

Tumalo Creek Instream Flow Study

Attachment A: Transect Photos



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A1-RR Low Flow (61 cfs)



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Figure 3. SR A1-RR: Transect 8 Pool – From 30' downstream looking upstream.



Figure 2. SR A1-RR: Transect 8 Pool – From left bank looking to right bank.



Figure 4. SR A1-RR: Transect 8 Pool – From right bank tail pin looking to left bank.



Figure 5. SR A1-RR: Transect 7 Riffle – From left bank head pin looking to right bank.



Figure 6. SR A1-RR: Transect 7 Riffle – From left bank looking to right bank.

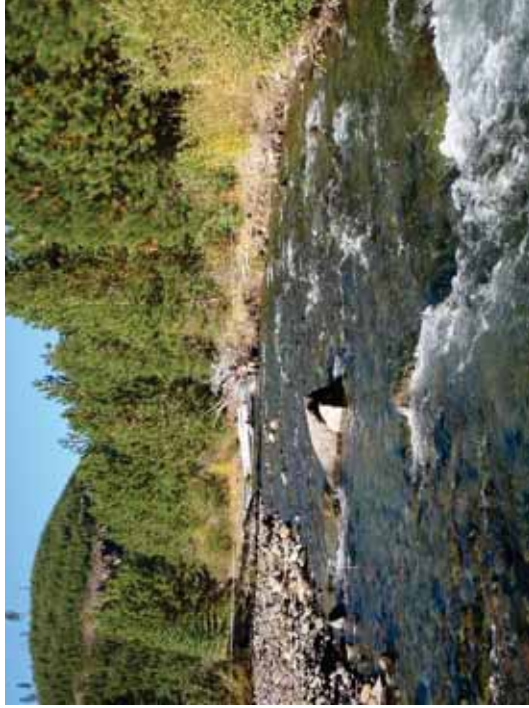


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Figure 8. SR A1-RR: Transect 7 Riffle – From right bank looking to left bank.



Figure 9. SR A1-RR: Transect 6 Riffle – From right bank tail pin looking to left bank.



Figure 10. SR A1-RR: Transect 6 Riffle – From 30' downstream looking upstream.



Figure 11. SR A1-RR: Transect 6 Riffle – From left bank water's edge looking to right bank.



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Figure 13. SR A1-RR: Transect 5 Pool – From 40’ downstream looking upstream.



Figure 14. SR A1-RR: Transect 5 Pool – From right bank tail pin looking to left bank.



Figure 15. SR A1-RR: Transect 4 Riffle – From left bank near water’s edge looking to right bank.



Figure 16. SR A1-RR: Transect 4 Dewatered Habitat – From left bank head pin looking toward right bank.



Figure 17. SR A1-RR: Transect 4 Side Channel – From left bank water's edge of side channel to right bank of side channel.



Figure 18. SR A1-RR: Transect 4 Riffle – From 20' upstream looking downstream.



Figure 19. SR A1-RR: Transect 4 Riffle – From right bank tail pin looking toward left bank.



Figure 20. SR A1-RR: Transect 3 Riffle – From left bank head pin looking to right bank.



Figure 21. SR A1-RR: Transect 3 Riffle – From right bank tail pin looking to left bank.



Figure 22. SR A1-RR: Transect 3 Riffle – From 40' upstream looking downstream.



Figure 23. SR A1-RR: Transect 2 Pool – From near left bank water's edge looking to right bank.



Figure 24. SR A1-RR: Transect 2 Dewatered Habitat – From left bank head pin looking toward right bank.



Figure 25. SR A1-RR: Transect 2 Pool – From right bank water's edge looking to left bank.



Figure 26. SR A1-RR: Transect 2 Pool – From 25' downstream looking upstream.



Figure 27. SR A1-RR: Transect 1 Riffle – From left bank head pin looking to right bank.



Figure 28. SR A1-RR: Transect 1 Riffle – From 30' upstream looking downstream.



Figure 29. SR A1-RR: Transect 1 Riffle – From right bank tail pin looking to left bank.

A1-RR Mid Flow (78 cfs)



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Figure 35. SR A1-RR: Transect 7 Riffle – From left bank looking to right bank.



Figure 36. SR A1-RR: Transect 7 Riffle – From 30' downstream looking upstream.



Figure 37. SR A1-RR: Transect 7 Riffle – From right bank looking to left bank.



