

Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM1	Identifier / Unit		Location		
	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)		Latitude or Northing		
Sub-surface	Sample Type: Surface or Sub-surface		Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Text

Photo

Photo

PM1_Subsurface.jpg



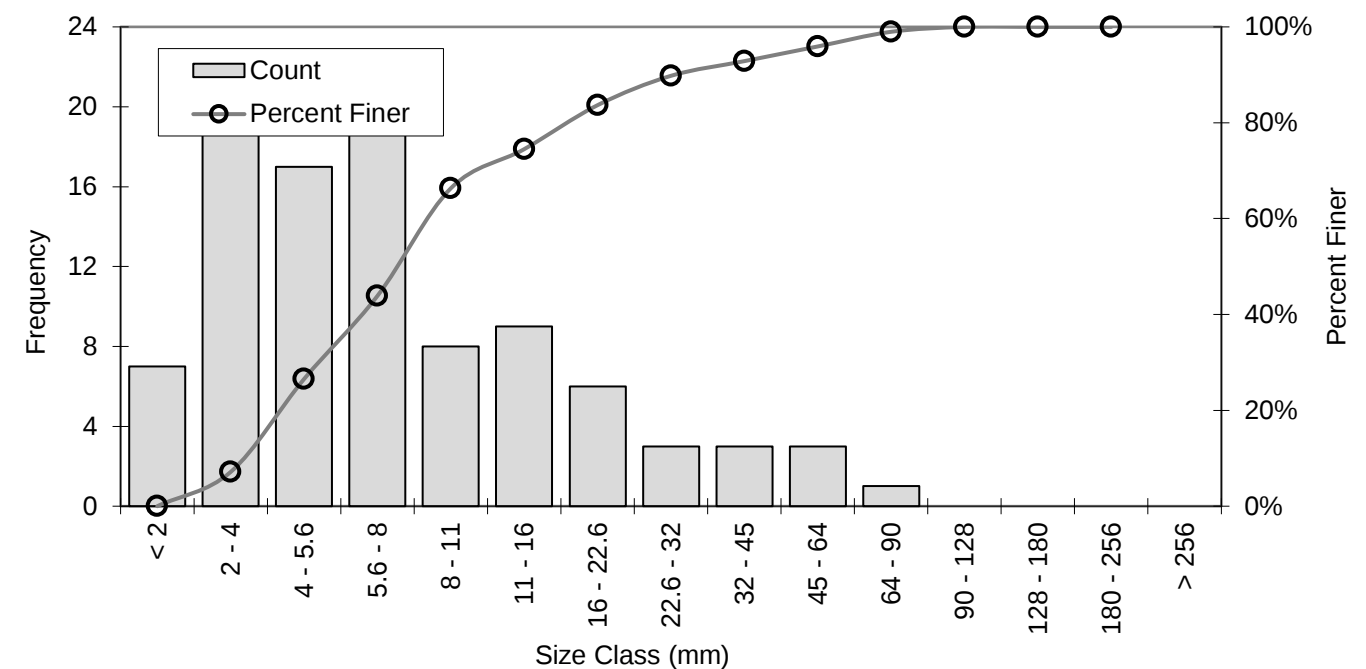
Distribution Statistic Points (Percent Finer)

D_{16}	2.9	mm
D_{50}	6.3	mm
D_{84}	16.4	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	7	0%
Very Fine Gravel	2 - 4	19	7%
Fine Gravel	4 - 5.6	17	27%
Fine Gravel	5.6 - 8	22	44%
Medium Gravel	8 - 11	8	66%
Medium Gravel	11 - 16	9	74%
Coarse Gravel	16 - 22.6	6	84%
Coarse Gravel	22.6 - 32	3	90%
Very Coarse Gravel	32 - 45	3	93%
Very Coarse Gravel	45 - 64	3	96%
Small Cobble	64 - 90	1	99%
Small Cobble	90 - 128		100%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		98	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM4	Identifier / Unit		Location		
Main Channel Pool Tailout	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.816039	Latitude or Northing		
Sub-surface	Sample Type: Surface or Sub-surface	-122.618059	Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Text

Photo

PM4_Subsurface.jpg



Photo

PM4Subsurface_SurfaceDownstream.jpg



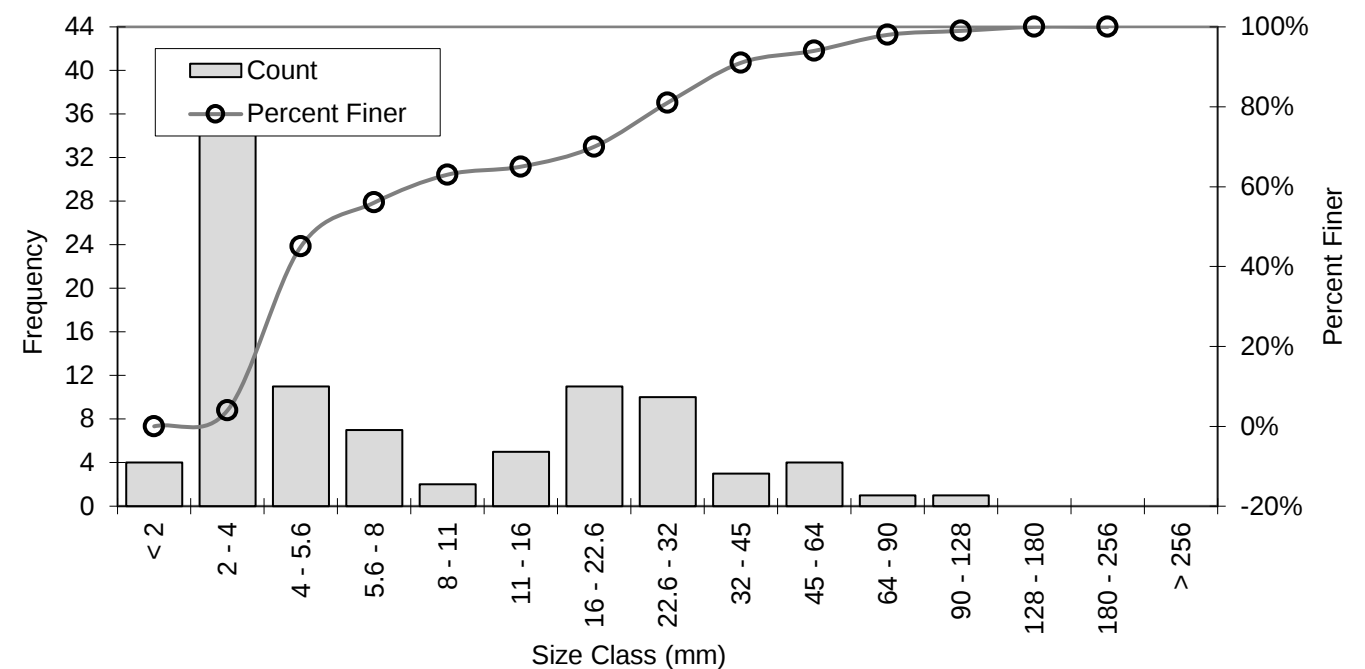
Distribution Statistic Points (Percent Finer)

D_{16}	2.6	mm
D_{50}	4.7	mm
D_{84}	24.4	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	4	0%
Very Fine Gravel	2 - 4	41	4%
Fine Gravel	4 - 5.6	11	45%
Fine Gravel	5.6 - 8	7	56%
Medium Gravel	8 - 11	2	63%
Medium Gravel	11 - 16	5	65%
Coarse Gravel	16 - 22.6	11	70%
Coarse Gravel	22.6 - 32	10	81%
Very Coarse Gravel	32 - 45	3	91%
Very Coarse Gravel	45 - 64	4	94%
Small Cobble	64 - 90	1	98%
Small Cobble	90 - 128	1	99%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM5	Identifier / Unit		Location		
Secondary Channel - Floodplain	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)	45.817369	Latitude or Northing		
Sub-surface	Sample Type: Surface or Sub-surface	-122.622199	Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Text

Photo

PM5_Subsurface.jpg

Photo



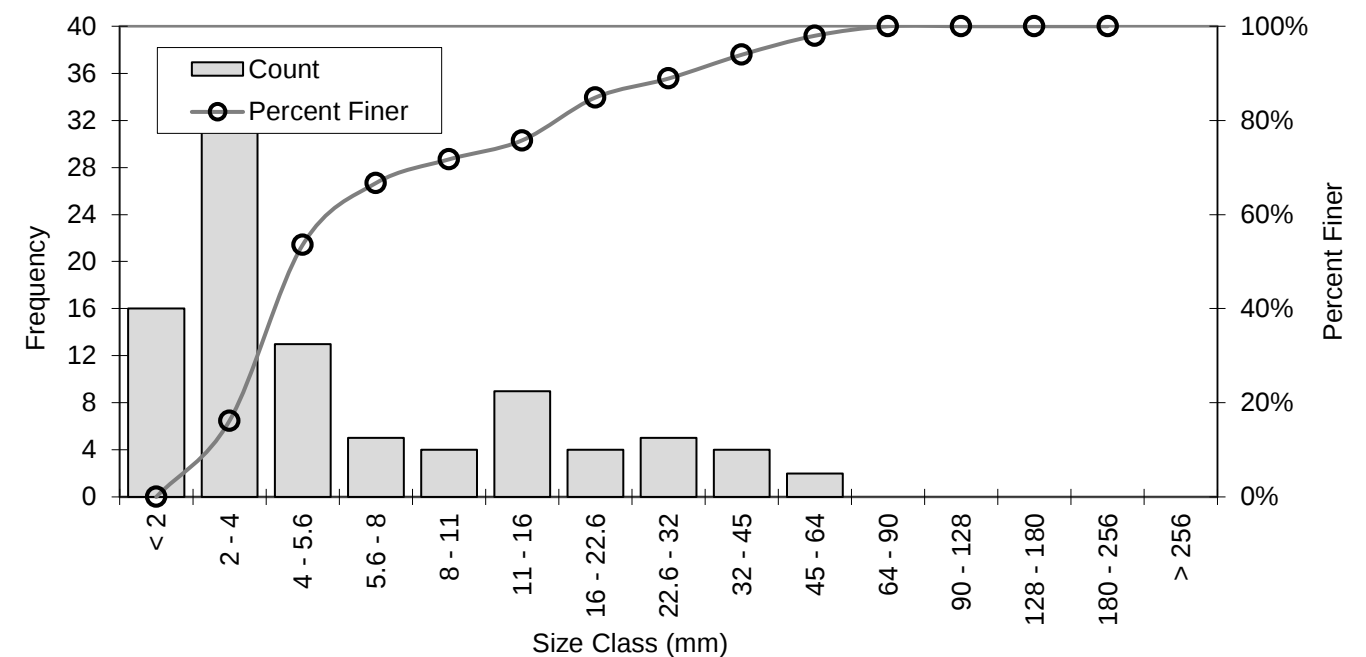
Distribution Statistic Points (Percent Finer)

