

Big River Monitoring Protocol Implementation Plan for Park Units in the Southern Colorado Plateau Network

Standard Operating Procedure (SOP) #3

Photos

Version SCPN_Riparian_SOP3_20180930

Revision History Log:

Prev. Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #

This SOP is adopted from Northern Colorado Plateau Network’s SOP #5 Photos for Black Canyon of the Gunnison NP, Canyonlands NP, and Dinosaur NM, Version 3.00 (December 2015) in Perkins, D. W., M. Scott, G. Auble, M. Wondzell, C. Holmquist-Johnson, E. Wahlig, H. Thomas, and A. Wight. 2018. Big River Monitoring Protocol for the Park Units in the Northern Colorado Plateau Network, Version 1.00. Natural Resource Report NPS/NCPN/NRR—2018/1707. National Park Service, Fort Collins, Colorado.

This SOP provides instructions for taking photos at monitoring sites. Four types of photos are taken at each sentinel site: transect, feature, overview, and reference. Reference photos are used solely for future crews to locate things and may not be taken each year. All other photo types are considered repeat photos for monitoring changes to the sentinel site and will be taken every year. Photos can be one of the most effective methods of showing long-term change at a site.

One photo data sheet (Appendix 1) can be filled out for all photo types. Fill out the top portion of the data sheet:

Park ID: CACH, CHCU, AZRU, HUTR, SAPU

Transect ID: Transect.

Date: mm/dd/yyyy

Camera date/time checked: Go to the settings and date on the camera to ensure that the date on the camera matches today's date. Check the box after doing so.

1.1 Transect Photos

Take transect photos from each end of the transect while the meter tape and/or tagline is stretched out along the transect (Figure 1).

- A. Place pin flags at the ends of all transects.
- B. Label the chalkboard with the information below and lean it next to the rebar marking the end of a transect.

Transect # – #1-7

Direction Facing – RR $\Rightarrow$ RL would mean the photographer is looking from RR to RL,
US $\Rightarrow$ DS would mean the photographer is looking from upstream to downstream

Date – mm/dd/yyyy, e.g., 08/22/2010

Site – Park code (e.g., CACH)

If you are having difficulty propping up the chalkboard, use additional objects behind it rather than including field crew members or their body parts in the photos. You can also hang the chalkboard on vegetation.

- C. Stand at the headpin of a transect, set the camera body on top of a fully extended laser monopod (1.5 m in height) or a 1.5m reference height on your body and point the camera down the transect.
- D. Orient the camera so that it is rotated 90° and takes a vertical (portrait) format photo.
- E. Check to ensure that the chalkboard is visible at the bottom of the field of view and the tape or tagline is visible in the middle of the photo. If a transect ends in the water, take photo from the temporary rebar location in the water with the chalkboard propped on the downstream side of the transect.
- F. If dense vegetation is blocking the headpin photo, take the photo on the other side of the vegetation along the transect.
- G. If the transect is heavily vegetated, additional photos may be placed along the tagline at vegetated/unvegetated boundaries, which can be looking either direction. The goal is to have photo documentation of all of entire transect (Figures 1 & 2).

H. Take a photo and record the photo information on the Photo data sheet:

Photo type – Circle “T” for transect

Direction (facing) – Circle the photographer is looking, either RR for river right or RL for river left for transect photos

Photographer location - Record the location of the photographer, i.e. A1 at RHP (right head pin) (0 m), A1 at 25m

Subject location – Record what the photo was centered on, i.e. A1RHP (right head pin), G1LHP (left head pin)

Photographer – use first name initial and full last name

Photo # - see directions below

Close-Up and Replacement Boxes - not recorded for transect photos

Skipped Box – Check if photo deliberately not taken and enter a reason for skipping photo in the comment field

Comment – Record any comments unique to that photo

Recording the Digital File Name

- While the camera is in “play” mode, you will be able to view the number assigned to the photo. *Do not record this number.* This number changes when the photos are downloaded from the camera. Instead, use the following instructions to record the digital file name on the data sheet.
- The last 4 digits of the number displayed on the camera (those following the dash) represent a unique photo number.
- The template for the number you will record is *Pmdd9999*, where P=photos, *m* = month (Jan – Sept are coded 1-9, Oct = A, Nov = B, Dec = C); *dd* = day (01-31); and 9999 = the unique number of the photo. For example, photo 0300 taken on October 1 would be recorded as PA010300.

