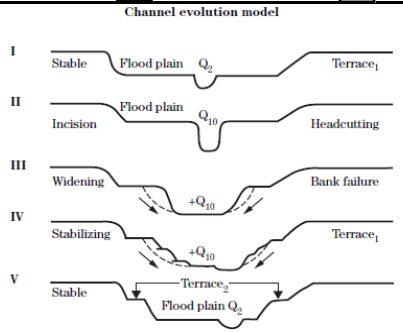
Stream/Reach Name: _____

Landowner's Name: _____

WA SVAP 2 Field Reference Sheet (Ver 1)

Date_____.

1. Channel Condition

Natural, stable channel with established bank	*If channel is incising (appears to be downcutting or degrading), score this element based on the descriptions in this upper section of the matrix:*		
No discernible signs of incision or aggradation; active channel and floodplain connected throughout reach, and flooded at natural intervals; streambanks low with few or no bank failures; Stage I : Score 10 Stage V: Score 9 (terrace)	Evidence of past incision and some recovery; some bank erosion possible; active channel and floodplain are connected in most areas, inundated seasonally; streambanks may be low or appear to be steepening; top of point bars are below active floodplain. Stage I: Score 8 Stage V: Score 7-8 Stage IV: Score 6	Active incision evident; plants are stressed , dying or falling in channel; active channel appears to be disconnected from the floodplain, with infrequent or no inundation; steep banks, bank failures evident or imminent ; point bars located adjacent to steep banks. Stage IV: Score 5 Stage III: Score 4 Stage II: Score 3	Headcuts or surface cracks on banks; active incision; vegetation very sparse; little or no connection between floodplain and stream channel, and no inundation; steep streambanks and failures prominent; point bars, if present, located adjacent to steep banks. Stage II or III, scores ranging from 2 to 0, depending on severity.
10 9	*If channel is aggrading (appears to be filling in and is relatively wide and shallow), score this element based on the descriptions in this lower section of the matrix:*		
Channel evolution model 	Minimal lateral migration and bank erosion; a few shallow places in reach, due to sediment deposits.	Moderate lateral migration and bank erosion; deposition of sediments causing channel to be very shallow in places; one or 2 bars in channel.	Severe lateral channel migration, and bank erosion; deposition of sediments causing channel to be very shallow in reach; braided channels (3 or more channels).
	8 7 6	5 4 3	2 1 0
	Comments:		

2. Hydrologic Alteration

Bankfull and higher flows occur according to the natural flow regime, generally every 1 to 2 years, AND No dams, dikes, development in the floodplain‡, or water control structures are present ; AND natural flow regime† prevails.	Bankfull and higher flows occur only once every 3 to 5 years, or less often than the local natural flow regime. Development in the floodplain, stream water withdrawals, flow augmentation, or water control structures may be present but do not significantly alter the natural flow regime.	Bankfull and higher flows occur only once every 6 to 10 years. Development in the floodplain, stream water withdrawals, flow augmentation, or water control structures alter the natural flow regime.	Bankfull and higher flows rarely occur or occur more frequently than once/year. Stream water withdrawals completely de-water channel; and/or flow augmentation, stormwater or urban runoff discharges directly to stream and severely alters the natural flow regime.
10 9	8 7 6	5 4 3	2 1 0
Comments:			

3. Bank Condition

Banks are stable; protected by roots of natural vegetation, wood, and rock†; no man-made structures present on bank; no bank failures‡; no recreational or livestock access.	Banks are moderately stable, protected by roots of natural vegetation, wood, rock or a combination of materials; limited number of structures present on bank; evidence of bank failures; recreational use and, or grazing do not negatively impact bank condition.	Banks are moderately unstable; very little protection of banks by roots of natural wood, vegetation, or rock; man-made structures cover more than half of reach or entire bank; active bank failures; recreational and/or livestock use contributing to bank instability.	Banks are unstable; no bank protection with roots, wood, rock or vegetation; riprap, and/or other structures dominate banks; numerous active bank failures; recreational and/or livestock use contributing to bank instability.	
Right Bank	10 9	8 7 6	5 4 3	2 1 0
Left Bank	10 9	8 7 6	5 4 3	2 1 0
Comments:				

4. Riparian Area Quantity - Score each bank separately.

Natural plant community covers the entire active floodplain and vegetation gaps generally contiguous, not exceeding 10% of the estimated length of the stream on the property.	Natural plant community extends at least 50 feet. Vegetation gaps do not exeed 30% of the stream reach on the planning unit.	Natural plant community extends at least 35 feet. Vegetation gaps do not exceed 30% of the estimated length of the stream on the planning unit.	Natural plant community extends at least 35 feet. Vegetation gaps exceed 30% of the estimated length of the stream on the planning unit.	Natural plant community extends less than 35 feet. Vegetation gaps exceed 30% of the estimated length of the stream on the planning unit.	
Right	10 9	8 7	6 5	4 3 2	1 0
Left Bank	10 9	8 7	6 5	4 3 2	1 0
Comments:					

