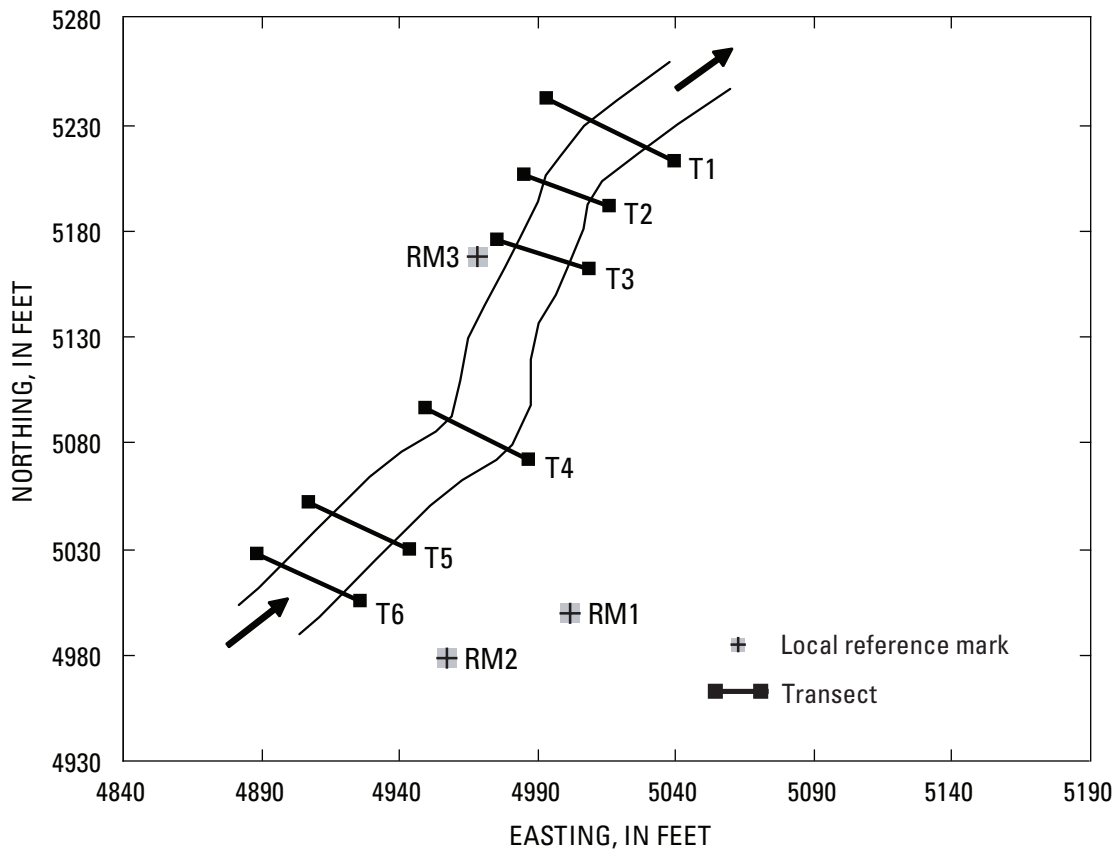


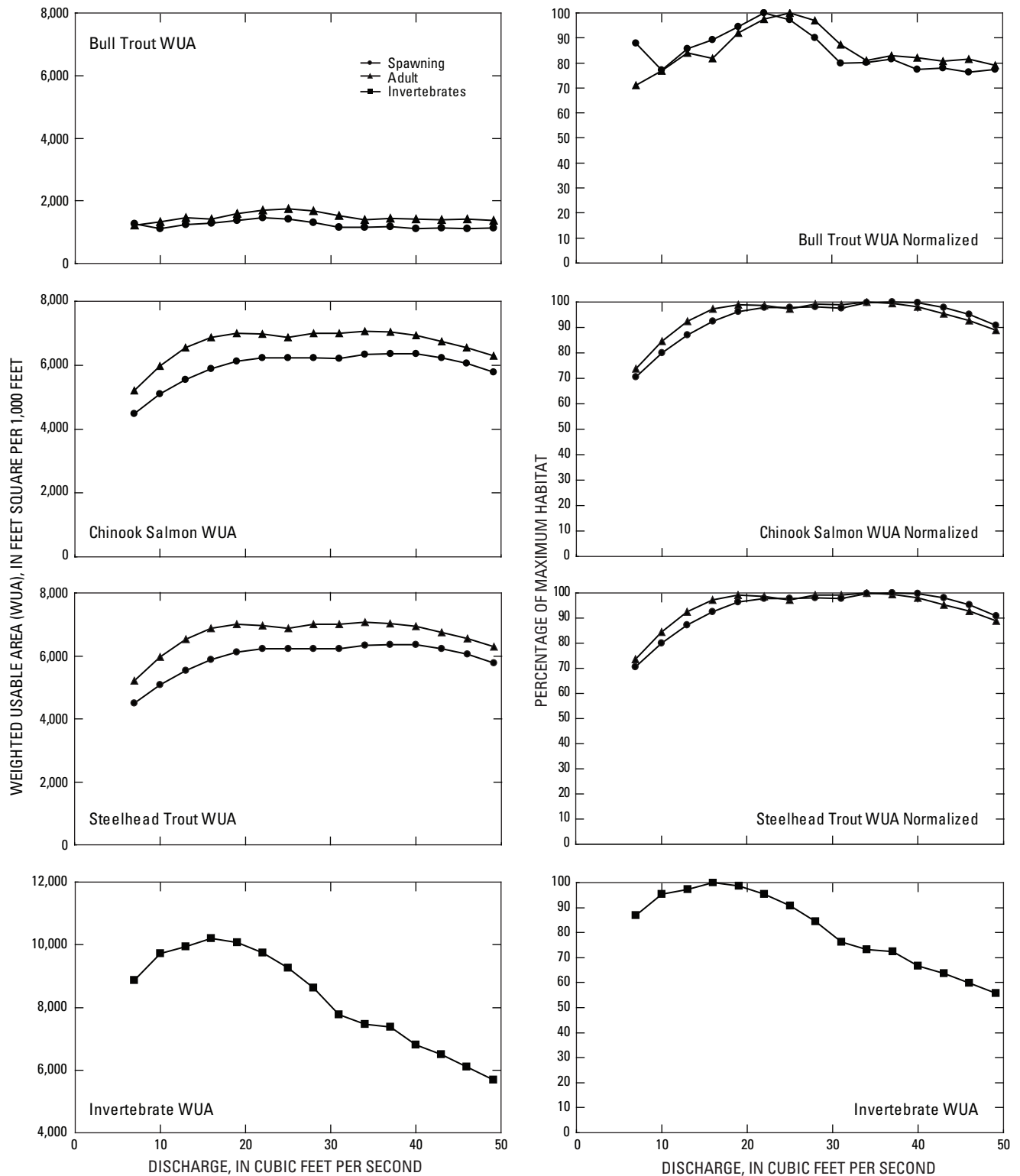
**Appendix B.** Plan view, weighted usable areas, and passage criteria assessments for bull trout, Chinook salmon, steelhead trout, and invertebrates for upper Challis Creek (CH4), upper Salmon River Basin, Idaho, 2005.



Transect Endpoint Coordinates (NAD 83)			Transect Endpoint Coordinates (NAD 83)		
Point	Latitude	Longitude	Point	Latitude	Longitude
RH1	44° 34' 8.57" N	114° 21' 46.74" W	RH4	44° 34' 7.27" N	114° 21' 47.84" W
LH1	44° 34' 8.17" N	114° 21' 46.22" W	LH4	44° 34' 6.95" N	114° 21' 47.43" W
RH2	44° 34' 8.24" N	114° 21' 46.99" W	RH5	44° 34' 6.96" N	114° 21' 48.55" W
LH2	44° 34' 8.02" N	114° 21' 46.63" W	LH5	44° 34' 6.66" N	114° 21' 48.17" W
RH3	44° 34' 7.98" N	114° 21' 47.21" W	RH6	44° 34' 6.78" N	114° 21' 48.91" W
LH3	44° 34' 7.76" N	114° 21' 46.82" W	LH6	44° 34' 6.48" N	114° 21' 48.47" W

For reference only; stream schematic not to scale.

