Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 6 Aug 2020

Time: Arrived: 11:15 Departed: ~3 Collectors: Alisha, Shannon Taylor, Deb, Sarah, Mikey, Julia, Scott, Karen

Stream: Wind Cave **Location Description:**

Coordinates: N W - **Datum:**

Elevation: ft Site name on GPS:

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	3.0	°C
Barometric pressure	555.2	mmHg
DO	84.0	% saturation
DO	11.32	mg/L
Specific conductivity (SPC)	153.8	µS/cm
Conductivity	89.1	µS/cm
pH	8.53	
ORP	-7.5	mV
Air temp		°C

Last calibrated: 8/1 DO: 8/6

Photos taken: Site ✓ Temp Probe Not found

Weather: Sunny, breezy

Substrate type: Bedrock, cobble, boulders

3 Surbers collected: Deb collected

Biofilm rank: Little Medium (Green)

Microbes collected: No

Slope 25°

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	1	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	1	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	12	
Consolidation of substrate	~~Lots of sizes,~~ tightly packed (2)	Moderately packed, ~~some size~~ overlap (4)	Mostly loose, ~~not much overl~~ap (6)	Totally loose, easily moved (8)	6	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	1	

Deployed Temp logger number: 20155969 Coordinates: UTMs: N W -

Retrieved Temp logger number: Not found Notes:

Description of logger location: Logger placed in usual pool below mouth of cave

Photo numbers of temp logger placement:

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	1000	1000	1000

Nutrient samples collected: ✓ 1-7 LT 27 Shannon

DOC collected: Taylor

Chl a collected: ✓

Algae collected: ✓ By Shannon

120
4a
8 4

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 6 Aug 2020

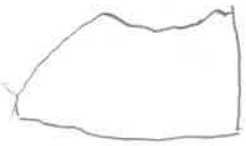
Stream Profile: edge (left edge) *looking down stream* (right edge)

Distance (cm)	0	75	120	186					
Depth (cm)	5	2.5	1	0					
Time (sec)	9	7	8	0					

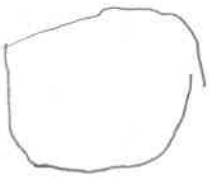
5 yd

3 Rock tracings (chlorophyll a):

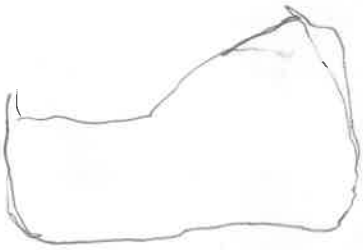
#1



#2



#3



Notes:
Lednia adult on cave wall. The whole team is here today to train. Could not find temp logger despite a lot of searching. 1 Surber collected in cave mouth in moss. Other below mouth of cave. Karen is collecting samples for food web (isotopes + gut contents). Taylar is collecting microbe samples. Shannan is collecting Diatoms

Julian Olson
Mikey Castillon

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 7 Aug 2020

Time: Arrived: 1:49 Departed: 4:14 Collectors: Scott, Julia, Lusha, Karen, Sarah + Mikey

Stream: Grizzly **Location Description:** Below Moose Divide

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	14.0	°C
Barometric pressure	536.0	mmHg
DO	78.3	% saturation
DO	8.08	mg/L
Specific conductivity (SPC)	14.5	µS/cm
Conductivity	11.4	µS/cm
pH	8.28	
ORP	-38.8	mV
Air temp		°C

Last calibrated: 8/1 DO: 8/8

Photos taken: Site ✓ Temp Probe _____

Weather: Sunny, breezy

Substrate type: Cobble, gravel, sand

3 Surbers collected: 3x

Biofilm rank: (Little) Medium Green

Microbes collected: No

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	2	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	2	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	6	
Consolidation of substrate	~~Lots of sizes~~, tightly packed (2)	Moderately packed, ~~some size overlap~~ (4)	Mostly loose, ~~not much overlap~~ (6)	Totally loose, easily moved (8)	6	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	3	moss growing on edges

Deployed Temp logger number: 20155864 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20571722 Notes: Easy to find

Description of logger location: Upstream of drop-off under pile of rocks

Photo numbers of temp logger placement: _____

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	800	800	800

Nutrient samples collected: 2x

DOC collected: —

Chl a collected: ✓ 3x

Algae collected: ✓ 3x

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: _____

Stream Profile: (left edge) *looking down stream* (right edge)

Distance (cm)	56	80	62	→ 3	different spots	along	reach		
Depth (cm)	6.5	10	4						
Time (sec)	9.76	13.39	12.39						

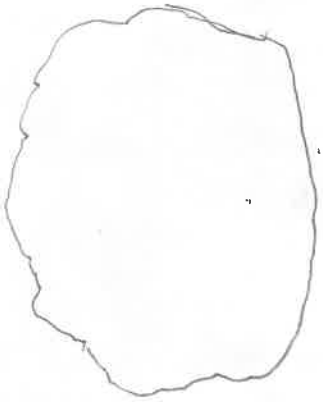
Distance 6.8

Ball floated down middle of stream so use mean velocity

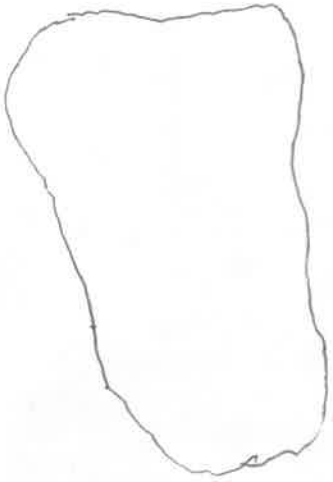
3 Rock tracings (chlorophyll a): (Scott H.)

#1

#2



#3



Notes: Some of stream highly braided. Recorded flow in reach where they all join (only one channel). Scott scrubed rocks. Lots of fine organic matter in stream + a lot of sand in stream. Snowfield smaller than previous years and flow appears lower. Granite geology. This year has been dry and warm.

