

ATTACHMENT C

ODFW Aquatic Inventory Project, Oregon Plan for Salmon and Watersheds,
Stream Habitat Report, Johnson Creek
Craven Consulting, Stream Habitat Inventory Report,
Johnson Creek Survey Nos. 1 through 5

**ODFW AQUATIC INVENTORY PROJECT
OREGON PLAN FOR SALMON WATERSHEDS
STREAM HABITAT REPORT**

SITE ID: 3977 (5459)
GCG: 3-MS
SURVEY DATE: 9/15/2003
STREAM: Johnson Creek
BASIN: Johnson Creek
INTERVAL: Once only
SURVEY CREW: Chelsey Girt/ Lisa Biggs
REPORT PREPARED BY: Carmen VanDyke
BASIN AREA (km²): 7.0
USGS MAPS: Bandon
ECOREGION: Coast Range Sitka Spruce

SURVEY DESCRIPTION.

The Johnson Creek habitat survey began at a bridge crossing and extended 565 meters. A single reach was designated based on the channel morphology and land use. The survey section was constrained by high terraces in a broad valley. The valley width index was 8.2 (range: 5-10). The primary land use for the reach was rural residential properties. The average unit gradient was 1.1 percent. Riffles (59%) and scour pools (22%) dominated the stream habitat. Sand (68%) and silt and organics (30%) were the most prominent in-stream sediments. Wood volume was low at 0.6 m³ per 100m. Trees most commonly found in the riparian zone were 3-15 cm dbh hardwoods.

COMMENTS:

The habitat survey crew conducted a fish presence survey with a backpack electroshocker at this site. Coho salmon fry (6-9 cm), cutthroat trout (3-15 cm), and three spined sticklebacks were encountered.

Raccoon and deer tracks were noted as well as garter snakes and tree frogs

There were no potential barriers to upstream fish migration noted in the survey.

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK (MS-5459)

HABITAT INVENTORY

Report Date: 8/12/2010

Survey Date: 9/15/2003

REACH

T29S-R14W-S06NW

REACH

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	8.2	VWI Range:	5 - 10

Channel Morphology (Percent Reach Length)

Constrained		Unconstrained	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	100%	Braided Channel	0%
Alt. Terrace/Hill	0%		
Landuse	0%		

Channel Characteristics

Type	Length (m)	Area (m ²)	Dry Units
Primary	565	1,215	0
Secondary	0	0	0

Channel Dimensions (m)

Wetted	Active	Floodprone <i>n</i> = 5	First Terrace <i>n</i> = 5
Width: 2.0	Width: 3.5	4.8 (3.6 - 6.3)	6.0 (4.1 - 9.3)
Depth: 0.39	Height: 0.6	1.1 (1 - 1.3)	1.5 (1.3 - 1.8)

W:D ratio: 6.2

Entrenchment (ACW:FPW ratio): 1.4

Stream Flow Type: MF

Habitat Units/100m (total channel length): 5.3

Average Unit Gradient: 1.1%

Habitat Units/100m (primary channel length): 5.3

Water temperature (°C): 12.5 - 12.5

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	RR	
Riparian Vegetation:	S	G

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:		Reach avg: 73%
Undercut Banks:		Range: 56 - 100

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	12	2.1
Volume (m ³):	3	0.6
Key pieces (>=12m x 0.60m):	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK (MS-5459)

HABITAT INVENTORY

Report Date: 8/12/2010

Survey Date:

9/15/2003

REACH	T29S-R14W-S06NW							REACH				
Habitat Type	Number Units	Total Length (m)	HABITAT DETAIL				Substrate					
			Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Percent Wetted Area					
			S/O	Snd	Grvl	Cbl	Bldr	Bdrk				
CULVERT CROSSING	1	6	0.7	0.20	4	0	25	75	0	0	0	0
POOL-BEAVER DAM	1	44	3.2	0.55	139	0	40	60	0	0	0	0
POOL-DAMMED	1	27	3.0	1.50	82	0	40	60	0	0	0	0
POOL-LATERAL SCOUR	7	79	2.7	0.67	220	0	38	60	1	0	0	0
POOL-STRAIGHT SCOUR	1	24	2.1	0.75	50	0	40	60	0	0	0	0
RIFFLE	1	9	2.0	0.30	19	8	23	68	5	0	5	0
RIFFLE W/ POCKETS	16	375	1.8	0.23	701	0	24	73	2	0	0	0
STEP/BEAVER DAM	1	0	0.3	0.01	0	0	40	60	0	0	0	0
STEP/LOG	1	0	0.5	0.05	0	0	40	60	0	0	0	0
Total:	30	565	2.0	0.39	1,215	8	Avg: 30	68	2	0	0	0