**Figure B1.** Plan view of upper Challis Creek (CH4), upper Salmon River Basin, Idaho, 2005.



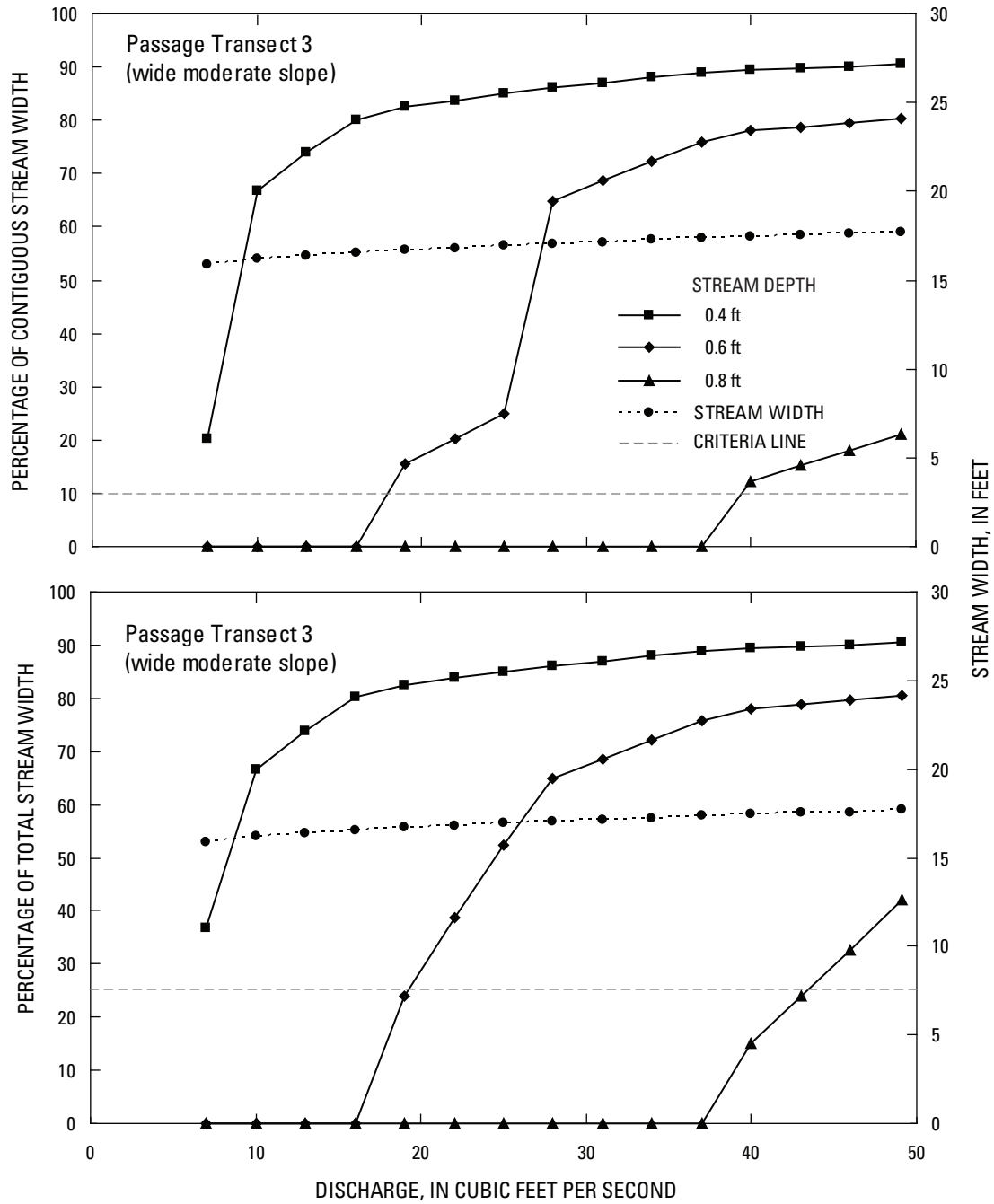
**Figure B2.** Weighted usable area and percentage of maximum habitat for bull trout, Chinook salmon, steelhead trout, and invertebrates, upper Challis Creek (CH4), upper Salmon River Basin, Idaho, 2005.

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**Table B1.** Weighted usable area for bull trout, Chinook salmon, steelhead trout life stages, and Ephemeroptera, Plecoptera, and Trichoptera (EPT) invertebrates, site CH4, upper Challis Creek, upper Salmon River Basin, Idaho, 2005.