Figure 38. SR A1-RR: Transect 6 Riffle – From left bank water's edge looking to right bank water's edge.



Figure 39. SR A1-RR: Transect 6 Riffle – From 30' downstream looking upstream.



Figure 40. SR A1-RR: Transect 6 Riffle – From right bank tail pin looking to left bank.



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Figure 42. SR A1-RR: Transect 5 Pool – From left bank head pin looking to right bank.



Figure 43. SR A1-RR: Transect 5 Pool – From 30' downstream looking upstream.



Figure 44. SR A1-RR: Transect 4 Riffle – From left bank near water's edge looking to right bank.



Figure 45. SR A1-RR: Transect 4 Riffle – From right bank water's edge looking to left bank water's edge.



Figure 46. SR A1-RR: Transect 4 Riffle – From 20' downstream looking upstream.



Figure 47. SR A1-RR: Transect 3 Riffle – From left bank water's edge looking to right bank.



Figure 48. SR A1-RR: Transect 3 Riffle – From 40' upstream looking downstream.



Figure 49. SR A1-RR: Transect 3 Riffle – From right bank water's edge looking to left bank.





Figure 50. SR A1-RR: Transect 2 Side Channel – From left bank water's edge of side channel to right bank of side channel.



Figure 51. SR A1-RR: Transect 2 Side Channel – From right bank of side channel to left bank of side channel.



Figure 52. SR A1-RR: Transect 2 Pool – From left bank water's edge looking to right bank.



Figure 53. SR A1-RR: Transect 2 Pool – From 30' downstream looking upstream.



Figure 54. SR A1-RR: Transect 2 Pool – From right bank water's edge looking to left bank.



Figure 55. SR A1-RR: Transect 1 Riffle – From right bank tail pin looking to left bank.



Figure 56. SR A1-RR: Transect 1 Riffle – From 30' downstream on right bank looking upstream.



Figure 57. SR A1-RR: Transect 1 Riffle – From left bank water's edge looking to right bank.



Figure 58. SR A1-RR: Transect 1 Side Channel – From left bank water's edge of side channel looking to right bank of side channel.



Figure 59. SR A1-RR: Transect 1 Side Channel – From right bank water's edge of side channel looking to left bank of side channel.

A1-RB Low Flow (63 cfs)



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Figure 60. SR A1-RB: Transect 8 Pool – From left bank looking to right bank.



Figure 62. SR A1-RB: Transect 8 Pool – From right bank water's edge looking to left bank.



Figure 61. SR A1-RB: Transect 8 Pool – From 30' downstream looking upstream.



Figure 63. SR A1-RB: Transect 7 Pool – From left bank looking to right bank.



Figure 64. SR A1-RB: Transect 7 Pool – From 30' upstream looking downstream.



Figure 65. SR A1-RB: Transect 7 Pool – From right bank looking to left bank.



Figure 66. SR A1-RB: Transect 6 Riffle – From right bank looking to left bank.



Figure 67. SR A1-RB: Transect 6 Riffle – From 30' downstream looking upstream.



Figure 68. SR A1-RB: Transect 6 Riffle – From left bank looking to right bank.



Figure 69. SR A1-RB: Transect 5 Rapid – From left bank looking to right bank.



Figure 70. SR A1-RB: Transect 5 Rapid– From right bank looking to left bank.



Figure 71. SR A1-RB: Transect 5 Rapid – From 20' upstream looking downstream.



Figure 72. SR A1-RB: Transect 4 Rapid – From left bank water's edge looking to right bank.



Figure 73. SR A1-RB: Transect 4 Rapid – From 30' upstream looking downstream.



Figure 74. SR A1-RB: Transect 4 Rapid – From right bank water's edge looking to left bank.



Figure 75. SR A1-RB: Transect 3 Plunge Pool – From left bank water's edge looking to right bank.





Figure 76. SR A1-RB: Transect 3 Plunge Pool – From 30' downstream looking upstream.



Figure 77. SR A1-RB: Transect 3 Plunge Pool – From right bank looking to left bank.



Figure 78. SR A1-RB: Transect 2 Riffle – From 30' downstream looking upstream.



Figure 79. SR A1-RB: Transect 2 Riffle – From left bank water's edge looking to right bank.



Figure 80. SR A1-RB; Transect 2 Riffle – From right bank looking to left bank.



Figure 81. SR A1-RB; Transect 1 Riffle – From left bank water's edge looking to right bank water's edge.



