

Lesson Plan 9.

Pasture and Stream Assessment

Goals/Overview:

Understand how to assess pastures and streams for potential and actual water quality impairments and use Worksheets 4 and 5 of the RWQP Template to record assessed conditions.

Learning Objectives:

1. Understand the set-up of self-assessment forms to be used across an entire ranch by listing specific pasture locations where water quality concerns occur.
2. Understand what each question is referring to in stream and pasture assessments.
3. Gain ability to describe the cause of any water quality concerns—current, historical, and/or natural.
4. Learn the importance of stream temperature as a water quality concern.
5. Know the fundamental aspects of riparian grazing management practices that address water quality concerns.

Introduction/Hook:

- Compare and contrast historical and natural examples of water quality concerns in order to ascertain if water quality concerns are caused or exacerbated by current livestock management.
- Pasture and stream assessments present opportunities to highlight ranch conditions that are beneficial for water quality and areas that need improvement.

Materials/Speakers:

- Show numerous photos of potential problem areas that depict or explain the intent of each question from Worksheets 4 and 5.
- Invited speaker and facilitator of discussion would be someone with knowledge in rangeland and watershed management from UCCE, NRCS, RCD, or other relevant organization.

- Bring a few extra copies of the [RWQP Template](#).
- Provide extra copies of the [Pasture Assessment—Worksheet 4](#), and [Stream Assessment—Worksheet 5](#).
- Instructional video: “[Pasture Assessment—Worksheet 4](#)” (13 minutes).
- Educational video: “[Stream Temperature](#)” (12 minutes).
- Educational video: “[Riparian Grazing Management](#)” (15 minutes).
- Instructional video: “[Stream Assessment—Worksheet 5](#)” (7 minutes).
- Provide attendees handouts of pertinent resources.

Time Allocated:

Allow 70 to 90 minutes (50 minutes for presentation and 15 to 30 minutes for question/answer).

Procedures/Activities/Strategies/Questions:

- Open with a brief story or anecdote, welcome newcomers, and ask for outstanding questions or concerns.
- Introduce participants to Worksheets 4 and 5 and the groups of questions on each worksheet.
- Present video: “[Pasture Assessment—Worksheet 4](#).”
- Discuss the questions on Worksheet 4 so that attendees understand how to answer questions on their ranches. Go through each very slowly. Consider dividing into small groups for discussion purposes so everyone feels comfortable articulating their confusion about individual assessment questions.
- Discuss stable waterfalls versus unstable headcuts that need monitoring and/or need to be fixed.
- Present video: “[Stream Temperature](#).”

- Present video: “Riparian Grazing Management.”
- Present video: “Stream Assessment—Worksheet 5.”
- Emphasize in various ways that monitoring with visual inspections (Worksheet 10) should address and support the questions in these two assessment worksheets.
- Complete the Session Evaluation Form (appendix A).

Conclusion/Self-assessment:

- As participants think about conducting pasture and stream assessments on their ranches, some questions they should consider include:
 - How large are bare-soil areas on ranch?
 - Where are the largest ones located and when do they connect to waterways (that is, after how much rainfall)?
 - Where is current livestock management exacerbating a potential problem or hindering the natural processes for vegetation to reestablish?
 - Are the largest unstable locations caused by natural and/or historical causes?

Resources:

- Pellant, M., P. Shaver, D. A. Pyke, and J. E. Herrick. 2005. Interpreting Indicators of Rangeland Health. Version 4. Technical Reference 1734-6. Denver: U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center. <https://www.blm.gov/documents/national-office/blm-library/technical-reference/interpreting-indicators-rangeland-health>
- Ward, T. A., K. W. Tate, and E. R. Atwill. n.d. Visual Assessment of Riparian Health. Oakland: UC Agriculture and Natural Resources Publication 8089. <https://anrcatalog.ucanr.edu/pdf/8089LR.pdf>

Next Steps/Future Lessons:

- Have participants considered previously completed work to control erosion or other conservation practices on their ranches or their neighbors' ranches? Did projects successfully meet objectives and do they need more work or maintenance?
- Ask participants if previously completed conservation practices increased or reduced pasture productivity and ranch viability and addressed water quality concerns.