FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Barber Creek

LONGITUDINAL LOCATION: 620

SITE DESCRIPTION: Downstream of CR 92

APPROXIMATE UTMs: 511175m E, 5253716m N

DATE SURVEYED: 10/10/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

1. Significant plunge pool located just upstream of study site.
2. Meander bends are confined by high terraces in valley type 8c.
3. Riparian vegetation is mostly WAD's and reed canary grass.
4. Overall, stream reach is in good condition, with a Modified Pfankuch rating of "Stable".
5. Stream type: C4, although stream type changes from E4 @ Hwy 92
6. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

1. Revegetation of riparian area with *Acer saccharinum* and *Salix* species.
2. Flood plain culvert installation @ Hwy 5 would prevent flow constriction and plunge pool.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Barber Creek

LONGITUDINAL LOCATION: 650

SITE DESCRIPTION: Upstream of Dixon Rd

APPROXIMATE UTMs: 510748m E, 5249659m N

DATE SURVEYED: 10/10/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

7. Gentle stream slope, with low entrenchment and wide flood-prone area.
8. Meander bends are confined by high terraces in valley type 8c.
9. Riparian vegetation is mostly WAD's and reed canary grass.
10. Overall, stream reach is in good condition, with a Modified Pfankuch rating of "Stable".
11. Stream type: E5
12. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

3. None at this time.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Barber Creek

LONGITUDINAL LOCATION: 675

SITE DESCRIPTION: Upstream of Hwy 16

APPROXIMATE UTMs: 510409m E, 5246571m N

DATE SURVEYED: 10/10/2012

PERSONS PRESENT: J. Jasperson, T. Schaub, T. Beaster

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

13. Increased channel incision from Barber 650 @ Dixon Rd.
14. Beaver dam was discovered just upstream of study reach.
15. Riparian vegetation is mostly reed canary grass and forbs, with some small to medium *Salix*, *Fraxinus*, and *Abies balsamea*.
16. Evidence of some scouring and bar formation in the channel. Undercut banks are significant, indicating moderate sediment movement in the system.
17. Stream type: C4 or C5
18. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

4. Continue monitoring/surveying reach to document channel evolution.
5. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
6. Revegetation of riparian area with *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Barber Creek

LONGITUDINAL LOCATION: 680

SITE DESCRIPTION: Upstream of Swinnerton Rd

APPROXIMATE UTMs: 511023m E, 5245921m N

DATE SURVEYED: 10/15/2012

PERSONS PRESENT: J. Jasperson, T. Schaub, T. Beaster

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

19. Increased channel incision from Barber 675 @ Hwy 16.
20. Undercut and slumping banks are significant, as well as scouring and substantial bar formation in the channel – indicating excessive sediment movement in the system.
21. Riparian vegetation is mostly reed canary grass and forbs, with minor amounts of WAD's.
22. If channel had a healthy connection to its flood plain, the flood prone area would be very wide - >400 ft.
23. Overall, stream reach is in poor condition, with a Modified Pfankuch rating of "Unstable".
24. Stream type: E5
25. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

7. Continue monitoring/surveying reach to document channel evolution.
8. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
9. Revegetation of riparian area with *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Barber Creek

LONGITUDINAL LOCATION: 695

SITE DESCRIPTION: US of Dempsey Confluence

APPROXIMATE UTMs: 512436m E, 5244226m N

DATE SURVEYED: 10/4/2012

PERSONS PRESENT: J. Jasperson, K. Anderson, T. Beaster

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

1. Channel is moderately incised and entrenched, with very steep banks and almost no flood plain connection. Some riparian trees are leaning into the channel.
2. Bank vegetation is mostly herbaceous, with occasional *Fraxinus* and *Salix* species. Riparian forest is composed of mainly *Fraxinus nigra and Abies balsamea.*
3. Moderate mass wasting and bank failure. Significant bank cuts, usually 12-24" high.
4. Some new sediment deposits, scour, and bar formation. The system does not appear to have a great deal of sediment movement.
5. Stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
6. Abandoned meander scroll was surveyed.
7. Stream type: E5, possibly evolving to a C6?
8. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

10. Continue monitoring/surveying reach to document channel evolution.
11. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: No