[Site location shown in [figure 8](#). **Abbreviations:** WUA, weighted usable area; ft<sup>3</sup>/s, cubic foot per second; ft<sup>2</sup>, square foot; ft<sup>2</sup>/1,000 ft, square foot per 1,000 feet]

Discharge (ft³/s)	Total area (ft²)	Summary of WUA (ft²/1,000 ft)		Percentage of maximum habitat		Discharge (ft³/s)	Total area (ft²)	Summary of WUA (ft²/1,000 ft)		Percentage of maximum habitat	
		Adult	Spawning	Adult	Spawning			Adult	Spawning	Adult	Spawning
Bull trout						Steelhead trout					
7.0	15,075	1,231	1,274	71.0	87.8	7.0	15,075	5,208	4,490	73.7	70.6
10	15,611	1,333	1,118	76.8	77.0	10	15,611	5,970	5,088	84.5	80.0
13	16,033	1,460	1,245	84.1	85.8	13	16,033	6,539	5,542	92.6	87.1
16	16,399	1,419	1,295	81.8	89.3	16	16,399	6,868	5,885	97.2	92.5
19	16,720	1,595	1,370	91.9	94.4	19	16,720	6,997	6,128	99.0	96.3
22	17,015	1,692	1,451	97.5	100.0	22	17,015	6,968	6,220	98.6	97.7
25	17,284	1,735	1,409	100.0	97.2	25	17,284	6,868	6,227	97.2	97.9
28	17,503	1,680	1,306	96.9	90.0	28	17,503	7,002	6,236	99.1	98.0
31	17,720	1,516	1,160	87.4	79.9	31	17,720	6,997	6,217	99.0	97.7
34	18,117	1,404	1,163	80.9	80.2	34	18,117	7,065	6,338	100.0	99.6
37	18,602	1,439	1,182	82.9	81.5	37	18,602	7,029	6,363	99.5	100.0
40	19,501	1,424	1,123	82.1	77.4	40	19,501	6,931	6,350	98.1	99.8
43	19,661	1,399	1,133	80.6	78.1	43	19,661	6,738	6,233	95.4	97.9
46	19,805	1,416	1,105	81.6	76.2	46	19,805	6,555	6,054	92.8	95.1
49.100	19,947	1,373	1,124	79.2	77.5	49.100	19,947	6,288	5,779	89.0	90.8
Chinook salmon						Discharge (ft³/s)	Total area (ft²)	Summary of WUA (ft²/1,000 ft)	Percentage of maximum habitat		
7.0	15,075	5,208	4,490	73.7	70.6						
10	15,611	5,970	5,088	84.5	80.0						
13	16,033	6,539	5,542	92.6	87.1						
16	16,399	6,868	5,885	97.2	92.5						
19	16,720	6,997	6,128	99.0	96.3	6.970	15,075	8,873	86.9		
22	17,015	6,968	6,220	98.6	97.7	10	15,611	9,729	95.3		
25	17,284	6,868	6,227	97.2	97.9	13	16,033	9,941	97.4		
28	17,503	7,002	6,236	99.1	98.0	16	16,399	10,207	100.0		
31	17,720	6,997	6,217	99.0	97.7	19	16,720	10,062	98.6		
34	18,117	7,065	6,338	100.0	99.6	22	17,015	9,737	95.4		
37	18,602	7,029	6,363	99.5	100.0	25	17,284	9,270	90.8		
40	19,501	6,931	6,350	98.1	99.8	28	17,503	8,631	84.6		
43	19,661	6,738	6,233	95.4	97.9	31	17,720	7,774	76.2		
46	19,805	6,555	6,054	92.8	95.1	34	18,117	7,460	73.1		
49.100	19,947	6,288	5,779	89.0	90.8	37	18,602	7,380	72.3		
						40	19,501	6,812	66.7		
						43	19,661	6,503	63.7		
						46	19,805	6,108	59.8		
						49.100	19,947	5,679	55.6		



