Section 12
Visual Stream Assessments

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After all other samples and field data have been collected, the field team makes a general visual assessment of the river, and performs a final check of the data forms and samples before leaving the river site (see Section 13). The objective of the visual river assessment is to record field team observations of catchment and stream characteristics that are useful for data validation, future data interpretation, ecological value assessment, development of associations, and verification of stressor data. The observations and impressions of field teams are extremely valuable.

12.1 Visual Stream Assessment

The objective of the visual river assessment is to record field crew observations of catchment/river characteristics useful for future data interpretation, ecological value assessment, development of associations, and verification of stressor data. Observations and impressions of field crews are extremely valuable. Thus, it is important that these observations about river characteristics be recorded for future data interpretation and validation. The assessment form is designed as a template for recording pertinent field observations. It is by no means comprehensive and any additional observations should be recorded in the Comments section of the form.

Complete the assessment form after all other sampling and measurement activities have been completed. Take into account all observations the sampling team has made while at the site. The assessment includes the following components: watershed activities and observed disturbances, reach characteristics, waterbody character, general assessment, and local anecdotal information. The procedure for conducting the visual assessment of the sampling reach is presented in Table 12-1. Record data and observations for each component of the assessment on the Assessment Form as shown in Figures 12-1 and 12-2.

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Table 12-1. Procedure for Conducting the Final Visual Assessment of a River.

1. After all other sampling and measurement activities are completed, fill out the header section of an Assessment Form. Use your perceptions obtained during the course of the day, while at the river or driving/walking through the catchment to complete the remainder of the form.
2. Watershed Activities and Disturbances Observed: Rate each type of activity or disturbance listed on the form as either "Not observed", "Low", "Medium", or "High", and record the rating on the Assessment Form. Keep in mind that ratings will be somewhat subjective and that an extensive effort to quantify the presence and intensity of each type of stressor is not required. General categories of activities and types of disturbance are described below:
   - Residential: The presence of any of the listed disturbances adjacent to or near the river.
   - Recreational: The presence of organized public or private parks, campgrounds, beaches or other recreation areas around the river. If there are signs of informal areas of camping, swimming or boating around the river (e.g., swimming hole), record them as "primitive" parks, camping.
   - Agriculture: The presence of cropland, pasture, orchards, poultry, and/or livestock.
   - Industrial: Any industrial activity (e.g., canning, chemical, pulp), commercial activity (stores, businesses) or logging/mining activities around the river or in the catchment. Describe in more detail in the comments section.
   - Management: Any evidence of liming activity, water treatment, dredging or channelization, flow control structures, etc.

   Any oddities, or further elaboration should be recorded in the Comments section.
3. Reach Characteristics: For each type of riparian vegetation cover or land use category listed on the Assessment Form, estimate the proportion of the sampling reach immediately adjacent to the river that is affected. Place and "X" in the appropriate extent class box (Rare [< 5%], Sparse [5 to 25%], Moderate [25 to 75%], and Extensive [> 75%]) on the form.
4. Classify the overall water clarity within the sampling reach as clear, murky, or highly turbid. Place an "X" in the appropriate box on the "Water Clarity" line of the Assessment Form. If you believe that water clarity has been influenced by a recent storm event, also place an "X" in the "Storm Influenced" box.
5. Water Body Character: Assign a rating of 1 (highly disturbed) to 5 (pristine) based on your general impression of the intensity of impact from human disturbance. Place an "X" in the box next to the assigned rating on the Assessment Form.
5. Waterbody Character (cont.): Assign a rating to the river based on overall aesthetic quality, based on your opinion of how suitable the river water is for recreation and aesthetic enjoyment today. Place and "X" in the box next to the assigned rating on the Assessment Form.
   5. Beautiful, could not be any nicer.
   4. Very minor aesthetic problems; excellent for swimming, boating, enjoyment.
   3. Enjoyment impaired.
   2. Level of enjoyment substantially reduced.
   1. Enjoyment nearly impossible.

   Add any comments you feel might aid data interpretation in the Comments Section.
6. General Assessment: record comments on wildlife observed, perceived diversity of terrestrial vegetation, and the estimated age class of forest (0 to 25 yr, 25 to 75 yr, or > 75 yr.) on the Assessment Form.
7. Local Anecdotal Information: Record any information regarding the past or present characteristics or condition of the river provided by local residents.

Each watershed activity or disturbance is rated into one of four categories of abundance or influence: not observed, low, medium, or high. Leave the line blank for any activity or disturbance type not observed. The distinction between low, medium, and high will be subjective. For example, if there are 2-3 houses on a river, the rating for "Houses" would be low. If the river is in a suburban housing development, rate it as high. Simi-

Reviewed by (initial) DKA

ASSESSMENT FORUM - STREAMS/RIVERS

SITE NAME: BEAVER RIVER DATE: 8 / 5 / 98 VISIT ☐0 ☒1 ☐2 ☐3

SITE ID: ORRV 98-999 TEAM ID (X): ☒1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8

WATERSHED ACTIVITIES AND DISTURBANCES OBSERVED (INTENSITY: BLANK = NOT OBSERVED, L = LOW, M = MODERATE, H = HEAVY)