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 8 Aug 2020

Time: Arrived: 9:30 Departed: _____ Collectors: Dusha, Scott, Sarah, Karen, Mikey + Julia

Stream: Paintbrush RG **Location Description:** Near air camp

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	6.2	°C
Barometric pressure	548.5	mmHg
DO	76.8	% saturation
DO	9.96	mg/L
Specific conductivity (SPC)	32.3	µS/cm
Conductivity	20.8	µS/cm
pH	8.46	
ORP	8.2	mV
Air temp		°C

Last calibrated: 8/1 DO: 8/7

Photos taken: Site ____ Temp Probe ____

Weather: Sunny, calm, beautiful

Substrate type: Boulder, cobble

3 Surbers collected: 3x

Biofilm rank: (Little) Medium Green

Microbes collected: No

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	2	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	3	Probably snow covered till 10am?
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	12	
Consolidation of substrate	~~Lots of sizes~~, tightly packed (2)	Moderately packed, ~~some size~~ overlap (4)	Mostly loose, ~~not much overlap~~ (6)	Totally loose, easily moved (8)	6	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	1	moss on edge + in main channel

Deployed Temp logger number: 20155865 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20475520 Notes: Right where we left it

Description of logger location: In green spot below cascade + giant boulder, upstream of spruce

Photo numbers of temp logger placement: _____

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	1600	1400	1400

Nutrient samples collected: ✓

DOC collected: —

Chl a collected: 3x

Algae collected: 3x

90
13

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: _____

Stream Profile: (left edge) *looking down stream* (right edge)

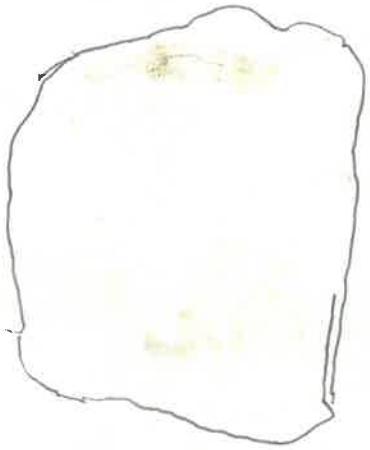
Distance (cm)	103	103	103	188	→	Distance	across		
Depth (cm)	7	6	7	8	8	→	stream	(riffle	
Time (sec)	22.25	16.12	16.95	21.8	→	Velocit	→ 4	reps	on reach

Distance 6.3 yds

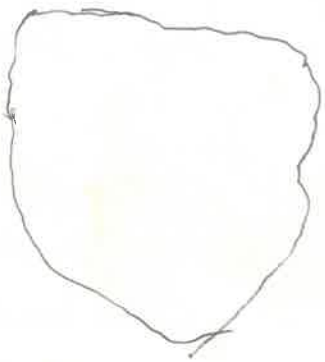
measured flow in one spot several times because of narrow channel

3 Rock tracings (chlorophyll a):

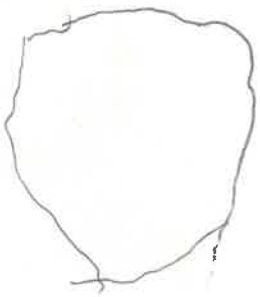
#1



#2



#3



Notes: Scott + I looked upstream. Probably a bit of snowmelt entering stream too. Stream goes underground (rocks) above where we sample, but is exposed on ridge. Lots of moss + grass growing in streambed. We're wondering if stream has became intermittent. Little biofilm in stream. Only blackflies + midges in Surbers. Lots of Hydrurus foetidus in stream + lots of midges living in it. Stream seems warmer than I remember. Found 1 Lednia above Cascade ready to emerge + a few caddis in Cascade (faster water)

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 8 Aug 2020

Time: Arrived: 3 pm Departed: 4:30 Collectors: Gusher, Scott, Karen, Julia, Mikey + Sarah

Stream: The Gusher (or Mt St. John) **Location Description:** Below Avalanch field at trail

Coordinates: N 43.79361 W - 110.77840 **Datum:** NAD83

Elevation: 2537 ft Site name on GPS: Gusher

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	4.7	°C
Barometric pressure	565.3	mmHg
DO	81.9	% saturation
DO	10.49	mg/L
Specific conductivity (SPC)	28.3	µS/cm
Conductivity	17.3	µS/cm
pH	8.44	
ORP	3.6	mV
Air temp	—	°C

Last calibrated: 8/1 DO: 8/8

Photos taken: Site ✓ Temp Probe Scott

Weather: Sunny, breezy

Substrate type: Cobble, Boulders

3 Surbers collected: 3x

Biofilm rank: (Little) Medium Green

Microbes collected: —

Slope ~ 23°

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	2	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	2	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	24	
Consolidation of substrate	~~Lots of sizes~~, tightly packed (2)	Moderately packed, ~~some size overlap~~ (4)	Mostly loose, ~~not much overlap~~ (6)	Totally loose, easily moved (8)	4	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	1	

Deployed Temp logger number: 20155967 Coordinates: UTMs: N 43.79361 W - 110.77846

Retrieved Temp logger number: Never deployed before Notes: secured w/ willow branch

Description of logger location: on side of stream below rock face on opposite side