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Penobscot Creek

LONGITUDINAL LOCATION: 605

SITE DESCRIPTION: Downstream of Hwy 73

APPROXIMATE UTMs: 505993m E, 5252517m N

DATE SURVEYED: 10/10/2012

PERSONS PRESENT: J. Jasperson, T. Schaub, T. Beaster

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

9. Reach has been heavily modified and entrenched. Straightened, trapezoidal channel was constructed (date unknown) starting at the outlet of the stormwater pipe discharging just downstream of Hwy 73 and extending through the entire study reach.
10. Stream has started to meander and create bankfull bench within confined channel (see photos).
11. Riparian vegetation is mostly grasses and forbs – in some locations it is almost completely absent. Lack of riparian canopy.
12. Evidence of scouring and deposition in the channel. Bank angle is relatively steep, indicating potential for significant bank erosion with an increasingly meandering channel.
13. Stream type: C4(b)
14. Valley type: 8a

PRELIMINARY PROPOSED ACTIONS:

12. Continue monitoring/surveying reach to document channel evolution.
13. With funding, reach could be modified to a two- or three-stage channel.
14. Revegetation of banks with native trees and shrubs is advised.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Penobscot Creek

LONGITUDINAL LOCATION: 621

SITE DESCRIPTION: Upstream of Dupont Rd.

APPROXIMATE UTMs: 507541m E, 5251909m N

DATE SURVEYED: 10/30/2012

PERSONS PRESENT: J. Jasperson, T. Schaub, T. Beaster

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

15. Reach has been heavily modified and entrenched. Straightened, trapezoidal channel was constructed (date unknown) starting downstream of Hwy 73 and extending ½ mile downstream of Dupont Road.
16. Unlike Penobscot 605, this reach has developed significant meanders, although a bankfull bench is starting to become evident (see photos).
17. Evidence of scouring and deposition in the channel. Bank angle is relatively steep, indicating potential for significant bank erosion with an increasingly meandering channel.
18. Significant large woody debris jams, esp. downstream of Dupont Rd.
19. Beaver dam located at the Dupont culvert caused backwater effect throughout reach.
20. Riparian vegetation is mostly small to medium trees – *Abies balsamea, Picea glauca, Populus tremuloides, Fraxinus nigra*, with significant amounts of reed canary grass.
21. Stream type: F5
22. Valley type: 2

PRELIMINARY PROPOSED ACTIONS:

15. Continue monitoring/surveying reach to document channel evolution.
16. With funding, reach could be modified to a two- or three-stage channel.
17. Monitoring of culvert is advised to prevent blockage.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Penobscot Creek

LONGITUDINAL LOCATION: 650

SITE DESCRIPTION: Upstream of Tamminen Rd.

APPROXIMATE UTMs: 508968 m E, 5250092 m N

DATE SURVEYED: 10/03/2012

PERSONS PRESENT: T. Beaster, M. Valero, T. Byrns

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

23. Bank and toe pine installed at various locations as part of an on-going PCA erosion study.
24. Much better condition than channelized upstream reach (Pfankuch rating of Good).
25. Some undercut banks present, as well as raw outside meander bends.
26. Riparian vegetation is mostly small to medium trees – *Populus tremuloides, Fraxinus nigra, and Populus balsamifera*, with significant amounts of reed canary grass.
27. Stream type: C4
28. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

18. Continued monitoring of bank and toe pins.
19. Revegetation with higher-value flood plain trees, such as *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: No.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Penobscot Creek

LONGITUDINAL LOCATION: 695

SITE DESCRIPTION: US of Barber Confluence

APPROXIMATE UTMs: 509370m E, 5247424m N

DATE SURVEYED: 10/03/2012

PERSONS PRESENT: T. Beaster, M. Valero, T. Byrns

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

29. Difficult access to site.
30. Flat slope/backwater from Barber confluence 1000' upstream.
31. Significant undercut banks present, as well as raw outside meander bends.
32. Aerial photo of Barber confluence suggests significant sediment supply from Penobscot.
33. Meander bends are confined by a high terrace to the south, but unconfined to the north.
34. Riparian vegetation is mostly WAD's and reed canary grass.
35. Stream type: C5, although stream type changes to E5 just downstream.
36. Valley type: 8c.

