</tr>
<tr>
<td>Riffle Velocity</td>
<td>2.8’/sec</td>
<td>2.1’/sec</td>
<td>1.5’/sec</td>
</tr>
<tr>
<td>Substrate Complexity</td>
<td>16</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Embeddedness</td>
<td>20%</td>
<td>40%</td>
<td>10%</td>
</tr>
<tr>
<td>Substrate Composition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Fines</td>
<td>15</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>% Gravel</td>
<td>30</td>
<td>35</td>
<td>55</td>
</tr>
<tr>
<td>% Cobble</td>
<td>55</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td>% Boulder</td>
<td>-</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>% Bedrock</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Substrate Consolidation</td>
<td>loose</td>
<td>moderate</td>
<td>loose</td>
</tr>
<tr>
<td>% Gradient</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Fish Shelter Ratings

| % undercut bank | 0 |
| % swd | 5 |
| % bwd | 0 |
| % root mass | 0 |
| % terr. veg | 50% of bank covered |
| % aqua. veg | 50% |
| % boulder curtain | 0 |
| % boulder | 5 |
| % bedrock ledge | 0 |
| % Exposed Substrate | 5% |
RIPARIAN GREENLINE TRANSECT DATA

Forest / District: 
Drainage: UCCE Example Creek
Examiners: David, Don, Theresa
Complex: 
Location: 
Date: 9/2/01

<table>
<thead>
<tr>
<th>Transect No.</th>
<th>Feet/Step: 3/1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Community Type</th>
<th>STEPS (Left)</th>
<th>STEPS (Right)</th>
<th>TOTAL STEPS</th>
<th>% COMP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare Bank/Brush</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>26.8</td>
</tr>
<tr>
<td>Rush/Pergrass</td>
<td>1</td>
<td>5</td>
<td>20</td>
<td>66.6</td>
</tr>
<tr>
<td>Pergrass/Sedge/Rush</td>
<td>14</td>
<td>15</td>
<td>201</td>
<td>66.6</td>
</tr>
</tbody>
</table>

Grand Total: 302

BARS WITHIN TRANSECT (Optional)

<table>
<thead>
<tr>
<th>STEPS</th>
<th>FEET</th>
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<tbody>
<tr>
<td>GRAVEL</td>
<td></td>
</tr>
<tr>
<td>SAND</td>
<td></td>
</tr>
<tr>
<td>SILT/CLAY</td>
<td></td>
</tr>
</tbody>
</table>

Total Steps ea. CT = Composition

Grand Total = 302
### Low Gradient Riparian Health Assessment for Rangelands

<table>
<thead>
<tr>
<th>Site: UCSE Example Creek</th>
<th>Date: 9/24/01</th>
</tr>
</thead>
</table>

#### 1. Channel Condition
- **Natural channel, no evidence of down cutting.**
- **Evidence of past channelization or down cutting, but significant recovery. Adequate access to the flood plain.**
- **Channelization or down cutting extensive. Flood plain is restricted.**
- **Channel actively down cutting or widening. Flood plain access prevented.**

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2. Access to Flood Plain
- **Flood event every 1 1/2 to 2 years -- not incised.**
- **Flood event every 3-5 years -- limited incision.**
- **Flood event every 6-10 years -- deeply incised.**
- **No flooding. Deeply incised.**

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3. Bank Stability
- **Banks stable.**
- **Moderately stable.**
- **Moderately unstable.**
- **Unstable.**

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4a. Riparian Zone - Perennial Creek
- **Natural vegetation extends at least two active channel widths (ex. sedges, rushes, willows, alders, aspen, cottonwoods, sycamores).**
- **Natural vegetation extends one active channel width.**
- **Natural vegetation extends 1/2 active width.**
- **Natural vegetation extends less than 1/2 of active width.**

<table>
<thead>
<tr>
<th>Left Bank Score</th>
<th>6</th>
<th>5.5</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Bank Score</td>
<td>6</td>
<td>5.5</td>
<td>5</td>
</tr>
</tbody>
</table>

#### 4a. Riparian Zone - Intermittent Creek
- **Natural vegetation extends two active channel widths (ex. oaks, buckeyes, alders, cottonwoods, coniferous, shrubs).**
- **Natural vegetation extends one active channel width.**
- **Natural vegetation extends 1/2 active width.**
- **Natural vegetation extends less than 1/2 of active width.**