PM5	2.0	mm
D_{50}	3.8	mm
D_{84}	17.1	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	16	0%
Very Fine Gravel	2 - 4	37	16%
Fine Gravel	4 - 5.6	13	54%
Fine Gravel	5.6 - 8	5	67%
Medium Gravel	8 - 11	4	72%
Medium Gravel	11 - 16	9	76%
Coarse Gravel	16 - 22.6	4	85%
Coarse Gravel	22.6 - 32	5	89%
Very Coarse Gravel	32 - 45	4	94%
Very Coarse Gravel	45 - 64	2	98%
Small Cobble	64 - 90		100%
Small Cobble	90 - 128		100%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		99	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM1-Surface	Identifier / Unit		Location		
Main Channel Bar Deposit	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)	45.811971	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.598658	Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Photo PM1_SurfaceDownstream.jpg



Photo PM1_SurfaceUpstream.jpg



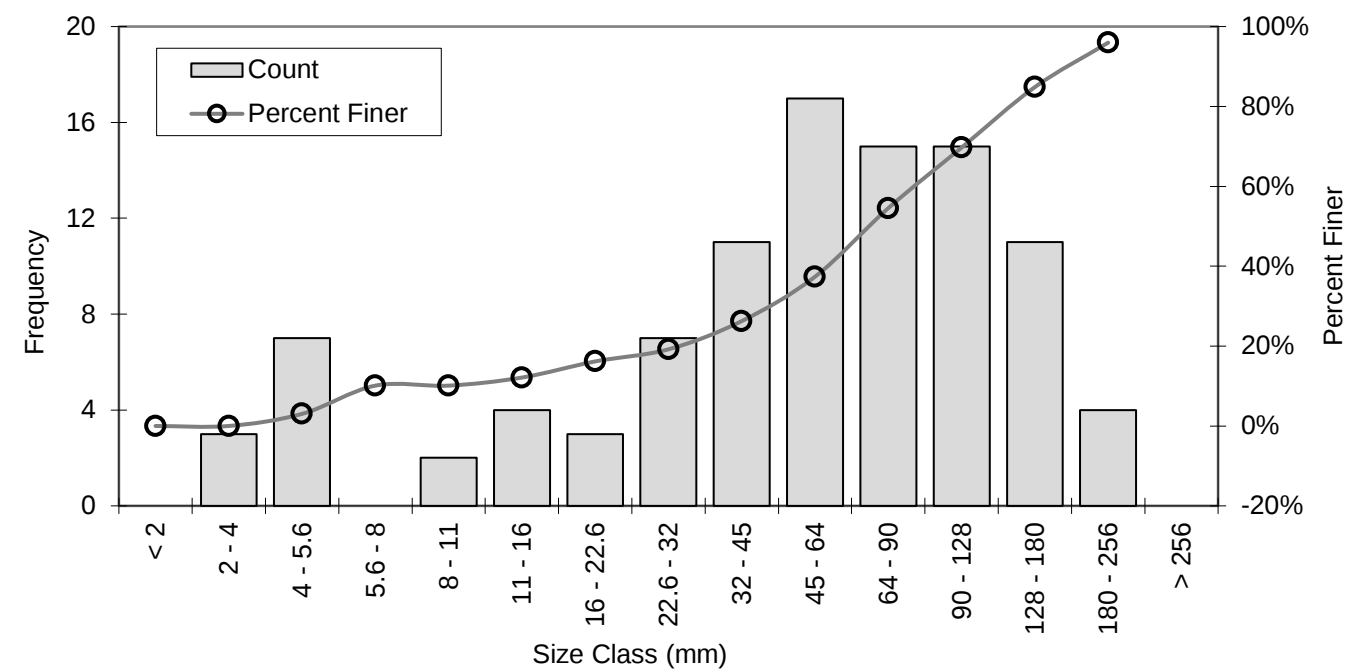
Distribution Statistic Points (Percent Finer)

<i>PM5</i>	15.8	mm
<i>D</i> ₅₀	59.0	mm
<i>D</i> ₈₄	125.9	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4	3	0%
Fine Gravel	4 - 5.6	7	3%
Fine Gravel	5.6 - 8		10%
Medium Gravel	8 - 11	2	10%
Medium Gravel	11 - 16	4	12%
Coarse Gravel	16 - 22.6	3	16%
Coarse Gravel	22.6 - 32	7	19%
Very Coarse Gravel	32 - 45	11	26%
Very Coarse Gravel	45 - 64	17	37%
Small Cobble	64 - 90	15	55%
Small Cobble	90 - 128	15	70%
Large Cobble	128 - 180	11	85%
Small Boulders	180 - 256	4	96%
Boulders	> 256		100%
Total		99	



Sediment Grain Size Analysis				
EF Lewis River	Stream	10/18/2018	Date	PK/Matt
PM2-Surface	Identifier / Unit		Location	Personnel
Main Channel Bar Deposit / Pool Tailout	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.81276	Latitude or Northing	
Surface	Sample Type: Surface or Sub-surface	-122.608541	Longitude or Easting	
	Dominant / Subdominant Substrate		Waypoint	



Notes

Main channel braided section

Photo PM2_SurfaceReference.jpg



Photo PM2_SurfaceUpstream.jpg

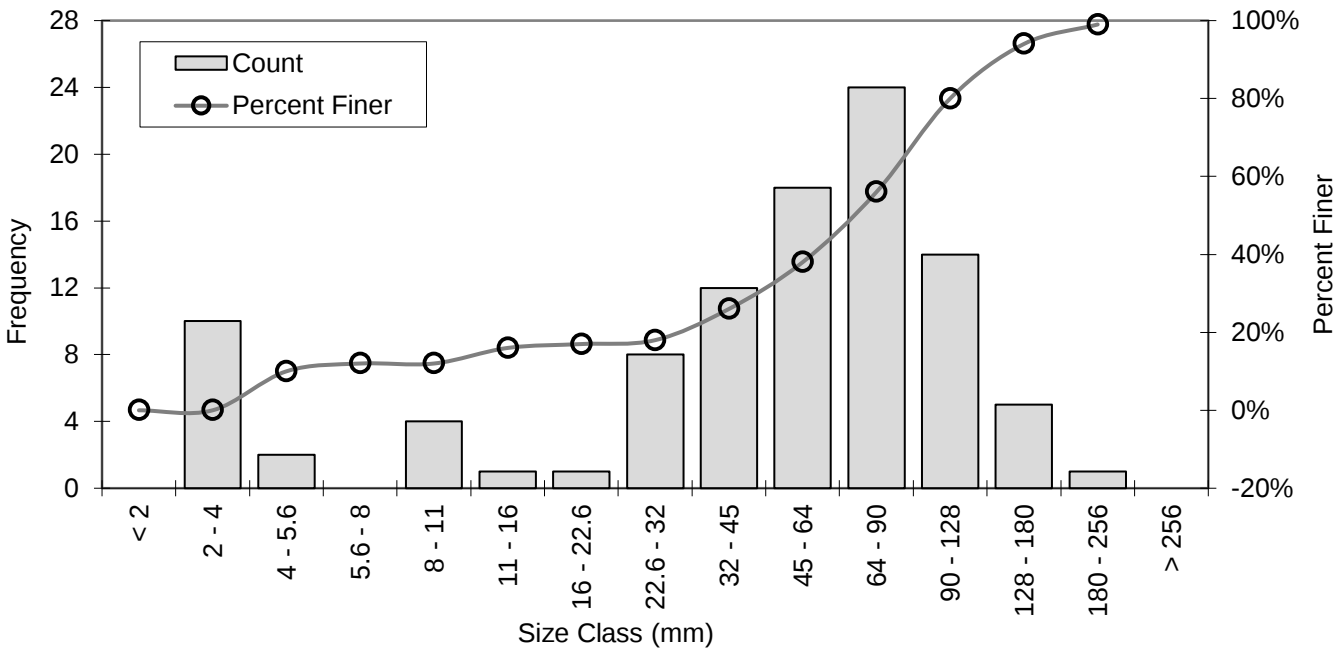


Distribution Statistic Points (Percent Finer)

PM5	11.0	mm
D ₅₀	57.7	mm
D ₈₄	100.9	mm

Assumes a linear interpolation

Pebble Count Data			
Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4	10	0%
Fine Gravel	4 - 5.6	2	10%
Fine Gravel	5.6 - 8		12%
Medium Gravel	8 - 11	4	12%
Medium Gravel	11 - 16	1	16%
Coarse Gravel	16 - 22.6	1	17%
Coarse Gravel	22.6 - 32	8	18%
Very Coarse Gravel	32 - 45	12	26%
Very Coarse Gravel	45 - 64	18	38%
Small Cobble	64 - 90	24	56%
Small Cobble	90 - 128	14	80%
Large Cobble	128 - 180	5	94%
Small Boulders	180 - 256	1	99%
Boulders	> 256	0	100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM3-Surface	Identifier / Unit		Location		
Main Channel Bar Deposit	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)	-122.612459 45.8	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.612459 45.8	Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Text

Photo

PM3_SurfaceSandReference.jpg



Photo

PM3_SurfaceUpstream.jpg



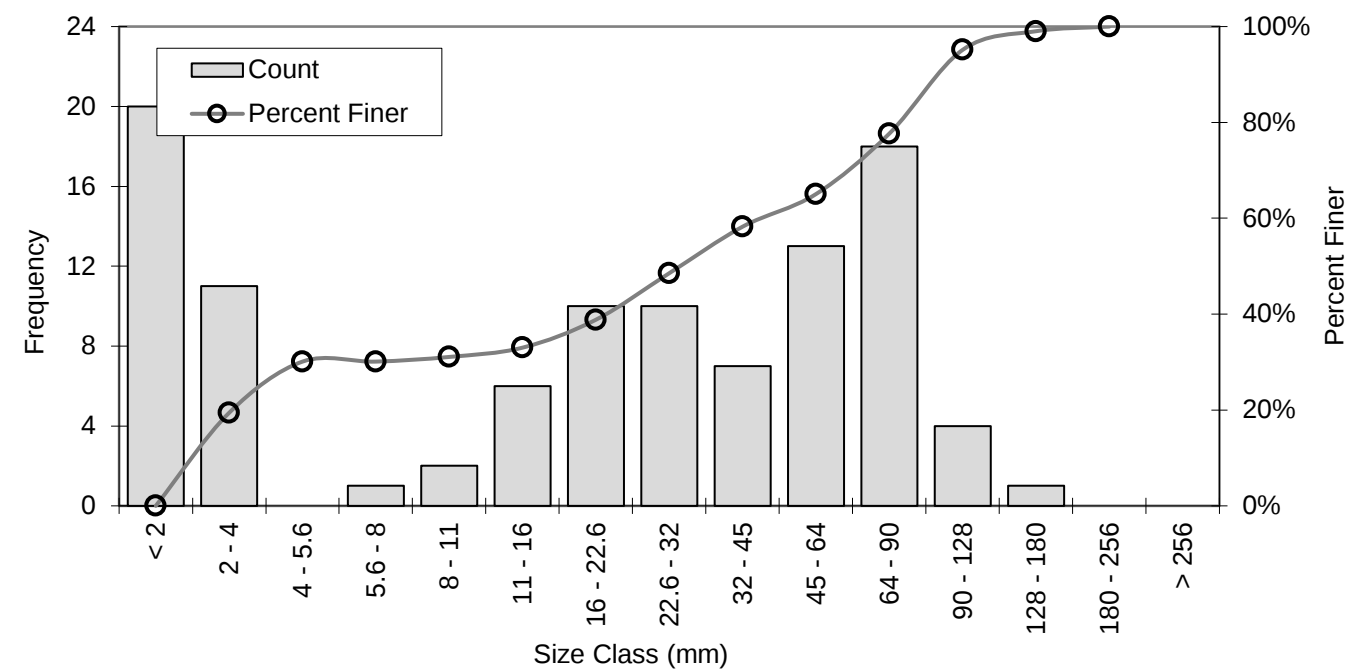
Distribution Statistic Points (Percent Finer)

<i>PM5</i>	1.8	mm
<i>D</i> ₅₀	24.0	mm
<i>D</i> ₈₄	73.4	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	20	0%
Very Fine Gravel	2 - 4	11	19%
Fine Gravel	4 - 5.6		30%
Fine Gravel	5.6 - 8	1	30%
Medium Gravel	8 - 11	2	31%
Medium Gravel	11 - 16	6	33%
Coarse Gravel	16 - 22.6	10	39%
Coarse Gravel	22.6 - 32	10	49%
Very Coarse Gravel	32 - 45	7	58%
Very Coarse Gravel	45 - 64	13	65%
Small Cobble	64 - 90	18	78%
Small Cobble	90 - 128	4	95%
Large Cobble	128 - 180	1	99%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		103	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM4-Surface	Identifier / Unit		Location		
Main Channel Pool Tailout	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)	45.816382	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.619471	Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Text

Photo

Photo

PM4Subsurface_SurfaceDownstream.jpg



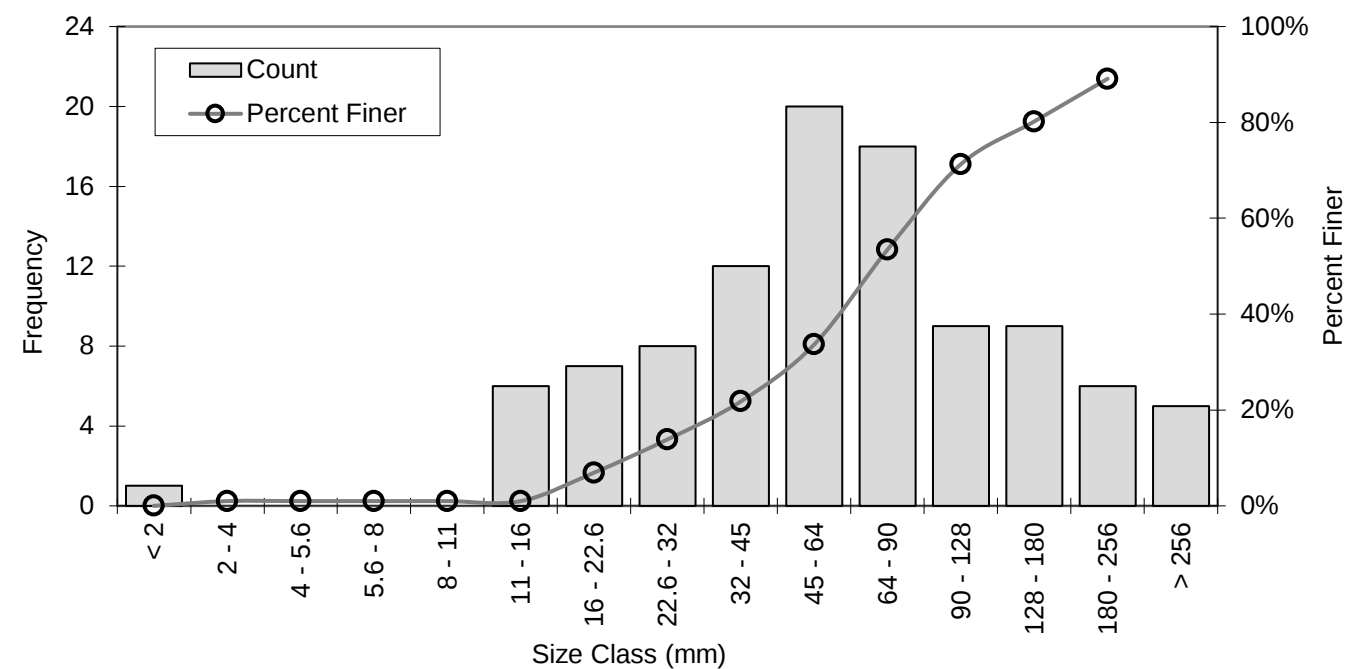
Distribution Statistic Points (Percent Finer)

PM5	25.1	mm
D ₅₀	60.7	mm
D ₈₄	150.2	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	1	0%
Very Fine Gravel	2 - 4		1%
Fine Gravel	4 - 5.6		1%
Fine Gravel	5.6 - 8		1%
Medium Gravel	8 - 11		1%
Medium Gravel	11 - 16	6	1%
Coarse Gravel	16 - 22.6	7	7%
Coarse Gravel	22.6 - 32	8	14%
Very Coarse Gravel	32 - 45	12	22%
Very Coarse Gravel	45 - 64	20	34%
Small Cobble	64 - 90	18	53%
Small Cobble	90 - 128	9	71%
Large Cobble	128 - 180	9	80%
Small Boulders	180 - 256	6	89%
Boulders	> 256	5	95%
Total		101	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM5-Surface	Identifier / Unit		Location		
	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)		Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface		Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Text

Photo PM5_SurfaceDownstream.jpgPhoto PM5_SurfaceUpstream.jpg

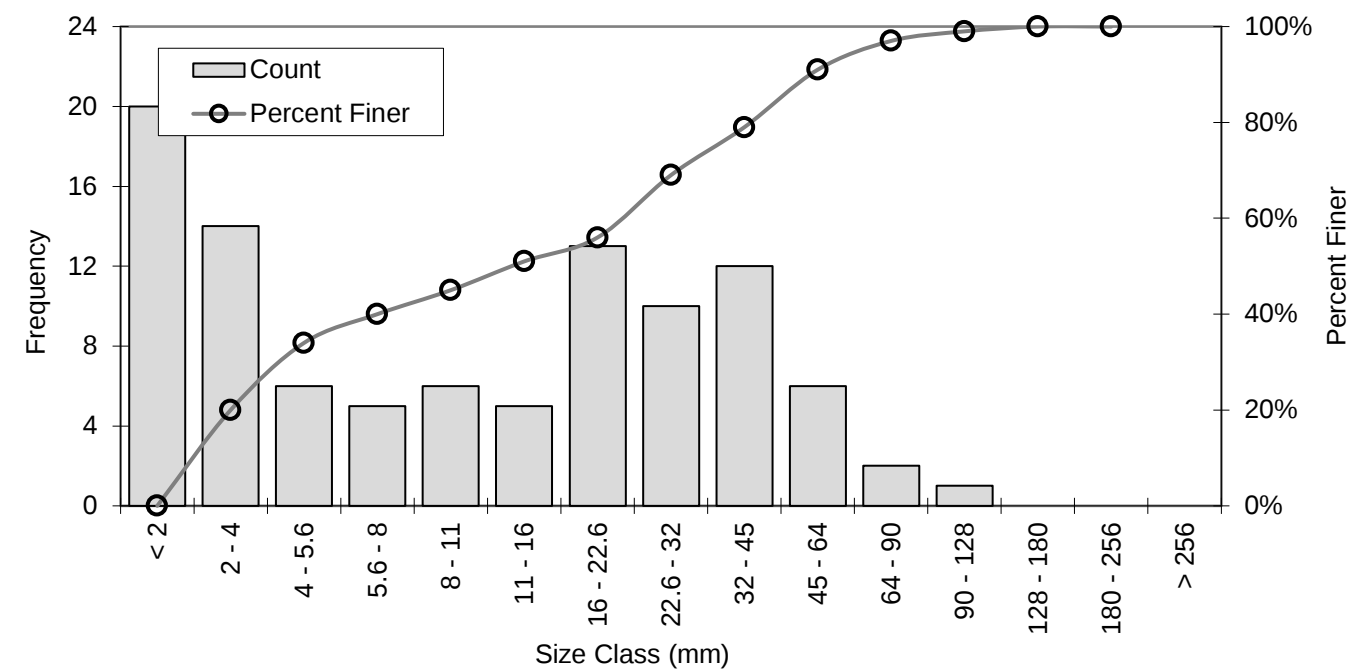
Distribution Statistic Points (Percent Finer)

PM5	1.8	mm
D ₅₀	10.5	mm
D ₈₄	37.4	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	20	0%
Very Fine Gravel	2 - 4	14	20%
Fine Gravel	4 - 5.6	6	34%
Fine Gravel	5.6 - 8	5	40%
Medium Gravel	8 - 11	6	45%
Medium Gravel	11 - 16	5	51%
Coarse Gravel	16 - 22.6	13	56%
Coarse Gravel	22.6 - 32	10	69%
Very Coarse Gravel	32 - 45	12	79%
Very Coarse Gravel	45 - 64	6	91%
Small Cobble	64 - 90	2	97%
Small Cobble	90 - 128	1	99%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	PK/Matt	Personnel
PM6-Surface	Identifier / Unit		Location		
Secondary Channel	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)	45.819391	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.614461	Longitude or Easting		
	Dominant / Subdominant Substrate		Waypoint		



Notes

Text

Photo PM6Surface_Downstream.jpgPhoto PM6Surface_Upstream.jpg

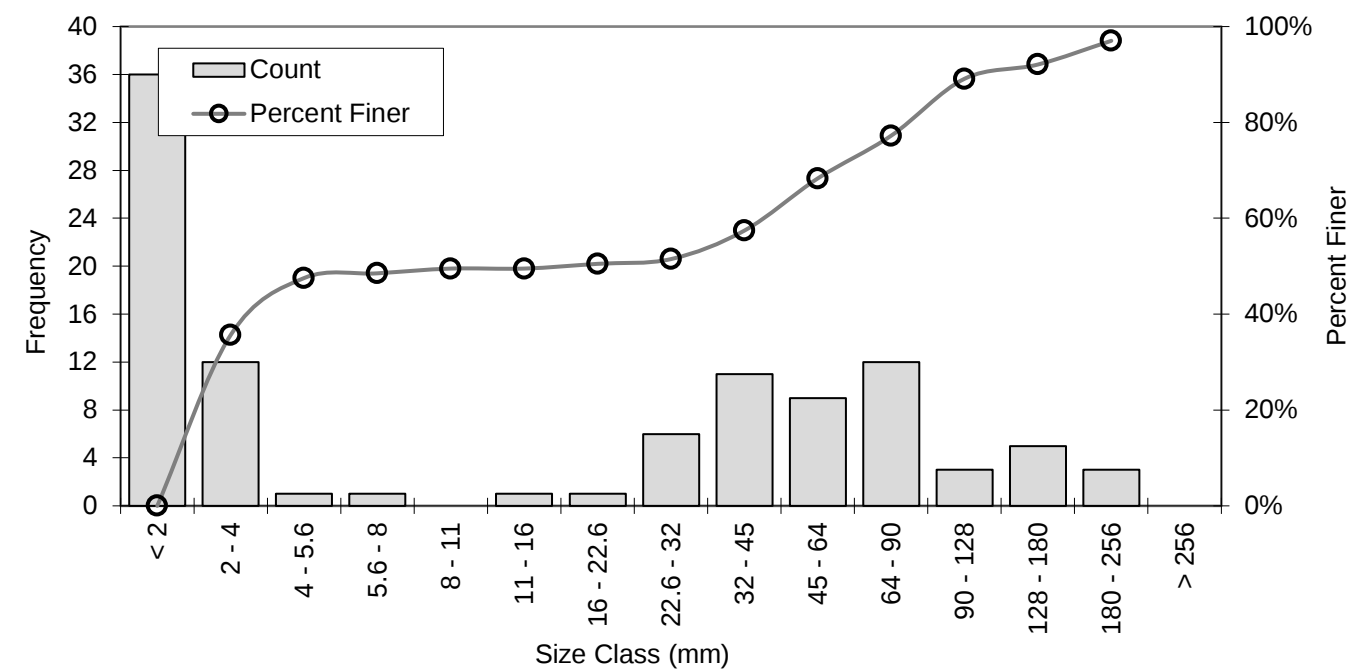
Distribution Statistic Points (Percent Finer)

<i>PM5</i>	1.4	mm
<i>D</i> ₅₀	11.0	mm
<i>D</i> ₈₄	78.8	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	36	0%
Very Fine Gravel	2 - 4	12	36%
Fine Gravel	4 - 5.6	1	48%
Fine Gravel	5.6 - 8	1	49%
Medium Gravel	8 - 11	1	50%
Medium Gravel	11 - 16	1	50%
Coarse Gravel	16 - 22.6	1	50%
Coarse Gravel	22.6 - 32	6	51%
Very Coarse Gravel	32 - 45	11	57%
Very Coarse Gravel	45 - 64	9	68%
Small Cobble	64 - 90	12	77%
Small Cobble	90 - 128	3	89%
Large Cobble	128 - 180	5	92%
Small Boulders	180 - 256	3	97%
Boulders	> 256		100%
Total		101	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN2	Identifier / Unit		Location		
Gravel Bar	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.827759	Latitude or Northing		
Sub-surface	Sample Type: Surface or Sub-surface	-122.633011	Longitude or Easting		
Gravel / Cobble	Dominant / Subdominant Substrate		Waypoint		



Notes

Photo [field_4-20181018-181420.jpg](#)



Photo [field_12-20181018-182302.jpg](#)



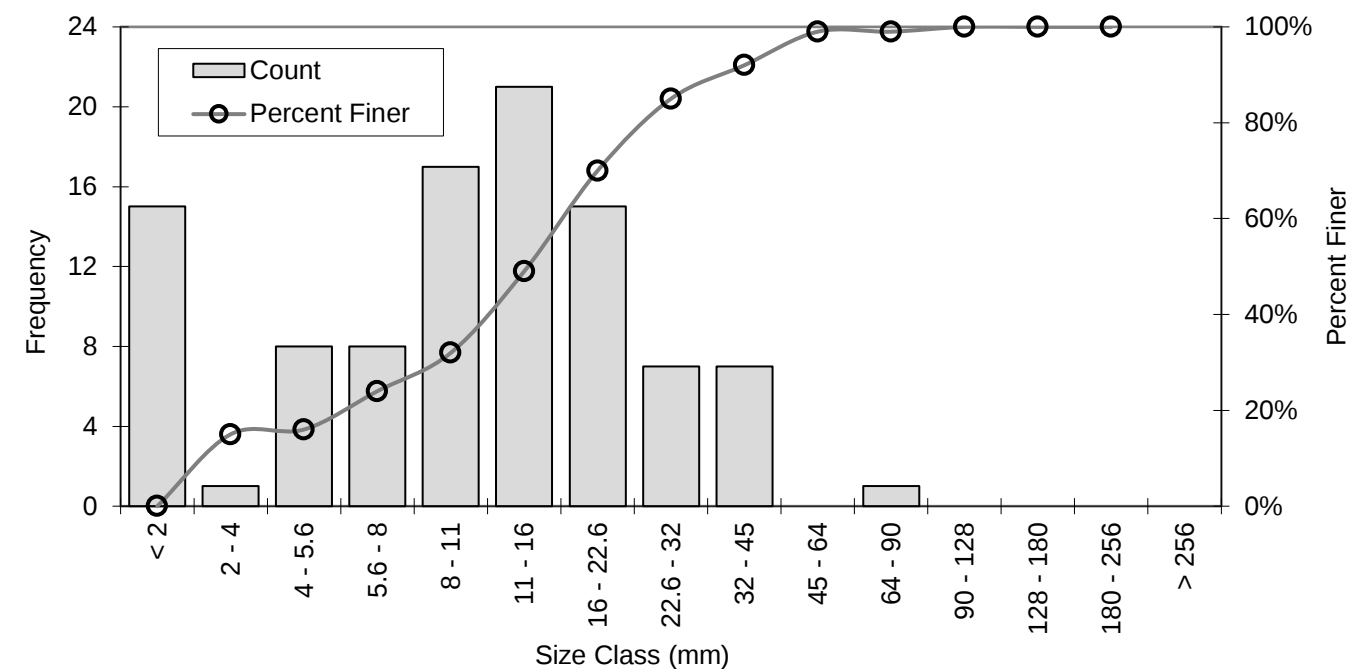
Distribution Statistic Points (Percent Finer)

D_{16}	-70.1	mm
D_{50}	#DIV/0!	mm
D_{84}	-326.0	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	15	0%
Very Fine Gravel	2 - 4	1	15%
Fine Gravel	4 - 5.6	8	16%
Fine Gravel	5.6 - 8	8	24%
Medium Gravel	8 - 11	17	32%
Medium Gravel	11 - 16	21	49%
Coarse Gravel	16 - 22.6	15	70%
Coarse Gravel	22.6 - 32	7	85%
Very Coarse Gravel	32 - 45	7	92%
Very Coarse Gravel	45 - 64		99%
Small Cobble	64 - 90	1	99%
Small Cobble	90 - 128		100%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN6	Identifier / Unit		Location		
Bar Deposit	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.819065	Latitude or Northing		
Sub-Surface	Sample Type: Surface or Sub-surface	-122.626668	Longitude or Easting		
Gravel / Sand	Dominant / Subdominant Substrate		Waypoint		



Notes

Thin armor layer, lots of sand

Photo KN6subcount_armor_removed_pre_mix.JPG



Photo KN6subcount_armor_removed_post_mix.JPG



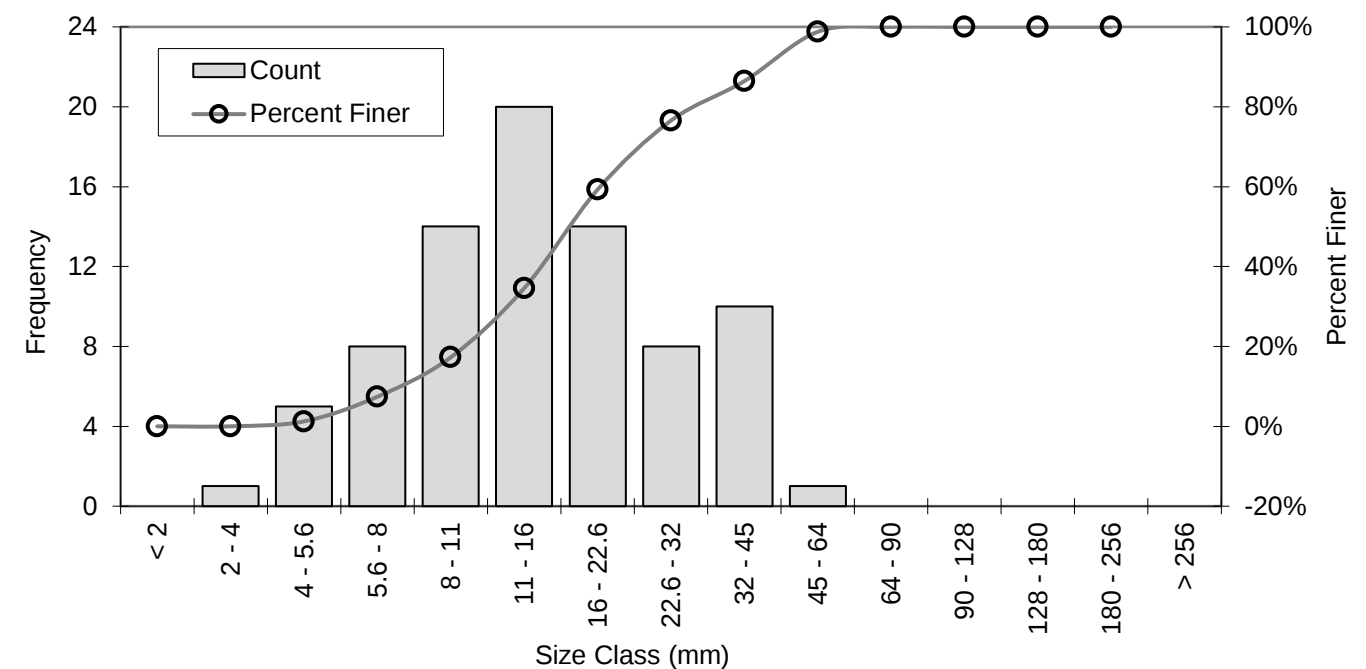
Distribution Statistic Points (Percent Finer)

