Instructions for April 2006 Draft POST-TREATMENT checklist
SS – STREAMBANK STABILIZATION (non-bioengineered)

Y = Yes, the question applies and the answer is yes, comment if needed. **P** = Partially, the question cannot be answered definitively yes or no, comment suggested. **N** = No, the question applies and the answer is no, comment if needed. **D** = Don't know, the answer is unknown and cannot be found; preferable to blank. **A** = Not applicable, the question or sub-question does not apply to the feature.

See Manual Part III for guidance. See below for 3-letter code key; see glossary for definitions.

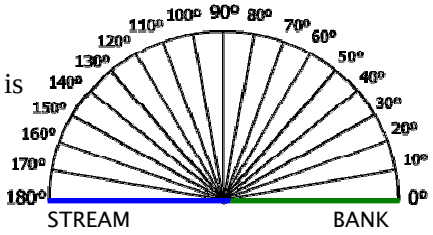
THE SAME TREATMENT AREA THAT WAS DEFINED DURING THE PRE-TREATMENT EVALUATION MUST BE CONSIDERED WHEN COLLECTING THE FOLLOWING DATA. CONFIRM THAT THE FEATURE LOCATION WAS SUFFICIENTLY DESCRIBED USING THE PROTOCOL FOR DOCUMENTING THE LOCATION OF HABITAT RESTORATION FEATURES. USE LOCATION DOCUMENTATION UPDATED DURING IMPLEMENTATION MONITORING AS NEEDED.

***Questions pertain to the bank stabilization* FEATURE.**

1. Measure the length of streambank stabilized. Count both banks if applicable, though typically one feature will not be on both sides of the stream.
2. Measure the meander length of stream habitat improved. If the feature was not intended to affect instream habitat, enter A.
3. Specify the current structural condition of feature: *EXCL* = (Excellent) The feature is intact and structurally sound. *GOOD* = the feature is intact and generally sound but some wear or undermining is evident. Components may have shifted slightly, but the feature is intact. *FAIR* = the feature position or condition has been altered significantly. *POOR* = the feature is visible but has suffered significant movement or damage. *FAIL* = (Failed) The feature is not visible or remnants are not in any form of designed configuration. (To be better defined)
4. Refers to visual evidence of structure malfunction or lack of structural integrity.
    a. Enter all that apply. Explain problems in comments.
5. Refers to location of the structure linearly in the channel, the lateral position of the structure in the channel and the orientation of the structure in relation to stream channel.

BANK *questions should be answered regardless of goals.*

6. Look for evidence of active erosion in or adjacent to the targeted treatment area.
    a. Location of erosion within and/or upstream and/or downstream of the feature *and* left and/or right bank (looking downstream) relative to the structure location.
    b. Determine using visual evidence and knowledge of land use and erosion processes.
7. If improving streambank conditions was a goal (Pre-project question #3 (PreQ 3)), compare current streambank conditions to pre-treatment streambank conditions (PreQ 2, a, b) to determine whether bank erosion was reduced. If it was not a goal, enter A.
8. The average bank angle at the treatment site will be reported in departure from horizontal, rather than vertical, to accommodate undercut banks. A vertical bank is 90°. A 1:1 slope is 45°. A 1½: 1 slope is 33.69°. And, a 2:1 slope is 26.65°. For undercut banks, also record the horizontal distance undercut to the tenth of a foot in the comments. Describe K. Vyverberg's folding rule/protractor method of bank measurement when available.



9. If improving streambank angle was a goal (PreQ 5), compare current bank angle to pre-treatment bank angle (PreQ 4) to determine whether bank angle was reduced. If it was not a goal, enter A and do not answer sub-question.
    a. Is the current bank angle equal to or less than the targeted bank angle (PreQ 5a)? If not specified, enter D.
10. ***This question always applies; answer Y, N, D.*** Compare current conditions in the vicinity of the treatment area to pre-treatment conditions (PreQ 2). Determine if there were any detrimental or beneficial effects on streambanks conditions that were not specified in goals. If Y, explain in comments (e.g. a deflector stabilized one bank and caused the opposite to erode).