PRELIMINARY PROPOSED ACTIONS:

20. None at this time.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Dempsey Creek

LONGITUDINAL LOCATION: 620

SITE DESCRIPTION: Upstream of 6-Mile Lake

APPROXIMATE UTMs: 514157m E, 5255542m N

DATE SURVEYED: 9/20/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

37. Gentle stream slope, with low entrenchment and wide flood-prone area.
38. Healthy aquatic vegetation.
39. Riparian vegetation is mostly WAD's and reed canary grass.
40. Overall, stream reach is in good condition with a Modified Pfankuch rating of "Stable".
41. Stream type: E6
42. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

1. None at this time.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Dempsey Creek

LONGITUDINAL LOCATION: 630

SITE DESCRIPTION: Upstream of Hwy 92

APPROXIMATE UTMs: 515244m E, 5254164m N

DATE SURVEYED: 9/20/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

43. Increasing incision of stream channel, with some undercutting and raw banks.
44. Riparian vegetation is mostly reed canary grass and native forbs, with minor amounts of WAD's. Infringement of riparian area by lawn.
45. Overall, stream reach is in fair condition with a Modified Pfankuch rating of "Moderately Unstable".
46. Stream type: E6
47. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

2. Revegetation with higher-value flood plain trees, such as *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Dempsey Creek

LONGITUDINAL LOCATION: 660

SITE DESCRIPTION: Upstream of Antonelli Rd.

APPROXIMATE UTMs: 513499m E, 5249693m N

DATE SURVEYED: 9/20/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

48. Historic road crossing (now removed) is causing grade control and plunge pool upstream of study area.
49. Decreased incision from Dempsey 630 @ Hwy 92, with better flood plain connection.
50. Evidence of moving substrate, with some deposition and bar formation.
51. Riparian vegetation is mostly reed canary grass and native forbs, with significant % WAD's.
52. Overall, stream reach is in fair condition with a Modified Pfankuch rating of "Moderately Unstable".
53. Culvert @ Antonelli Rd was almost full at baseflow conditions.
54. Stream type: E6
55. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

3. Revegetation with higher-value flood plain trees, such as *Acer saccharinum* and *Salix* species.
4. Modification of Antonelli Rd culvert to allow more room for high flows.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Dempsey Creek

LONGITUDINAL LOCATION: 670

SITE DESCRIPTION: Upstream of Berg Rd.

APPROXIMATE UTMs: 513586m E, 5248317m N

DATE SURVEYED: 9/20/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

56. Increased incision from Dempsey 660 @ Antonelli, with steeper banks and tenuous flood plain connection.
57. Alders are leaning into the channel, indicating bank failure.
58. Evidence of moving substrate, with some deposition and recent bar formation.
59. Riparian vegetation is mostly reed canary grass on north bank, with alder on south bank.
60. *Pfankuch assessment was not conducted at this site.*
61. Stream type: C4
62. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

5. Revegetation with higher-value flood plain trees, such as *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Dempsey Creek

LONGITUDINAL LOCATION: 671

SITE DESCRIPTION: Downstream of Berg Rd.

APPROXIMATE UTMs: 513729m E, 5248282m N

DATE SURVEYED: 9/20/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

63. Starting to get very incised, with very steep banks and almost no flood plain connection.
64. Riparian vegetation is almost entirely reed canary grass and native forbs.
65. Undercut banks indicate instability.
66. The Berg Rd crossing, just upstream, serves as a grade control structure and is possibly preventing a headcut from migrating further upstream.
67. *Pfankuch assessment was not conducted at this site.*
68. Stream type: E5
69. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

6. Continue monitoring/surveying reach to document channel evolution.
7. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
8. Revegetation with higher-value flood plain trees, such as *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Dempsey Creek

LONGITUDINAL LOCATION: 680

SITE DESCRIPTION: Upstream of Hwy 16

APPROXIMATE UTMs: 513842m E, 5246632m N

DATE SURVEYED: 10/4/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

70. Channel is now extremely incised, with very steep banks and no flood plain connection.
71. Riparian vegetation is almost entirely reed canary grass, with some native forbs and WAD's.
72. Undercut banks are intermittent, with occasional slumping.
73. Substrate is very fine, and loosely packed.
74. Overall, stream reach is in fair condition with a Modified Pfankuch rating of "Moderately Unstable".
75. Stream type: E6, possibly F6 (depending on W/D ratio)
76. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

9. Continue monitoring/surveying reach to document channel evolution.
10. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
11. Revegetation with higher-value flood plain trees, such as *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Dempsey Creek

