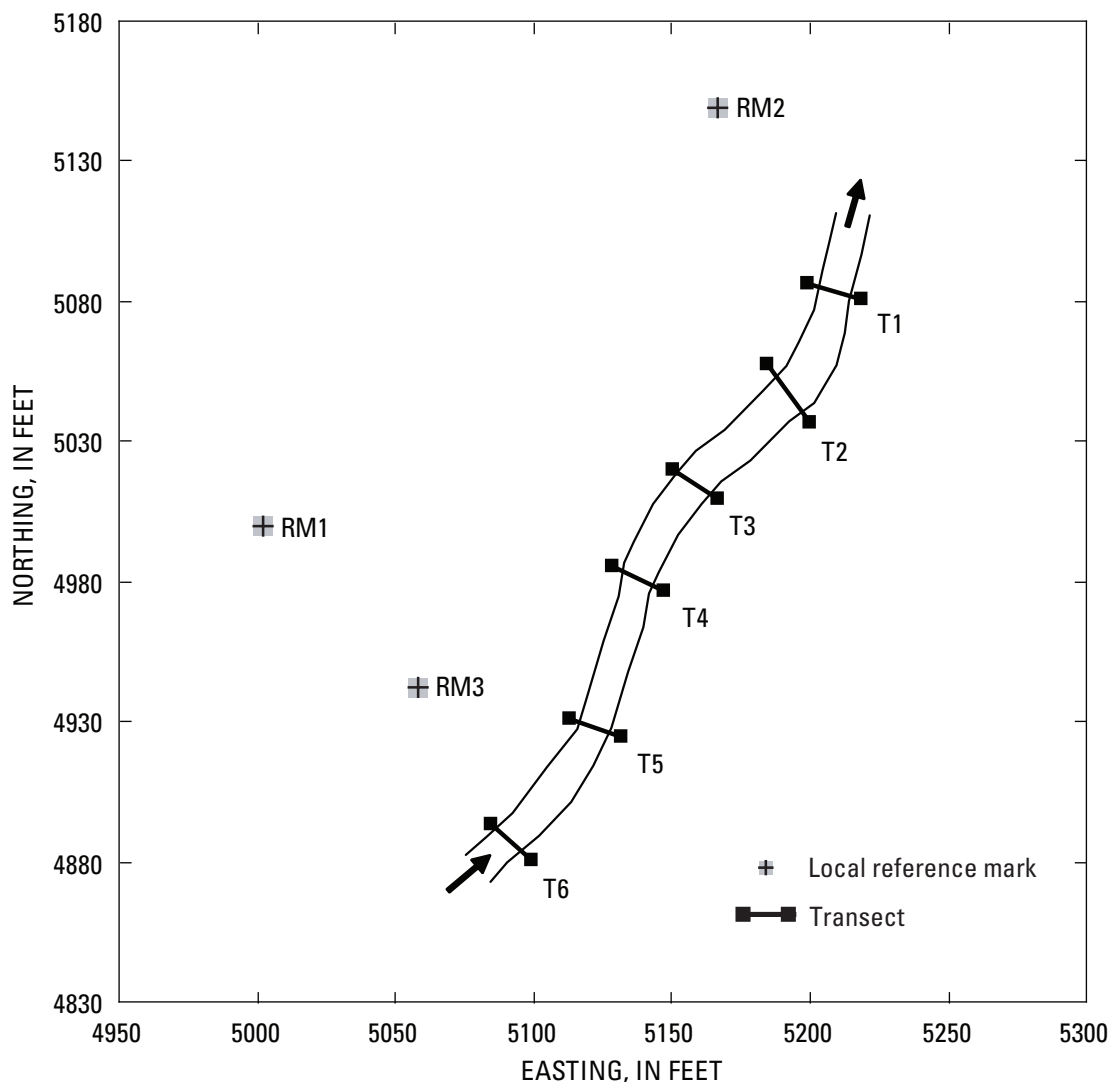


Appendix F. Plan view, weighted usable areas, and passage criteria assessments for bull trout, Chinook salmon, steelhead trout, and invertebrates for lower middle Challis Creek (CH2), upper Salmon River Basin, Idaho, 2005.



Transect Endpoint Coordinates (NAD 83)			Transect Endpoint Coordinates (NAD 83)		
Point	Latitude	Longitude	Point	Latitude	Longitude
RH1	44° 33' 36.5" N	114° 16' 30.86" W	LH4	44° 33' 35.39" N	114° 16' 31.46" W
LH1	44° 33' 36.46" N	114° 16' 30.58" W	RH5	44° 33' 34.91" N	114° 16' 31.87" W
RH2	44° 33' 36.2" N	114° 16' 31.05" W	LH5	44° 33' 34.85" N	114° 16' 31.6" W
LH2	44° 33' 36.02" N	114° 16' 30.8" W	RH6	44° 33' 34.51" N	114° 16' 32.23" W
RH3	44° 33' 35.81" N	114° 16' 31.46" W	LH6	44° 33' 34.4" N	114° 16' 32.01" W
LH3	44° 33' 35.72" N	114° 16' 31.21" W			

For reference only; stream schematic not to scale.