D_{16}	7.7	mm
D_{50}	14.1	mm
D_{84}	29.7	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4	1	0%
Fine Gravel	4 - 5.6	5	1%
Fine Gravel	5.6 - 8	8	7%
Medium Gravel	8 - 11	14	17%
Medium Gravel	11 - 16	20	35%
Coarse Gravel	16 - 22.6	14	59%
Coarse Gravel	22.6 - 32	8	77%
Very Coarse Gravel	32 - 45	10	86%
Very Coarse Gravel	45 - 64	1	99%
Small Cobble	64 - 90		100%
Small Cobble	90 - 128		100%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		81	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN8	Identifier / Unit		Location		
	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)	45.819694	Latitude or Northing		
Sub-Surface	Sample Type: Surface or Sub-surface	-122.625368	Longitude or Easting		
Gravel / Sand	Dominant / Subdominant Substrate		Waypoint		



Notes

Lots of fine sand mixed with gravel and cobble

Photo KN8subcount_armor_layer.JPG



Photo KN8subcount_armor_removed_pre_mix



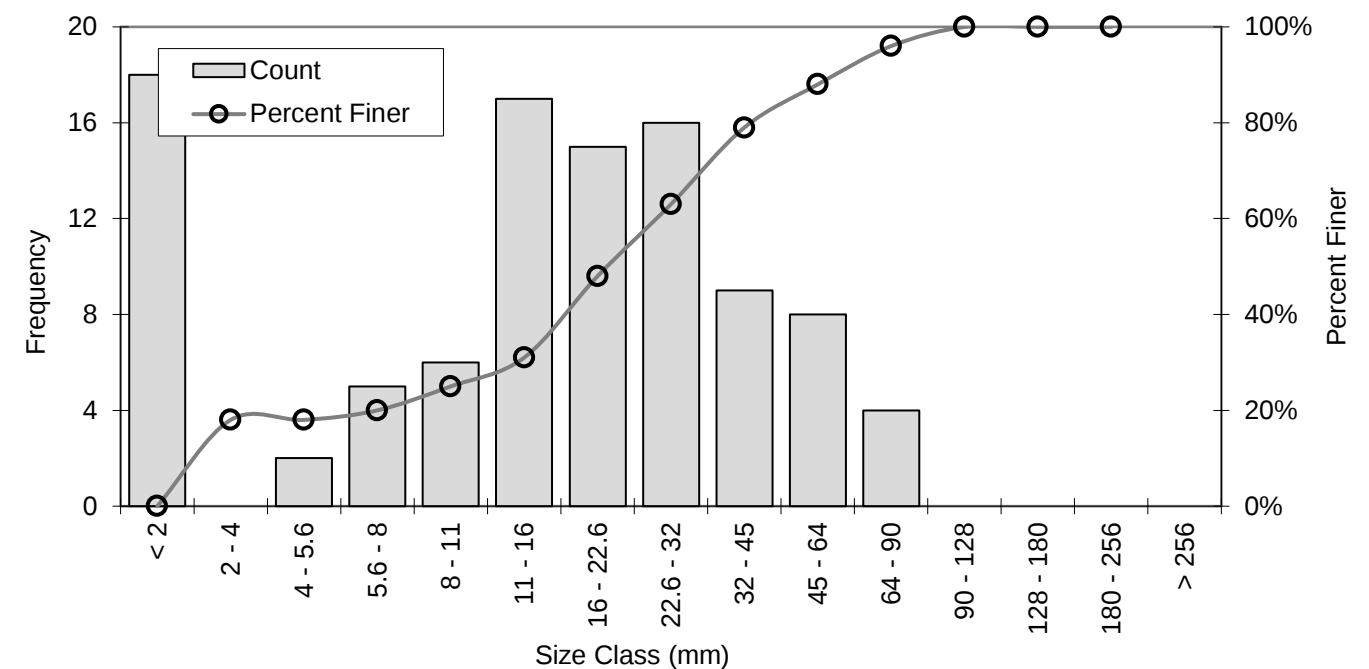
Distribution Statistic Points (Percent Finer)

D_{16}	2.8	mm
D_{50}	16.9	mm
D_{84}	39.2	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2	18	0%
Very Fine Gravel	2 - 4	0	18%
Fine Gravel	4 - 5.6	2	18%
Fine Gravel	5.6 - 8	5	20%
Medium Gravel	8 - 11	6	25%
Medium Gravel	11 - 16	17	31%
Coarse Gravel	16 - 22.6	15	48%
Coarse Gravel	22.6 - 32	16	63%
Very Coarse Gravel	32 - 45	9	79%
Very Coarse Gravel	45 - 64	8	88%
Small Cobble	64 - 90	4	96%
Small Cobble	90 - 128		100%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN1	Identifier / Unit		Location		
Riffle	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.827668	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.632556	Longitude or Easting		
Gravel / Cobble	Dominant / Subdominant Substrate		Waypoint		

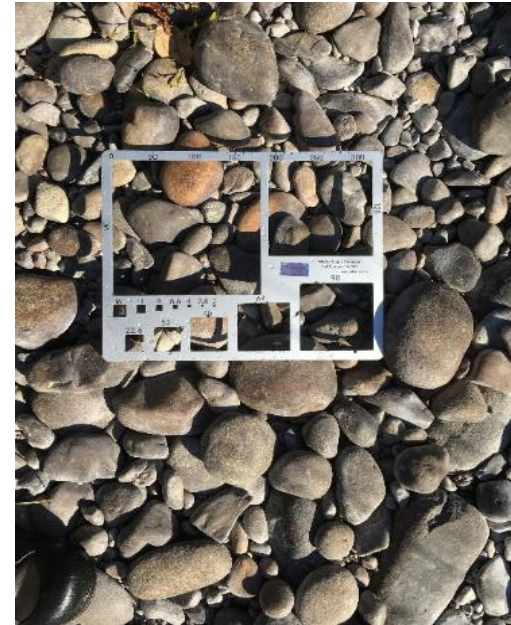


Notes

Diagonal riffle transects, redds upstream in tailout, riffle not in high flow main energy line, pebble count all in water

Photo [field_6-20181018-180552.jpg](#)

Photo [field_5-20181018-175149.jpg](#)



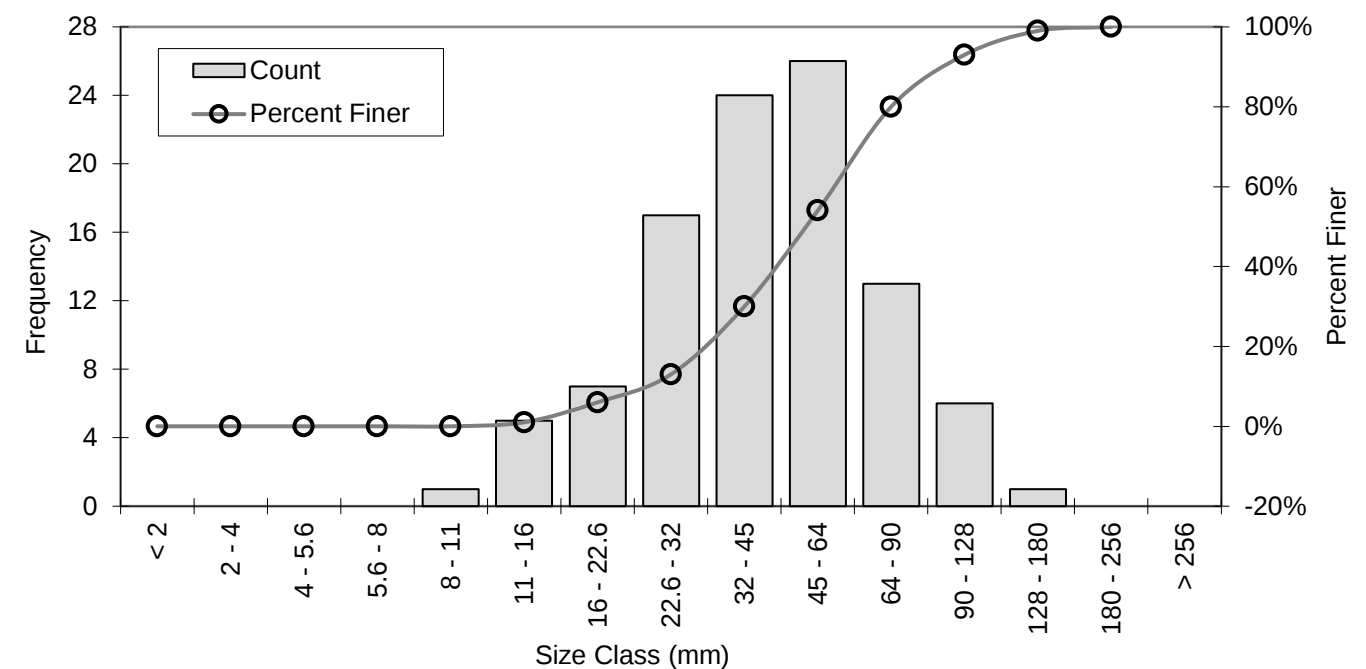
Distribution Statistic Points (Percent Finer)

D_{16}	24.3	mm
D_{50}	42.8	mm
D_{84}	72.0	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4		0%
Fine Gravel	4 - 5.6		0%
Fine Gravel	5.6 - 8		0%
Medium Gravel	8 - 11	1	0%
Medium Gravel	11 - 16	5	1%
Coarse Gravel	16 - 22.6	7	6%
Coarse Gravel	22.6 - 32	17	13%
Very Coarse Gravel	32 - 45	24	30%
Very Coarse Gravel	45 - 64	26	54%
Small Cobble	64 - 90	13	80%
Small Cobble	90 - 128	6	93%
Large Cobble	128 - 180	1	99%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN2	Identifier / Unit		Location		
Gravel Bar	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.827759	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.633011	Longitude or Easting		
Gravel / Cobble	Dominant / Subdominant Substrate		Waypoint		