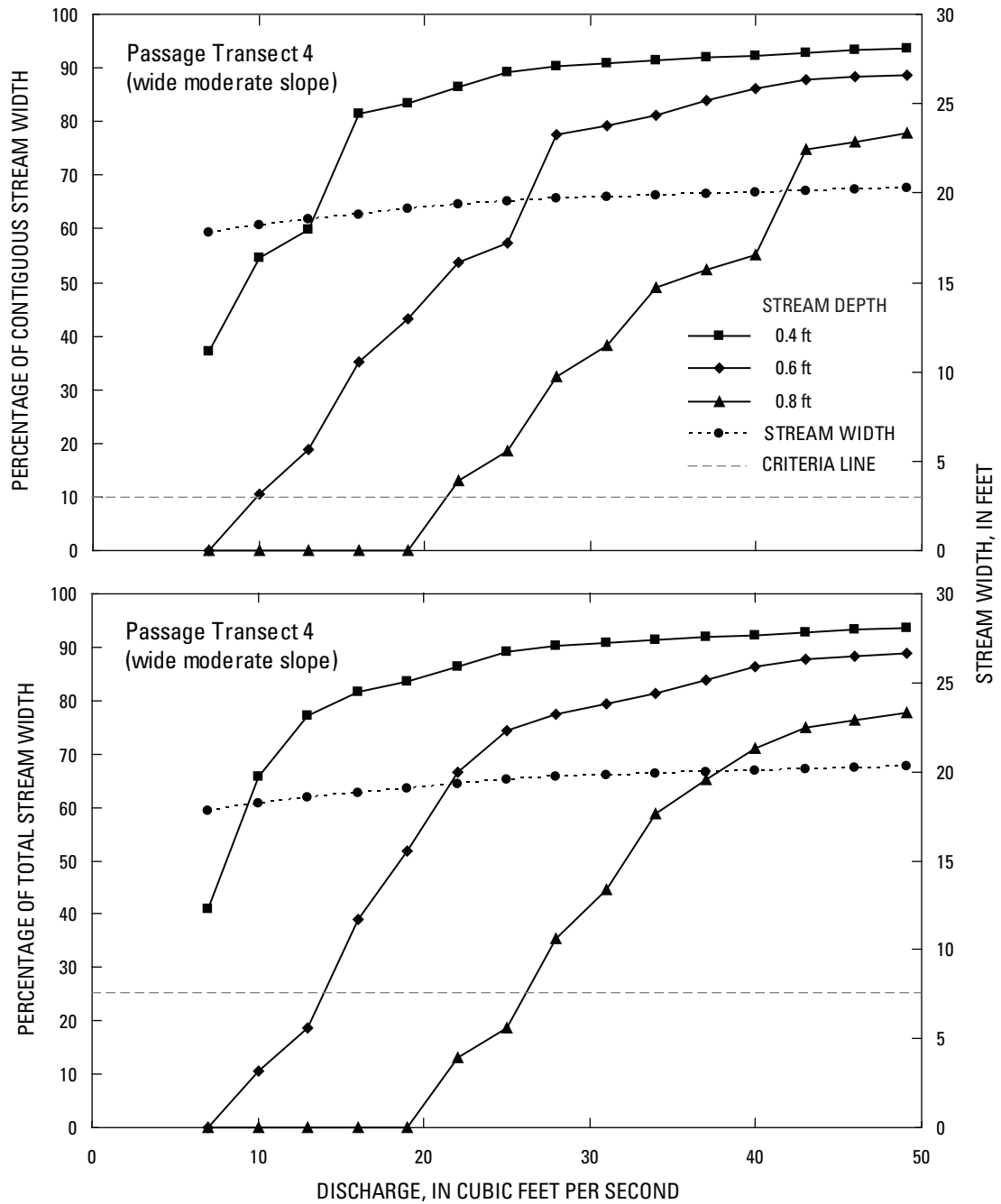
**Figure B3.** Percentages of contiguous and total stream width for passage transect 3, upper Challis Creek (CH4), upper Salmon River Basin, Idaho, 2005.

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**Table B2.** Passage criteria assessment for transect 3 (wide moderate slope), site CH4, upper Challis Creek, upper Salmon River Basin, Idaho, 2005.

[Site location shown in [figure 8](#). Abbreviations: ft, foot; ft<sup>3</sup>/s, cubic foot per second]