Photo numbers of temp logger placement: on Scott's phone

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	1000	750	1000

hole in filter

Nutrient samples collected: ✓ 2x

DOC collected: —

Chl a collected: 3x

Algae collected: 3x

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date:_____

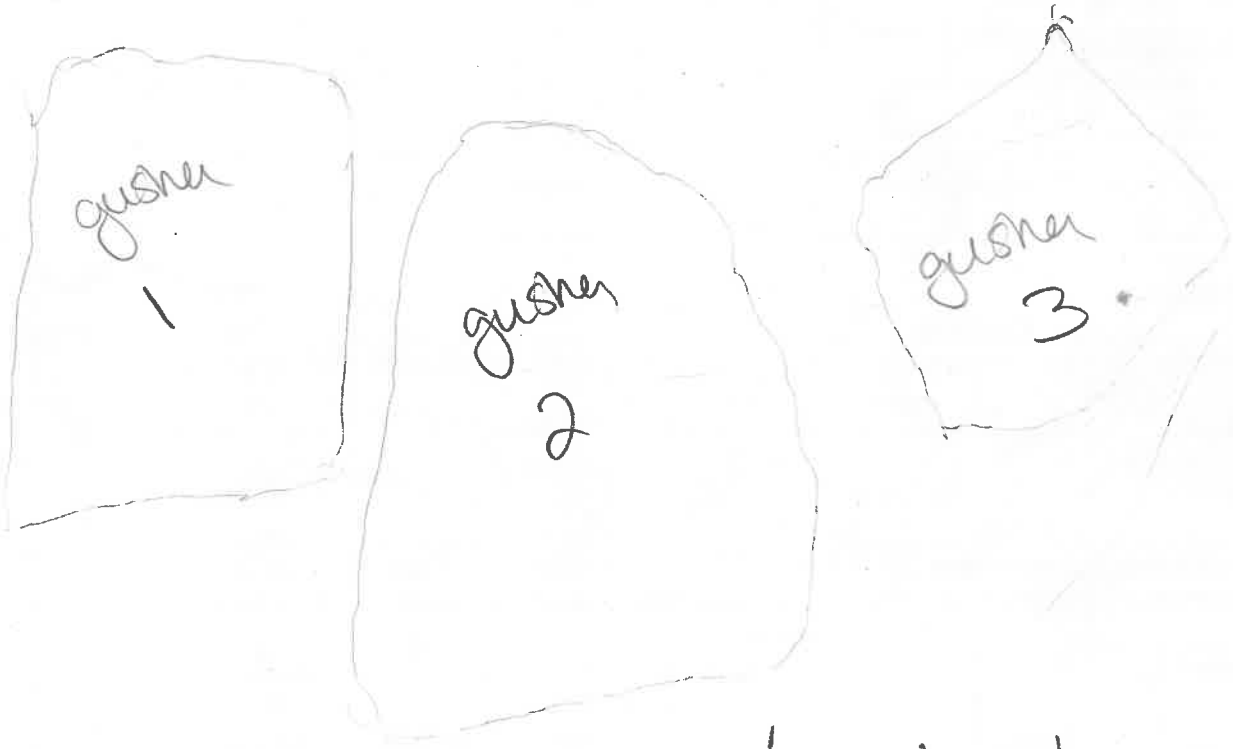
Stream Profile: (left edge) *looking down stream* (right edge)

Distance (cm)	6.0	———	———	7 yd wide					
Depth (cm)	16 cm								
Time (sec)	6.69	6.95	2.5						

4.9 yds

3 Rock tracings (chlorophyll a):

① ② ③



Notes: Lots of water! Zapada + Lednia here! Steep. Need to cross creek so take Texas! Flow difficult to measure. We threw branches in stream and recorded time to flow down. Only 1 channel Very steep.

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 9 Aug 2020

Time: Arrived: 11:15 Departed: 1:15 Collectors: Lusha, Scott, Karen, Mikey, Julia + Mad.

Stream: Delta Lake Inlet **Location Description:** _____

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	2.3	°C
Barometric pressure	551.0	mmHg
DO	82.4	% saturation
DO	11.26	mg/L
Specific conductivity (SPC)	8.1	µS/cm
Conductivity	4.6	µS/cm
pH	9.43	
ORP	3.0	mV
Air temp	—	°C

Last calibrated: 8/1 DO: 8/9

Photos taken: Site ✓ Temp Probe _____

Weather: Sunny, calm

Substrate type: Cobble

3 Surbers collected: 3x

Biofilm rank: (Little) Medium Green

Microbes collected: None

17° Slope

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	3	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	4	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	18	
Consolidation of substrate	Lots of sizes, tightly packed (2)	Moderately packed, some size overlap (4)	Mostly loose, not much overlap (6)	Totally loose, easily moved (8)	8	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	2	

Deployed Temp logger number: 20224649 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20571725 Notes: logger was pushed out of plung pool

Description of logger location: Moved to below plung pool to other side of stream b/w log + boulder

Photo numbers of temp logger placement: _____

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	400	300	300

Nutrient samples collected: 2x

DOC collected: —

Chl a collected: 3x

Algae collected: 3x

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: _____

edge starts at 0

Stream Profile: (left edge) middle *looking ~~down~~ up stream* left middle (right edge)

~~Distance~~ Depth (cm)	32.5	26.5	23	14	11	7		total width 77 in
~~Depth (cm)~~ Distance inches	14	24	37	49	54	72		
Time (sec)	4.56	3.83	6.42	7.2	10.53	7.45		

right middle

5.7 yd distance (reach)

3 Rock tracings (chlorophyll a):

Notes: New NPS logger installed. Flow? Ask Simone. Found Ledria, Zapada large Megarcys, Rhyacophila + Mayflies. Midges very abundant. Stream appears more scoured in places this year. NPS walked on trail to Delta. Seems like less moss in main channel, but moss abundant on margins.