1.2 Feature Photos

These photos are to monitor the overall geomorphic feature (Figure 3).

- Make sure there are still pin flags at a meter mark near the water’s edge of the most upstream transect and the most downstream transect. This meter mark should be the same as was used in previous years if possible. Remove the pin flags on all other transects.
- On the furthest downstream end of the feature, stand at the pin flag on the streamward-end of the downstream-most transect. Looking upstream, center the camera on the pin flag at the streamward-end of the upstream -most transect. Photo needs to be taken at 1.5m height; can use a folding engineer ruler, an extended monopod, or a 1.5m reference height on your body. Orient the camera so that it takes a horizontal (landscape) format photo.
- On the furthest upstream end of the feature, stand at the streamward-end of the upstream-most transect and center the camera on the pin flag at the streamward end of the downstream -most transect (Figure 3). Orient the camera so that it takes a horizontal (landscape) format photo.

D. Record the photo information on the Photo data sheet:

Transect ID – 1-7

Date – Date(s) of photographs

Camera Date/Time Checked – check box after ensuring that you have gone into the camera settings and ensured that the date and time matches reality

Photo type – Circle “F” for feature

Direction (facing) – Circle the photographer is looking, either US for upstream or DS for downstream for feature photos

Photographer location - Record the location of the photographer, i.e. A1 at 15 m,

Subject location – Record what the photo was centered on, i.e. A3 at 25 m

Photographer – use first name initial and full last name

Photo # - see directions below

Close-Up and Replacement Boxes - not recorded for feature photos

Skipped Box – Check if photo deliberately not taken and enter a reason for skipping photo in the comment field

Comment – Record any comments unique to that photo

E. Repeat steps A-D on opposite bank

Recording the Digital File Name

- While the camera is in “play” mode, you will be able to view the number assigned to the photo. *Do not record this number.* This number changes when the photos are downloaded from the camera. Instead, use the following instructions to record the digital file name on the data sheet.
- The last 4 digits of the number displayed on the camera (those following the dash) represent a unique photo number.
- The template for the number you will record is *Pmdd9999*, where P=photos, *m* = month (Jan – Sept are coded 1-9, Oct = A, Nov = B, Dec = C); *dd* = day (01-31); and 9999 = the unique number of the photo. For example, photo 0300 taken on October 1 would be recorded as PA010300.

F. If the feature has changed and the picture cannot obtain an adequate picture of the feature go to a meter mark that is closest to the river and take the picture. Record the meter mark and take all future pictures from this location.

1.3 Overview Photos

These photos are taken from above the feature Figure 4.

- Initial Visit - The observer selects points where multiple features can be seen from one picture.
- Take photo and GPS photo location, this is the photopoint. More than one overview photo can be taken from a single photopoint.
- Take reference photos (see section 4.4 below) of the photopoint where the photographer was located.

4. Repeat visits. Print out the overall feature photos as well as the reference photos that showed the photopoints. Use the GPS and reference photos to get to the location.
5. Use the previous year's photo to center the photo on the same place. When possible the same time of day is desired.
6. Record the information below on the photo data sheet

Site – Park or site

Date – Date(s) of photographs

Camera Date/Time Checked – check box after ensuring that you have gone into the camera settings and ensured that the date and time matches reality

Photo type – Circle “O” for overview

Direction (facing) – Circle the photographer is looking, US for upstream, DS for downstream, RR for river right, RL for river left. More than thing can be circled, if US and RR was circled it would meant that the photographer was looking upstream and river right.