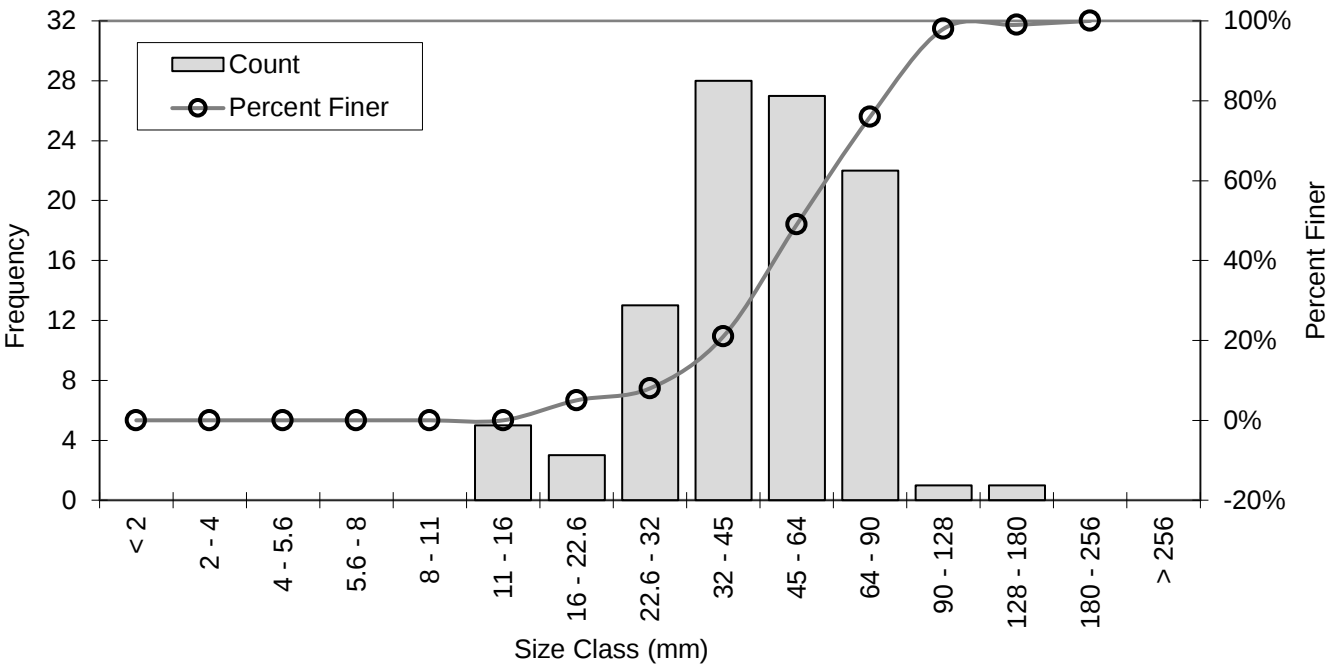
Notes	Photo	field_4-20181018-181420.jpg	Photo
Text			



Distribution Statistic Points (Percent Finer)			
D_{16}	28.4	mm	
D_{50}	45.7	mm	
D_{84}	73.5	mm	
Assumes a linear interpolation			

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4		0%
Fine Gravel	4 - 5.6		0%
Fine Gravel	5.6 - 8		0%
Medium Gravel	8 - 11		0%
Medium Gravel	11 - 16	5	0%
Coarse Gravel	16 - 22.6	3	5%
Coarse Gravel	22.6 - 32	13	8%
Very Coarse Gravel	32 - 45	28	21%
Very Coarse Gravel	45 - 64	27	49%
Small Cobble	64 - 90	22	76%
Small Cobble	90 - 128	1	98%
Large Cobble	128 - 180	1	99%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN5	Identifier / Unit		Location		
Riffle / Bar Deposit	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.819065	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.626668	Longitude or Easting		
Gravel / Cobble	Dominant / Subdominant Substrate		Waypoint		



Notes

Narrow riffle with bar, just above entrance to a pit. Sand dune above bar on downstream side. River mile 7.8.

Photo

KN5surfcount_Ref.JPG



Photo

KN5_transect_W.JPG



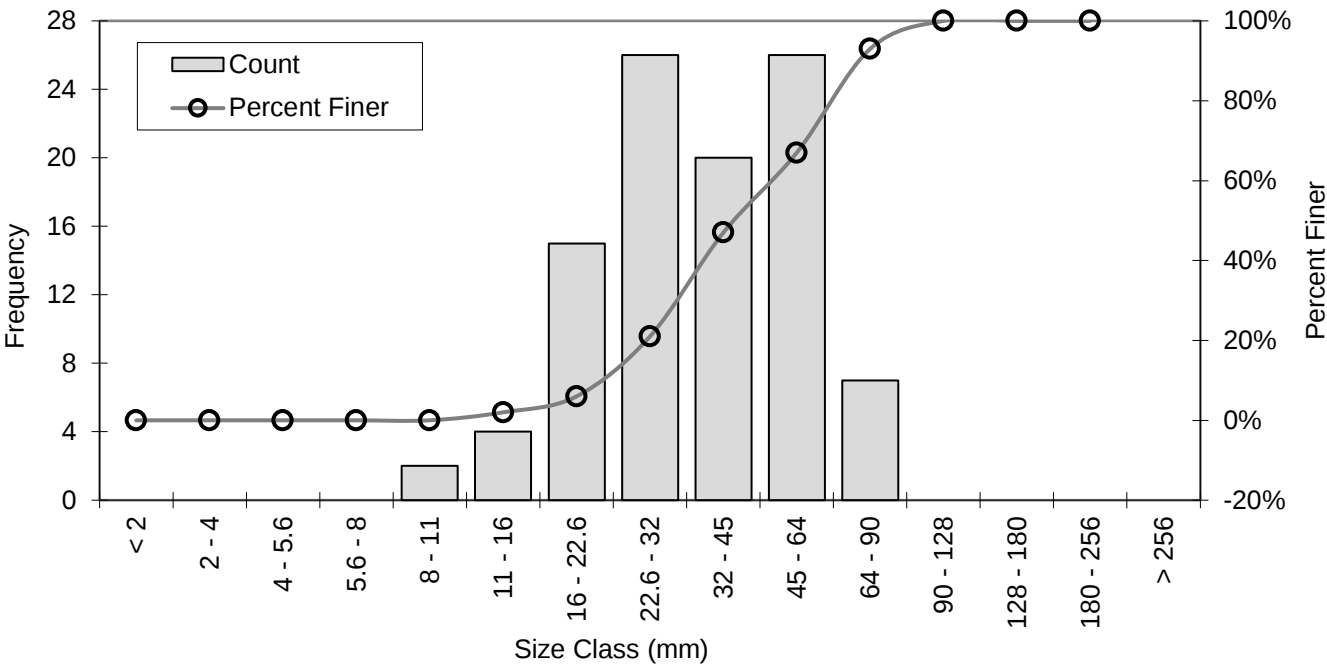
Distribution Statistic Points (Percent Finer)

D_{16}	20.4	mm
D_{50}	34.0	mm
D_{84}	57.4	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4		0%
Fine Gravel	4 - 5.6		0%
Fine Gravel	5.6 - 8		0%
Medium Gravel	8 - 11	2	0%
Medium Gravel	11 - 16	4	2%
Coarse Gravel	16 - 22.6	15	6%
Coarse Gravel	22.6 - 32	26	21%
Very Coarse Gravel	32 - 45	20	47%
Very Coarse Gravel	45 - 64	26	67%
Small Cobble	64 - 90	7	93%
Small Cobble	90 - 128		100%
Large Cobble	128 - 180		100%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN7	Identifier / Unit		Location		
	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.819694	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.625368	Longitude or Easting		
Cobble / Gravel	Dominant / Subdominant Substrate		Waypoint		



Notes

Mid-channel bar deposit in the middle of a floodplain expansion adjacent to riffle, upstream of recent avulsion. Several adult salmon spawning in the riffle.

Photo KN7surfcount_Ref.JPG



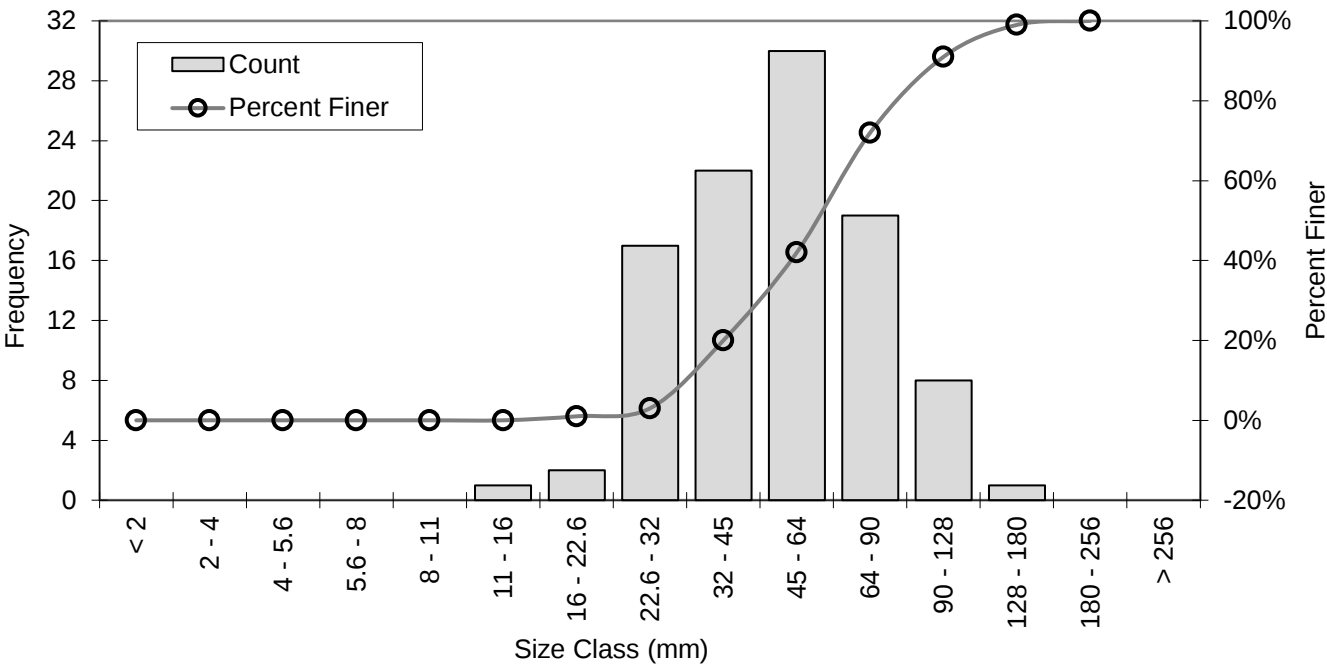
Photo KN7_transect_W.JPG



Distribution Statistic Points (Percent Finer)			
D_{16}	29.8	mm	
D_{50}	50.1	mm	
D_{84}	80.4	mm	
Assumes a linear interpolation			