Figure 82. SR A1-RB; Transect 1 Riffle – From 30' downstream looking upstream.



Figure 83. SR A1-RB; Transect 1 Riffle – From right bank water's edge looking to left bank.

A1-RB Mid Flow (80 cfs)



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Figure 84. SR A1-RB: Transect 7 Pool – From right bank looking to left bank.



Figure 85. SR A1-RB: Transect 7 Pool – From 20' downstream looking upstream.



Figure 86. SR A1-RB: Transect 7 Pool – From left bank water's edge looking to right bank.



Figure 87. SR A1-RB: Transect 6 High Gradient Riffle – From right bank looking to left bank.



Figure 88. SR A1-RB: Transect 6 High Gradient Riffle – From left bank water's edge looking to right bank.



Figure 89. SR A1-RB: Transect 6 High Gradient Riffle – From 30' downstream looking upstream.



Figure 90. SR A1-RB: Transect 5 Rapid – From 20' upstream on right bank looking downstream.



Figure 91. SR A1-RB: Transect 5 Rapid – From right bank looking to left bank.



Figure 92. SR A1-RB: Transect 5 Rapid – From left bank water's edge looking to right bank.



Figure 93. SR A1-RB: Transect 5 Rapid – From 30' downstream looking upstream.



Figure 94. SR A1-RB: Transect 4 Rapid– From right bank water's edge looking to left bank.



Figure 95. SR A1-RB: Transect 3 Plunge Pool – From right bank looking to left bank.



Figure 96. SR A1-RB: Transect 3 Plunge Pool – From 25' downstream looking upstream.



Figure 97. SR A1-RB: Transect 3 Plunge Pool – From left bank water's edge looking to right bank.



Figure 98. SR A1-RB: Transect 2 Riffle – From right bank water's edge looking to left bank.



Figure 99. SR A1-RB: Transect 2 Riffle – From 10' downstream looking upstream.





Figure 100. SR A1-RB: Transect 2 Riffle – From left bank water's edge looking to right bank.



Figure 101. SR A1-RB: Transect 1 Riffle – From right bank water's edge looking to left bank.



Figure 102. SR A1-RB: Transect 1 Riffle – From 20' downstream looking upstream.



Figure 103. SR A1-RB: Transect 1 Riffle – From left bank looking to right bank.

A2 Low Flow (72 cfs)



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Figure 104. SR A2: Transect 6 Lateral Pool – From left bank looking to right bank.



Figure 105. SR A2: Transect 6 Lateral Pool – From 20' upstream looking downstream.



Figure 106. SR A2: Transect 6 Lateral Pool – From right bank water's edge looking to left bank.



Figure 107. SR A2: Transect 5 Low Gradient Riffle – From 30' upstream looking downstream.



Figure 108. SR A2: Transect 5 Low Gradient Riffle – From left bank water's edge looking to right bank.



Figure 109. SR A2: Transect 5 Low Gradient Riffle – From right bank water's edge looking to left bank.



Figure 110. SR A2: Transect 4 Riffle – From 30' downstream looking upstream.



Figure 111. SR A2: Transect 4 Riffle – From left bank water's edge looking to right bank.



Figure 112. SR A2: Transect 4 Riffle – From right bank water's edge looking to left bank.



Figure 113. SR A2: Transect 3 Riffle – From 30' upstream looking downstream.



Figure 114. SR A2: Transect 3 Riffle – From left bank water's edge looking to right bank.



Figure 115. SR A2: Transect 3 Riffle – From right bank water's edge to left bank.



Figure 116. SR A2: Transect 2 Pool – From 30' downstream looking upstream.



Figure 117. SR A2: Transect 2 Pool – From right bank water's edge looking to left bank.



Figure 118. SR A2: Transect 2 Pool – From left bank looking to right bank.



Figure 119. SR A2: Transect 1 Riffle – From left bank looking to right bank.



Figure 120. SR A2: Transect 1 Riffle – From 20’ downstream looking upstream.



Figure 121. SR A2: Transect 1 Riffle – From right bank water’s edge looking to left bank.

A2 Mid Flow (77 cfs)



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Figure 122. SR A2: Transect 6 Lateral Pool – From left bank water's edge looking to right bank.



Figure 123. SR A2: Transect 6 Lateral Pool – From right bank looking to left bank.



Figure 124. SR A2: Transect 6 Lateral Pool – From 10' downstream looking upstream.