Landowner Name: _____

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5. Riparian Area Quality – Rate entire property				
Natural and diverse riparian vegetation with composition, density and age structure appropriate for the site. No invasive species or concentrated flows through area.	Natural and diverse riparian vegetation with composition, density and age structure appropriate for the site. Invasive species present in small numbers (20% cover or less).	Natural vegetation compromised by poor management. Evidence of concentrated flows running through the riparian area. Invasive species common (>20%<50% cover).	Little or no natural vegetation. Evidence of concentrated flows running through the riparian area. Invasive species widespread (>50% cover).
Right Bank 10 9	8 7 6	5 4 3	2 1 0
Left Bank 10 9	8 7 6	5 4 3	2 1 0
Comments:			

6(a). Canopy Cover - *Coldwater* Streams (See Percent Canopy Cover Guide Below)			
>75% of water surface shaded within the length of the stream in landowner's property.	75% to 50% of water surface shaded within the length of the stream in landowner's property.	49% to 20% of water surface shaded within the length of the stream in landowner's property.	<20% of water surface shaded within the length of the stream in landowner's property.
10 9	8 7 6	5 4 3	2 1 0

6(b). Canopy Cover – *Warmwater* Streams (See Percent Canopy Cover Guide Below)			
50 to 75% of water surface shaded within the length of the stream in landowner's property.	>75% of water surface shaded within the length of the stream in landowner's property.	49% to 20% of water surface shaded within the length of the stream in landowner's property.	<20% of water surface shaded within the length of the stream in landowner's property.
10 9	8 7 6	5 4 3	2 1 0
Comments:			

7. Water Appearance			
Very clear, or clarity appropriate to site (3-6'). No oil sheen on surface; no evidence of metal precipitates in streams.	Slightly turbid, especially after storm event, but water clears rapidly (>1.5-3'); no oil sheen on surface; no evidence of metal precipitates in stream.	Turbid most of the time (0.5-1.5') and/or presence of metal precipitates and/or foam/oil present in slackwater areas.	High turbidity most of the time (<0.5') and/or considerable amount of metal precipitates and/or foam/oil present throughout reach.
10 9 8	7 6 5	4 3 2	1 0
Comments:			

8. Nutrient Enrichment			
Clear water along entire reach; little algal growth present.	Fairly clear or slightly greenish water; moderate algal growth on substrates.	Greenish water particularly in slow sections; abundant algal growth, especially during warmer months; and/or slight odor of ammonia or rotten eggs; and/or sporadic growth of aquatic plants within slack water areas.	Pea green color present; thick algal mats dominating stream; and/or strong odor of ammonia or rotten eggs, and/or dense stands of aquatic plants widely dispersed.
10 9	8 7 6	5 4 3	2 1 0
Comments:			

9. Manure or Human Waste Presence			
Livestock do not have access to stream; no pipes or concentrated flows discharging animal waste or sewage directly into stream.	Livestock access to stream is controlled and/or limited to small watering or crossing areas; no pipes or concentrated flows discharging animal waste or sewage directly into stream.	Livestock have unlimited access to stream during some portion of the year; manure is noticeable in stream; and/or pipes or concentrated flows discharge treated animal waste or sewage directly into stream	Livestock have unlimited access to stream during entire year; manure is noticeable in stream; and/or pipes or concentrated flows discharge untreated animal waste or sewage directly into stream or in stream.
10 9	8 7 6	5 4 3	2 1 0
Comments:			

10(a). Pools – *Low-Gradient* Streams			
More than 2 deep pools separated by riffles, each with greater than 30% of the pool bottom obscured by depth, wood, or other cover. Shallow pools also present.	One or 2 deep pools separated by riffles, each with greater than 30% of the pool bottom obscured by depth wood, or other cover; at least one shallow pool present.	Pools present but shallow (< 2 times maximum depth of the upstream riffle). Only 10 – 30% of pool bottoms are obscured due to depth or wood cover.	Pools absent, but some slow water habitat is available; no cover discernible. OR Reach is dominated by shallow continuous pools or slow water.
10 9	8 7 6	5 4 3	2 1 0
10(b). Pools – *High-Gradient* Streams (>2%)			
More than 3 deep pools separated by boulders or wood, each with greater than 30% of the pool bottom obscured by depth, wood, or other cover. For small streams, pool bottoms may not be completely obscured by depth, but pools are deep enough to provide adequate cover for resident fish. Shallow pools also present.	Two to 3 deep pools, each with greater than 30% of the pool bottom obscured by depth wood, or other cover; at least one shallow pool present. For small streams, pool bottoms may not be completely obscured by depth, but pools are deep enough to provide some cover for resident fish. At least one shallow pool also present.	Pools present but shallow relatively shallow, with only 10 – 30% of pool bottoms obscured by depth or wood cover. For small streams, pool bottoms may not be completely obscured by depth, but pools are deep enough to provide minimal cover for resident fish. No shallow pools present.	Pools absent.
10 9	8 7 6	5 4 3	2 1 0
Comments:			