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4		0%
Fine Gravel	4 - 5.6		0%
Fine Gravel	5.6 - 8		0%
Medium Gravel	8 - 11		0%
Medium Gravel	11 - 16	1	0%
Coarse Gravel	16 - 22.6	2	1%
Coarse Gravel	22.6 - 32	17	3%
Very Coarse Gravel	32 - 45	22	20%
Very Coarse Gravel	45 - 64	30	42%
Small Cobble	64 - 90	19	72%
Small Cobble	90 - 128	8	91%
Large Cobble	128 - 180	1	99%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN9	Identifier / Unit		Location		
Riffle / Bar Deposit	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.81962	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.626196	Longitude or Easting		
Cobble / Gravel	Dominant / Subdominant Substrate		Waypoint		



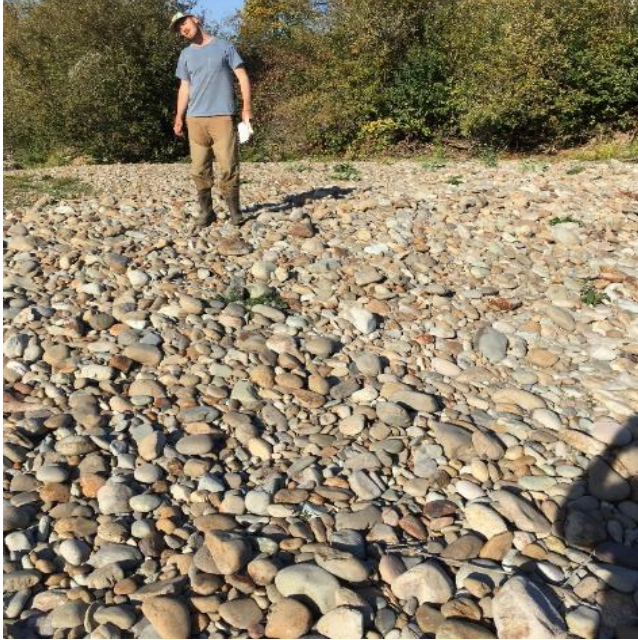
Notes

Just bar, no riffle. Last riffle on main channel below pits

Photo KN9surfcount_Ref.JPG

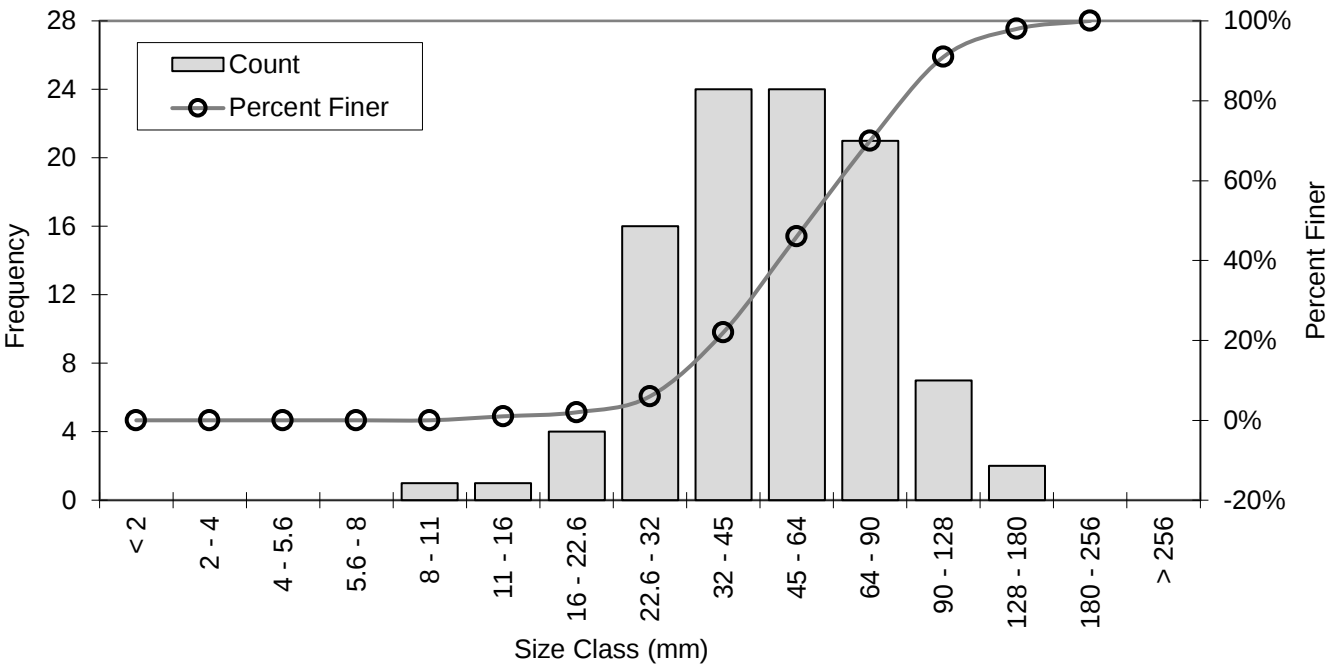


Photo KN9_transect_N.JPG



Distribution Statistic Points (Percent Finer)			
D_{16}	28.5	mm	
D_{50}	48.2	mm	
D_{84}	81.3	mm	
Assumes a linear interpolation			

Pebble Count Data			
Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4		0%
Fine Gravel	4 - 5.6		0%
Fine Gravel	5.6 - 8		0%
Medium Gravel	8 - 11	1	0%
Medium Gravel	11 - 16	1	1%
Coarse Gravel	16 - 22.6	4	2%
Coarse Gravel	22.6 - 32	16	6%
Very Coarse Gravel	32 - 45	24	22%
Very Coarse Gravel	45 - 64	24	46%
Small Cobble	64 - 90	21	70%
Small Cobble	90 - 128	7	91%
Large Cobble	128 - 180	2	98%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
KN10	Identifier / Unit		Location		
Riffle / Bar Deposit	Longitudinal Description (<i>Pool, Riffle, Bend, Crossing, etc.</i>)	45.819665	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.62658	Longitude or Easting		
Gravel / Cobble	Dominant / Subdominant Substrate		Waypoint		



Notes

Transect crosses riffle goes up slope of bar, stops below top. New main channel alignment at downstream end of deltaic deposit

Photo

KN10_transect_E.JPG



Photo

KN10surfcount_Ref.JPG



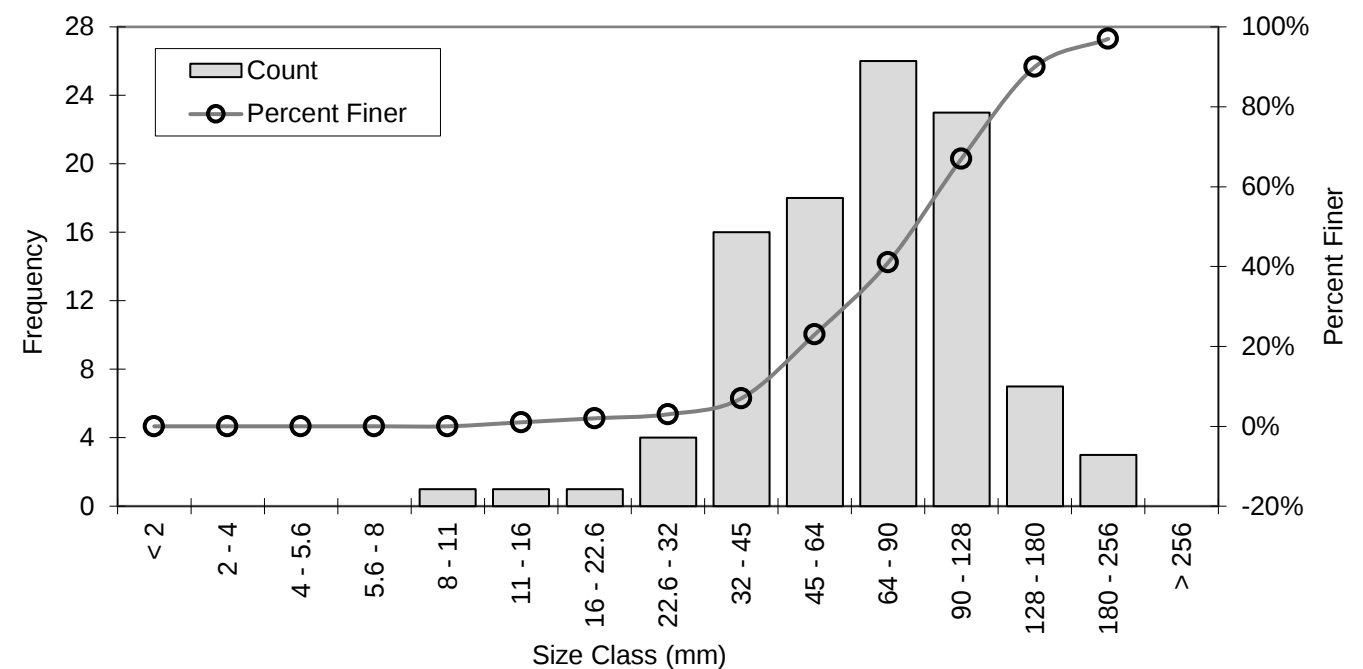
Distribution Statistic Points (Percent Finer)

D_{16}	39.3	mm
D_{50}	73.0	mm
D_{84}	118.1	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4		0%
Fine Gravel	4 - 5.6		0%
Fine Gravel	5.6 - 8		0%
Medium Gravel	8 - 11	1	0%
Medium Gravel	11 - 16	1	1%
Coarse Gravel	16 - 22.6	1	2%
Coarse Gravel	22.6 - 32	4	3%
Very Coarse Gravel	32 - 45	16	7%
Very Coarse Gravel	45 - 64	18	23%
Small Cobble	64 - 90	26	41%
Small Cobble	90 - 128	23	67%
Large Cobble	128 - 180	7	90%
Small Boulders	180 - 256	3	97%
Boulders	> 256		100%
Total		100	



