

Use Attainability Analysis

for

WBID 0202 Crooked Creek

Submitted by

Missouri Department of Natural Resources Staff

To

Missouri Department of Natural Resources  
Water Protection Program

Date Received: September 22, 2006

**Field Data Sheets for Recreational Use Stream Surveys**

**Data Sheet A - Water Body Identification**

Water Body Name. (from USGS 7.5' quad)	<i>Crooked Cr</i>
8-digit HUC	<i>07116008</i>
Missouri WBID #:	<i>0202</i>
County:	<i>Linn</i>
Upstream Legal Description:	<i>10.48N.1E</i>
Downstream Legal Description:	<i>11.48N.1W</i>
Upstream Coordinates: (UGS 84, ddd.dddd)	
Downstream Coordinates: (UGS 84, ddd.dddd)	
Discharger Facility Name(s):	
Discharger Permit Number(s):	
Number of Sites Evaluated:	<i>4</i>
Name of Surveyor and Telephone Number:	<i>Mary Clark 573-526-1002</i>
Organization:	<i>MDNR</i>
Position:	<i>ESM</i>

**I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.**

Signed: *Mary Clark* Date: *9-22-06*

## Field Data Sheets for Recreational Use Stream Surveys

*EPE 5*

### Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID # <i>0202-01</i>		Site Location Description: <i>Crooked Creek at Hemmel rd + rt. mm <sup>Lincoln</sup></i>	
Site GPS Coordinates: <i>N 38.93023 / W 090.90146</i>		Facility Name:	
Date & Time: <i>10/1/06</i>		Permit Number:	
Personnel: <i>Mary Clark</i>		Weather Conditions for Past 7 days: <i>rain today</i>	
Current Weather Conditions: <i>cloudy rain</i>		Photo Ids: Upstream: _____ Downstream: _____ Other: _____	

#### Uses Observed\*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)				

#### Surrounding Conditions\*:

(Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> <i>suburban → rural</i> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

#### Evidence of Human Use\*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / A N Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

**Stream Morphology:**

**Upstream View Physical Dimensions:**

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 20	Length (ft): 100 to bend	Avg. Depth (ft): 0.54	Max. Depth (ft): 0.8
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Estimated (ft <sup>3</sup> /sec):	

**Downstream View Physical Dimensions:**

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): 15	Length (ft): 85 to under bridge	Avg. Depth (ft): 0.58	Max. Depth (ft): 0.9
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Estimated (ft <sup>3</sup> /sec): w/ stain 30 sec	

**Substrate\*:** (These values should add up to 100%.)

% Cobble	% Gravel	95 % Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

some filamentous  
turkey tail + deer hair

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> Other:	
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need Further analysis or that effect another use.

**I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.**

Signed: Mary Clark Date: 9-21-06

Organization: MONR Position: EC III

WBID 0202-01 - downstream



WBID 0202-01 – upstream



## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization (A separate data sheet must be completed for each site)

Missouri WBID #: <i>0202-02</i>	Site Location Description:	
Site GPS Coordinates: <i>not done</i>	<i>Hwy 61 Bridge over Crooked Cr.</i>	
Date & Time:	Facility Name:	
Personnel: <i>Neely Clark</i>	Permit Number:	
Current Weather Conditions: <i>raining</i>	Weather Conditions For Past 7 days: <i>rained last night</i>	
Photo Ids: Upstream:	Downstream:	Other:

#### Uses Observed\*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

*Didn't get out of car. Raining + traffic very heavy. Shoulder is narrow & it is too dangerous to get out near traffic. Banks on either steep access is dangerous especially since it is wet.*

Surrounding Conditions\*: (Mark all that promote or impede recreational uses. **Attach** photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

#### Evidence of Human Use\*:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / A N Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations **Map(s)**: Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.