Figure 125. SR A2: Transect 5 Low Gradient Riffle – From 30' upstream looking downstream.



Figure 126. SR A2: Transect 5 Low Gradient Riffle – From right bank water's edge looking to left bank.



Figure 127. SR A2: Transect 5 Low Gradient Riffle – From 15' downstream looking upstream.



Figure 128. SR A2: Transect 4 Riffle – From right bank looking to left bank.



Figure 129. SR A2: Transect 4 Riffle – From left bank water's edge looking to right bank.



Figure 130. SR A2: Transect 4 Riffle – From 30' downstream looking upstream.



Figure 132. SR A2: Transect 3 Riffle – From 30' downstream looking upstream.



Figure 131. SR A2: Transect 3 Riffle – From right bank looking to left bank.



Figure 133. SR A2: Transect 3 Riffle – From left bank water's edge to right bank.





Figure 134. SR A2: Transect 2 Pool – From right bank looking to left bank.



Figure 135. SR A2: Transect 2 Pool – From 20' downstream looking upstream.



Figure 136. SR A2: Transect 2 Pool – From left bank water's edge looking to right bank.



Figure 137. SR A2: Transect 1 Riffle – From right bank water's edge looking to left bank.



Figure 138. SR A2: Transect 1 Riffle – From 20' downstream looking upstream.



Figure 139. SR A2: Transect 1 Riffle – From left bank looking to right bank.

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B Low Flow (60 cfs)



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Figure 140. R B: Transect 8 Pool – From left bank water's edge looking to right bank.



Figure 141. R B: Transect 8 Pool – From right bank looking to left bank.



Figure 142. R B: Transect 8 Pool – From 25' downstream looking upstream.



Figure 143. R B: Transect 7 Riffle – From left bank looking to right bank.



Figure 144. R B: Transect 7 Riffle – From 30' upstream looking downstream.



Figure 145. R B: Transect 7 Riffle – From right bank looking to left bank.



Figure 146. R B: Transect 6 Glide – From left bank head pin looking to right bank.



Figure 147. R B: Transect 6 Glide – From 20' downstream looking upstream.



Figure 148. R B: Transect 6 Glide – From right bank looking to left bank.



Figure 149. R B: Transect 5 Riffle – From 20' downstream looking upstream.



Figure 150. R B: Transect 5 Riffle – From right bank water's edge looking to left bank.



Figure 151. R B: Transect 5 Riffle – From left bank water's edge looking to right bank water's edge.



Figure 152. R B: Transect 4 Riffle – From right bank looking to left bank.



Figure 153. R B: Transect 4 Riffle – From 20' upstream looking downstream.



Figure 154. R B: Transect 4 Riffle – From left bank water's edge looking to right bank.



Figure 155. R B: Transect 3 Riffle – From 30' upstream looking downstream.



Figure 156. R B: Transect 3 Riffle – From right bank water's edge looking to left bank.



Figure 157. R B: Transect 3 Riffle – From left bank looking to right bank.



Figure 158. R B: Transect 2 Riffle – From right bank looking to left bank.



Figure 159. R B: Transect 2 Riffle – From 30' upstream looking downstream.



Figure 160. R B: Transect 2 Riffle – From left bank looking to right bank.



Figure 161. R B: Transect 1 Pool – From left bank looking to right bank.



Figure 162. R B: Transect 1 Pool – From right bank looking to left bank.



Figure 163. R B: Transect 1 Pool – From 20' upstream looking downstream.

B Mid Flow (78 cfs)



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Figure 164. R B: Transect 8 Pool – From right bank looking to left bank.



Figure 165. R B: Transect 8 Pool – From 20' downstream looking upstream.



Figure 166. R B: Transect 8 Pool – From left bank water's edge looking to right bank.



Figure 167. R B: Transect 7 Riffle – From left bank looking to right bank water's edge.



Figure 168. R B: Transect 7 Riffle – From 20’ downstream looking upstream.



Figure 169. R B: Transect 7 Riffle – From right bank looking to left bank.



Figure 170. R B: Transect 6 Glide – From right bank water’s edge looking to left bank.



Figure 171. R B: Transect 6 Glide – From 30’ upstream looking downstream.



Figure 172. R B: Transect 6 Glide – From left bank looking to right bank.



Figure 173. R B: Transect 5 Riffle – From left bank looking to right bank.



Figure 174. R B: Transect 5 Riffle – From 25' downstream looking upstream.