Sediment Grain Size Analysis

EF Lewis River	Stream	10/18/2018	Date	KM / Niko	Personnel
JE1	Identifier / Unit		Location		
Riffle	Longitudinal Description (Pool, Riffle, Bend, Crossing, etc.)	45.817832	Latitude or Northing		
Surface	Sample Type: Surface or Sub-surface	-122.623838	Longitude or Easting		
Cobble / Gravel	Dominant / Subdominant Substrate		Waypoint		



Notes

Coarse inundated riffle/bar unit, large redd upstream in tailout

Photo

field_6-20181018-215000.jpg



Photo

field_4-20181018-214854.jpg



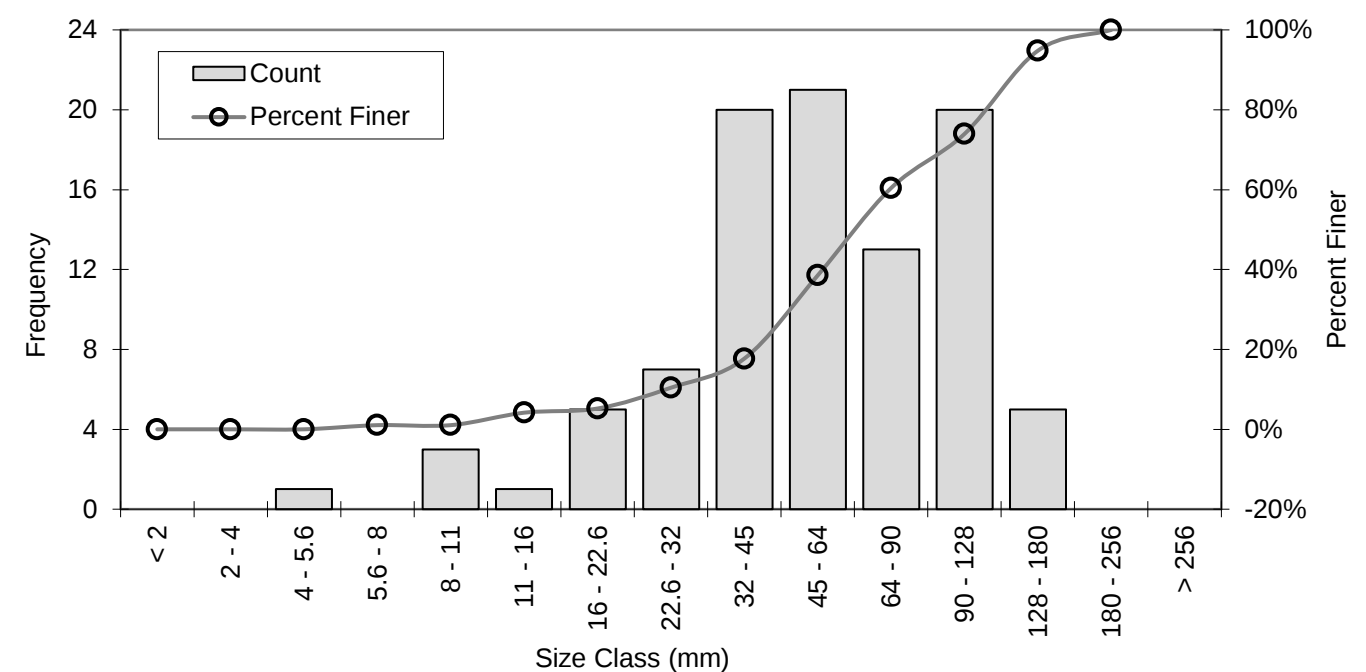
Distribution Statistic Points (Percent Finer)

D_{16}	29.8	mm
D_{50}	55.0	mm
D_{84}	108.3	mm

Assumes a linear interpolation

Pebble Count Data

Class (Wentworth)	Size Class (mm)	Count	Percent Finer
Sand	< 2		0%
Very Fine Gravel	2 - 4		0%
Fine Gravel	4 - 5.6	1	0%
Fine Gravel	5.6 - 8		1%
Medium Gravel	8 - 11	3	1%
Medium Gravel	11 - 16	1	4%
Coarse Gravel	16 - 22.6	5	5%
Coarse Gravel	22.6 - 32	7	10%
Very Coarse Gravel	32 - 45	20	18%
Very Coarse Gravel	45 - 64	21	39%
Small Cobble	64 - 90	13	60%
Small Cobble	90 - 128	20	74%
Large Cobble	128 - 180	5	95%
Small Boulders	180 - 256		100%
Boulders	> 256		100%
Total		96	



Bank Profile					
EF Lewis River		Stream	10/18/2018	Date	JE
BP1		Identifier / Unit	45.819611	Location	Personnel
Notes: Outside of bend in new avulsion at the top of the pits reach			-122.626694	Latitude or Northing	
				Longitude or Easting	
				Waypoint	

		Photo	field_6-20181018-220730.jpg
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Profile Range (ft)	Description
4-14	nd /gravel with cobble
0-4	sand/gravel with cobble at surface

Photo field_4-20181018-220649.jpg



Bank Profile					
EF Lewis River		Stream	10/18/2018	Date	JE
BP2		Identifier / Unit		Location	Personnel
Notes: Outside of bend in new avulsion at the top of the pits reach, Upstream of BP1			45.819466	Latitude or Northing	
			-122.626459	Longitude or Easting	
				Waypoint	

Profile Range (ft)	Description
2-12	silt/sand w cobble and gr
0-2	cobble
4:1 slope of cobble at toe	

Photo field_5-20181018-221420.jpg



Photo field_6-20181018-221448.jpg



Photo field_4-20181018-221352.jpg



Bank Profile

EF Lewis River	Stream	10/18/2018	Date	JE	Personnel
BP3	Identifier / Unit	45.819741	Location		
Notes:		-122.625944	Latitude or Northing		
			Longitude or Easting		
			Waypoint		



Profile Range (ft)	Description
12-13	Fines / Gravel / Sand
9-12	Sand / Silt
5-9	Silt / Sand
0-5	Alluvium

Photo field_5-20181018-221856.jpg



Photo field_12-20181018-222201.jpg



Bank Profile

EF Lewis River	Stream	10/18/2018	Date	JE	Personnel
BP4	Identifier / Unit	45.819796	Location		
Notes:		-122.625783	Latitude or Northing		
			Longitude or Easting		
			Waypoint		



	Photo	field_4-20181018-222838.jpg	Photo	field_6-20181018-223331.jpg
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Profile Range (ft)	Description
9.5-11	soil
7-9.5	silt / sand
4.5-7	gravel / silt / cobble
3.5-4.5	Cobble w/ gravel (old riffle?)
2-3.5	Alluvium
0-2	Alluvium (red from iron)



Photo field_12-20181018-223342.jpg



Bank Profile

EF Lewis River	Stream	10/18/2018	Date	JE	Personnel
BP5	Identifier / Unit	45.818971	Location		
Notes:		-122.625728	Latitude or Northing		
			Longitude or Easting		
			Waypoint		



Profile Range (ft)	Description
4-7	Sand / Silt
0-4	Gravel / Sand

Photo field_4-20181018-224851.jpg



Photo field_6-20181018-224930.jpg



Photo field_5-20181018-224913.jpg



Bank Profile					
EF Lewis River		Stream	10/18/2018	Date	JE
BP-KN3		Identifier / Unit	45.827254	Location	Personnel
Notes:			-122.632613	Latitude or Northing	
				Longitude or Easting	
				Waypoint	



		Photo	field_5-20181018-184741.jpg
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Profile Range (ft)	Description
5-6	soil
0-5	alluvium

Photo [field_4-20181018-184732.jpg](#)



Bank Profile

EF Lewis River	Stream	10/18/2018	Date	JE	Personnel
BP-KN4	Identifier / Unit	45.819796	Location		
Notes:		-122.625783	Latitude or Northing		
			Longitude or Easting		
			Waypoint		



Profile Range (ft)	Description
5.5-7	soil
1-5.5	silt / sand w/ some cobble
0-1	alluvium

Photo field_4-20181018-185426.jpg



Photo field_5-20181018-185436.jpg



Bank Profile			
EF Lewis River	Stream	10/18/2018	Date
PM1-Bank	Identifier / Unit		Location
Notes: Upper layer- all fines including sands and clays. Visual estimate of D50= 2.8 cm		45.811775	Latitude or Northing
Middle layer - fines and gravels. Visual estimate of D50 is 22cm (likely bimodal dist.)-	Toe	-122.598443	Longitude or Easting
zone- gravels (coarser than middle layer)	Unconsolidated		Waypoint



Profile Range (ft)	Description	Photo <u>PM1_Bank_1.jpg</u>	Photo <u>PM1_Bank_Close_LowerSubstrate.jp</u>
6.5	upper layer- fines		
3	middle layer- fines and gravels		
6.5	toe- gravels		

Photo PM1_Bank_Downstream.jpg

Bank Profile

EF Lewis River	Stream	10/18/2018	Date	Paul / Matt	Personnel
PM4-Bank	Identifier / Unit		Location		
Notes: top layer- all fines including sands and clays. Visual estimate of D50= 2.8 cm		45.815699	Latitude or Northing		
bottom layer - gravels. Visual estimate of D50 is 22cm (likely bimodal dist.)		-122.616793	Longitude or Easting		
cause for brown layer?			Waypoint		
		Oxidation			
		Unconsolidated			

Profile Range (ft)	Description
1.5- 2	Top Layer- fines
3	Bottom Layer- gravels and fines

Photo



Photo

PM4Bank_1.jpg



Type	Sample ID	D16	D50	D84	RM
Sub-surface	PM1		2.9	6.3	16.4
Sub-surface	PM4		2.6	4.7	24.4
Sub-surface	PM5		2.0	3.8	17.1
Sub-surface	KN2	-70.1	#DIV/0!		-326.0
Sub-Surface	KN6		7.7	14.1	29.7
Sub-Surface	KN8		2.8	16.9	39.2
Surface	PM1-Surface		15.8	59.0	125.9
Surface	PM2-Surface		11.0	57.7	100.9
Surface	PM3-Surface		1.8	24.0	73.4
Surface	PM4-Surface		25.1	60.7	150.2
Surface	PM5-Surface		1.8	10.5	37.4
Surface	PM6-Surface		1.4	11.0	78.8
Surface	KN1		24.3	42.8	72.0
Surface	KN2		28.4	45.7	73.5
Surface	KN5		20.4	34.0	57.4
Surface	KN7		29.8	50.1	80.4
Surface	KN9		28.5	48.2	81.3
Surface	KN10		39.3	73.0	118.1
Surface	JE1		29.8	55.0	108.3
	KN3				7.265151515
	KN4				7.271969697