Figure F1. Plan view of upper lower middle Challis Creek (CH2), upper Salmon River Basin, Idaho, 2005.

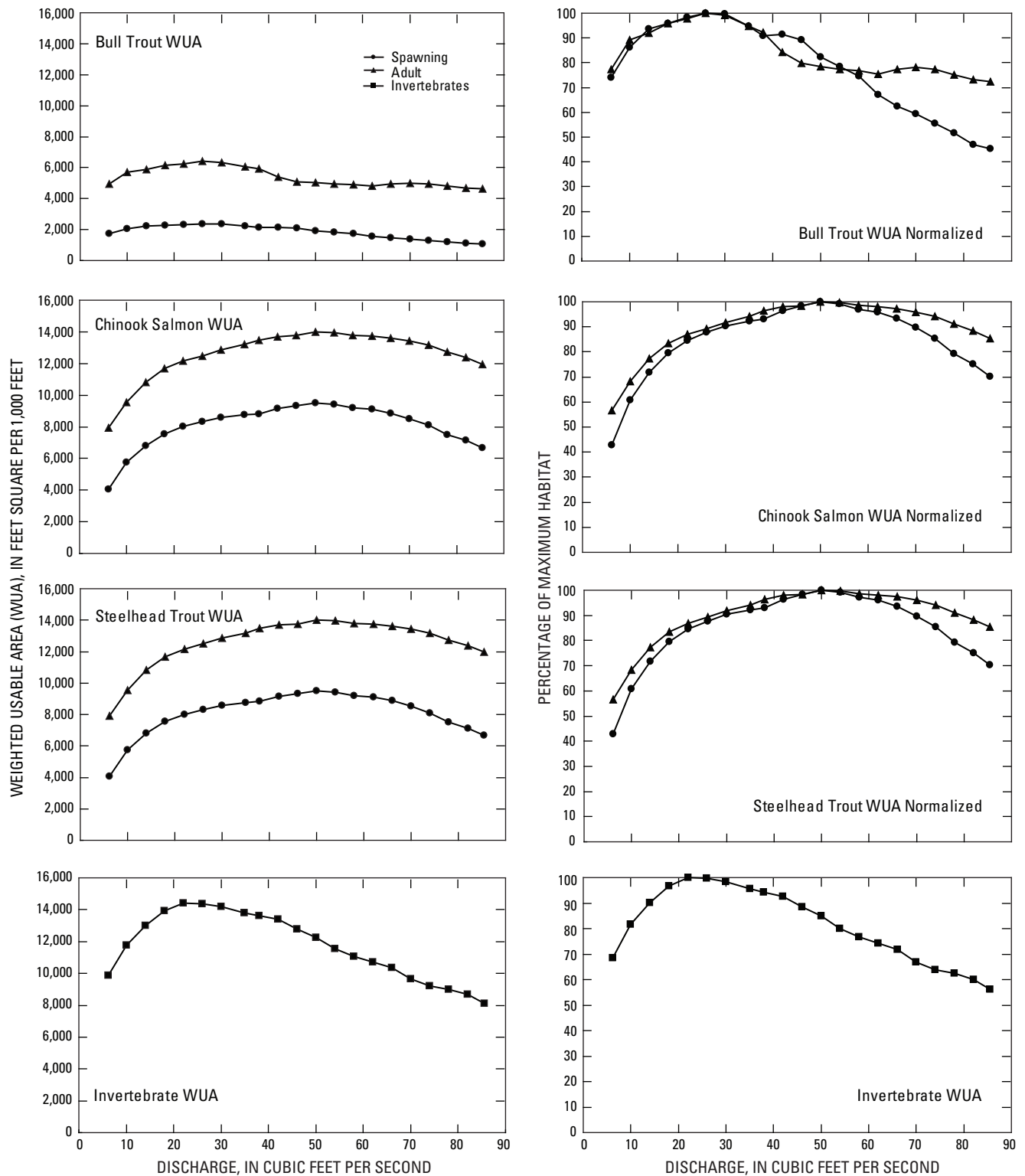


Figure F2. Weighted usable area and percentage of maximum habitat for bull trout, chinook salmon, steelhead trout, and invertebrates, lower middle Challis Creek (CH2), upper Salmon River Basin, Idaho, 2005.

Table F1. Weighted usable area for bull trout, Chinook salmon, steelhead trout life stages, and Ephemeroptera, Plecoptera, and Trichoptera (EPT) invertebrates, site CH2, lower middle Challis Creek, upper Salmon River Basin, Idaho, 2005.

[Site location shown in [figure 8](#). **Abbreviations:** WUA, weighted usable area; ft³/s, cubic foot per second; ft², square foot; ft²/1,000 ft, square foot per 1,000 feet]

Discharge (ft ³ /s)	Total area (ft ²)	Summary of WUA (ft ² /1,000 ft)		Percentage of maximum habitat		Discharge (ft ³ /s)	Total area (ft ²)	Summary of WUA (ft ² /1,000 ft)		Percentage of maximum habitat	
		Adult	Spawning	Adult	Spawning			Adult	Spawning	Adult	Spawning
Bull trout						Steelhead trout					
6.2	22,307	4,947	1,744	77.3	74.0	6.2	22,307	7,925	4,064	56.6	42.8
10	23,494	5,706	2,033	89.2	86.2	10	23,494	9,561	5,752	68.3	60.7
14	24,052	5,886	2,210	92.0	93.7	14	24,052	10,816	6,811	77.3	71.8
18	24,516	6,140	2,260	96.0	95.9	18	24,516	11,681	7,548	83.5	79.6
22	24,920	6,258	2,318	97.8	98.3	22	24,920	12,164	8,015	86.9	84.5
26	25,286	6,399	2,358	100.0	100.0	26	25,286	12,487	8,325	89.2	87.8
30	26,497	6,348	2,349	99.2	99.6	30	26,497	12,850	8,571	91.8	90.4
35	26,839	6,055	2,231	94.6	94.6	35	26,839	13,190	8,747	94.3	92.2
38	27,157	5,910	2,140	92.4	90.8	38	27,157	13,493	8,823	96.4	93.0
42	27,448	5,399	2,156	84.4	91.4	42	27,448	13,709	9,141	98.0	96.4
46	27,717	5,102	2,105	79.7	89.3	46	27,717	13,765	9,318	98.4	98.2
50	28,306	5,017	1,938	78.4	82.2	50	28,306	13,995	9,484	100.0	100.0
54	28,924	4,958	1,849	77.5	78.4	54	28,924	13,951	9,416	99.7	99.3
58	29,616	4,912	1,760	76.8	74.6	58	29,616	13,798	9,207	98.6	97.1
62	31,557	4,824	1,580	75.4	67.0	62	31,557	13,735	9,100	98.1	95.9
66	33,641	4,953	1,473	77.4	62.5	66	33,641	13,623	8,862	97.3	93.4
70	34,339	4,996	1,398	78.1	59.3	70	34,339	13,429	8,512	96.0	89.7
74	34,613	4,941	1,312	77.2	55.6	74	34,613	13,175	8,105	94.1	85.5
78	34,871	4,813	1,221	75.2	51.8	78	34,871	12,750	7,511	91.1	79.2
82	35,127	4,693	1,109	73.3	47.0	82	35,127	12,361	7,128	88.3	75.2
85.5	35,363	4,638	1,066	72.5	45.2	85.5	35,363	11,962	6,659	85.5	70.2
Chinook salmon						Discharge (ft ³ /s)	Total area (ft ²)	Summary of WUA (ft ² /1,000 ft)		Percentage of maximum habitat	
6.2	22,307	7,925	4,064	56.6	42.8			EPT Invertebrates			
10	23,494	9,561	5,752	68.3	60.7	6.180	22,307	9,886		68.5	
14	24,052	10,816	6,811	77.3	71.8	10	23,494	11,769		81.5	
18	24,516	11,681	7,548	83.5	79.6	14	24,052	12,998		90.1	
22	24,920	12,164	8,015	86.9	84.5	18	24,516	13,940		96.6	
26	25,286	12,487	8,325	89.2	87.8	22	24,920	14,433		100.0	
30	26,497	12,850	8,571	91.8	90.4	26	25,286	14,386		99.7	
35	26,839	13,190	8,747	94.3	92.2	30	26,497	14,195		98.4	
38	27,157	13,493	8,823	96.4	93.0	35	26,839	13,798		95.6	
42	27,448	13,709	9,141	98.0	96.4	38	27,157	13,615		94.3	
46	27,717	13,765	9,318	98.4	98.2	42	27,448	13,382		92.7	
50	28,306	13,995	9,484	100.0	100.0	46	27,717	12,761		88.4	
54	28,924	13,951	9,416	99.7	99.3	50	28,306	12,252		84.9	
58	29,616	13,798	9,207	98.6	97.1	54	28,924	11,538		79.9	
62	31,557	13,735	9,100	98.1	95.9	58	29,616	11,068		76.7	
66	33,641	13,623	8,862	97.3	93.4	62	31,557	10,704		74.2	
70	34,339	13,429	8,512	96.0	89.7	66	33,641	10,354		71.7	
74	34,613	13,175	8,105	94.1	85.5	70	34,339	9,631		66.7	
78	34,871	12,750	7,511	91.1	79.2	74	34,613	9,226		63.9	
82	35,127	12,361	7,128	88.3	75.2	78	34,871	9,009		62.4	
85.5	35,363	11,962	6,659	85.5	70.2	82	35,127	8,679		60.1	
						85.5	35,363	8,126		56.3	

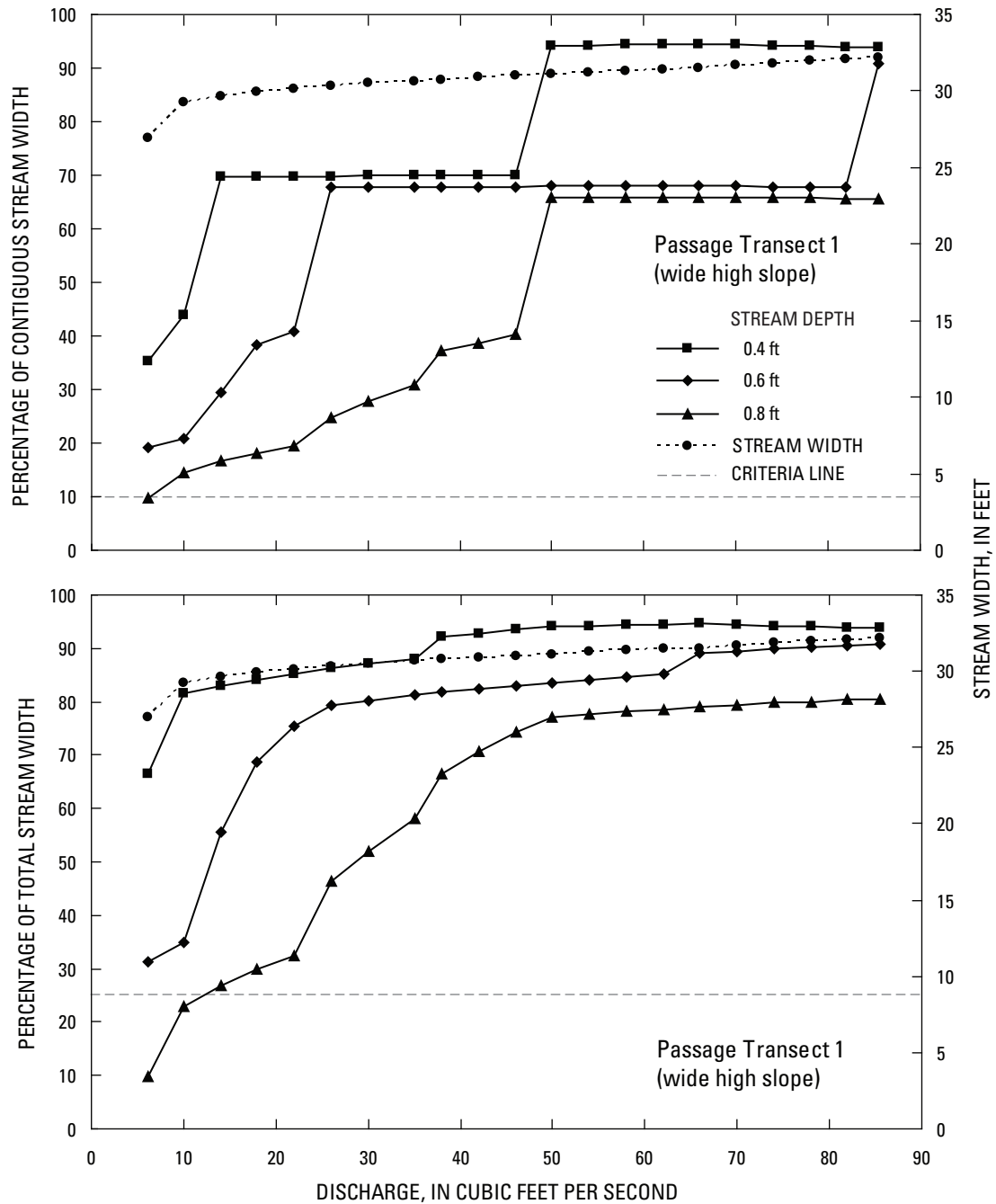


Figure F3. Percentages of contiguous and total stream width for passage transect 1, lower middle Challis Creek (CH2), upper Salmon River Basin, Idaho, 2005.

Table F2. Passage criteria assessment for transect 1 (wide high slope), site CH2, lower middle Challis Creek, upper Salmon River Basin, Idaho, 2005.[Site location shown in [figure 8](#). Abbreviations: ft, foot; ft³/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					
6.2	27.0	17.9	66.4	9.5	35.2	6.2	27.0	2.6	9.8	2.6	9.8
10	29.2	23.9	81.7	12.8	43.8	10	29.2	6.7	22.9	4.3	14.6
14	29.6	24.6	83.0	20.7	69.8	14	29.6	7.9	26.7	4.9	16.5
18	29.9	25.2	84.2	20.9	69.8	18	29.9	8.9	29.8	5.4	18.1
22	30.1	25.7	85.3	21.0	69.8	22	30.1	9.8	32.4	5.9	19.5
26	30.3	26.1	86.2	21.2	69.9	26	30.3	14.0	46.3	7.5	24.9
30	30.5	26.5	87.0	21.3	69.9	30	30.5	15.9	52.1	8.5	27.7
35	30.7	27.0	87.9	21.4	69.9	35	30.7	17.8	58.2	9.5	30.8
38	30.8	28.3	92.1	21.5	70.0	38	30.8	20.5	66.5	11.4	37.1
42	30.9	28.7	92.9	21.6	70.0	42	30.9	21.8	70.6	12.0	38.7
46	31.0	29.0	93.5	21.7	70.0	46	31.0	23.1	74.3	12.5	40.2
50	31.1	29.3	94.0	29.3	94.0	50	31.1	24.0	77.0	20.5	65.8
54	31.2	29.4	94.2	29.4	94.2	54	31.2	24.2	77.6	20.6	65.8
58	31.3	29.6	94.3	29.6	94.3	58	31.3	24.5	78.1	20.6	65.9
62	31.4	29.7	94.5	29.7	94.5	62	31.4	24.7	78.6	20.7	65.9
66	31.5	29.8	94.6	29.8	94.6	66	31.5	24.9	79.1	20.8	66.0
70	31.7	29.9	94.4	29.9	94.4	70	31.7	25.2	79.4	20.9	65.9
74	31.8	30.0	94.3	30.0	94.3	74	31.8	25.4	79.8	20.9	65.8
78	32.0	30.1	94.1	30.1	94.1	78	32.0	25.6	80.0	21.0	65.7
82	32.1	30.2	94.0	30.2	94.0	82	32.1	25.8	80.3	21.1	65.6
85.5	32.2	30.2	93.9	30.2	93.9	85.5	32.2	26.0	80.6	21.1	65.6
Stream widths greater than 0.6-ft depth											
6.2	27.0	8.5	31.4	5.2	19.2						
10	29.2	10.2	35.0	6.1	20.9						
14	29.6	16.5	55.6	8.8	29.6						
18	29.9	20.6	68.8	11.5	38.3						
22	30.1	22.7	75.5	12.3	40.9						
26	30.3	24.1	79.4	20.5	67.7						
30	30.5	24.5	80.3	20.6	67.7						
35	30.7	24.9	81.2	20.8	67.8						
38	30.8	25.2	81.8	20.9	67.8						
42	30.9	25.5	82.4	21.0	67.9						
46	31.0	25.8	83.0	21.1	67.9						
50	31.1	26.0	83.6	21.1	67.9						
54	31.2	26.3	84.2	21.2	68.0						
58	31.3	26.5	84.7	21.3	68.0						
62	31.4	26.8	85.2	21.4	68.0						
66	31.5	28.1	89.1	21.5	68.1						
70	31.7	28.4	89.5	21.5	68.0						
74	31.8	28.6	89.8	21.6	67.9						
78	32.0	28.8	90.1	21.7	67.8						
82	32.1	29.0	90.5	21.7	67.7						
85.5	32.2	29.2	90.7	29.2	90.7						