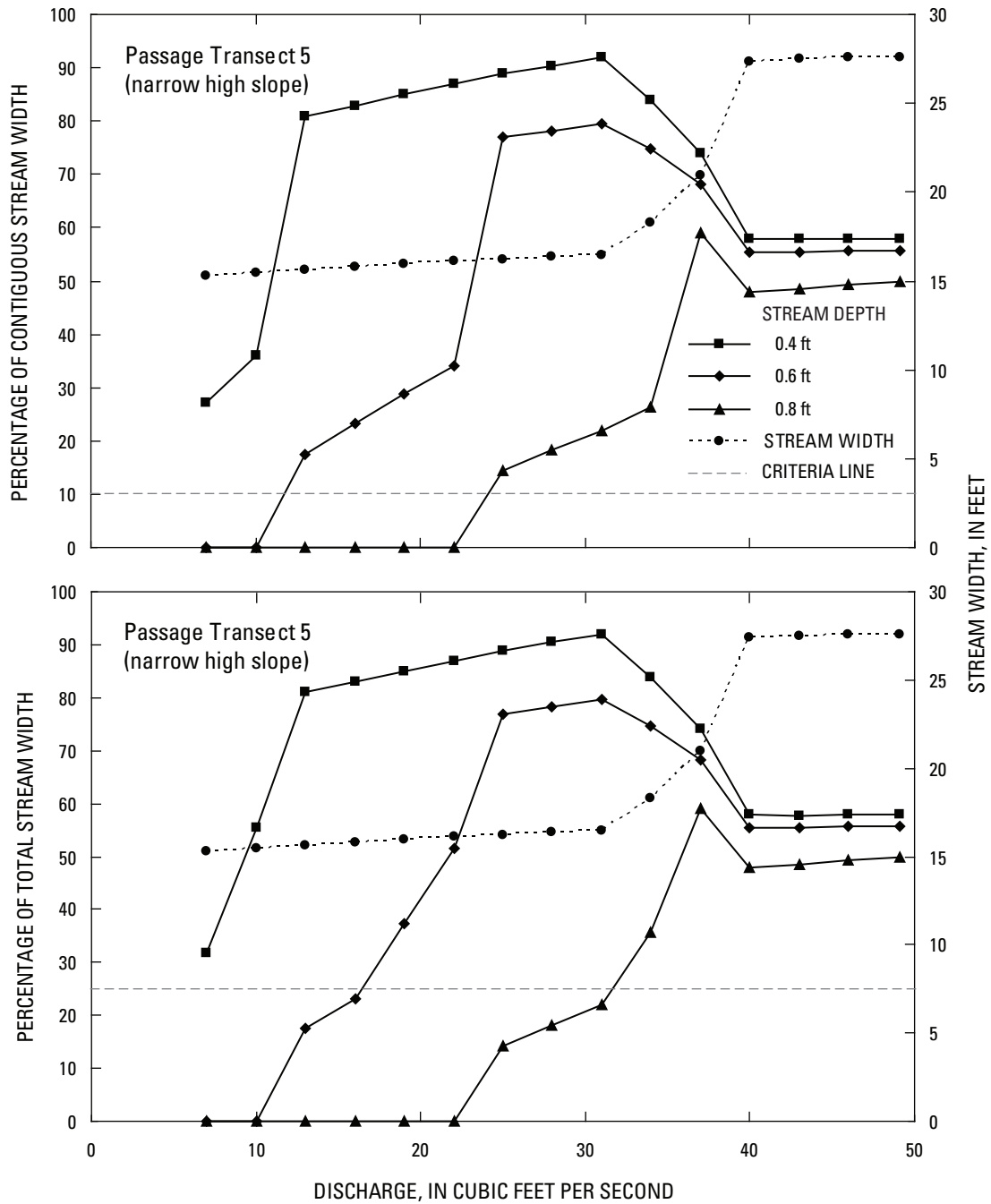
Discharge (ft³/s)	Stream width (ft)	Passage criteria assessment				Discharge (ft³/s)	Stream width (ft)	Passage criteria assessment			
		Total	Percentage	Contiguous	Percentage contiguous			Total	Percentage	Contiguous	Percentage contiguous
Stream widths greater than 0.4-ft depth						Stream widths greater than 0.8-ft depth					
7.0	15.9	5.9	36.9	3.2	20.2	7.0	15.9	0.0	0.0	0.0	0.0
10	16.2	10.8	66.7	10.8	66.7	10	16.2	0.0	0.0	0.0	0.0
13	16.4	12.1	73.9	12.1	73.9	13	16.4	0.0	0.0	0.0	0.0
16	16.6	13.3	80.2	13.3	80.2	16	16.6	0.0	0.0	0.0	0.0
19	16.7	13.8	82.5	13.8	82.5	19	16.7	0.0	0.0	0.0	0.0
22	16.8	14.1	83.8	14.1	83.8	22	16.8	0.0	0.0	0.0	0.0
25	16.9	14.4	85.0	14.4	85.0	25	16.9	0.0	0.0	0.0	0.0
28	17.1	14.7	86.1	14.7	86.1	28	17.1	0.0	0.0	0.0	0.0
31	17.2	14.9	87.0	14.9	87.0	31	17.2	0.0	0.0	0.0	0.0
34	17.2	15.2	88.0	15.2	88.0	34	17.2	0.0	0.0	0.0	0.0
37	17.3	15.4	88.8	15.4	88.8	37	17.3	0.0	0.0	0.0	0.0
40	17.4	15.6	89.5	15.6	89.5	40	17.4	2.6	15.1	2.1	12.3
43	17.5	15.7	89.8	15.7	89.8	43	17.5	4.2	23.9	2.7	15.1
46	17.6	15.8	90.1	15.8	90.1	46	17.6	5.7	32.7	3.2	18.0
49.1	17.7	16.0	90.4	16.0	90.4	49.1	17.7	7.4	41.9	3.7	21.0
Stream widths greater than 0.6-ft depth											
7.0	15.9	0.0	0.0	0.0	0.0						
10	16.2	0.0	0.0	0.0	0.0						
13	16.4	0.0	0.0	0.0	0.0						
16	16.6	0.0	0.0	0.0	0.0						
19	16.7	4.0	23.9	2.6	15.5						
22	16.8	6.5	38.7	3.4	20.3						
25	16.9	8.9	52.5	4.2	24.8						
28	17.1	11.1	64.9	11.1	64.9						
31	17.2	11.8	68.6	11.8	68.6						
34	17.2	12.5	72.3	12.5	72.3						
37	17.3	13.1	75.8	13.1	75.8						
40	17.4	13.6	78.0	13.6	78.0						
43	17.5	13.8	78.8	13.8	78.8						
46	17.6	14.0	79.6	14.0	79.6						
49.1	17.7	14.2	80.4	14.2	80.4						