<table>
<thead>
<tr>
<th>Left Bank Score</th>
<th>6</th>
<th>5.5</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Bank Score</td>
<td>6</td>
<td>5.5</td>
<td>5</td>
</tr>
</tbody>
</table>
## Low-Gradient Riparian Health Assessment for Rangelands Form

### 5. Macroinvertebrate Habitat

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat Types</td>
<td>Greater than 5</td>
<td>3-4 types</td>
<td>1-2 types</td>
</tr>
</tbody>
</table>

Cover types: Shoulders, cobbles, coarse gravel, leaf packs, fine woody debris, submerged logs, overhanging vegetation, macrophytes (aquatic vegetation)

### 6. Macroinvertebrates Observed

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat Type</td>
<td>Class I dominate. Score higher if good diversity and number.</td>
<td>Class II dominate.</td>
<td>Class III dominate. No macroinvertebrates present.</td>
</tr>
</tbody>
</table>

### 7. Fish Habitat (if applicable)

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat Type</td>
<td>Greater than 7</td>
<td>6-4 habitats present.</td>
<td>3-2 habitats present.</td>
</tr>
</tbody>
</table>

Cover types: Logs/large woody debris, deep pools, overhanging vegetation, riffles, boulders/cobbles, thick root mats, isolated/backwater pools, dense macrophyte beds, undercut banks

### 8. Pool Variability

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat Type</td>
<td>Even mix large-shallow, large-deep, small-shallow, small-deep pools present.</td>
<td>Majority of pools large-deep. Shallow pools more prevalent that deep pools.</td>
<td>Majority of pools small-shallow or pools absent.</td>
</tr>
</tbody>
</table>

### 9. Pool Substrate

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substrate</td>
<td>Mix of substrate (gravel, firm sand, etc.). Roots, submerged vegetation common.</td>
<td>Mix of soft sand, mud, and clay. Some submerged vegetation.</td>
<td>All mud, clay, or sand. Little to no root mats or submerged vegetation.</td>
</tr>
</tbody>
</table>

### 10. Channel Flow

<table>
<thead>
<tr>
<th>Score</th>
<th>12</th>
<th>11</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Type</td>
<td>Water reaches base of both lower banks, minimal substrate exposed.</td>
<td>Water fills &gt;75% of the channel, &lt;25% of substrate exposed.</td>
<td>Water fills 25-75% of the channel, riffle substrate mostly exposed.</td>
</tr>
</tbody>
</table>

### Photopoint Monitoring

<table>
<thead>
<tr>
<th>Witness Point</th>
<th>Location Description</th>
<th>Compass Heading</th>
<th>Landmarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photopoint 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photopoint 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photopoint 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Score: 7.75
## Standard Checklist

**Name of Riparian-Wetland Area:** UCCE Example Creek  
**Date:** 9/2/01  
**Segment/Reach ID:**  
**Miles:**  
**Acres:**  
**ID Team Observers:**

### HYDROLOGIC

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>✓</td>
<td></td>
<td>1) Active floodplain inundated in &quot;relatively frequent&quot; events (1-3 years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>current floodplain is:</strong></td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>2) Active/stable beaver dams</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>beaver activity but no dams.</strong></td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)</td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>4) Riparian area is widening or has achieved potential extent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>is starting to widen.</strong></td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>5) Upland watershed is not contributing to riparian degradation</td>
</tr>
</tbody>
</table>

### VEGETATION

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>6) Diverse age-class distribution (recruitment for maintenance/recovery)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>no mature/old class</strong></td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>7) Diverse composition of vegetation (for maintenance/recovery)</td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>8) Species present indicate maintenance of riparian soil moisture characteristics</td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>9) Streambank vegetation is made up of those plants or plant communities that have root masses capable of withstanding high streamflow events</td>
</tr>
<tr>
<td>✗</td>
<td></td>
<td></td>
<td>10) Riparian plants exhibit high vigor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>beaver activity on the willows</strong></td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>11) Adequate vegetative cover present to protect banks and dissipate energy during high flows</td>
</tr>
<tr>
<td>✓</td>
<td></td>
<td></td>
<td>12) Plant communities in the riparian area are an adequate source of coarse and/or large woody debris</td>
</tr>
</tbody>
</table>
## PFC Standard Checklist Form