11. Barriers to Aquatic Species Movement			
No artificial barriers that prohibit movement of aquatic organisms during any time of the year.	Physical structures, water withdrawals and/or water quality seasonally restrict movement of aquatic species.	Physical structures, water withdrawals and/or water quality restrict movement of aquatic species *throughout the year*.	Physical structures, water withdrawals and/or water quality prohibit movement of aquatic species.
10	9 8 7	6 5 4 3	2 1 0
Comments:			

12. Fish Habitat Complexity				
10 or more habitat features available, at least one of which is considered optimal in reference sites (e.g., large wood in forested streams.)	8 to 9 habitat features available.	6 to 7 habitat features available.	4 to 5 habitat features available.	<4 habitat features available.
10 9	8 7	6 5	4 3	2 1 0

1)Logs, large wood: 2/rch. **2)**Small wood accumulations: 1/rch. **3)**Deep pools: 2/rch. **4)**Secondary pools: 4/rch. **5)**Overhanging veg: 3/rch. **6)**Large boulders: 3/rch if no wood, 2/rch if wood present. **7)**Small boulder clusters: 3/rch. **8)**Cobble riffles: 2/rch. **9)**Undercut banks: 3/rch or 25% of bank area. **10)**Thick root mats: 3/rch. **11)**Macrophyte beds: 1/rch. **12)**Off-channel habitats: 2/rch. **13)**Other locally important habitat features. *(describe in comments field)*

Comments:

13. Aquatic Invertebrate Habitat				
At least 9 types of habitat present; a combination of wood with riffles should be present and suitable in addition to other types of habitat. (If non-forested stream, consider reference site's optimal habitat type needed for this high score.)	8 to 6 types of habitat; site may be in need of more wood or reference habitat features, and stable wood-riffle sections.	5 to 4 types of habitat present	3 to 2 types habitat present	None to 1 type of habitat present
10 9	8 7 6	5 4	3 2	1 0

1)Logs, large wood: 2/subreach. **2)**Large boulders w/in riffles: 2/subreach if now wood, 1/subreach if wood present. **3)**Small boulder clusters: 2/subreach. **4)**Fine woody debris: 2/subreach. **5)**Overhanging vegetation: 1/subreach. **6)**Cobble riffles: 1/subreach. **7)**Undercut banks: 1/subreach or 25% of bank area. **8)**Pools: no minimum. **9)**Thick root mats: 1/subreach. **10)**Macrophyte beds: 1/subreach. **11)**Other locally important habitat features. *(describe in comments field).* Subreach= 5X active channel width

Comments:

14. Aquatic Invertebrate Community			
Invertebrate community is diverse and well represented by Group I or intolerant species; One or two species do not dominate.	Invertebrate community is well represented by Group II or facultative species, and Group I species are also present; one or two species do not dominate.	Invertebrate community is composed mainly of Groups II and III, and/or 1 or 2 species of any group may dominate.	Invertebrate community composition is predominantly Group III species and/or only 1 or 2 species of any group is present and abundance is low.
10 ☐ 9 ☐ 8 ☐	7 ☐ 6 ☐ 5 ☐	4 ☐ 3 ☐ 2 ☐	1 ☐ 0 ☐
Comments:			

15. Riffle Embeddedness: Streambed Sediments				
Gravel or cobble substrates are <10% embedded.	Gravel or cobble substrates are 10-20%	Gravel or cobble substrates are 21-30%	Gravel or cobble substrates are 31-40%	Gravel or cobble substrates are >40% embedded.
10 ☐ 9 ☐	8 ☐ 7 ☐	6 ☐ 5 ☐	4 ☐ 3 ☐	2 ☐ 1 ☐ 0 ☐
Comments:				

16. Salinity (if applicable)			
No wilting, bleaching, leaf burn or stunting of aquatic vegetation, no streamside tolerant vegetation present.	Minimal wilting, bleaching, leaf burn, or stunting of aquatic vegetation; some salt-tolerant stream side vegetation.	Aquatic vegetation may show significant wilting, bleaching, leaf burn, or stunting; dominance of salt-tolerant streamside vegetation.	Severe wilting, bleaching, leaf burn, or stunting; presence of only salt tolerant aquatic vegetation; most streamside vegetation is salt tolerant.
10 ☐ 9 ☐ 8 ☐	7 ☐ 6 ☐ 5 ☐	4 ☐ 3 ☐	2 ☐ 1 ☐ 0 ☐
Comments:			

B. Element Scores

Element	Score	Element	Score
1. Channel Condition		14. Aquatic Invertebrate Community	
2. Hydrologic Alteration		15. Riffle Embeddedness	
3. Bank Condition		16. Salinity	
4. Riparian Area Quantity		**A. Sum of all elements scored**	0
5. Riparian Area Quality		**B. Number of elements scored**	
6. Canopy Cover			
7. Water Appearance		**Overall score: A/B** NaN	
8. Nutrient Enrichment			
9. Manure or Human Waste		1 to 2.9 Severely Degraded	
10. Pools		3 to 4.9 Poor	
11. Barriers to Movement		5 to 6.9 Fair	
12. Fish Habitat Complexity		7 to 8.9 Good	
13. Aquatic Invertebrate Habitat		9 to 10 Excellent	

Suspected causes for SVAP scores <7:

Recommendations for further assessment or actions:

Additional Information: