

PRAIRIE CREEK NEAR CANNON CITY



Prairie Creek at junction of Rice County 29 and 88 (PCC-10.1)

Location:

River mile: 30

U.S.G.S. quad: Cannon City; 44093-C2

Township: T110N R20W S14

Lat./Long: 44°20'/93°12'

Other info.:

Type: Small Stream near the headwaters

Stream Order: 2

Drainage area: 8 square miles

Riparian: Old field and hardwood forest

Instream: Sand and gravel in riffle and mud and silt in slow current

Gradient: 32 ft/mi



QUALITATIVE HABITAT EVALUATION INDEX (QHEI) SCORING FORM

Date 6/15/95 River Mile 30 Watershed Number _____
 Location PCC-10.1 U.S.G.S. quad Cannon City
 Township T110N R20W Section 12 Lat./Long. 44°22'93"11'30"

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Total QHEI

1. SUBSTRATE (Check ONLY two substrate TYPES). % Pool/Riffle substrates optional.

Type	Pool	Riffle	Type	Pool	Riffle	Quality
<input type="checkbox"/> Boulder (7)	_____	_____	<input checked="" type="checkbox"/> Gravel (5)	_____	_____	Check all that apply: <input checked="" type="checkbox"/> Silt covered (-1) <input checked="" type="checkbox"/> Silt free (1) <input type="checkbox"/> Boulders as slabs (1) <input checked="" type="checkbox"/> Embedded (-2)
<input type="checkbox"/> Cobble (6)	_____	_____	<input type="checkbox"/> Sand (4)	_____	_____	
<input type="checkbox"/> Hardpan (3)	_____	_____	<input type="checkbox"/> Bedrock (3)	_____	_____	
<input checked="" type="checkbox"/> Silt (3)	_____	_____	<input type="checkbox"/> Detritus (2)	_____	_____	
<input type="checkbox"/> Muck (2)	_____	_____	<input type="checkbox"/> Sludge (1)	_____	_____	
Comments _____						

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Substrate

2. INSTREAM COVER

Type (Check ALL that apply)	Amount (Check ONLY one)
<input checked="" type="checkbox"/> Undercut banks (1) <input checked="" type="checkbox"/> Overhanging vegetation (1) <input checked="" type="checkbox"/> Shallows (in slow water) (1) <input checked="" type="checkbox"/> Logs or woody debris (1)	<input checked="" type="checkbox"/> Extensive (7) <input type="checkbox"/> Moderate (5) <input type="checkbox"/> Sparse (3) <input type="checkbox"/> Nearly absent (1)
<input checked="" type="checkbox"/> Deep pools (1) <input type="checkbox"/> Oxbows (1) <input checked="" type="checkbox"/> Boulders (1) <input type="checkbox"/> Aquatic macrophytes (1)	
Comments _____	

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Cover

3. CHANNEL MORPHOLOGY (Check ONLY one under each category)

Sinuosity	Development	Channelization	Stability	Other
<input type="checkbox"/> High (4) <input checked="" type="checkbox"/> Moderate (3) <input type="checkbox"/> Low (2) <input type="checkbox"/> None (1)	<input type="checkbox"/> Excellent (4) <input type="checkbox"/> Good (3) <input checked="" type="checkbox"/> Fair (2) <input type="checkbox"/> Poor (1)	<input checked="" type="checkbox"/> None (4) <input type="checkbox"/> Recovered (3) <input type="checkbox"/> Recovering (2) <input type="checkbox"/> Recent or no Recovery (1)	<input type="checkbox"/> High (3) <input type="checkbox"/> Moderate (2) <input checked="" type="checkbox"/> Low (1)	<input type="checkbox"/> Impound <input type="checkbox"/> Islands <input type="checkbox"/> Leveed
Comments _____				

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Channel

4. RIPARIAN ZONE AND BANK EROSION *River right looking downstream*

(Check single most predominant, on each bank, under each category)

Riparian Width	Flood Plain Quality	Bank Erosion							
<table style="width: 100%;"> <tr> <th style="width: 50%;">L R</th> <th style="width: 50%;">L R</th> </tr> <tr> <td> <input type="checkbox"/> Extensive >100m (3) <input checked="" type="checkbox"/> Wide 50-100m (4) <input checked="" type="checkbox"/> Moderate 10-50m (3) <input type="checkbox"/> Narrow 5-10m (2) <input type="checkbox"/> Very Narrow 1-5m (1) <input type="checkbox"/> None (0) </td> <td> <input type="checkbox"/> Open pasture (1) <input type="checkbox"/> Fenced pasture (2) <input checked="" type="checkbox"/> Old field (3) <input type="checkbox"/> Rowcrop (1) <input type="checkbox"/> Conservation tillage (2) </td> </tr> </table>	L R	L R	<input type="checkbox"/> Extensive >100m (3) <input checked="" type="checkbox"/> Wide 50-100m (4) <input checked="" type="checkbox"/> Moderate 10-50m (3) <input type="checkbox"/> Narrow 5-10m (2) <input type="checkbox"/> Very Narrow 1-5m (1) <input type="checkbox"/> None (0)	<input type="checkbox"/> Open pasture (1) <input type="checkbox"/> Fenced pasture (2) <input checked="" type="checkbox"/> Old field (3) <input type="checkbox"/> Rowcrop (1) <input type="checkbox"/> Conservation tillage (2)	<table style="width: 100%;"> <tr> <th style="width: 50%;">L R</th> <th style="width: 50%;">L R</th> </tr> <tr> <td> <input type="checkbox"/> Forest, swamp (3) <input type="checkbox"/> Shrub (4) <input type="checkbox"/> Residential, Park (2) <input type="checkbox"/> Urban </td> <td> <input type="checkbox"/> None (5) <input type="checkbox"/> Little (4) <input checked="" type="checkbox"/> Moderate (3) <input checked="" type="checkbox"/> Heavy (2) <input type="checkbox"/> Severe (1) </td> </tr> </table>	L R	L R	<input type="checkbox"/> Forest, swamp (3) <input type="checkbox"/> Shrub (4) <input type="checkbox"/> Residential, Park (2) <input type="checkbox"/> Urban	<input type="checkbox"/> None (5) <input type="checkbox"/> Little (4) <input checked="" type="checkbox"/> Moderate (3) <input checked="" type="checkbox"/> Heavy (2) <input type="checkbox"/> Severe (1)
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Comments _____									

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Riparian

5. POOL/GLIDE AND RIFFLE/RUN QUALITY

Maximum Depth (Check 1)	Pool Cover (Check 1)	Overall Current Velocity (Check ALL that apply)	Morphology (Check 1)
<input type="checkbox"/> > 1m (3) <input type="checkbox"/> 0.7-1m (2) <input checked="" type="checkbox"/> 0.4-0.7m (1) <input type="checkbox"/> < 0.4m (0)	<input checked="" type="checkbox"/> Extensive (3) <input type="checkbox"/> Moderate (2) <input type="checkbox"/> Sparse (1) <input type="checkbox"/> Nearly absent (0)	<input type="checkbox"/> Torrential (-1) <input type="checkbox"/> Fast (1) <input checked="" type="checkbox"/> Moderate (1) <input checked="" type="checkbox"/> Slow (1)	<input checked="" type="checkbox"/> Pool width > riffle width (2) <input type="checkbox"/> Pool width = riffle width (1) <input type="checkbox"/> Pool width < riffle width (0)
Comments _____			

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Pool/Riffle

Riffle/Run Depth (Check 1)	Riffle/Run Substrate (Check 1)	Riffle/Run Substrate Quality (Check 1)
<input type="checkbox"/> Generally <10cm (1) <input checked="" type="checkbox"/> Generally >10cm Max <50 (2) <input type="checkbox"/> Generally >10cm Max >50 (3) <input type="checkbox"/> No riffle (0)	<input type="checkbox"/> Stable (cobble, boulder) (1) <input checked="" type="checkbox"/> Unstable (gravel, sand) (0)	<input checked="" type="checkbox"/> Embedded (0) <input type="checkbox"/> Not embedded (1)
Comments _____		

6. GRADIENT (ft/mi) _____

6

Gradient

7. DRAINAGE AREA (square mile) _____

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Drainage Area

PRAIRIE CREEK (PCC-10)

Junction of Rice County 29 and 88

Riparian: Forest, old field

Instream: gravel, sand, and silt

Macroinvertebrate Metrics

<u>Metric</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>Average</u>	<u>Overall Impact</u>
QHEI	64	61		62.5	
ICI	21	34		27.5	Moderate
Richness	15.5	13.5		14.5	Moderate
Diversity	3.1	2.8		2.95	Slight
Equitability	0.85	0.66		0.76	Non Impacted
Scraper/Filterer Ratio	0.15	0.98			
Tolerance Range	3-8	3-8		3-8	

Macroinvertebrate Taxa and Numbers of Individuals

[#] = Tolerance Values (Source is Illinois Environmental Protection Agency)

	<u>June 94</u>	<u>July 94</u>	<u>June 95</u>	<u>July 95</u>	<u>June 96</u>	<u>July 96</u>
Amphipods						
Gammarus [3]	2	6	39	32		
Hyalella [5]	-	3	-	-		
Leeches						
Hirudinea [8]	-	12	-	-		
Megaloptera						
Sialis [4]	-	1	-	-		
Snails						
Physa [9]						
Beetles						
Agabus [?]	1	-	-	-		
Deronectes [?]	3	-	-	-		
Mayflies						
Baetis [4]	1	2	24	1		
Heptagenia [3]	-	2	16	7		
Stenacron [4]	2	-	2	-		
Stenonema [4]	-	-	4	-		
Caddisflies						
Cheumatopsyche [6]	-	14	4	2		
Hydropsyche [5]	-	35	19	12		
Pycnopsyche [3]	-	-	-	3		
Neureclipsis [3]	-	-	3	-		
True Flies						
Simuliidae [4-6]	-	3	13	-		
Dicranota [4]	-	1	2	-		
Midges						
Brillia [?]	-	1	3	-		
Cricotopus [8]	4	-	2	1		
Microtendipes [6]	-	-	2	-		
Dicrotendipes [6]	1	6	-	-		
Polypedilum [6]	3	1	3	-		
Eukiefferiella [4]	-	-	12	-		
Tanytarsus [7]	-	-	3	1		
Parametriocnemus [4]	-	-	10	-		
Thienemannimyia [6]	9	5	2	-		
Phaenopsectra [4]	7	-	2	-		
Paratanytarsus [?]	1	1	-	-		
Stictochironomus [5]	1	-	-	-		
Paratanytarsus [?]	1	1	-	-		

Prairie Creek near Headwaters (PCC-10)

Site	NUMBER OF INSECTS BY TOLERANCE RATING									PERCENT IN TOLERANCE RANK									
	1	2	3	4	5	6	7	8	9	TOTAL	1	2	3	4	5	6	7	8	9
PCC 1994	0	0	10	13	39	42	0	16	0	120	0%	0%	8%	11%	33%	35%	0%	13%	0%
PCC 1995	0	0	100	32	31	26	4	3	0	196	0%	0%	51%	16%	16%	13%	2%	2%	0%
PCC TOTAL	0	0	110	45	70	68	4	19	0	316	0%	0%	35%	14%	22%	22%	1%	6%	0%

Percent Macroinvertebrates by Tolerance Rank



PRAIRIE CREEK NEAR CANNON CITY

Prairie Creek at this location is in the headwaters and is a 2nd order stream draining only about 8 square miles. The substrate is composed of sand and gravel in the riffle areas and silt in slow current. The sample site was changed from 1994 to 1995 due to vandalism to the artificial samplers. In 1995 the flow was very low for the second set and it was determined that the data collected was not sufficient to keep monitoring this site. The QHEI scored in the low 60's and the flow was so slow that it was impossible to determine.

The dominant species collected were mayflies, caddisflies, and midges. The ICI and richness indices showed moderate impact while the diversity index showed slight impact and the equitability index showed non impacted. The tolerance range was from 3 to 8 with 22% in rank 6, 22% in rank 5, 14% in rank 4, and 35% in rank 3. Filtering organisms dominated in 1994 and the ratio of scrapers to filterers was about even in 1996.

No chemistry assessment was completed for this site as it was terminated before any chem samples were taken. The flow was too low and inconsistent to justify continuation of monitoring this site.