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 10 Aug 2026 Ricky Ristau

Time: Arrived: 11:00 am Departed: 1:07 Collectors: Alisha, Scott, Karen, Madi, Mickey, Julia

Stream: Claudveil Dome **Location Description:** Below Middle Teton Site

Coordinates: N 43.72556 W - 110.79607 **Datum:** NAD83

Elevation: 2847 ft m Site name on GPS: Claudveil Dome

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	3.0	°C
Barometric pressure	541.7	mmHg
DO	77.7	% saturation
DO	10.46	mg/L
Specific conductivity (SPC)	5.4	µS/cm
Conductivity	2.7	µS/cm
pH	9.6	
ORP	17.9	mV
Air temp	—	°C

Last calibrated: 8/9 DO: 8/10

Photos taken: Site ✓ Temp Probe Scott

Weather: Sunny, light breeze

Substrate type: Cobble, sand

3 Surbers collected: 3x

Biofilm rank: (Little) Medium Green

Microbes collected: —

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	2	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	4	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	24	
Consolidation of substrate	~~Lots of sizes~~, tightly packed (2)	Moderately packed, ~~some size overlap~~ (4)	Mostly loose, ~~not much overlap~~ (6)	Totally loose, easily moved (8)	4	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	4	Moss growing in slower water

Deployed Temp logger number: 10972588 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20174692 Notes: _____

Description of logger location: In pool, above giant boulder at base, near up boulder

Photo numbers of temp logger placement: Scott

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	1200	600	1200

Nutrient samples collected: 2x

DOC collected: —

Chl a collected: 3x

Algae collected: 3x

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date:_____

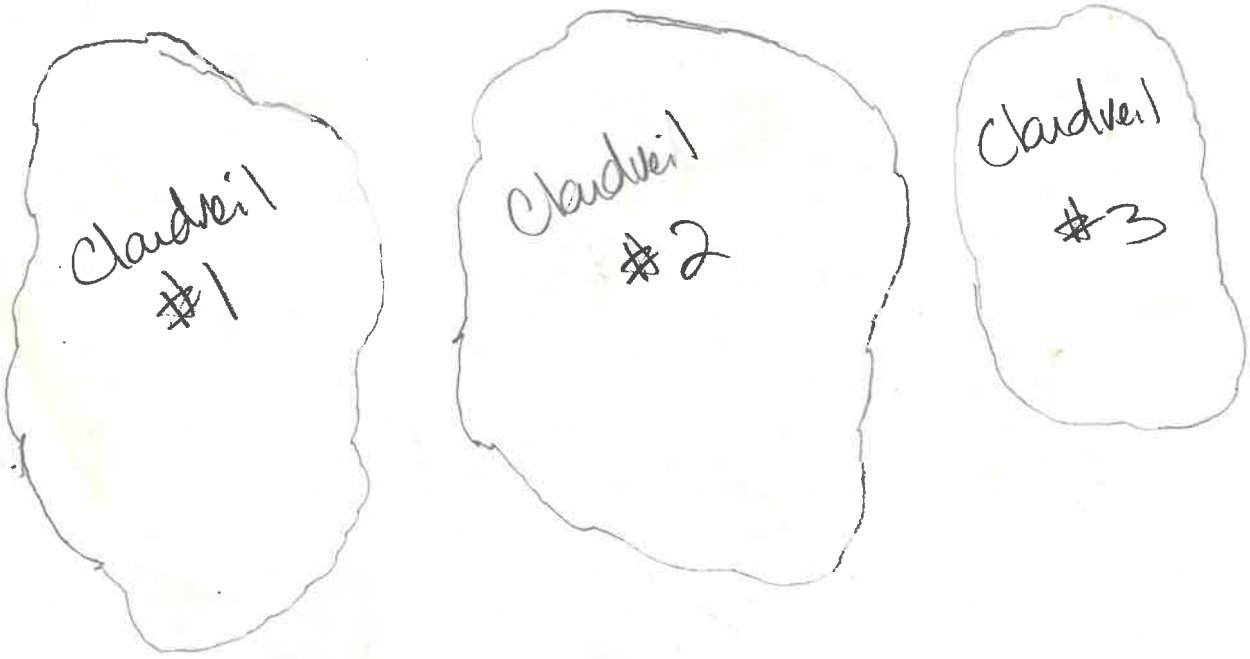
Total stream width = 6.9 yd

Stream Profile: (left edge) *looking ~~down~~ up stream* (right edge)

Distance (cm)	←	left	→	←	right →				
Depth (cm)	4.5	6	3.5	1	6				
Time (sec)	12.24	7.43	6.74	5.36 →					

Reach = 6.6 yds

3 Rock tracings (chlorophyll a):



Notes:
The area we sampled last year by the giant boulder is still snow covered (although last year that was the only spot that was open). This year, stream is open above giant boulder. Very little algae on rocks, perhaps melted out recently. Jednia here. Karen is doing a full walk up here

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 10 Aug 2020

Time: Arrived: 1:30 Departed: 3 pm Collectors: Lusha, Scott, Ricky

Stream: Middle Teton **Location Description:** Above meadows

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	3.9	°C
Barometric pressure	536.5	mmHg
DO	76.7	% saturation
DO	10.06	mg/L
Specific conductivity (SPC)	3.6	µS/cm
Conductivity	2.1	µS/cm
pH	8.16	
ORP	42.6	mV
Air temp	—	°C

Last calibrated: 8/9 DO: 8/10

Photos taken: Site ✓ Temp Probe _____

Weather: Sunny, light breeze

Substrate type: Cobble, boulder

3 Surbers collected: 3x

Biofilm rank: (Little) Medium Green

Microbes collected: —

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	3	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	4	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	24	
Consolidation of substrate	~~Lots of sizes,~~ tightly packed (2)	Moderately packed, ~~some size overlap~~ (4)	Mostly loose, not much overlap (6)	Totally loose, easily moved (8)	6	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	1	Moss in stream

Deployed Temp logger number: 10767841 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20571721 Notes: Right where we left it