Photographer location - Record the photo point location, i.e. PP1, PP3

Subject location – Record the overview number, followed by the feature(s) that the photo captures (i.e., O3, O4, O5)

Photographer – use first name initial and full last name

Photo # - see directions below

Close-Up and Replacement Boxes - not recorded for overview photos

Skipped Box – Check if photo deliberately not taken and enter a reason for skipping photo in the comment field

Comment – Record any comments unique to that photo

Recording the Digital File Name

- a. While the camera is in “play” mode, you will be able to view the number assigned to the photo. *Do not record this number.* This number changes when the photos are downloaded from the camera. Instead, use the following instructions to record the digital file name on the data sheet.
- b. The last 4 digits of the number displayed on the camera (those following the dash) represent a unique photo number.
- c. The template for the number you will record is *Pmdd9999*, where P=photos, *m* = month (Jan – Sept are coded 1-9, Oct = A, Nov = B, Dec = C); *dd* = day (01-31); and 9999 = the unique number of the photo. For example, photo 0300 taken on October 1 would be recorded as PA010300.

1.4 Reference Photos

Take reference photos to document locations of all survey control, headpins, orientation pins, or other specific features or items that need to be located in the future (Figure 5). Include the cliff line, surrounding perennial vegetation, and/or other recognizable landmarks in the background to help the returning field crew relocate these points.

1. Label a chalkboard with the park code, site ID, specific description of what is being photographed (i.e. CP1, G2LHP, etc.), river right or left, and direction facing (upstream

[US], downstream [DS], right to left [R -> L], or left to right [L->R], etc.) (e.g., BLCA, EP, G1RHP, US). The date does not need to be included.

2. Place the chalkboard in a location where it will be easy to read in the photo.
3. Clearly mark the location of the control, headpin, etc. in relation to recognizable landmarks. This location should be marked by bright-colored pin flags, placed either in the soil at the point or held above the point where they will be visible in the photo. Unlike repeat photos, you may include anything in reference photos that may assist with re-locating the point (i.e., crew members, bright-colored flagging, etc.).
4. Take a photo and check the quality. If the photo is blurry or otherwise not acceptable, delete it and take another one.
5. Record the information below on the Photo data sheet.

Site ID – Site/transect/transducer/control point

Date – Date(s) of photographs

Camera Date/Time Checked – check box after ensuring that you have gone into the camera settings and ensured that the date and time matches reality

Photo type – Circle “R” for reference

Direction (facing) – Circle the photographer is looking, US for upstream, DS for downstream, RR for river right, RL for river left. More than thing can be circled, if US and RR was circled it would meant that the photographer was looking upstream and river right.

Photographer location - Record the photographer location, i.e. 10 m upstream of EP water transducer 7

Subject location – Record what the photo captures, i.e. A1RHP, EP water transducer 7

Photographer – use first name initial and full last name

Photo # - see directions below

Close-Up and Replacement Boxes - Check the box if it is a close-up photo or replaces a previous reference photo

Skipped Box – Check if photo deliberately not taken and enter a reason for skipping photo in the comment field

Comment – Record any comments unique to that photo

Recording the Digital File Name

- a. While the camera is in “play” mode, you will be able to view the number assigned to the photo. *Do not record this number.* This number changes when the photos are downloaded from the camera. Instead, use the following instructions to record the digital file name on the data sheet.
- b. The last 4 digits of the number displayed on the camera (those following the dash) represent a unique photo number.
- c. The template for the number you will record is *Pmdd9999*, where P=photos, *m* = month (Jan – Sept are coded 1-9, Oct = A, Nov = B, Dec = C); *dd* = day (01-31); and 9999 = the unique number of the photo. For example, photo 0300 taken on October 1 would be recorded as PA010300.



Figure 1. Transect photo.