Habitat Group	Number Units	Total Length (m)	HABITAT SUMMARY		Wetted Area		Large Boulders	
			Avg Width (m)	Avg Depth (m)	(m ²)	Percent	Number	(# / 100m ²)
			Dammed & BW Pools	2	71	3.1	1.03	221
Scour Pools	8	103	2.6	0.68	269	22.18%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	17	384	1.9	0.23	719	59.21%	8	1.1
Rapids	0	0			0	0.00%	0	0.0
Cascades	0	0			0	0.00%	0	0.0
Step/Falls	2	1	0.4	0.03	0	0.02%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	1	6	0.7	0.20	4	0.37%	0	0.0

	Total of all Channel Lengths		Primary Channel Length
	Total	# / Km	# / Km
All Pools:	10	17.7	17.7
Pools >=1m deep:	2	3.5	3.5
Complex pools (LWD pieces>=3):	1	1.8	1.8
Pool frequency (channel widths/pool):	16.2		
Residual pool depth (avg):	0.60		

RIPARIAN ZONE VEGETATION

Reach		Cover (percent)							Diameter class (cm)					Reach
Unit	Side	Zone	Surface	Slope	Canopy	Shrub	Grass		3-15	15-30	30-50	50-80	>90	Notes
8	LF	1	HT	0	25	20	80	Conifer						
								Hardwood	12					
8	LF	2	HT	0	15	0	100	Conifer						WILLOW
								Hardwood	3					
8	LF	3	HT	0	0	0	100	Conifer						PASTURE
								Hardwood						
8	RT	1	HT	0	0	10	85	Conifer						
								Hardwood	3					
8	RT	2	HS	30	5	20	70	Conifer	1	1				SHORE PINE
								Hardwood						
8	RT	3	HS	15	25	10	85	Conifer	3					
								Hardwood						
14	LF	1	HT	0	0	0	100	Conifer						
								Hardwood						
14	LF	2	HT	0	0	0	100	Conifer						
								Hardwood						
14	LF	3	HT	0	0	0	100	Conifer						
								Hardwood						
14	RT	1	HS	10	40	5	95	Conifer						ALDER
								Hardwood	8	3				
14	RT	2	HS	20	85	15	10	Conifer	7	1				DFIR, SPRUCE, ALDER
								Hardwood	5					
14	RT	3	HS	20	100	5	5	Conifer	8					
								Hardwood	12					
23	LF	1	HS	20	85	60	20	Conifer						
								Hardwood	23					
23	LF	2	HS	20	80	70	20	Conifer						
								Hardwood	24	1				
23	LF	3	HS	20	45	40	50	Conifer	1					
								Hardwood	7					
23	RT	1	HT	0	0	40	60	Conifer						
								Hardwood						
23	RT	2	HT	0	0	30	70	Conifer						
								Hardwood						
23	RT	3	HT	0	0	30	70	Conifer						
								Hardwood						

RIPARIAN ZONE VEGETATION SUMMARY

REACH	Summary of Riparian Zone (0-30m)	REACH
		3 transects
Total hardwoods/1000	2052	
Total conifers/1000 ft	447	
Total conifers >20" dbh/1000 ft	0	
Total conifers >35" dbh/1000 ft	0	

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1		Zone 2		Zone 3		Zones 1-3	
	0-10 meters		10 - 20 meters		20 - 30 meters		0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	15.3	2.7	10.7	4.0	6.3	6.7	32.3
15-30cm	0.0	1.0	0.7	0.3	0.0	0.0	0.7	1.3
30-50cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50-90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.0	16.3	3.3	11.0	4.0	6.3	2.4	11.2

Canopy closure and ground cover

	Zone 1		Zone 2		Zone 3	
	0-10 meters		10 - 20 meters		20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	25		33		28	
Shrub cover	23		23		14	
Grass/forb cover	73		62		68	