SUBSTRATE *questions should be answered regardless of goals.*

11. Enter the 1st and then the 2nd dominant substrates in the treatment area (e.g. GRV/COB). For channel spanning structures, record the dominant substrate upstream of the structure.
12. If change in substrate composition was a goal (PreQ 7), compare current substrate composition to targeted substrate composition (PreQ 7a) to determine whether that goal was met. If it was not a goal, enter A.

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13. ***This question always applies; answer Y, N, D.*** Compare current conditions in the vicinity of the treatment area to pre-treatment conditions (PreQ 6). Determine if there were any detrimental or beneficial effects on substrate composition that were not specified in goals (e.g. if the feature caused silt to accumulate on or be washed away from spawning gravel). If Y, explain in comments.

HABITAT ***questions pertain to features intended to affect instream habitat. Collect baseline data according to goals.***

14. If changing habitat type was a goal (PreQ 9), compare current habitat type to targeted habitat type (PreQ 9a) to determine if the habitat type change was achieved. If it was not a goal, enter A.
    a. Level II habitat type in treatment area. If the feature area is on a side channel or is dry at the time of evaluation, enter the level II habitat type and OTH with a comment (e.g. POO/OTH).
15. ***This question always applies; answer Y, N, D.*** Consider pre-treatment site conditions (PreQ 8). Document *any* unintended effects, detrimental or beneficial e.g. if the feature caused a pool to become flatwater or if creating a pool was not a goal but the feature unexpectedly created a pool.
16. If increasing maximum residual water depth was a goal (PreQ 11), compare current maximum residual water depth associated with the structure (PostQ 16b) to pre-treatment residual water depth (PreQ 10) to determine if residual water depth was increased in the treatment area <u>because of the feature</u>. If it was not a goal, enter A and do not answer sub-questions.
    a. Measure the residual water depth to the tenth of a foot for *all* habitat types, not just pools. This is the maximum water depth in the treatment area, even if it is not at the structure, minus the depth of the nearest downstream tail crest. For habitat types other than pools, this may be a significant distance from the treatment area. Record in the comments the approximate location of maximum depth (e.g. Max. at base of LBK bedrock.
    b. Follow instructions above, but measure maximum residual depth created by the structure. Include approximate location of maximum depth in comments (e.g. 3 feet DNS of weir apex or UPS of scour log. If it is the same as the maximum depth in the 16a, record same depth for both questions to indicate the maximum depth in the treatment area is associated with the structure.
    c. Refer to PreQ 9b to determine if the depth is equal to or greater than the targeted residual pool depth. If not specified at pre-treatment, enter D.
17. Consider pre-treatment site conditions (PreQ 9a). Document in the comments *any* unintended effects, detrimental or beneficial (e.g. if the feature caused a pool to fill or unexpectedly created a pool. ***The question always applies; answer Y, N, D.***

SHELTER ***questions pertain to features intended to affect instream shelter. Collect baseline data according to goals.***

18. If increasing instream shelter rating was a goal (PreQ 10), compare current shelter rating (PostQ 18a x 18b) to pre-treatment shelter rating (PreQ 10a x 10b) to determine if shelter rating was increased in the treatment area. If it was not a goal, enter A and do not answer sub-questions.
    a. Use the table to the right to determine the shelter complexity value in the treatment area.
    b. Estimate the percent of the targeted treatment area covered by instream shelter using DFG habitat typing methods.
    c. Did the feature create or exceed the minimum targeted shelter rating (PreQ 10c)? The shelter complexity value is multiplied by the percent shelter cover to calculate the shelter rating (0-300). If not specified, enter D.

Instream Shelter Complexity Value Examples
(DFG Restoration Manual pg III-43)

Value 0
- No shelter.

Value 1
- One to five boulders
- Bare undercut bank or bedrock ledge
- Single piece of large wood (>12" diameter and 6' long) defined as large woody debris (LWD)

Value 2
- One or two pieces of LWD associated with any amount of small wood (<12" diameter) defined as small woody debris (SWD)
- Six or more boulders per 50 feet
- Stable undercut bank with root mass, and less than 12" undercut
- A single root wad lacking complexity
- Branches in or near the water
- Limited submersed vegetative fish cover
- Bubble curtain

Value 3
Must have a combination of at least 2 of the following cover types:
- LWD/boulders/root wads
- Three or more pieces of LWD combined with SWD
- Three or more boulders combined with LWD/SWD
- Bubble curtain combined with LWD or boulders
- Stable undercut bank with greater than 12" undercut, associated with root mass or LWD
- Extensive submersed vegetative fish cover

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d. Enter both the 1st and the 2nd dominant shelter component in the proposed treatment area (e.g. BUB / LWD.