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>EROSION DEPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>√</td>
<td></td>
<td>13) Floodplain and channel characteristics (i.e., rocks, coarse and/or large woody debris) adequate to dissipate energy</td>
</tr>
<tr>
<td>√</td>
<td></td>
<td></td>
<td>14) Point bars are revegetating</td>
</tr>
<tr>
<td>√</td>
<td></td>
<td></td>
<td>15) Lateral stream movement is associated with natural sinuosity</td>
</tr>
<tr>
<td>√</td>
<td></td>
<td></td>
<td>16) System is vertically stable</td>
</tr>
<tr>
<td>√</td>
<td></td>
<td></td>
<td>17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)</td>
</tr>
</tbody>
</table>

### Remarks (Rationale for Rating)

Vegetation will not at level it should be.

### Summary Determination

Functional Rating:
- [ ] Proper Functioning Condition
  - √ Functional – At Risk
  - ___ Nonfunctional
  - ___ Unknown

Trend for Functional – At Risk:
- ___ Upward
- ___ Downward
- √ Not Apparent

Are factors contributing to unacceptable conditions outside the control of the manager?
- Yes
- No  

If yes, what are those factors?
- ___ Flow regulations
- ___ Mining activities
- ___ Upstream channel conditions
- ___ Channelization
- ___ Road encroachment
- ___ Oil field water discharge
- ___ Augmented flows
- ___ Other (specify) ____________________________________

(Revised 1998)
### CROSS SECTION COMPOSITION

**(Transect Data)**

**Forest / District:**

**Drainage:** UCCE Example Creek

**Examiners:** David, Theresa, Don

**Complex:**

**Location:**

**Transect No.:** 1

**Date:** 9/2/01

**Feet/Step:** 2/1

<table>
<thead>
<tr>
<th>Community Type</th>
<th>NUMBER STEPS</th>
<th>TOTAL STEPS</th>
<th>FEET Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per grass, brush, sedge mix</td>
<td>7.5</td>
<td>12</td>
<td>360</td>
</tr>
<tr>
<td>Bare ground, grass, brush</td>
<td>5</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Per grass, sedge, rush, forb</td>
<td>4</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Creek</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Per grass, rush, forb</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Bare ground</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

**ESTIMATED AVERAGE HT.**

<table>
<thead>
<tr>
<th>Sprout</th>
<th>Young</th>
<th>Mature</th>
<th>Decadent</th>
<th>Dead</th>
</tr>
</thead>
</table>

**LINE INTERCEPT CANOPY OF WOODY SPECIES (optional):**

**TOTAL FEET OF RIPARIAN (optional):**

### CROSS SECTION COMPOSITION
(Transect Data)

<table>
<thead>
<tr>
<th>Forest / District</th>
<th>Date</th>
<th>Drainage</th>
<th>Examiners</th>
<th>Photo No's</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9/2/01</td>
<td>UCC Example Creek</td>
<td>David, Don, Theresa</td>
<td></td>
</tr>
<tr>
<td>Complex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
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<td></td>
</tr>
<tr>
<td>Transect No.</td>
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<td>Feet/Step</td>
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<table>
<thead>
<tr>
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<th>NUMBER STEPS</th>
<th>TOTAL STEPS</th>
<th>FEET Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare ground / Brush</td>
<td>12</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>Per grass / Rabbit</td>
<td>7</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>Per grass / Rush / Firb</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Creek</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Bare ground</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

**ESTIMATED AVERAGE HT.**

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<th>Dead</th>
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</thead>
</table>

**LINE INTERCEPT CANOPY OF WOODY SPECIES (optional)____________**

**TOTAL FEET OF RIPARIAN (optional)____________**

### CROSS SECTION COMPOSITION
(Transect Data)

<table>
<thead>
<tr>
<th>Forest / District</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
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<td>9/2/01</td>
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<table>
<thead>
<tr>
<th>Drainage</th>
<th>Examiners</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCCE Example Creek</td>
<td>David, Don, Theresa</td>
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</table>

<table>
<thead>
<tr>
<th>Complex</th>
<th>Photo No's</th>
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</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Location</th>
<th>Transect No.</th>
<th>Feet/Step</th>
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</thead>
<tbody>
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<td>3/1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Community Type</th>
<th>NUMBER STEPS</th>
<th>TOTAL STEPS</th>
<th>FEET Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare ground / grass / Brush</td>
<td>8 / 6</td>
<td>14</td>
<td>42</td>
</tr>
<tr>
<td>Rush / Sedge / Per grass</td>
<td>4 / 1 / 3</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Willow</td>
<td>1 / 1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Creek</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>bare ground</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