**Figure B4.** Percentages of contiguous and total stream width for passage transect 4, upper Challis Creek (CH4), upper Salmon River Basin, Idaho, 2005.

**Table B3.** Passage criteria assessment for transect 4 (wide moderate slope), site CH4, upper Challis Creek, upper Salmon River Basin, Idaho, 2005.[Site location shown in [figure 8](#). Abbreviations: ft, foot; ft<sup>3</sup>/s, cubic foot per second]

Discharge (ft <sup>3</sup> /s)	Stream width (ft)	Passage criteria assessment				Discharge (ft <sup>3</sup> /s)	Stream width (ft)	Passage criteria assessment			
		Total	Percentage	Contiguous	Percentage contiguous			Total	Percentage	Contiguous	Percentage contiguous
Stream widths greater than 0.4-ft depth						Stream widths greater than 0.8-ft depth					
7.0	17.8	7.3	41.0	6.6	37.1	7.0	17.8	0.0	0.0	0.0	0.0
10	18.2	12.0	65.7	9.9	54.5	10	18.2	0.0	0.0	0.0	0.0
13	18.5	14.3	77.1	11.1	59.9	13	18.5	0.0	0.0	0.0	0.0
16	18.8	15.3	81.6	15.3	81.6	16	18.8	0.0	0.0	0.0	0.0
19	19.1	15.9	83.5	15.9	83.5	19	19.1	0.0	0.0	0.0	0.0
22	19.3	16.7	86.3	16.7	86.3	22	19.3	2.5	13.1	2.5	13.1
25	19.6	17.4	89.1	17.4	89.1	25	19.6	3.7	18.7	3.7	18.7
28	19.7	17.8	90.2	17.8	90.2	28	19.7	7.0	35.3	6.4	32.4
31	19.8	18.0	90.8	18.0	90.8	31	19.8	8.8	44.6	7.6	38.2
34	19.9	18.2	91.3	18.2	91.3	34	19.9	11.7	58.8	9.8	49.1
37	20.0	18.3	91.8	18.3	91.8	37	20.0	13.0	65.1	10.4	52.3
40	20.1	18.5	92.3	18.5	92.3	40	20.1	14.2	70.9	11.1	55.1
43	20.1	18.7	92.8	18.7	92.8	43	20.1	15.1	74.8	15.1	74.8
46	20.2	18.9	93.3	18.9	93.3	46	20.2	15.4	76.3	15.4	76.3
49.1	20.3	19.0	93.7	19.0	93.7	49.1	20.3	15.8	77.8	15.8	77.8
Stream widths greater than 0.6-ft depth											
7.0	17.8	0.0	0.0	0.0	0.0						
10	18.2	1.9	10.5	1.9	10.5						
13	18.5	3.5	18.8	3.5	18.8						
16	18.8	7.3	39.0	6.6	35.2						
19	19.1	9.9	51.8	8.2	43.1						
22	19.3	12.9	66.6	10.4	53.7						
25	19.6	14.5	74.3	11.2	57.3						
28	19.7	15.3	77.5	15.3	77.5						
31	19.8	15.7	79.3	15.7	79.3						
34	19.9	16.2	81.2	16.2	81.2						
37	20.0	16.7	83.9	16.7	83.9						
40	20.1	17.3	86.3	17.3	86.3						
43	20.1	17.7	87.8	17.7	87.8						
46	20.2	17.8	88.3	17.8	88.3						
49.1	20.3	18.0	88.7	18.0	88.7						



