

**UPPER CLARK FORK WORKING GROUP
OCTOBER WORKSHOP**

**OCTOBER 18, 2019
Delta Hotel, Helena, MT, 9AM-3PM**

I) Hosting entities

University of Montana: Maury Valett, Division of Biological Sciences
Montana Water Consortium, Montana Institute on Ecosystems
Montana DOJ, Natural Resource Damage Program: Brian Bartkowiak
Geum, Inc.: Tom Parker, Marisa Sowles

II) Workshop intent and participating personnel

The Upper Clark Fork Working Group (UCFWG) is a collaborative with the mission to ‘...facilitate, produce, analyze, and share science-based knowledge among key participants involved in the remediation, restoration, research, and monitoring of the Upper Clark Fork River and its tributaries’ (UCFRWG Strategic Plan 2019).

The UCFWG is currently composed of eleven participants representing eight institutions including educational, regulatory, private business, and non-governmental organizations. The UCFWG October 2019 Workshop in Helena introduced the UCFWG to a larger audience of participating individuals and programs with 30 individuals attending the meeting. A roster of associated personnel (attending or affiliated) is provided in Appendix A.

III) Action items and Workshop results

A) Communications

- 1) UCFWG Google Group
Google group for communications to be established for UCFWG and affiliates (Michelle Terwilliger, CREWS, UM)
- 2) On-line platform (web site)
Web-based interface (UCFWG.org) to be established as an easily accessible electronic platform for contact information, data access and sharing, and communications (AF Hauer, HM Valett)

B) Data compilation and sharing

- 1) UCFWG Data listing
Lists of variables and data either existing or currently being collected that was collected at the Workshop will be compiled and made available through the web interface described above (Claire Utzman, UM)
- 2) Research and monitoring matrix
An Excel ‘matrix’ spreadsheet has been generated by Geum & UM that lists tasks associated with the UCFWG’s objectives and the associated ‘hypotheses’ (i.e., current

understanding of water quality issues associated with specific objectives. The Matrix will be filled out by recipients, with focus on adding participant activities and perspectives including:

- Data sets that individuals wish to see generated to help inform research and understanding of the Clark Fork.
- Data individuals have available to place on the online GIS platform
- Additions to, or modifications of, existing 'hypotheses' addressing our general understanding of causes and consequences associated with specific goals/objectives
- Recommendations of actions that might improve the health of the Clark Fork based on your research and observations

Individual spreadsheets will be collated and compiled and placed on the web interface (HM Valett, AF Hauer, UM)

3) On-line Data Map and template

a) Clark Fork Basin On-line Map

T Parker & Geum Inc. have created a Clark Fork Basin On-line Map (CFBoM), a GIS-based electronic platform that will serve as a geographically explicit facility for housing data, or for access to appropriate data sets.

The Map can be accessed via:

<http://gis.geumserver.com/auth.php?id=5d9e40d8802cb&key=b39d90dd8b8950fc063bcb640fd7d7909e3e8151a8>.

b) data template

A protocol or template for data/metadata required to add material to CFBoM is being developed (Parker, Sowles, Valett, Hauer). Uploading protocols are forthcoming.

4) Macroinvertebrate data set compilation

Jose Sanchez (CREWS PhD student, MSU; Wyatt Cross, advisor) has compiled historical data listed by site/location and year into an excel workbook. One tab each for periphyton, nutrients, metals and chlorophyll, fish counts, insects and metals.

5) Working group identification

Working groups were proposed and assembled around six broad areas of interest.

Group composition (Table 1) is open to change.

HYDROLOGY	HABITAT
Brian Bartkowiak (NRDP)	Terry Short (USGS)
Alex Leone (CFC)	Taylor Gold Quiros (UM)
Jacob Prater (UM)	Alex Leone (CFC)
Maury Valett (UM)	Nathan Cook (FWP)
Chris Ellison (USGS)	Beau Downing (NRDP)
Joe Griffin (DEQ retired)	Tom Parker (Geum)
Colton Kyro (UM)	
Jim Ford (NRDP)	

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COMMUNICATION	FLINT CREEK
Tom Parker (Geum)	Randy Apfelbeck (DEQ)
Andrew Hauer ((UM)	Taylor Gold Quiros (UM)
Nathan Cook (FWP)	Eric Greene (UM)
Taylor Gold Quiros (UM)	Maury Valett (UM)
Madison Boone (MSU IoE)	Rob Roberts (TU)
Maury Valett (UM)	Brad Lehrmann (FWP)

Table 1: Participant association with identified 'working groups.