Figure 175. R B: Transect 5 Riffle – From right bank water's edge looking to left bank.



Figure 176. R B: Transect 4 Riffle – From left bank looking to right bank.



Figure 177. R B: Transect 4 Riffle – From 30' downstream looking upstream.



Figure 178. R B: Transect 4 Riffle – From right bank looking to left bank.



Figure 179. R B: Transect 3 Riffle – From right bank water's edge looking to left bank.



Figure 180. R B: Transect 3 Riffle – From 30' downstream looking upstream.



Figure 181. R B: Transect 3 Riffle – From left bank looking to right bank.



Figure 182. R B: Transect 2 Riffle – From left bank looking to right bank.



Figure 183. R B: Transect 2 Riffle – From 30' downstream looking upstream.



Figure 184. R B: Transect 2 Riffle – From right bank looking to left bank.



Figure 185. R B: Transect 1 Pool – From left bank looking to right bank.

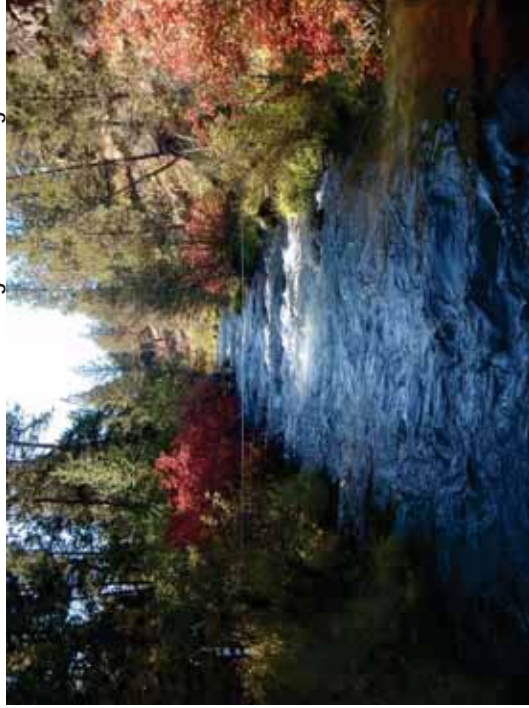


Figure 186. R B: Transect 1 Pool – From 25' downstream looking upstream.



Figure 187. R B: Transect 1 Pool – From right bank looking to left bank.

B Low Low Flow (24 cfs)



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Figure 188. R B: Transect 8 Pool – From left bank water's edge looking to right bank.



Figure 189. R B: Transect 8 Pool – From 20' downstream looking upstream.



Figure 190. R B: Transect 8 Pool – From right bank water's edge looking to left bank.



Figure 191. R B: Transect 7 Riffle – From left bank looking to right edge.





Figure 192. R B: Transect 7 Riffle – From 25' downstream looking upstream.



Figure 193. R B: Transect 7 Riffle – From right bank looking to left bank.



Figure 194. R B: Transect 6 Glide – From left bank looking to right bank.



Figure 195. R B: Transect 6 Glide – From 20' downstream looking upstream.



Figure 196. R B: Transect 6 Glide – From right bank looking to left bank.



Figure 197. R B: Transect 5 Riffle – From left bank looking to right bank.



Figure 198. R B: Transect 5 Riffle – From 20' downstream looking upstream.



Figure 199. R B: Transect 5 Riffle – From right bank water's edge looking to left bank water's edge.



Figure 200. R B: Transect 4 Riffle – From left bank water's edge looking to right bank.



Figure 201. R B: Transect 4 Riffle – From 20' downstream looking upstream.



Figure 202. R B: Transect 4 Riffle – From right bank looking to left bank.



Figure 203. R B: Transect 3 Riffle – From left bank water's edge looking to right bank.



Figure 204. R B: Transect 3 Riffle – From 20' downstream looking upstream.



Figure 205. R B: Transect 3 Riffle – From right bank water's edge looking to left bank.



Figure 206. R B: Transect 2 Riffle – From left bank looking to right bank.



Figure 207. R B: Transect 2 Riffle – From 15' downstream looking upstream.





Figure 208. R B: Transect 2 Riffle – From right bank water's edge looking to left bank.



Figure 209. R B: Transect 1 Pool – From left bank looking to right bank.



Figure 210. R B: Transect 1 Pool – From 15' upstream looking downstream.



Figure 211. R B: Transect 1 Pool – From right bank looking to left bank.