#### ESTIMATED AVERAGE HT.

<table>
<thead>
<tr>
<th>Sprout</th>
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<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
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<td></td>
</tr>
</tbody>
</table>

#### LINE INTERCEPT CANOPY OF WOODY SPECIES (optional) ___________

#### TOTAL FEET OF RIPARIAN (optional) ___________

CROSS SECTION COMPOSITION  
(Transect Data)

Forest / District: ___________________________  Date: 9/2/01
Drainage: UCCE Example Creek
Examiners: David, Don, Theresa  Photo No’s: ___________________________
Complex: ___________________________
Location: ___________________________
Transect No: 4  Feet/Step: 3/1

<table>
<thead>
<tr>
<th>Community Type</th>
<th>NUMBER STEPS</th>
<th>TOTAL STEPS</th>
<th>FEET Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare ground / grass / Brush</td>
<td>9 4 6</td>
<td>19</td>
<td>57</td>
</tr>
<tr>
<td>Rush / Per grass / Bare ground</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Creek</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Rush</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Willow</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Per grass / Sedge / Rush</td>
<td>4</td>
<td>4</td>
<td>12</td>
</tr>
</tbody>
</table>

ESTIMATED AVERAGE HT.  Sprout: 36'  Young: 36'  Mature: 36'  Decadent: 36'  Dead: 36'

LINE INTERCEPT CANOPY OF WOODY SPECIES (optional) ________________________________
# CROSS SECTION COMPOSITION

(Transect Data)

<table>
<thead>
<tr>
<th>Community Type</th>
<th>NUMBER STEPS</th>
<th>TOTAL STEPS</th>
<th>FEET Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare / Sage / Brush</td>
<td>9 / 3</td>
<td>13</td>
<td>36</td>
</tr>
<tr>
<td>Per / Sage / Brush</td>
<td>2 / 4</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Per / Grass / Brush</td>
<td>1 / 1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Creek</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Willow</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Sedge / Per / Grass / Rush</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

---

ESTIMATED AVERAGE HT.

<table>
<thead>
<tr>
<th>Sprout</th>
<th>Young</th>
<th>Mature</th>
<th>Decadent</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'</td>
<td></td>
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</tbody>
</table>

LINE INTERCEPT CANOPY OF WOODY SPECIES (optional) _____________

TOTAL FEET OF RIPARIAN (optional) _____________


Forest / District ___________________________ Date 9/2/01

Drainage UCC Example Creek

Examiners David, Don, Theresa

Location Transect No. 5 Feet/Step 3/1

Complex ___________________________ Photo No's ___________
### CROSS SECTION COMPOSITION

**Forest / District:**

**Date:** 9/2/01

**Drainage:** UCDE Example Creek

**Examiners:** David, Don, Theresa

**Complex:**

**Location:**

**Transect No.:** 6

**Feet/Step:** 3/1

<table>
<thead>
<tr>
<th>Community Type</th>
<th>NUMBER STEPS</th>
<th>TOTAL STEPS</th>
<th>FEET Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass / Sedge / Sage / Brush</td>
<td>5 / 7</td>
<td>15 / 21</td>
<td></td>
</tr>
<tr>
<td>Bare / Sage ground / Brush</td>
<td>5</td>
<td>15 / 15</td>
<td></td>
</tr>
<tr>
<td>Willow</td>
<td>2</td>
<td>2 / 6</td>
<td></td>
</tr>
<tr>
<td>Creek</td>
<td>2</td>
<td>2 / 6</td>
<td></td>
</tr>
<tr>
<td>Sedge / Forb / Rush / Per grass</td>
<td>4 / 13</td>
<td>4 / 18 / 18</td>
<td></td>
</tr>
<tr>
<td>Bare ground</td>
<td>1 / 3</td>
<td>1 / 6 / 3</td>
<td></td>
</tr>
<tr>
<td>Rose bush</td>
<td>1</td>
<td>1 / 3</td>
<td></td>
</tr>
</tbody>
</table>

**ESTIMATED AVERAGE HT.:**

<table>
<thead>
<tr>
<th>Sprout</th>
<th>Young</th>
<th>Mature</th>
<th>Decadent</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>14'</td>
<td></td>
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</tbody>
</table>