LONGITUDINAL LOCATION: 695

SITE DESCRIPTION: US of Barber Confluence

APPROXIMATE UTMs: 512628m E, 5244272m N

DATE SURVEYED: 10/4/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

77. Channel is moderately incised and entrenched, with very steep banks and almost no flood plain connection. Some riparian trees are leaning into the channel.
78. Bank vegetation is mostly herbaceous, with occasional *Fraxinus* and *Salix* species. Riparian forest is composed of mainly *Fraxinus nigra and Corylus americana.*
79. Moderate mass wasting and bank failure. Significant bank cuts, usually 12-24" high.
80. Some new sediment deposits, scour, and bar formation. Fine substrate is loose and easily moved.
81. Stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
82. Abandoned meander scroll was surveyed.
83. Stream type: E6, possibly evolving to a C6?
84. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

12. Continue monitoring/surveying reach to document channel evolution.
13. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: No.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Little Swan Creek

LONGITUDINAL LOCATION: 690

SITE DESCRIPTION: Upstream of CR 444

APPROXIMATE UTMs: 512836m E, 5238225m N

DATE SURVEYED: 10/16/2012

PERSONS PRESENT: T. Beaster, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

85. Significant scouring, deposition, and cutting, although channel is still connected to flood plain.
86. Meander bends are confined by a high terrace on south bank.
87. Flood plain vegetation is mostly WAD's and reed canary grass. South bank is forested with *Populus* and *Fraxinus*.
88. Excessive amount of large woody debris, causing jams and flow obstructions.
89. Water is exceptionally stained by tannin.
90. Overall, stream reach is in poor condition, with a Modified Pfankuch rating of "Unstable".
91. Stream type: E6
92. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

14. Revegetation of riparian area with *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: No.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: East Swan River

LONGITUDINAL LOCATION: 603

SITE DESCRIPTION: DS Barb/Demp Confluence

APPROXIMATE UTMs: 512506m E, 5244133m N

DATE SURVEYED: 10/4/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

93. Channel is moderately incised, with very steep banks and almost no flood plain connection. Riparian trees are leaning into the channel.
94. Riparian vegetation is mostly herbaceous, with a healthy flood-plain forest consisting of *Populus* and *Fraxinus* species.
95. Frequent mass wasting and bank failures, causing sediment entrainment nearly yearlong. Significant cutting on banks, and moderate deposition and bar formation.
96. Substrate is very fine, and loosely packed.
97. Overall, stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
98. Stream type: E5, possibly C5
99. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

15. Continue monitoring/surveying reach to document channel evolution.
16. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
17. Revegetation with higher-value flood plain trees, such as *Acer saccharinum* and *Salix* species.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: No.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: East Swan River

LONGITUDINAL LOCATION: 620

SITE DESCRIPTION: Upstream of CR 444

APPROXIMATE UTMs: 511976m E, 5242605m N

DATE SURVEYED: 10/15/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

100. Channel is moderately incised and entrenched, with very steep banks and almost no flood plain connection.
101. Riparian vegetation is mostly herbaceous, with occasional *Fraxinus* and *Salix* species. Extensive agricultural management on right bank.
102. Frequent mass wasting and bank failures, causing sediment entrainment nearly yearlong. Significant cutting on banks, and moderate deposition and bar formation.
103. Stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
104. Stream type: E5, possibly evolving to an F5?
105. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

18. Continue monitoring/surveying reach to document channel evolution.
19. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
20. Due to degree of incision, revegetation alone is unlikely to prevent banks from failing.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: East Swan River

LONGITUDINAL LOCATION: 645

SITE DESCRIPTION: West of Helstrom Rd.

APPROXIMATE UTMs: 511367m E, 5239798m N

DATE SURVEYED: 10/15/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

106. Channel is moderately incised and entrenched, with very steep banks and almost no flood plain connection. Riparian trees are leaning into the channel.
107. Bank vegetation is mostly herbaceous, with occasional *Fraxinus* and *Salix* species. Riparian buffer is composed of mainly *Fraxinus*, *Populus*, and *Picea* species.
108. Frequent mass wasting and bank failures. Almost continuous bank cutting, some over 24" high. Large woody debris in channel.
109. Evidence of moving fine substrate, with accelerated bar formation.
110. Stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
111. Stream type: C6, possibly an F6?
112. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

21. Continue monitoring/surveying reach to document channel evolution.
22. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
23. Due to degree of incision, revegetation alone is unlikely to prevent banks from failing.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: East Swan River