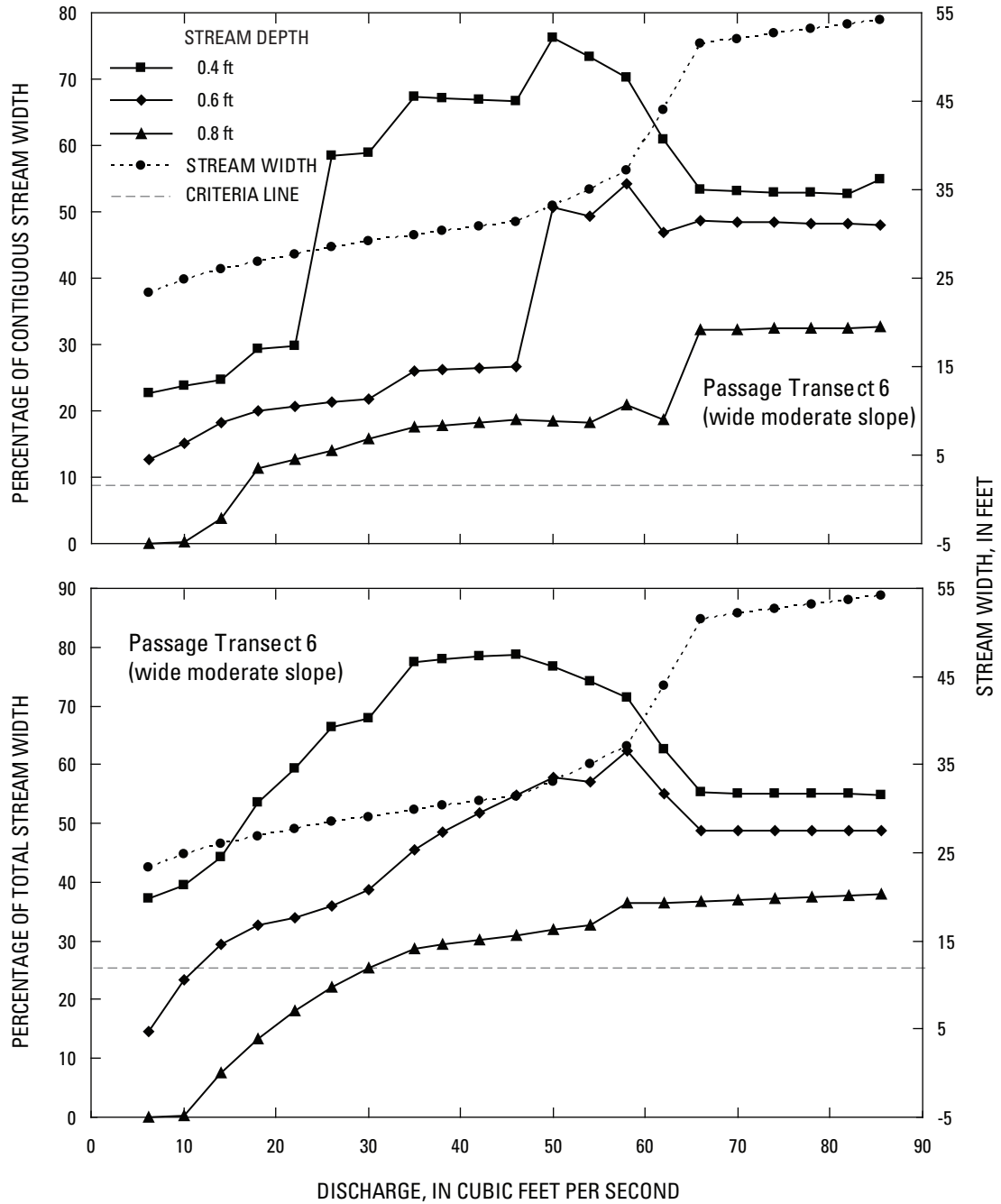


Figure F4. Percentages of contiguous and total stream width for passage transect 6, lower middle Challis Creek (CH2), upper Salmon River Basin, Idaho, 2005.

Table F3. Passage criteria assessment for transect 6 (wide moderate slope), site CH2, lower middle Challis Creek, upper Salmon River Basin, Idaho, 2005.[Site location shown in [figure 8](#). Abbreviations: ft, foot; ft³/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					
6.2	23.4	8.7	37.3	5.3	22.7	6.2	23.4	0.0	0.0	0.0	0.0
10	24.9	9.8	39.4	5.9	23.8	10	24.9	0.1	0.3	0.0	0.1
14	26.0	11.5	44.2	6.4	24.7	14	26.0	2.0	7.5	1.0	3.8
18	26.9	14.4	53.6	7.9	29.4	18	26.9	3.6	13.3	3.0	11.3
22	27.7	16.4	59.3	8.3	29.8	22	27.7	5.0	18.2	3.5	12.6
26	28.5	18.9	66.4	16.6	58.4	26	28.5	6.3	22.2	4.0	14.1
30	29.1	19.7	67.9	17.1	58.9	30	29.1	7.4	25.4	4.6	15.7
35	29.9	23.1	77.5	20.1	67.4	35	29.9	8.5	28.6	5.2	17.5
38	30.3	23.6	77.9	20.4	67.2	38	30.3	8.9	29.3	5.4	17.8
42	30.9	24.2	78.4	20.7	66.9	42	30.9	9.3	30.1	5.6	18.3
46	31.4	24.7	78.8	20.9	66.7	46	31.4	9.7	30.8	5.9	18.7
50	33.1	25.3	76.6	25.2	76.1	50	33.1	10.5	31.9	6.1	18.5
54	35.0	26.0	74.2	25.7	73.3	54	35.0	11.5	32.8	6.4	18.3