C) UCFWG and Social Networking Analysis (SNA)

UM CREWS administrator, Chelle Terwilliger, is executing a social science research project addressing collaborative science to include the UCFWG and other collaborators.

- 1) Participation will include answering a 20-minute survey each year
- 2) Participants will be accessed via email for permission
- 3) Results will be available to the community

APPENDIX A: UCFWG October 2019 Workshop attendees and associated personnel

UCFWG workshop Helena, Oct 18 2019			
WHO	FROM	email	Attending?
Apfelbeck, Randy	MT DEQ	rapfelbeck@mt.gov	yes
Barnhart, Elliott	USGS Helena	epbarnhart@usgs.gov	yes
Bartkowiak, Brian	MT NRDP	brain.bartkowiak@mt.gov	yes
Beatty, Cory	UM DeGrandpre Lab	corry.beatty@umontana.edu	no
Boone, Madison	MSU IoE	madison.boone@montana.edu	yes
Clark, Gregory Daniel	USGS Helena	gdclark@usgs.gov	yes
Cleasby, Tom	USGS Helena	tcleasby@usgs.gov	yes
Colman, Ben	FCFC UM Colman Lab	ben.colman@umontana.edu	yes
Cook, Nathan	MT FWP	Nathan.Cook@mt.gov	yes
DeArment, John	CFC	john@clarkfork.org	no
DeGrandpre, Michael D	UM DeGrandpre Lab	michael.degrandpre@mso.umt.edu	yes
Downey , Jerry	Metallurgical and Mater Eng, MTU	jdowney@mtech.edu	no
Downing, Beau	MT NRDP	beaudoening@mt.gov	no
Eldridge, Sara	USGS Helena	seldridge@usgs.gov	yes
Ellison, Christopher	USGS Helena	cellison@usgs.gov	yes
Erick Greene	UM UMBEL	egreene@mso.umt.edu	yes
Fischer, Andy	CFC	andy@clarkfork.org	no
Ford, Jim	MT NRDP	JFord@mt.gov	no
Gardner, Payton	UM Geosciences	payton1.gardner@umconnect.umt.edu	no
Gold Quiros, Taylor	UM Valett Lab	taylor.goldquiros@umconnect.umt.edu	yes
Griffin, Joe	DEQ retired	jgriffin.redmountain@gmail.com	yes
Hackathorn, Casey	Trout Unlimited	CHackathorn@tu.org	yes
Hauer, Andrew	UM CREWS	andy.hauer@umontana.edu	yes
Hornberger , Michelle	USGS Menlo Park	mhornber@usgs.gov	yes
Kron, Darrin	MT DEQ	dkron@mt.gov	no
Kyro, Colton	UM Valett Lab	colton.kyro@umconnect.umt.edu	yes
Leone, ALex	Clark Fork Coalition	alex@clarkfork.org	yes
Liermann, Brad	MT FWP	Liermann@blackfoot.net	no
Martin, Doug	MT NRDP	dmartin@mt.gov	no
McDowell, Will	Clark Fork Coalition	will@clarkfork.org	no
Mullen, Greg	MT NRDP	gmullen@mt.gov	no
Naughton, Joe	RESPEC	Joe.Naughton@respec.com	yes
Parker, Tom	Geum Inc	tparker@geumconsulting.com	yes
Prater, Jacob	UM Valett Lab	jacob.prater@umconnect.umt.edu	no
Rouse, David	US Fish and Wildlife Service	david_rouse@fws.gov	yes
Sanchez, Jose	MSU Dept of Ecology	js16686@georgiasouthern.edu	yes
Selch, Trevor	MT FWP	tselch@mt.gov	no
Short, Terry	USGS Menlo Park	tmsshort@usgs.gov	yes
Sowels, Marisa	Geum Inc	msowles@geumconsulting.com	yes
Sullivan, Sean	Rithron Associates, Inc	ssullivan@rithron.com	no
Terwilliger, Chelle	CREWS UM EPSCoR	michelle.terwilliger@umontana.edu	yes
Valett, Maury	UM Valett Lab	maury.valett@umontana.edu	yes
Walker, Rob	Chemistry MSU	rawalker@montana.edu	yes
Wisotzkey, Chelsea	FCFC UM Colman Lab	chelsea.wisotzkey@umconnect.umt.edu	yes
Young, Fischer	UM DeGrandpre Lab	fischer.young@umconnect.umt.edu	no