**Figure B5.** Percentages of contiguous and total stream width for passage transect 5, upper Challis Creek (CH4), upper Salmon River Basin, Idaho, 2005.



**Table B4.** Passage criteria assessment for transect 5 (narrow high slope), site CH4, upper Challis Creek, upper Salmon River Basin, Idaho, 2005.[Site location shown in [figure 8](#). Abbreviations: ft, foot; ft<sup>3</sup>/s, cubic foot per second]

Discharge (ft <sup>3</sup> /s)	Stream width (ft)	Passage criteria assessment				Discharge (ft <sup>3</sup> /s)	Stream width (ft)	Passage criteria assessment			
		Total	Percentage	Contiguous	Percentage contiguous			Total	Percentage	Contiguous	Percentage contiguous
Stream widths greater than 0.4-ft depth						Stream widths greater than 0.8-ft depth					
7.0	15.3	4.8	31.7	4.2	27.3	7.0	15.3	0.0	0.0	0.0	0.0
10	15.5	8.6	55.4	5.6	36.0	10	15.5	0.0	0.0	0.0	0.0
13	15.6	12.7	81.0	12.7	81.0	13	15.6	0.0	0.0	0.0	0.0
16	15.8	13.1	82.9	13.1	82.9	16	15.8	0.0	0.0	0.0	0.0
19	16.0	13.6	85.0	13.6	85.0	19	16.0	0.0	0.0	0.0	0.0
22	16.1	14.0	87.0	14.0	87.0	22	16.1	0.0	0.0	0.0	0.0
25	16.2	14.4	88.8	14.4	88.8	25	16.2	2.3	14.3	2.3	14.3
28	16.3	14.8	90.4	14.8	90.4	28	16.3	3.0	18.2	3.0	18.2
31	16.5	15.1	92.0	15.1	92.0	31	16.5	3.6	22.0	3.6	22.0
34	18.3	15.4	84.0	15.4	84.0	34	18.3	6.5	35.7	4.8	26.2
37	21.0	15.5	74.1	15.5	74.1	37	21.0	12.4	59.0	12.4	59.0
40	27.4	15.8	57.8	15.8	57.8	40	27.4	13.1	48.0	13.1	48.0
43	27.5	15.9	57.8	15.9	57.8	43	27.5	13.4	48.6	13.4	48.6
46	27.6	16.0	57.9	16.0	57.9	46	27.6	13.6	49.2	13.6	49.2
49.1	27.6	16.0	58.0	16.0	58.0	49.1	27.6	13.8	49.8	13.8	49.8
Stream widths greater than 0.6-ft depth											
7.0	15.3	0.0	0.0	0.0	0.0						
10	15.5	0.0	0.0	0.0	0.0						
13	15.6	2.7	17.5	2.7	17.5						
16	15.8	3.7	23.2	3.7	23.2						
19	16.0	6.0	37.4	4.6	28.7						
22	16.1	8.3	51.5	5.5	34.0						
25	16.2	12.5	76.9	12.5	76.9						
28	16.3	12.8	78.2	12.8	78.2						
31	16.5	13.1	79.6	13.1	79.6						
34	18.3	13.7	74.8	13.7	74.8						
37	21.0	14.3	68.2	14.3	68.2						
40	27.4	15.2	55.5	15.2	55.5						
43	27.5	15.3	55.5	15.3	55.5						
46	27.6	15.3	55.6	15.3	55.6						
49.1	27.6	15.4	55.7	15.4	55.7						