58	37.1	26.5	71.5	26.1	70.3	58	37.1	13.6	36.5	7.8	20.9
62	44.0	27.6	62.6	26.8	61.0	62	44.0	16.1	36.5	8.2	18.6
66	51.5	28.4	55.2	27.5	53.4	66	51.5	18.8	36.6	16.6	32.2
70	52.1	28.7	55.1	27.7	53.2	70	52.1	19.2	36.9	16.8	32.3
74	52.6	29.0	55.1	27.9	53.0	74	52.6	19.6	37.2	17.1	32.4
78	53.2	29.3	55.0	28.1	52.8	78	53.2	20.0	37.5	17.3	32.5
82	53.7	29.5	55.0	28.3	52.7	82	53.7	20.3	37.8	17.5	32.5
85.5	54.2	29.8	54.9	29.8	54.9	85.5	54.2	20.6	38.0	17.7	32.6
Stream widths greater than 0.6-ft depth											
6.2	23.4	3.4	14.5	3.0	12.8						
10	24.9	5.8	23.4	3.7	15.0						
14	26.0	7.6	29.4	4.7	18.2						
18	26.9	8.8	32.7	5.4	19.9						
22	27.7	9.4	34.0	5.7	20.7						
26	28.5	10.3	36.1	6.1	21.3						
30	29.1	11.2	38.7	6.3	21.8						
35	29.9	13.6	45.6	7.8	26.0						
38	30.3	14.7	48.5	8.0	26.3						
42	30.9	16.0	51.9	8.2	26.5						
46	31.4	17.2	54.9	8.4	26.8						
50	33.1	19.1	57.8	16.8	50.6						
54	35.0	19.9	57.0	17.3	49.3						
58	37.1	23.1	62.2	20.1	54.2						
62	44.0	24.2	55.0	20.7	47.0						
66	51.5	25.1	48.8	25.0	48.7						
70	52.1	25.4	48.8	25.3	48.5						
74	52.6	25.7	48.8	25.5	48.4						
78	53.2	26.0	48.8	25.7	48.3						
82	53.7	26.2	48.8	25.9	48.1						
85.5	54.2	26.5	48.8	26.0	48.0						