Description of logger location: Where boulder face is closest to stream

Photo numbers of temp logger placement: _____

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	800	600	600

Nutrient samples collected: 2x

DOC collected: —

Chl a collected: 3x

Algae collected: 3x

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date:_____

9.6 yds wide

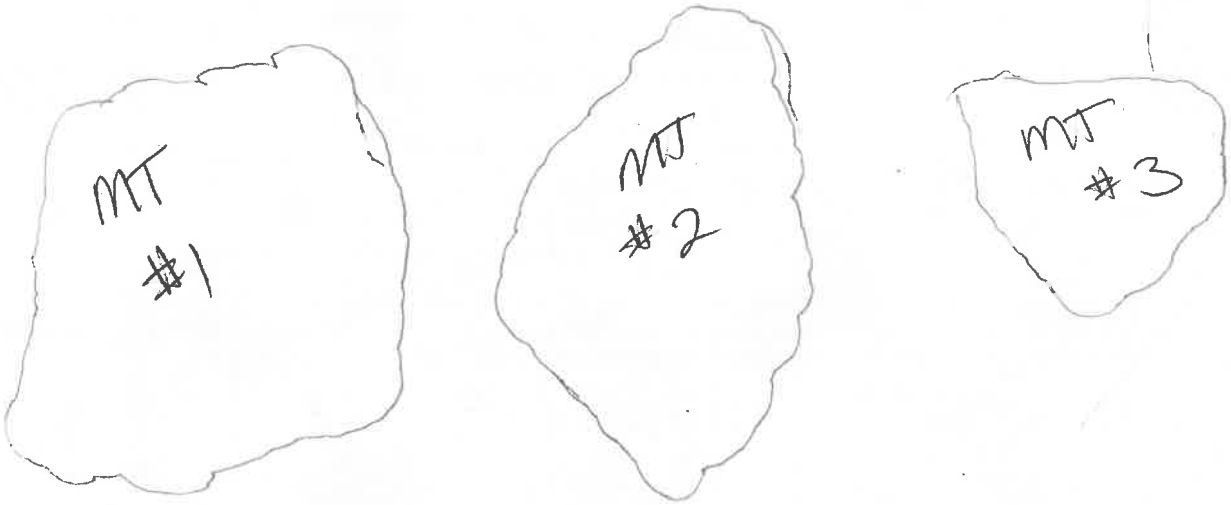
Stream Profile: (left edge) *looking ~~down~~ up stream* (right edge)

Distance (~~cm~~ yds)	4.7	6.8	9.2	9.2					
Depth (cm)	5.75	5.40	5.0	10.5					
Time (sec)	5.74	5.43	2.83	2.67					

left middle Right Reach = ~~7.3~~ yds

3 Rock tracings (chlorophyll a):

Reach=6.0 5.5 <5.2> yds



Notes: Rocky TSS
MT#1: 800mL (blue)
MT#2: 600 mL
MT#3:

Lots of moss in stream channel. Little algae visible. Good flow. Estimated flow using flowers. Nice day.

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 11 Aug 2020

Time: Arrived: 11:45 Departed: 1:19 Collectors: Lusha, Scott, Julia, Karen + Mikey

Stream: Skillet Glacier **Location Description:** Below Skillet Glacier

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	8.0	°C
Barometric pressure	551.6	mmHg
DO	81.7	% saturation
DO	9.67	mg/L
Specific conductivity (SPC)	3.6	µS/cm
Conductivity	2.4	µS/cm
pH	8.86	
ORP	9.8	mV
Air temp		°C

Last calibrated: 8/9 DO: 8/11

Photos taken: Site ~~Yes~~ Temp Probe Scott

Weather: Sunny, calm

Substrate type: Cobbles, Boulders

3 Surbers collected: 3x

Biofilm rank: Little Medium (Green)

Microbes collected: —

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	2	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	2	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	24	
Consolidation of substrate	Lots of sizes, tightly packed (2)	Moderately packed, some size overlap (4)	Mostly loose, not much overlap (6)	Totally loose, easily moved (8)	4	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	2	No moss, lots of algae

Deployed Temp logger number: 20416499 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20475521 Notes: moved from original location

Description of logger location: Below large boulder on North side of stream

Photo numbers of temp logger placement: Scott

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	600	600	600

Nutrient samples collected: 2x

DOC collected: —

Chl a collected: 3x

Algae collected: 3x

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date:_____

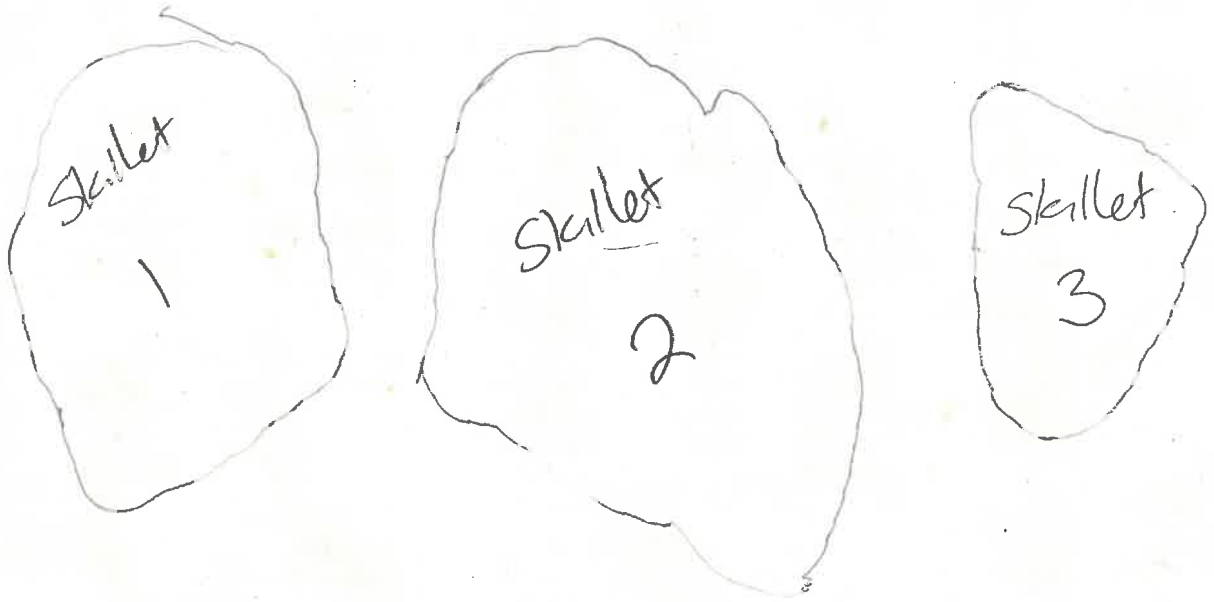
width = 96 inches

Stream Profile: (left edge) *looking down stream* (right edge)

