

# Riparian grazing & water quality: risk assessment & solutions

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# Water Quality Risk Spectrum



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# Context & timing matters





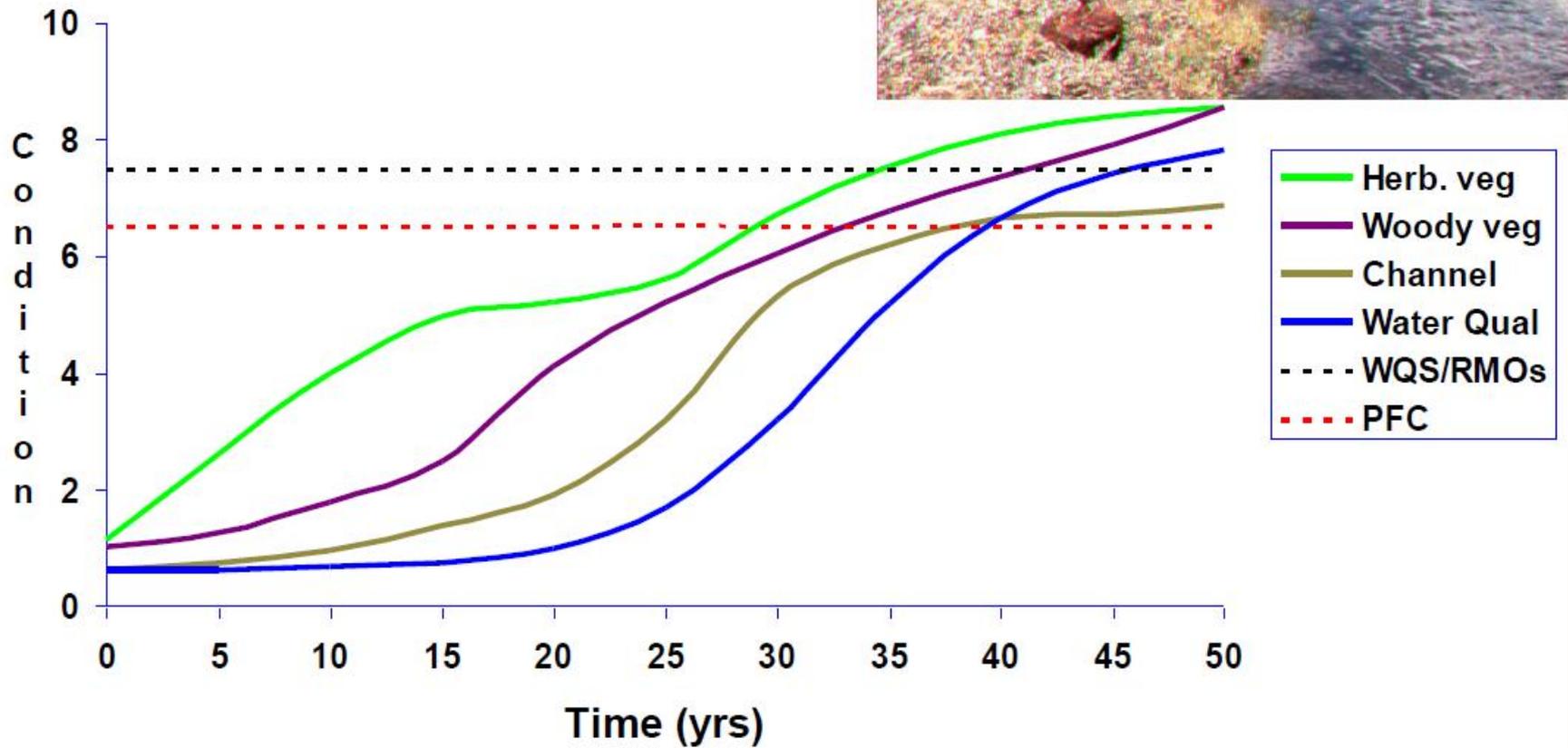