RESIDENTIAL		RECREATIONAL		AGRICULTURAL		INDUSTRIAL		STREAM MANAGEMENT	
(L) M H	RESIDENCES	L M H	PARKS, CAMPGROUNDS	L M H	CROPLAND	L M H	INDUSTRIAL PLANTS	L M H	DIKING
L M H	MAINTAINED LAWNS	L (M) H	PRIMITIVE PARKS, CAMPING	L M H	PASTURE	L M H	MINES/QUARRIES	L M H	DRINKING WATER TREATMENT
L M H	CONSTRUCTION	(L) M H	TRASH/LITTER	L (M) H	LIVESTOCK USE	L M H	ORGANIC WASTES	L M (H)	ANIMAL PRESENCE
L M H	PIPES, DRAINS	L M H	OUTDOOR TOURS, GROUPS, CITIZENS	L M H	ORCHARDS	L M H	POWER PLANTS	L M H	DREDGING
L M H	DUMPING			L M H	POULTRY	L M H	LOGGING	L M H	CHANNELIZATION
(L) M H	ROADS			L M H	IRRIGATION PUMPS	L M H	EVIDENCE OF FIRE	(L) M H	WATER LEVEL FLUCTUATIONS
(L) M H	BRIDGES/CULVERTS					L M H	ODORS	L (M) H	FISH STOCKING
						L M H	COMMERCIAL	L M H	DAMS

REACH CHARACTERISTICS (percent of reach)

FOREST	☒ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☐ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
SHRUB	☐ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☒ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
GRASS	☐ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☒ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
WETLAND	☒ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☐ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
BARE GROUND	☐ RARE (< 5%)	☒ SPARSE (5 TO 25%)	☐ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
MACROPHYTES	☒ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☐ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
AGRICULTURE - ROW CROP	☒ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☐ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
AGRICULTURE - GRAZING	☐ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☒ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
LOGGING	☒ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☐ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
DEVELOPMENT (RESIDENTIAL/ URBAN)	☒ RARE (< 5%)	☐ SPARSE (5 TO 25%)	☐ MODERATE (25 TO 75%)	☐ EXTENSIVE (> 75%)
WATER CLARITY	☒ CLEAR	☐ MURKY	☐ HIGHLY TURBID	☐ STORM INFLUENCED

WATERBODY CHARACTER (X ONE)

PRISTINE	☐ 6	☐ 5	☒ 4	☐ 3	☐ 2	☐ 1 — DISTURBED
APPEALING	☐ 5	☒ 4	☐ 3	☐ 2	☐ 1	UNAPPEALING

GENERAL ASSESSMENT (wildlife, vegetation diversity, forest age class (0-25 yrs, 25-75 yrs, >75)

ROCKY CANYON LANDS, SAGE/GRASS COVER — OCCASIONAL RIPARIAN TREE.
NO LWA, LIMITED FISH COVER, REGULATED FLOW / WATER LEVEL.

LOCAL ANECDOTAL INFORMATION:

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Figure 12-1. Assessment Form (page 1).

Reviewed by (initial) _____

ASSESSMENT FORUM - STREAMS/RIVERS (continued)													
SITE NAME:						DATE:	/	/ 98	VISIT	0	1	2	3
SITE ID:	O R R V	___ ___ -	___ ___ ___		TEAM ID (X):	1	2	3	4	5	6	7	8

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ASSESSMENT FORM - STREAMS/RIVER - 2

Figure 12-2. Assessment Form (page 2).

larly, a small patch of clear cut logging on a hill overlooking the river would be rated as low. Logging activity right on the river shore, however, would be rated as high.

When assessing reach characteristics, make your best estimate as to the percent of the sampling reach (100 or 40 channel widths) that had each type of listed riparian zone land use immediately adjacent to the river. Also rate the water clarity, including whether you believe the clarity is influenced by recent storm events (see Section 4).

Water body character is defined as "the physical habitat integrity of the water body, largely a function of riparian and littoral habitat structure, volume change, trash, turbidity, slicks, scums, color, and odor." Water body character is assessed using two attributes, the degree of human development, and aesthetics. Rate each of these attributes on a scale of 1 to 5. For development, give the river a "5" rating if it is pristine, with no signs of any human development. A rating of "1" indicates a river which is totally developed (e.g., the entire river is lined with houses, or the riparian zone has been removed). For aesthetics, base your decision on any factor about the river that bothers you (e.g., trash, algal growth, weed abundance, overcrowding).

The general assessment component includes any observations that will help in data interpretation in the pertinent section. General assessment comments can include comments on wildlife observed, diversity of terrestrial vegetation, age class of forest, or any other observation. Comments from locals are often useful and should be recorded in the "Local Anecdotal Information" section. The back side of the form (Figure 12-2) is available for general comments.

12.2 Equipment and Supplies

Figure 12-3 is a checklist of the supplies required to complete the rapid habitat and visual stream assessments. This checklist may differ from the checklists presented in Appendix A, which are used at a base site to ensure that all equipment and supplies are brought to and are available at the river site. Field teams are required to use the checklist presented in this section to ensure that equipment and supplies are organized and available to conduct the protocols efficiently.

Equipment and Supplies for Visual Stream Assessments

Qty.	Item	
1	Assessment Form for visual stream assessment	
6	Soft (#2) lead pencils	
1	Covered clipboard or forms holder	
1 copy	Field operations and methods manual	
1 set	Laminated sheets of procedure tables and/or quick reference guides for rapid habitat and visual assessments	

Figure 12-3. Checklist of equipment and supplies required for visual assessments