Distance (cm)	57	40	21	0					
Depth (cm)	6.2	5.5	4.5						
Time (sec)	5.7	8.5	7.7						

Reach = 6.7 yds

3 Rock tracings (chlorophyll a):



Notes: No snow around site today. Temperature lower had moved and stream channel appeared to shift south. Good flow. Blackflies, Zedria, Rhyacophila in stream + lots of midges. Used Monkey flowers for flow and that worked great. Use spot that was a single channel.

Teton Stoneflies ~~2018~~ 2020
WYNDD-Tronstad 307-766-3115

Date: 9 August 2020

Time: Arrived: ~~1245~~ 12:45 pm Departed: 3:00pm Collectors: Deb, Lydia, Taylor, Shannon

Stream: S. Cascade icy seep **Location Description:** top of South Cascade Canyon ~70-m reach near source

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____ (same - long-term site)

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	0.3	°C
Barometric pressure	525	mmHg
DO	105	% saturation
DO	10.5	mg/L
Specific conductivity (SPC)	108	µS/cm
Conductivity	57	µS/cm
pH	8.4	
ORP	n/a	mV
Air temp		°C

Last calibrated: yesterday DO: today (AM

Photos taken: Site ✓ Temp Probe _____

Weather: sunny, breezy

Substrate type: limestone cobbles, some sandstone (thx to Shannon!)

3 Surbers collected: ✓

Biofilm rank: (Little) Medium Green

Microbes collected: ✓ (Lydia)

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	1	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	4	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	6	
Consolidation of substrate	Lots of sizes, tightly packed (2)	Moderately packed, some size overlap (4)	Mostly loose, not much overlap (6)	Totally loose, easily moved (8)	4	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	4	SNOW likely only recently melted & exposed stream to light

Deployed Temp logger number: 10972590 Coordinates: UTMs: N _____ W - _____

2018 #: 20174697 (see notes)

Retrieved Temp logger number: _____ Notes: _____

Description of logger location: Exact same as 2018 - in line w/ d/s side of 1st bedrock outcropping on River Right

Photo numbers of temp logger placement: no (phone dying) but ↑ (pix from 2018)

Suspended Solids: (Lushas ashed filters)

Filter number	1	2	3
Volume filtered (mL)	900	600	600

(filters crudded in between 800-1000 mL - so estimated)

Nutrient samples collected: N=3

DOC collected: N=3

Chl a collected: ✓ N=3

Algae collected: N=3

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 9 Aug 2020

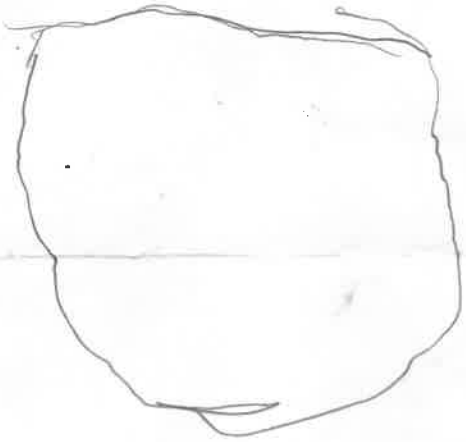
Stream Profile: (left edge) *looking down stream* (R) (right edge)

Distance (cm)	∅	20	40	60	80	100	130		
Depth (cm)	∅	4	10	7	3	5	∅		
Time (sec)									

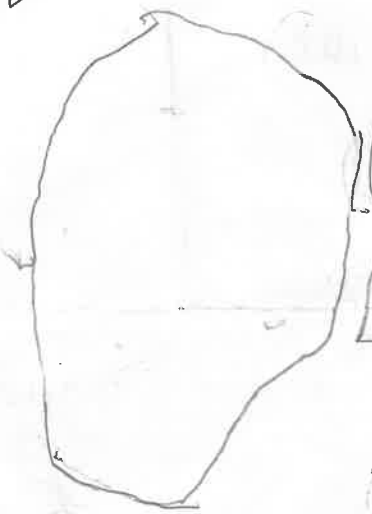
stream reach length for velocity 8 meters → 18.5 sec
6.2 meters → 13.2 sec
(did 2X)
↳ take avg.

3 Rock tracings (chlorophyll a):

#1



#2



#3

Notes:

(1) We tried but were not able to un-bury the datalogger from 2016 (@source). There is a photo... We did get the logger from 2018.

(2) Lusha's ashed filters could not withstand the pressure after about 600 mL thru (but all 3 survived!)