## Point #1: Riparian function drives water quality



# Recovery Rates

## Non-Functional



## Point #2: Improper livestock grazing can cause serious riparian damage and water quality problems



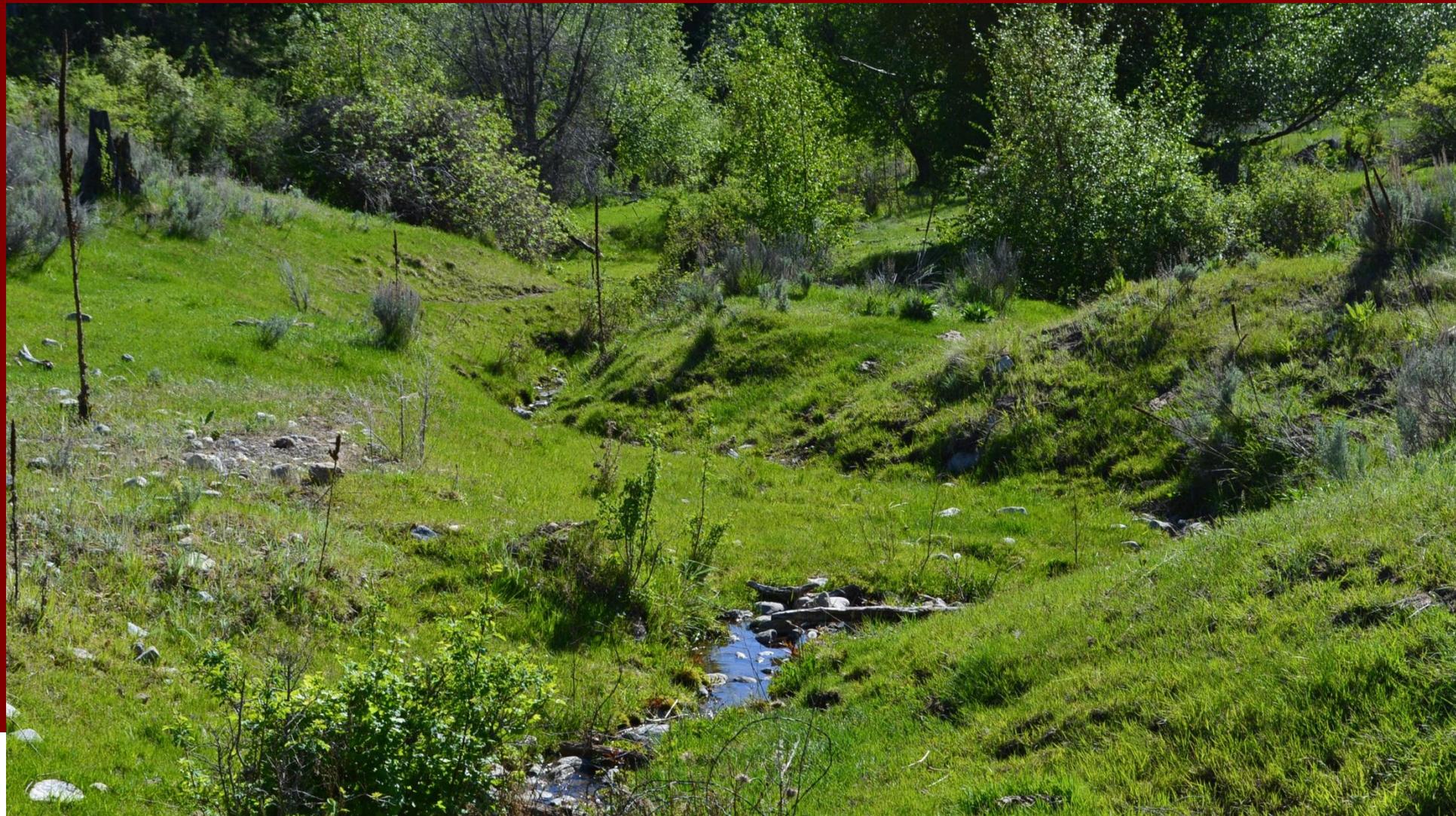
Point #3: Solving WQ problems involves both source control and a grazing regime that protects riparian vegetation



