



## Stream Assessment Worksheet

Owners name \_\_\_\_\_ Date \_\_\_\_\_

Stream name \_\_\_\_\_ Watershed \_\_\_\_\_

Reach location \_\_\_\_\_

Drainage area \_\_\_\_\_ Gradient (in percent slope) \_\_\_\_\_

Land use within drainage (%): row crop \_\_\_\_\_ hayland \_\_\_\_\_ grazing/pasture \_\_\_\_\_ forest \_\_\_\_\_ residential \_\_\_\_\_

confined animal feeding operations \_\_\_\_\_ Cons. Reserve \_\_\_\_\_ industrial \_\_\_\_\_ Other: \_\_\_\_\_

Weather conditions-today \_\_\_\_\_ Past 2-5 days \_\_\_\_\_

Bank-full channel width \_\_\_\_\_ Dominant substrate on stream bed: boulder \_\_\_\_\_ gravel \_\_\_\_\_ sand \_\_\_\_\_ silt \_\_\_\_\_ mud \_\_\_\_\_

### Site Diagram

## Observations

**Channel Condition:** Stream meandering should increase as the slope of the reach flattens. Channel should not be unnaturally straight. Rip rap, dikes and levies should not be present that restrict the flood plain width.

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**Hydrologic Alteration:** Flooding should occur two out of three years. High flows clean the stream bed by scouring away fine sediment. Decreases in out-of-bank flows can lead to excess sediment deposition and channel braiding. Conversely, confining a stream from its floodplain can lead to excessive flows and bank erosion.

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**Riparian Zone:** *Natural* vegetation should extend at least 2 bankfull widths on each side of the stream. Concentrated surface runoff should not cut through the riparian zone. A healthy riparian zone controls erosion, filters the pollutants that would reach the stream in surface runoff, creates a cooler microclimate suitable to aquatic organisms, and provides habitat for fish and insects.

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**Bank Stability:** Bank erosion should not be excessive. Some erosion is natural, especially in outside bends. High banks, slope failure, unvegetated stretches, trees growing in a "J" shape on failing bank slope and exposed tree roots are indicators of unstable banks and excessive erosion.

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**Water Appearance:** Water should be clear. Check this by noting at what depth objects underwater are no longer visible. Water should not be green. There should not be an oily sheen on the surface or noticeable film on submerged objects or rocks. There should be no odor of ammonia, rotten eggs, chemicals or sewage.

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**Nutrient Enrichment:** Excessive levels of nutrients (especially phosphorous and nitrogen) are indicated by an overabundance of algae and aquatic vegetation. This leads to a depletion of dissolved oxygen in the stream. Fish may be seen gulping for air at the water surface during warm weather.

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**Manure Presence:** Manure from livestock or untreated human waste should not be allowed to enter the stream, which would increase the nutrient load and pose a health risk.

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**Barriers to Fish Movement:** Manmade structures such as dams, culverts, diversions or drop structures should not block fish passage. Some structures may create a hydraulic barrier rather than a drop, such as small culverts that create high flow velocities. Beaver dams generally do not prevent fish migration.

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**Instream Fish Cover:** Cover is ideally provided by a variety of logs, large woody debris, deep pools, overhanging vegetation, boulders, cobbles, undercut banks forming underwater pockets, thick root mats, dense aquatic vegetation, off-channel/backwater pools, and riffles characterized by broken water with a swift, shallow current. Note any of these that are present.

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**Canopy Cover:** Shading of the stream is important because it keeps water cool and limits algal growth. Cool water has a greater oxygen holding capacity than does warm water. Trout and Salmon require cool, oxygen-rich water. What percentage of the stream is shaded that could be shaded?

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**Macroinvertebrates Observed:** Stream health may be indicated by the presence of insects, such as stoneflies, mayflies and caddisflies that cannot tolerate polluted water. Damselflies, aquatic sowbugs, and crayfish can tolerate limited pollution. The presence of Midges, craneflies and leeches suggests that the water is significantly polluted.

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