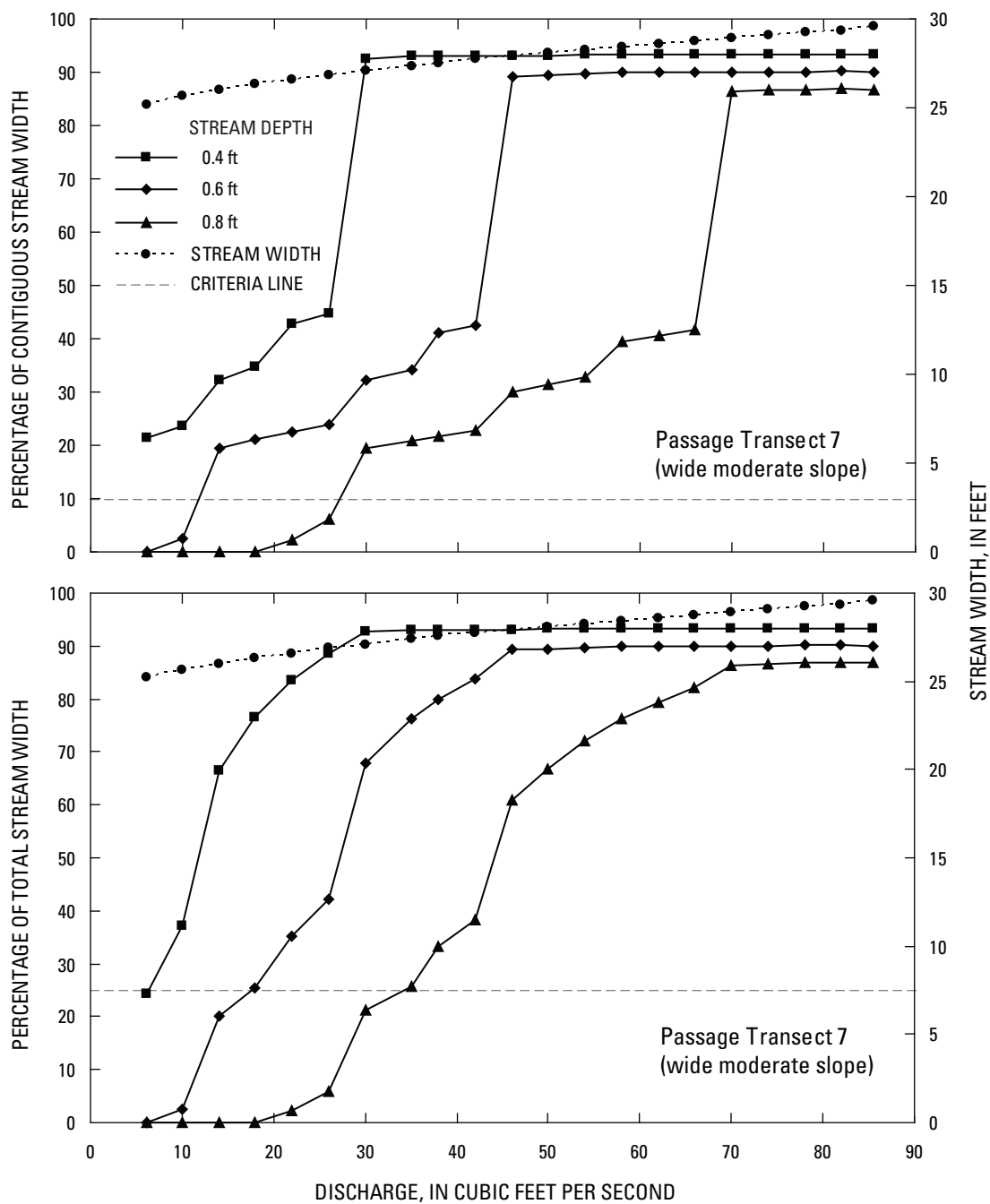


Figure F5. Percentages of contiguous and total stream width for passage transect 7, lower middle Challis Creek (CH2), upper Salmon River Basin, Idaho, 2005.

Table F4. Passage criteria assessment for transect 7 (wide moderate slope), site CH2, lower middle Challis Creek, upper Salmon River Basin, Idaho, 2005.[Site location shown in [figure 8](#). Abbreviations: ft, foot; ft³/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					
6.2	25.2	6.1	24.3	5.4	21.4	6.2	25.2	0.0	0.0	0.0	0.0
10	25.7	9.5	37.1	6.0	23.6	10	25.7	0.0	0.0	0.0	0.0
14	26.0	17.3	66.4	8.4	32.3	14	26.0	0.0	0.0	0.0	0.0
18	26.3	20.1	76.4	9.2	34.9	18	26.3	0.0	0.0	0.0	0.0
22	26.6	22.2	83.5	11.4	42.9	22	26.6	0.6	2.2	0.6	2.2
26	26.9	23.8	88.5	12.0	44.8	26	26.9	1.6	6.0	1.6	6.0
30	27.1	25.1	92.6	25.1	92.6	30	27.1	5.8	21.3	5.3	19.4
35	27.4	25.4	92.9	25.4	92.9	35	27.4	7.1	25.8	5.7	20.8
38	27.5	25.6	93.0	25.6	93.0	38	27.5	9.1	33.1	6.0	21.6
42	27.7	25.8	93.1	25.8	93.1	42	27.7	10.6	38.3	6.3	22.7
46	27.9	26.0	93.1	26.0	93.1	46	27.9	17.0	61.0	8.3	29.9
50	28.1	26.2	93.2	26.2	93.2	50	28.1	18.8	66.8	8.8	31.4
54	28.3	26.4	93.2	26.4	93.2	54	28.3	20.4	72.1	9.2	32.7
58	28.4	26.5	93.2	26.5	93.2	58	28.4	21.7	76.4	11.2	39.4
62	28.6	26.7	93.3	26.7	93.3	62	28.6	22.7	79.4	11.6	40.6
66	28.8	26.8	93.3	26.8	93.3	66	28.8	23.7	82.2	12.0	41.7
70	28.9	27.0	93.4	27.0	93.4	70	28.9	25.0	86.4	25.0	86.4
74	29.1	27.1	93.4	27.1	93.4	74	29.1	25.2	86.6	25.2	86.6
78	29.2	27.3	93.4	27.3	93.4	78	29.2	25.3	86.7	25.3	86.7
82	29.4	27.4	93.4	27.4	93.4	82	29.4	25.5	86.9	25.5	86.9
85.5	29.5	27.6	93.3	27.6	93.3	85.5	29.5	25.6	86.8	25.6	86.8
Stream widths greater than 0.6-ft depth											
6.2	25.2	0.0	0.0	0.0	0.0						
10	25.7	0.7	2.6	0.7	2.6						
14	26.0	5.2	20.0	5.1	19.5						
18	26.3	6.7	25.3	5.6	21.1						
22	26.6	9.4	35.2	6.0	22.6						
26	26.9	11.3	42.1	6.4	23.9						
30	27.1	18.4	67.9	8.7	32.2						
35	27.4	20.9	76.4	9.4	34.3						
38	27.5	22.0	79.9	11.3	41.1						
42	27.7	23.2	83.7	11.8	42.6						
46	27.9	24.9	89.3	24.9	89.3						
50	28.1	25.2	89.5	25.2	89.5						
54	28.3	25.4	89.7	25.4	89.7						
58	28.4	25.6	89.9	25.6	89.9						
62	28.6	25.7	89.9	25.7	89.9						
66	28.8	25.9	90.0	25.9	90.0						
70	28.9	26.0	90.0	26.0	90.0						
74	29.1	26.2	90.1	26.2	90.1						
78	29.2	26.3	90.1	26.3	90.1						
82	29.4	26.5	90.2	26.5	90.2						
85.5	29.5	26.6	90.0	26.6	90.0						