## Point #4: Changing timing, duration, and intensity of grazing use may be sufficient



Point #5: Both riparian conditions and grazing practices are relevant to accurately assessing risk of pollution



Point #7: Producers/landowners need a self-assessment option to evaluate relative risk of pollution



# WQ risk assessment limits

- WSU risk assessment is not a regulatory document
- The conditions and practices described should not be used as a new bright line, speed limit, sideboard . . .
- WQRA is designed to allow a producer to self-assess relative level of risk of water quality problems from an ecological perspective.
- Risky conditions & practices may not indicate a discharge or cause impairment, but do indicate higher risk
- Positive conditions & practices may not guarantee water quality compliance, but do decrease risk

# Risky Conditions

**Conditions within the stream zone which increase risk of a water quality problem include:**

- Bare soil
- Visibly eroding streambanks; streambanks are more prone to erode when soils are saturated (Note: this is sometimes a hydrologic feature rather than livestock damage)
- Erosional features similar to miniature gullies following livestock trails
- Replacement of riparian-type vegetation with upland-type vegetation and/or invasive plants

# Risky Conditions

**Certain visual indicators or conditions are direct evidence of discharge** and do not require further analysis or investigation:

- Contaminated runoff entering surface water
- A "plume" of sediment in the water where a streambank is being actively eroded by heavy livestock activity
- A "plume" of manure continually being washed into a stream
- Manure accumulation in or immediately adjacent to water

# Risky Grazing Practices

- Long grazing periods or multiple-season grazing
- Short recovery periods (recovery is variable depending on seasonality and severity of defoliation)
- Grazing for >30 days during the hot season every year in large pastures with limited riparian area
- Grazing on steep slopes adjacent to a stream
- No offstream stockwater options
- No opportunity for vegetation regrowth before winter in riparian areas

# Risky Grazing Practices

- Any heavy grazing use that occurs too often (high defoliation frequency, short stubble heights)
- Placing salt or other supplements on or near creeks
- Leaving a small number of animals behind in a pasture with a riparian zone
- Feeding hay in winter near a stream (slope, distance from water, winter precipitation, etc., influence this risk heavily)
- Late summer, early fall grazing without practices to discourage riparian loafing that results in unacceptable browsing levels on woody species

Point #6: This is not rocket science. It's much more complicated than that.



# Positive grazing practices

The following practices and principles tend to maintain riparian health and decrease risk of pollution.

- Off-stream water, which dramatically reduces animal time in the riparian zone
- Short grazing periods, which reduce the risk of severe defoliation
- Long recovery periods (time between grazing events)
- Change season of grazing use on range and forest each year
- Moderate defoliation of primary forage species
- Riparian fencing, temporary or permanent, which controls livestock impacts to the stream. Permanent exclusion fence prevents any livestock impacts; establishing a riparian pasture allows the manager complete control over timing, duration, and intensity of riparian grazing.
- Using utilization of preferred forage species and/or woody species as a “trigger” for moving animals out of a grazing unit with a riparian system

# Positive grazing practices

The following practices and principles tend to maintain riparian health and decrease risk of pollution.

- Grazing during late spring/early summer only every other year
- Early spring grazing: In early spring animals spend less time in the riparian zone because it's colder, upland forage has higher water content and is abundant; this practice provides a long recovery period and plenty of standing biomass going into winter. Exceptions to this include regions with heavy spring rainfall and saturated soils where intensively grazed pastures are likely to discharge manure into their adjacent drainages/streams
- Herding animals: done properly, herding places rather than chases animals out of the riparian zone until avoidance becomes their idea
- Hardened access points or crossing points on streams
- Annual grazing use monitoring and trend monitoring as part of an adaptive management strategy

## For More Information . . .

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