Teton Stoneflies ~~2018~~ 2020
WYNDD-Tronstad 307-766-3115

Date: 10 Aug 2020

Time: Arrived: 12:45 pm Departed: 2:45 pm Collectors: Deb, Lydia, Taylor, Shannon

Stream: S. Fork Teton Creek - snowmelt **Location Description:** same ol': upper AIC Basin

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	13.9	°C
Barometric pressure	534	mmHg
DO	~~109~~ 105	% saturation
DO	7.6	mg/L
Specific conductivity (SPC)	59	µS/cm
Conductivity	47	µS/cm
pH	7.8	
ORP	n/a	mV
Air temp	20.5	°C

Last calibrated: 2 days ago DO: this morning

Photos taken: Site ____ Temp Probe ____

Weather: sunny, light breeze, warm

Substrate type: lg gravel, cobbles

3 Surbers collected: ✓

Biofilm rank: Little (Medium) Green

Microbes collected: ✓ (Lydia)

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	2	(more like 1.5, ha)
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	2	
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	12	could be 14 25%
Consolidation of substrate	Lots of sizes, tightly packed (2)	Moderately packed, some size overlap (4)	Mostly loose, not much overlap (6)	Totally loose, easily moved (8)	5	in-between!
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	3	

Deployed Temp logger number: 20571724 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20475519 Notes: One of the "hider" rocks on top washed away, so was very easy to see - but NO apparent issues!

Description of logger location: same ol': d/s of large boulder, River Right, just u/s of main sample site 1-2 m

Photo numbers of temp logger placement: _____

* Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	~~150~~	150	150

* See notes

All filters in foil cracked during filtering. We used the last remaining backups.

Nutrient samples collected: N=3

DOC collected: N=3 (to Lydia)

Chl a collected: N=3

Algae collected: N=3 (to Shannon)

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 10 Aug 2020

Stream Profile: (left edge) *looking down stream* R (right edge)

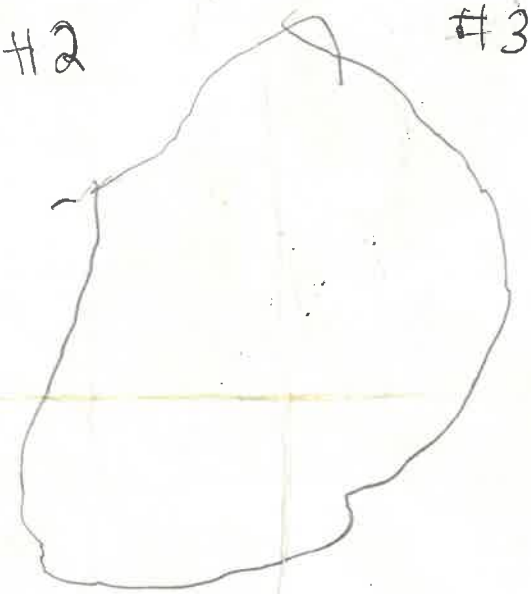
Distance (cm)	Ø	20	50	90	100	120	142		
Depth (cm)	Ø	10	12	9	6	5	3		
Time (sec)									

Stream reach length measured speed of ball
5.7 m → 15.2 sec
8 m → 26.4 sec
8.7 m → 35.8 sec

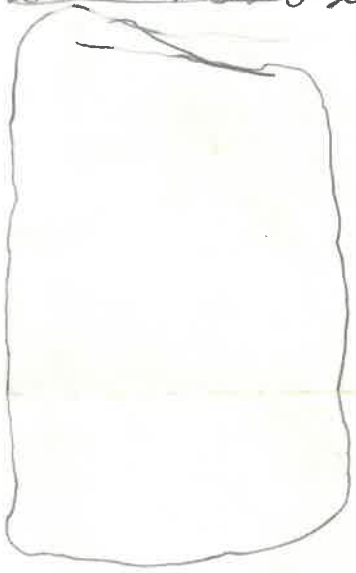
3 Rock tracings (chlorophyll a):

#1

#2



#3



Notes: We need to work out the filter breakage issue! :(

We switched to backup ashed filters and used the smaller syringe. checked btwn each refill. Stopped when filter had obvious seston on it but filter was still hanging IN.

We also collected a few bugs from a nearby leg seep. Flows into study stream d/s of sample reach.

YSI for trout: temp: 2.4°C
SPC: 168 µS/cm

Teton Stoneflies ~~2018~~ 2020
WYNDD-Tronstad 307-766-3115

Date: 7 Aug 2020

Time: Arrived: 1:40 pm Departed: 4:15 pm Collectors: Deb, Taylor, Shannon, Lydia

Stream: North Fork Teton Creek **Location Description:** snowmelt stream - year 1e! low snow year

Coordinates: N (same ol') W - **Datum:**

Elevation: ft Site name on GPS:

Water quality (Recorded with a YSI Pro Plus Mulitprobe)

Parameter	Value	Units
Water temperature	12.5	°C
Barometric pressure	536	mmHg
DO	114	% saturation
DO	8.6	mg/L
Specific conductivity (SPC)	9.8	µS/cm
Conductivity	7.5	µS/cm
pH	7.31	
ORP (Taylor) HACH	232	mV
Air temp	14	°C

Last calibrated: ~~next~~ this morning DO: now

Photos taken: Site ✓ Temp Probe ✓ Deb's phone

Weather: partly cloudy, breezy

Substrate type: small boulders | lg cobbles

3 Surbers collected: ✓

Biofilm rank: Little (Medium) Green

Microbes collected: yes - Lydia - H_2O column + biofilm

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	1	(same as
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	2	it ever was,
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	6	it seems!)
Consolidation of substrate	Lots of sizes, tightly packed (2)	Moderately packed, some size overlap (4)	Mostly loose, not much overlap (6)	Totally loose, easily moved (8)	2	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	2	

Deployed Temp logger number: 20224665 Coordinates: UTMs: N W -

Retrieved Temp logger number: 20571726 Notes:

Description of logger location: same place @ large boulder river right, u/s end of main sample reach

Photo numbers of temp logger placement: (Deb's iPhone)

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	1400	800	1000

Nutrient samples collected: ✓ N=3

DOC collected: N=3

Chl a collected: N=3

Algae collected: N=3

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 7 Aug 2020

Stream Profile: (left edge) (R) *looking down stream* (right edge)