Predominant landform in each zone

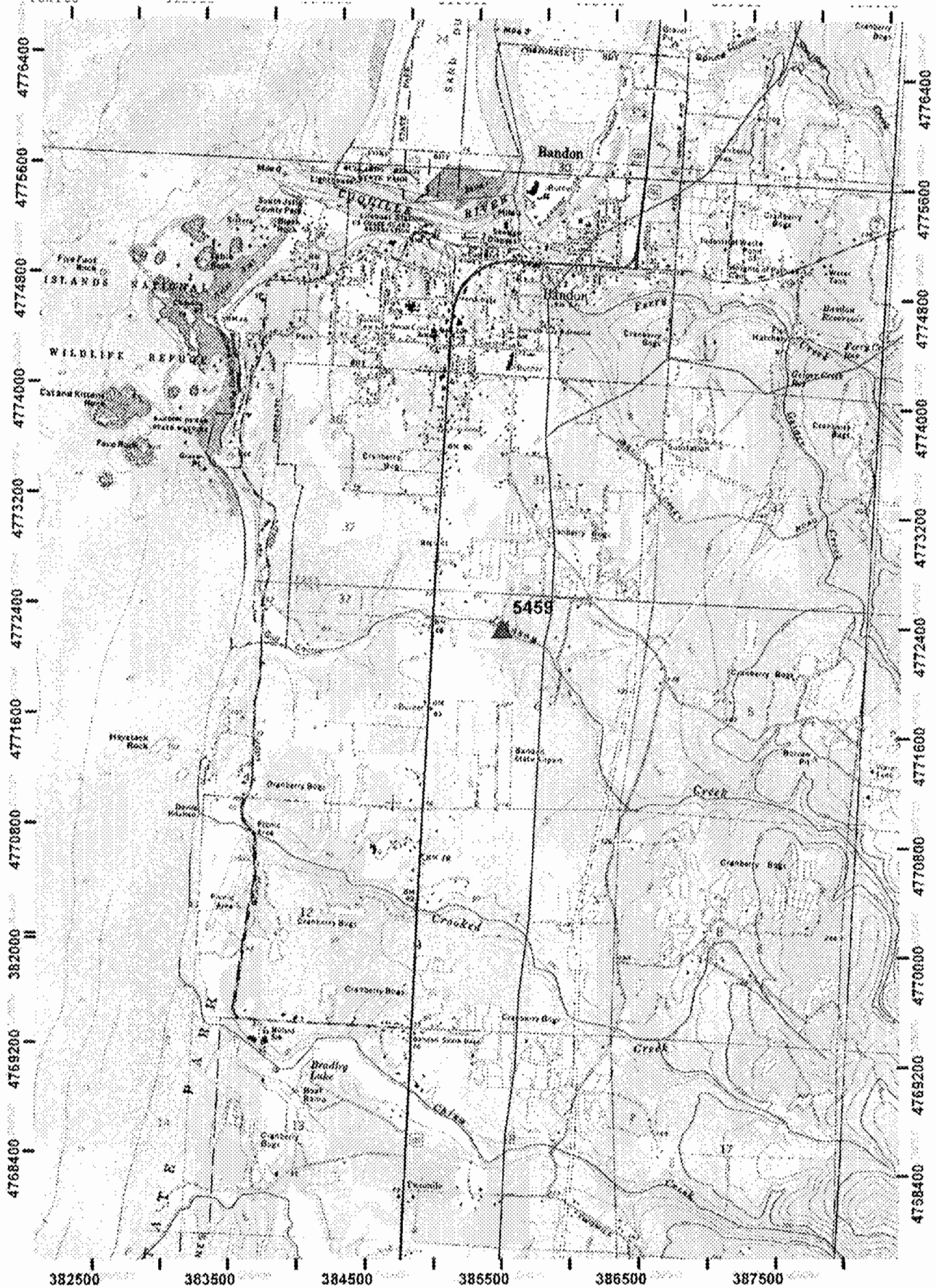
	Zone 1		Zone 2		Zone 3	
	0-10 meters		10 - 20 meters		20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	33		50		50	
High terrace	67		50		50	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	5		12		9	

Comment Summary



Oregon Plan Monitoring Sites 2003

MONITORING AREA: MID-SOUTH COAST SITE ID: 5459 JOHNSON CREEK (MS-5459)

UNIT#	TYPE	CHAN	DIST. (m)	COMMENTS	NOTE ESTIMATOR	NOTE NUMERATOR
1	RI	00	9.3	/SS	START AT 101 BRIDGE	START OF SURVEY
2	LP	00	16.3		T=12.5G, PHOTO #205	
3	RP	00	42.8	WL		RACCOON
5	RP	00	79.1	WL		GARTER SNAKE
8	LP	00	147.7		RIP#1	RIP#1
9	RP	00	171.8	/SS,WL,FC	OLD BRIDGE CROSSING	TREE FROG, BARBED WIRE
10	RP	00	196.8			FISH
11	RP	00	208.6	BC		WOODEN FOOT BRIDGE
13	RP	00	243.6	WL		DEER
14	LP	00	250.6	CE/	RIP#2	RIP#2
17	CC	00	298.1	CC	1.5X1.5 METAL NO DROP	GOOD CONDITION
18	RP	00	330.6	/TJ		NOT ON MAP, NOT SURVEYED
19	LP	00	343.2	SD/	MANMADE POOL FOR WATER	2 IN PLASTIC PIPE
21	SD	00	364.7	BD	H=35	
22	BP	00	408.2	BV		
23	RP	00	433.2		RIP#3	RIP#3
26	LP	00	486.2	SS/	SS/	
27	SL	00	486.5		H=.3	
28	DP	00	513.9		MANMADE POOL FOR WATER	
30	RP	00	565.4	SS/	END AT POINT/ACCESS DENIED	END SURVEY