19. If increasing LWD count was a goal (PreQ 11), compare current LWD count to pre-treatment LWD count (PreQ 11a) to determine whether LWD count was increased. If it was not a goal, enter A and do not answer sub-questions.
    a. Count the amount of large woody debris in the targeted treatment area in the two specified size classes. The first entry is for logs with a diameter of at least one foot that are between 6 and 20 feet in length, the second for logs with a diameter of at least one foot that are over 20 feet in length (e.g. enter 1 / 4.
    b. Consider the origin of all LWD currently at the feature and in the treatment area. Enter all that apply.

CHANNEL *questions should be answered regardless of goals.*

20. List all channel problems near the treatment area, not at a stream or reach level. List all that apply. Record problems in the vicinity of the treatment area even if they are irrelevant to the project goals.
21. If improving channel conditions was a goal (PreQ 13), compare current conditions to pre-treatment conditions (PreQ 12) to see if conditions specified in PreQ 13a were achieved.
    a. List all targeted channel conditions achieved as a result of the feature.
22. ***This question always applies; answer Y, N, D.*** Compare current conditions in the vicinity of the treatment area to pre-treatment conditions (PreQ 12). Determine if there were any detrimental or beneficial effects on channel conditions that were not specified in goals. If Y, explain in comments.

Effectiveness* RATING *is feature specific.

23. Rate the features effectiveness, not the structural condition. Keep in mind the degree to which it met the specific goals. (To be better defined)
    - EXCL = (Excellent) the project feature is performing according to objectives.
    - GOOD = there are some deficiencies in the projects feature's performance, but it is still performing in a satisfactory manner.
    - FAIR = there are some deficiencies in the project feature's performance and, these may cause problems in the future. Some characteristics of the feature, although not enough to cause corrective action at this time, require further scrutiny.
    - POOR = the feature is not performing in a satisfactory manner. Remedial action is required.
    - FAIL = (Failed) the feature has completely failed to meet objectives and/or is causing deleterious effects of habitat.
24. Enter all that apply, give details in comments.
25. Y if the feature needs or deserves further restoration effort, N if the site doesn't need further restoration or is not suitable for restoration activity.

Code definitions

AGG	Aggradation	GRC	Grade control	SHF	Structure shifted
ANC	Anchor failure	GRV	Gravel	SIN	Sinuosity
ANC	Anchored	GRZ	Grazing/grazing animal	SLC	Silt/clay
BAR	Lack of stabilizing vegetation	HDC	Headcut	SND	Sand
		HYD	Hydrologic processes	STB	Stability
BBB	Buried by bedload	INC	Incision	STR	Stranded out of active channel (horizontally)
BED	Bedrock	INT	Intercepted		
BOL	Boulder	LBK	Left bank	STT	Straightening
BRD	Braiding	LWD	Large woody debris	SWA	Stranded out of water (vertically)
BUB	Bubble curtain	MAT	Structure material failure		
CNR	Concentrated runoff	MIG	Migration	SWD	Small woody debris
COB	Cobble	MNT	Maintenance	TOG	To grade
CRF	Cable/rebar failure	NAR	Narrowing	UCB	Undercut bank
DNS	Downstream	NON	None	UNA	Unanchored
DRY	Dry	OTH	Other	UND	Undercut/undermined
EMG	Emergent groundwater	POO	Pool	UNS	Undersized/under-built
ENH	Enhancement	RBK	Right bank	UPS	Upstream
EXC	Excavated	REP	Repair	USG	Unstable soils/geology
EXH	Exhumed	RIF	Riffle	VEG	Vegetation
FLO	Flow obstructions	RPR	Riparian recruitment	WID	Widening
FLT	Flatwater	RTW	Rootwad	WIN	Within
FPD	Floodplain deposition	SCU	Side cutting	WSH	Washed out