**LINE INTERCEPT CANOPY OF WOODY SPECIES (optional):**

**TOTAL FEET OF RIPARIAN (optional):**

# CROSS SECTION SUMMARY SHEET

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<thead>
<tr>
<th>Community Type</th>
<th>T&lt;sub&gt;1&lt;/sub&gt; Steps</th>
<th>T&lt;sub&gt;2&lt;/sub&gt; Steps</th>
<th>T&lt;sub&gt;3&lt;/sub&gt; Steps</th>
<th>T&lt;sub&gt;4&lt;/sub&gt; Steps</th>
<th>T&lt;sub&gt;5&lt;/sub&gt; Steps</th>
<th>T&lt;sub&gt;6&lt;/sub&gt; Steps</th>
<th>COMPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per grass / Rabbit / Sedge mix</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.5</td>
</tr>
<tr>
<td>Bare ground / Per grass / Rabbit Brush</td>
<td>5</td>
<td>14</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td>23.8</td>
</tr>
<tr>
<td>Per grass / Sedge / Rush / Forb</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Bare ground / Sage Brush</td>
<td></td>
<td>13</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>11.3</td>
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<tr>
<td>Per grass / Rush / Forb</td>
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<td>3</td>
<td></td>
<td></td>
<td></td>
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<td>2.5</td>
</tr>
<tr>
<td>Bare ground</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>8.8</td>
</tr>
<tr>
<td>Bare ground / Rabbit Brush</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.5</td>
</tr>
<tr>
<td>Per grass / Rabbit Brush</td>
<td>13</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>8.1</td>
</tr>
<tr>
<td>Rush / Sedge / Per grass</td>
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<td>4</td>
<td>3</td>
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<td>9.4</td>
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<tr>
<td>Willow</td>
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<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Rush / Per grass / Bare ground</td>
<td>1</td>
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<td></td>
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<td></td>
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<td>0.6</td>
</tr>
<tr>
<td>Rush</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>0.6</td>
</tr>
<tr>
<td>Per grass / Rush</td>
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<td></td>
<td>1.2</td>
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<tr>
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<td>6</td>
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<td></td>
<td>3.8</td>
</tr>
<tr>
<td>Rosebrush</td>
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<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>0.6</td>
</tr>
<tr>
<td>Per grass / Sedge / Sage Brush</td>
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<td></td>
<td></td>
<td>7</td>
<td></td>
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<td>4.4</td>
</tr>
</tbody>
</table>

| TOTAL UNDISTURBED TYPES (PERCENT) | 15 |

**Status (check)**

- 0 – 15 = very early seral
- 16 – 40 = early seral
- 41 – 60 = mid seral
- 61 – 85 = late seral
- 85+ = PNC

---


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Forest/District / Date Compiled 9/2/01

Drainage: UCLE Example Creek

Examiners: David, Don, Theresa
**WOODY SPECIES REGENERATION**

<table>
<thead>
<tr>
<th>Species</th>
<th>Seedling / Sprout</th>
<th>Young / Sapling</th>
<th>Mature</th>
<th>Decadent</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Left</td>
<td>Right</td>
<td>Left</td>
<td>Right</td>
<td>Left</td>
</tr>
<tr>
<td>Willow</td>
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<td>8</td>
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<td>7</td>
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<tr>
<td>Willow</td>
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<td>8</td>
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<td></td>
</tr>
<tr>
<td>Willow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willow</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Willow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willow</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Total: 17 34 18 15 16 11

Total (L&R): 5 33 18 15 16 27

Average Height (Optional)

<table>
<thead>
<tr>
<th>Layer</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Layer</td>
<td></td>
</tr>
<tr>
<td>Shrub Layer</td>
<td></td>
</tr>
<tr>
<td>Herb Layer</td>
<td></td>
</tr>
</tbody>
</table>

Use dot count method to record numbers, e.g.:

- = 4
1 = 8
2 = 10

FOR MORE INFORMATION

You’ll find detailed information on many aspects of rangeland and riparian management in these titles and in other publications, slide sets, CD-ROMs, and videos from UC ANR:

- California Guidelines for Residual Dry Matter (RDM) Management on Coastal and Foothill Annual Rangelands, publication 8092
- Sediment Delivery Inventory and Monitoring: A Method for Water Quality Management in Rangeland Watersheds, publication 8014
- Visual Assessment of Riparian Health, publication 8089

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