LONGITUDINAL LOCATION: 665

SITE DESCRIPTION: Upstream of CR 442

APPROXIMATE UTMs: 512777m E, 5236756m N

DATE SURVEYED: 10/16/2012

PERSONS PRESENT: T. Beaster, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

113. Channel is somewhat incised and entrenched (although less so than East Swan 645 reach), with very steep banks and tenuous flood plain connection. Riparian trees are leaning into the channel.
114. Bank vegetation is mostly herbaceous, with occasional *Fraxinus* and *Salix* species. Riparian buffer is composed of mainly *Fraxinus* and *Populus* species.
115. Frequent mass wasting and bank failures. Almost continuous bank cutting, some over 24" high. Large woody debris jam in channel.
116. Evidence of moving fine substrate. Bottom is loosely packed and easily moved.
117. Banks and terraces are composed of very consolidated clay and silt, making it hard to drive rebar stakes.
118. Stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
119. Stream type: E6, possibly evolving to a C6?
120. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

24. Continue monitoring/surveying reach to document channel evolution.
25. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.
26. Due to degree of incision, revegetation alone is unlikely to prevent banks from failing.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: No.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: East Swan River

LONGITUDINAL LOCATION: 695

SITE DESCRIPTION: US of W. Swan Confluence

APPROXIMATE UTMs: 513970m E, 5233186m N

DATE SURVEYED: 10/23/2012

PERSONS PRESENT: T. Beaster, J. Jasperson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

121. Channel is somewhat incised and entrenched (although less so than upstream reaches), with steep banks and tenuous flood plain connection.
122. Many riparian trees leaning into the channel, creating debris jam potential
123. Bank vegetation is 50% herbaceous and 50% *Fraxinus* and *Thuja* species. Riparian buffer is a healthy flood plain forest composed of mainly *Fraxinus, Picea* and *Populus* species, with some *Thuja occidentalis* and *Betula alleghaniensis*.
124. Frequent mass wasting and bank failures. Significant bank cutting, some over 24" high. Large woody debris jams in channel.
125. Evidence of moving fine substrate. Bottom is loosely packed and easily moved.
126. Stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
127. It appears that the channel is in better condition than the upstream study reaches, with gentler bank slopes and more significant bankfull benches. Perhaps this is because the furthest downstream reaches downcut first and thus have had more time to re-equilibrate?
128. Stream type: E6, possibly evolving to a F6?
129. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

27. Continue monitoring/surveying reach to document channel evolution.
28. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Unnamed trib to W. Swan

LONGITUDINAL LOCATION: 655

SITE DESCRIPTION: Near W. Swan Confluence

APPROXIMATE UTMs: 504257m E, 5236807m N

DATE SURVEYED: 10/26/2012

PERSONS PRESENT: T. Beaster, K. Kubiak, T. Schaub

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

130. Largest tributary to West Swan River.
131. Healthy connection to wide flood plain.
132. Some raw banks, but overall very little bank erosion or failure.
133. Flood plain vegetation is mostly WAD's and reed canary grass.
134. Overall, stream reach is in fair condition, with a Modified Pfankuch rating of "Moderately unstable".
135. Stream type: E5/E6, possibly evolving to a C5/C6?
136. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

29. None at this time.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: West Swan River

LONGITUDINAL LOCATION: 655

SITE DESCRIPTION: US of CR 442

APPROXIMATE UTMs: 503747m E, 5236415m N

DATE SURVEYED: 10/26/2012

PERSONS PRESENT: T. Beaster, K. Kubiak, T. Schaub

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

137. Healthy connection to wide, lacustrine flood plain.
138. Mass wasting and cutting are infrequent, primarily occurring at outside bends and constrictions. Little or no deposition or enlargement of point bars.
139. Substrate is mostly moderately packed sand. Aquatic vegetation is common.
140. Flood plain vegetation is mostly WAD's and *Carex* species, with some *Abies balsamea* and *Fraxinus nigra*.
141. Overall, stream reach is in good condition, with a Modified Pfankuch rating of "Stable".
142. Stream type: C5
143. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

30. None at this time.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: West Swan River

LONGITUDINAL LOCATION: 660

SITE DESCRIPTION: DS of CR 442

APPROXIMATE UTMs: 504616m E, 5236560m N

DATE SURVEYED: 10/23/2012

PERSONS PRESENT: T. Beaster, J. Jasperson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