WBID 0202-03 – downstream



WBID 0202-03 – upstream



Field Data Sheets for Recreational Use Stream Surveys

*FPE 6*

**Data Sheet B - Site Characterization**  
(A separate data sheet must be completed for each site)

Missouri WBID #: <i>0202-03</i>		Site Location Description:	
Site GPS Coordinates: <i>N38.43052/W90.93392</i>		<i>bridge on Hougelrd. over Crooked Creek</i>	
Date & Time: <i>10:55 9-11-06</i>		Facility Name:	
Personnel: <i>Mary Clark</i>		Permit Number:	
Current Weather Conditions: <i>cloudy - sprinkling</i>		Weather Conditions for Past 7 days: <i>sun, hot rain, cloudy today</i>	
Photo Ids: Upstream:	Downstream:	Other:	

**Uses Observed\*:**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input checked="" type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <i>farming, an alleyway, building house adjacent to cr.</i>	

**Evidence of Human Use\*:**

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / A N Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
C Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

\*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Stream Morphology:

Upstream View Physical Dimensions:

*dry above bridge pool*

<input type="checkbox"/> Riffle	Width (ft):	Length (A):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	width (ft):	Length (ft):	Avg. Depth (A):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (h): <i>5</i>	Length (A): <i>65</i>	Avg. Depth (ft): <i>1.5-2.0</i>	Max. Depth (ft): <i>&gt; 3ft</i>
<input type="checkbox"/> Flow	Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec): <i>1</i>	

Downstream View Physical Dimensions:

*Dry below bridge*

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <i>15</i>	Length (ft): <i>100+</i>	Avg. Depth (ft): <i>1.0</i>	Max. Depth (ft): <i>2.5</i>
<input type="checkbox"/> Flow	Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec):	

Substrate\*: (These values should add up to 100%.)

% Cobble	% Gravel	<i>95</i> % Sand	<i>5</i> % Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation\*: (note amount of vegetation or algal growth at the assessment site)

Water Characteristics\*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green <i>brown</i>	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other: <i>Tan/bro</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

"This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: *May Clark* Date: *9-21-06*  
 Organization: *MDNR* Position: *BSTA*

WBID 0202-04 – downstream



WBID 0202-04 - downstream



Field Data Sheets for Recreational Use Stream Surveys

*EPK 8*

**Data Sheet B - Site Characterization**  
(A separate data sheet must be completed for each site)

Missouri WBID #: <i>0202-04</i>		Site Location Description:	
Site GPS Coordinates: <i>N 38.94365/W 090.96827</i>		<i>Bridge over Crooked Cr. on 5th Rm Rd.</i>	
Date & Time: <i>11:30 9-11-06</i>		Facility Name:	
Personnel: <i>May Clark</i>		Permit Number:	
Current Weather Conditions: <i>Cloudy</i>		Weather Conditions for Past 7 days: <i>rain last night + this morning.</i>	
Photo Ids: Upstream:	Downstream:	Other:	

**Uses Observed\*:**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)				

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

**Evidence of Human Use\*:**

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / A N Tracks
<input checked="" type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

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*Isolated pool  
US + DS*

Stream Morphology:

*pic 190 US dry*

**Upstream View Physical Dimensions:**

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft): <i>1.0</i>	Max. Depth (ft): <i>1.9</i>
<input type="checkbox"/> Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec):	

*1.89 cut bank*

**Downstream View Physical Dimensions:**

*isolated pool dry*

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft): <i>0</i>	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <i>12</i>	Length (ft): <i>30</i>	Avg. Depth (ft): <i>0.8</i>	Max. Depth (ft): <i>1.5</i>
<input type="checkbox"/> Flow Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Estimated (ft <sup>3</sup> /sec):	

*1.89 cut bank*

**Substrate\*:** (These values should add up to 100%.)

% Cobble	<i>5</i>	% Gravel	<i>90</i>	% Sand	<i>5</i>	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (note amount of vegetation or algal growth at the assessment site)

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach additional comments (including information from interviews) to this form.

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**I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.**

Signed: *May Clark* Date: *9-21-06*  
 Organization: *MORR* Position: *ESTM*

WBID 0202-04 – upstream



WBID 0202-04 – upstream



# Crooked Creek -WBID 0202 (C - 7 miles) - Lincoln Count!