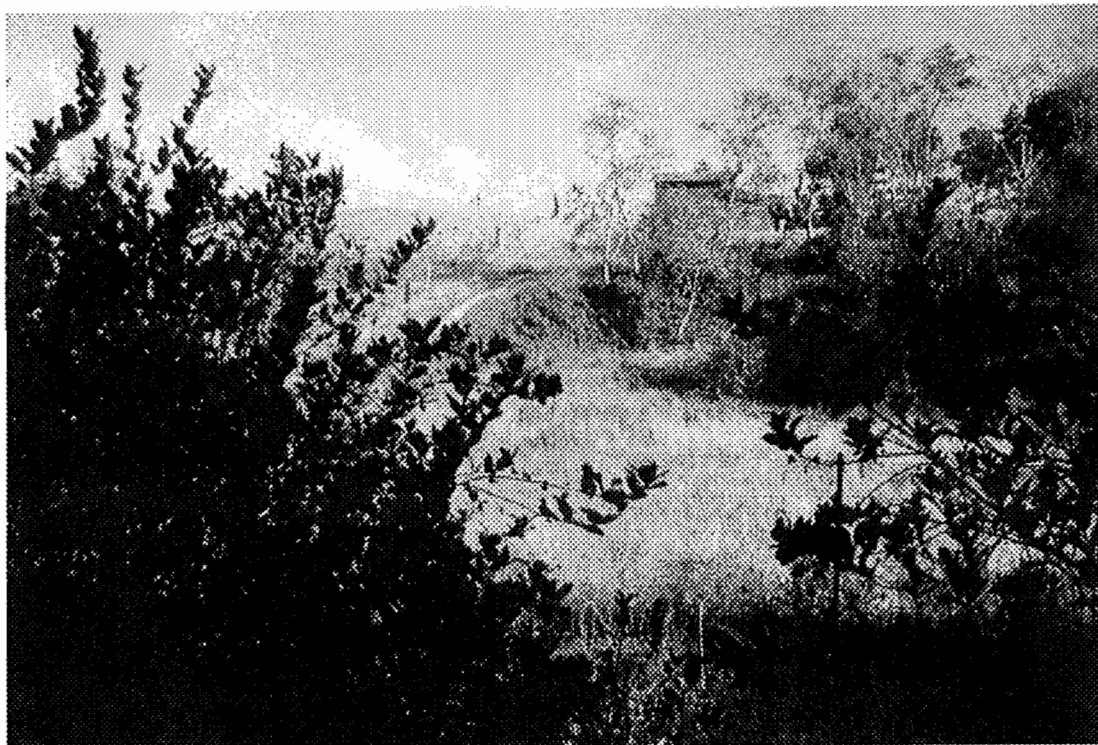


Johnson Creek
 MS-5459/3977
 Quad: Bandon

	Habitat Sites
	Mid-South Streams 1:100k







CRAVEN CONSULTING

STREAM HABITAT INVENTORY REPORT

STREAM: Johnson Creek Survey#1	DATE: 9/19/05
ECOREGION: Coast Range Sedimentary	Survey Length: 1.032 km
Crew: Pete Baki, Brandon Marshall	Stream Order: 2
REPORT PREPARED BY: Pete Baki	Basin Area:
USGS Maps: Bandon, Bill Peak	

REACH DESCRIPTIONS:

Reach 1: Length 1,032m. Reach one begins by the road and pump house which leads down to Johnson Creek from the North (UTM 10T, 387928E, 4770856N) and ends at the property line between the Gant and McWharten lots. This reach was constrained by alternating terraces and hill slopes. The valley width index is 4.2 (with a range of 2.5-6.1). The average unit gradient was 0.6%. The stream habitat was dominated by seour pools (85.5%) followed by riffles (9.78%). The wetted width to depth ratio is 6.8. The residual pool depth average is 0.45m. The stream substrate was dominated by gravel (50%) followed by sand (45%). There was 61% gravel in riffle units. There were 20.6 pieces of wood and 17.5m³ of wood per 100 m of stream. The most frequently appearing trees in this unit were hardwoods 3-15cm dbh. Large conifers in this reach were rare. Average shade for the reach was 87% (range 67-100). Land use for the reach was agricultural and timber harvest. There were two pools greater than 1m deep. Active erosion had an average of 14% and 9% undercut. The entire reach is on private land.