144. Substantial bankfull bench present.
145. Mass wasting and cutting are frequent, primarily occurring at outside bends and constrictions. Cuts are significant, sometimes 12-24" high.
146. Substrate is loosely assorted and fine. Extensive deposits of fine particles are common, with accelerated bar development.
147. Flood plain vegetation is mostly WAD's and *Carex* species, with some *Fraxinus nigra* and reed canary grass.
148. Overall, stream reach is on the cusp of fair/poor condition, with a Modified Pfankuch rating of "Unstable".
149. It is noteworthy that this reach appears much less stable than the West Swan 655 study reach, being just one stream-mile downstream. Possible reasons are the effect of the two CR 442 road crossings, and the addition to the watershed of the sizable unnamed tributary which flows into the West Swan between the CR 442 crossings.
150. Stream type: E6
151. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

31. None at this time.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: West Swan River

LONGITUDINAL LOCATION: 685

SITE DESCRIPTION: DS of Hingeley Rd

APPROXIMATE UTMs: 511194m E, 5233769m N

DATE SURVEYED: 10/16/2012

PERSONS PRESENT: T. Beaster, K. Anderson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

152. Reliable bankfull indicators present.
153. Mass wasting and bank failure are moderate, mostly occurring during high flows. Cuts are significant, sometimes 12-24" high.
154. Substrate is coarse sand and loosely assorted. Moderate deposition on point bars.
155. Riparian vegetation consists of mostly *Fraxinus nigra and Carex* species, with some *Populus tremuloides* and *Quercus rubra*.
156. Some debris jams in channel.
157. Overall, stream reach is in poor condition, with a Modified Pfankuch rating of "Unstable".
158. Stream type: E6
159. Valley type: 10

PRELIMINARY PROPOSED ACTIONS:

32. Continue monitoring/surveying reach to document channel evolution.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: No.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: West Swan River

LONGITUDINAL LOCATION: 695

SITE DESCRIPTION: US of E. Swan Confluence

APPROXIMATE UTMs: 513736m E, 5232992m N

DATE SURVEYED: 10/23/2012

PERSONS PRESENT: T. Beaster, J. Jasperson

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

160. Channel is somewhat incised and entrenched, with very steep banks and tenuous flood plain connection. Riparian trees are leaning into the channel.
161. Bank vegetation is mostly herbaceous. Riparian buffer is a healthy *Fraxinus nigra* flood plain forest community.
162. Moderate mass wasting and bank failures. Bank cutting is significant. Some large woody debris in channel.
163. Evidence of moving fine substrate, with extensive deposition and accelerated bar development.
164. Stream reach is in poor condition with a Modified Pfankuch rating of “Unstable”.
165. Stream type: F6
166. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

33. Continue monitoring/surveying reach to document channel evolution.
34. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.

FIELD RECONNAISSANCE REPORT

HUC 08: St. Louis River

STREAM NAME: Swan River

LONGITUDINAL LOCATION: 605

SITE DESCRIPTION: DS of Hwy 5

APPROXIMATE UTMs: 514374m E, 5232954m N

DATE SURVEYED: 10/15/2012

PERSONS PRESENT: T. Beaster, J. Jasperson, T. Schaub

PURPOSE: To summarize overall condition of stream reach and note important findings.

OBSERVATIONS:

167. Channel is moderately incised and entrenched with very steep banks and tenuous flood plain connection.
168. Many riparian trees leaning into the channel, creating debris jam potential.
169. It appears that there is a backwater effect in this reach, indicating some sort of grade control downstream?
170. Bank vegetation is 50% herbaceous and 50% *Fraxinus nigra*.
171. Frequent mass wasting and bank failures. Almost continuous bank cutting, some over 24" high.
172. Extensive deposits of predominantly fine particles, with accelerated bar development. Bottom is very loosely packed. Almost no aquatic vegetation present.
173. Stream reach is in poor condition with a Modified Pfankuch rating of "Unstable".
174. Stream type: C6, possibly evolving to a F6?
175. Valley type: 8c

PRELIMINARY PROPOSED ACTIONS:

35. Continue monitoring/surveying reach to document channel evolution.
36. Installation of grade control structures would raise channel elevation and reconnect the channel to its flood plain.

REPORT PREPARED BY: T. Beaster

PHOTOGRAPHS ATTACHED?: Yes.