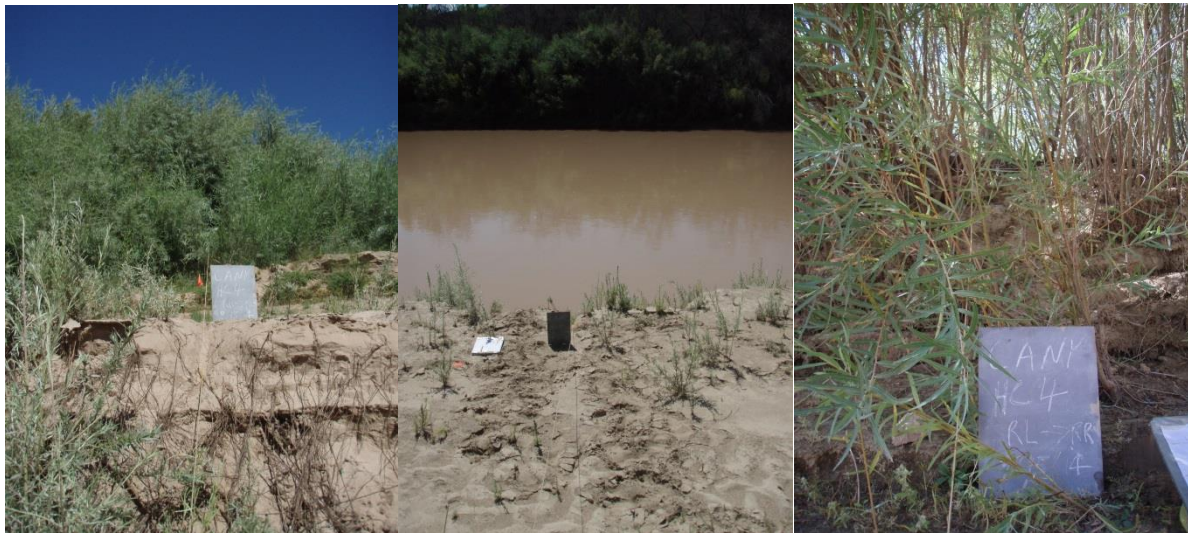


Figure 2. Example transect photos.



Figure 3. Example feature photo taken from the upstream most transect with the pin flag placed at the water's edge of the downstream most transect being the center of the photo.



Figure 4. Example overview photo taken from a location above the monitoring site.



Figure 5. Example reference photo of a headpin, pink flag is at headpin.



Figure 6. Example of reference photos of the location of Holeman Canyon Photopoint #1. The left photo is a close-up photo accompanied with notes that state the photon point is at the tip of the rock, while the right photo is the same rock with the photo taken at a downstream location looking upstream.

1.5 Other Photos

Crew members are encouraged to take other photos to document specific aspects of a reach or to provide scenic or fieldwork photos for publications or Facebook. Fill in the category, photographer, photo# and description on the bottom of the photo data sheet.

Appendix A. Data sheets.

Photos

Photos downloaded by:

Data entered by:

Data verified by:

SCPN Big River Monitoring

Big River Monitoring Protocol – SOP#5 – Version 2.00 – June 2014

Park: River: Site: __ Date: __/__/__ ➡ Camera date/time checked? ☐

LOCATION	PHOTOGRAPHER:	F → F transect #(s) - order # (F 3/4 - 2)	T → T transect # - order # (T 2 - 1)
		O → PP1, PP2, PP3	R → from river, 10m upstream
	SUBJECT:	Location being photographed	

KEY	T	F	O	R
Photo Type	Transect	Feature	Overview	Reference
Direction Facing	RR RL	US DS	US DS RR RL	US DS RR RL

P A 0 1 0 3 0 0		
1	2	3

1 Month: Jan-Sep = 1-9, Oct -Dec = A - C
 2 Day: 01-31 3 4-digit Camera Photo Sequence #

Photo Type	ALL	ALL	O R	ALL	ALL	R		ALL
Photo Type (circle one)	Direction facing (circle)	 Photographer Location	Subject Location	Photographer (first initial, last name)	Photo #	Close Up?	Replacement?	Comments
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	
T F O R	US DS RR RL					☐	☐	

OTHER PHOTOS:

Category (select one)	Photographer	Photo #	Description
Animals Cultural Disturbance Field work Plants Scenic Weather Other			