Distance (cm)	0	16	42	55					
Depth (cm)	10	11	13	15					
Time (sec)									

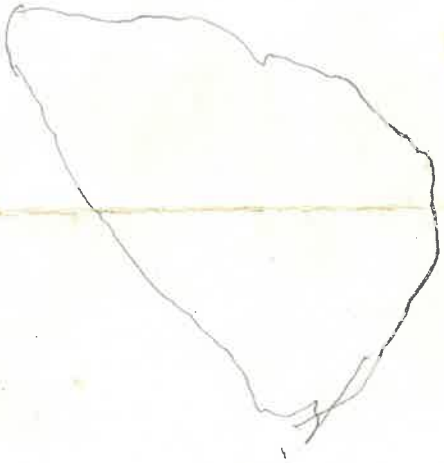
stream reach length for velocity 4.7m in 20.15 sec

3 Rock tracings (chlorophyll a):

#1

#2

#3



Notes: filters were breaking during filtering w/ large syringe - was mostly the ones that were in the foil envelopes. Some had cracks before even starting to filter. We used backups that Lasha provided. Not sure we'll have enough for next 3 sites, but fingers crossed!

Teton Stoneflies ~~2018~~ 2020
WYNDD-Tronstad 307-766-3115

Date: 10 Aug. 2020

Time: Arrived: 9:00 AM Departed: 11:10 AM Collectors: Deb, Lydia, Taylor, Shannon

~~X~~ **Stream:** S. Alaska Basin icy seep **Location Description:** the one Right by our camp

Coordinates: N _____ W - _____ **Datum:** _____

Elevation: _____ ft Site name on GPS: _____

Water quality (Recorded with a YSI Pro Plus Mulitprobe) ~4m d/s of source

Parameter	Value	Units
Water temperature	1.9	°C
Barometric pressure	542	mmHg
DO	110	% saturation
DO	10.9	mg/L
Specific conductivity (SPC)	226	µS/cm
Conductivity	127	µS/cm
pH	7.84	
ORP	n/a	mV
Air temp	20	°C

Last calibrated: 2 days ago DO: now

Photos taken: Site ✓ Temp Probe _____

Weather: Sunny, calm

Substrate type: angular limestone cobbles

3 Surbers collected: n=3 ✓

Biofilm rank: Little (X) Medium Green more or less

Microbes collected: ✓ (Lydia)

Pfankuck Index

	Excellent	Good	Fair	Poor	Score	Notes
Angularity	Lots of edges (1)	Some edges, some round (2)	Rounded edges (3)	All round (4)	1	
Brightness (Dull = biofilm)	Most surfaces dull (1)	Mostly dull, <35% bright (2)	50/50 dull & bright (3)	Mostly bright, >65% (4)	2	looks
Scour	<5% evidence of scour (6)	5-30% of bed scoured (12)	30-50% of bed scoured (18)	>50% of bed scoured (24)	6	Same as "always"
Consolidation of substrate	Lots of sizes, tightly packed (2)	Moderately packed, some size overlap (4)	Mostly loose, not much overlap (6)	Totally loose, easily moved (8)	2-4	
Aquatic Veg	Abundant veg, moss in swift water (1)	Common veg or algae, lots in pools (2)	Spotty, in backwater or seasonal algae (3)	Perennial types, very scarce or absent (4)	2	

Deployed Temp logger number: 10767834 Coordinates: UTMs: N _____ W - _____

Retrieved Temp logger number: 20571723 Notes: All good! Super stable.

Description of logger location: Same s w/in 1-2m of source, btwn 2 cubical boulders

Photo numbers of temp logger placement: _____

Suspended Solids:

Filter number	1	2	3
Volume filtered (mL)	1000	1000	1000

Nutrient samples collected: n=3

DOC collected: n=3 (to Lydia)

Chl a collected: n=3

Algae collected: n=3 (to Shannon + Becky)

X Lusha Labled Filters/IONS
Alaska Basin Rock Glacier/ICY seep

Teton Stoneflies 2018
WYNDD-Tronstad 307-766-3115

Date: 10 Aug 2020

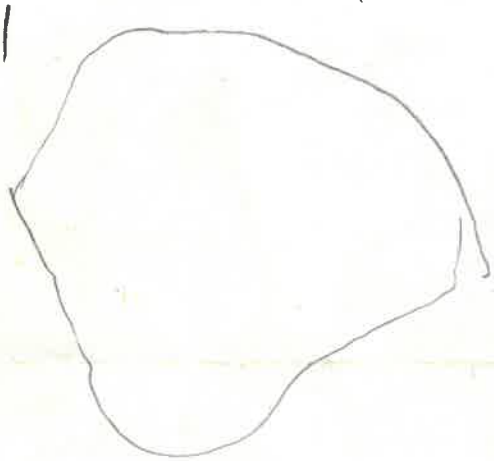
Stream Profile: LE (left edge) *looking down stream* RE (right edge)

Distance (cm)	0.0	25.0	50.0	64.0	80.0	100.0	116		
Depth (cm)	5.0	4.0	7.0	7.0	6.0	6.0	7.0		
Time (sec)									

stream reach length for velocity ____ (see Notes)

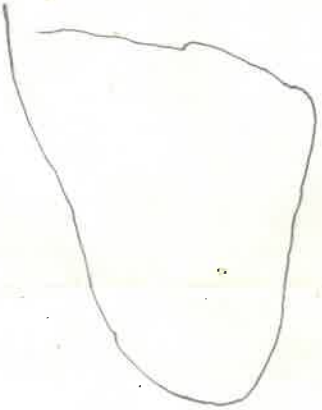
3 Rock tracings (chlorophyll a):

#1



#2

#3



velocity of flow:

Notes: 3.4 m = 7.75 sec

7.0 m = 20.0 sec

$\frac{3}{8} \sim \frac{7}{20}$