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #1

HABITAT INVENTORY

Report Date: 10/5/2005

Survey Date 9/19/2005

REACH

T29S-R14W-S08NE

REACH

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	4.2	VWI Range:	2.5 - 6.1

Channel Morphology (Percent Reach Length)

Constrained		Unconstrained	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	Braided Channel	0%
Alt. Terrace/Hill	100%		
Landuse	0%		

Channel Characteristics

Type	Length (m)	Area (m ²)	Dry Units
Primary	978	2,495	0
Secondary	54	61	0

Channel Dimensions (m)

Wetted	Active	Floodprone	n = 12	First Terrace	n = 10
Width: 1.2	Width: 3.6	5.3	(3.7 - 9.8)	7.0	(4.8 - 12.2)
Depth: 0.29	Height: 0.5	1.1	(0.9 - 1.3)	1.5	(1.2 - 2.3)

W:D ratio: 6.8

Entrenchment (ACW:FPW ratio): 1.5

Stream Flow Type: LF

Habitat Units/100m (total channel length): 12.4

Average Unit Gradient: 0.6%

Habitat Units/100m (primary channel length): 13.1

Water temperature (°C): 47.0 - 47.0

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	RR	TH
Riparian Vegetation:	D3	S

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	14%	Reach avg: 87%
Undercut Banks:	9%	Range: 67 - 100

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	201	20.6
Volume (m ³):	171	17.5
Key pieces (>=12m x 0.60m):	6	0.6

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #1

HABITAT INVENTORY

Report Date: 10/5/2005

Survey Date:

9/19/2005

REACH	T29S-R14W-S08NE							REACH					
HABITAT DETAIL													
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (>0.5m)	Substrate Percent Wetted Area						
							S/O	Snd	Grv	Cbl	Bldr	Bdrk	
CASCADE/BOULDERS	1	10	0.1	0.02	1	0	0	20	80	0	0	0	
CULVERT CROSSING	1	17	0.3	0.03	4	0	10	80	10	0	0	0	
GLIDE	2	10	1.1	0.09	10	0	0	50	50	0	0	0	
POOL-ISOLATED	1	8	5.4	2.00	45	0	30	70	0	0	0	0	
POOL-LATERAL SCOUR	58	608	1.8	0.48	2,177	0	6	57	36	1	0	0	
POOL-PLUNGE	2	4	2.1	0.58	9	0	11	63	26	0	0	0	
RAPID/BOULDERS	5	45	0.8	0.10	37	0	1	40	59	0	0	0	
RIFFLE	32	296	0.8	0.12	250	0	1	36	61	2	0	0	
STEP/COBBLE	24	33	0.6	0.05	22	0	0	22	74	3	0	0	
STEP/STRUCTURE	2	1	0.2	0.02	0	0	20	75	5	0	0	0	
Total:	128	1,032	1.2	0.29	2,556	0	Avg: 4	45	50	2	0	0	

HABITAT SUMMARY								
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m ²)	Percent	Number	(# / 100m ²)
Dammed & BW Pools	1	8	5.4	2.00	45	1.78%	0	0.0
Scour Pools	60	612	1.8	0.48	2,186	85.53%	0	0.0
Glides	2	10	1.1	0.09	10	0.40%	0	0.0
Riffles	32	296	0.8	0.12	250	9.78%	0	0.0
Rapids	5	45	0.8	0.10	37	1.44%	0	0.0
Cascades	1	10	0.1	0.02	1	0.03%	0	0.0
Step/Falls	26	33	0.6	0.05	22	0.87%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	1	17	0.3	0.03	4	0.17%	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #1

HABITAT INVENTORY

Report Date: 10/5/2005

Survey Date:

9/19/2005

REACH

T29S-R14W-S08NE

REACH

POOL SUMMARY

	Total of all Channel Lengths		Primary Channel Length
	Total	# / Km	# / Km
All Pools:	61	59.1	62.4
Pools >=1m deep:	2	1.9	2.0
Complex pools (LWD pieces >=3):	29	28.1	29.7
Pool frequency (channel widths/pool):	4.7		
Residual pool depth (avg):	0.45		

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #1

HABITAT INVENTORY Report Date: 10/4/2005

Survey Date: 9/19/2005

RIPARIAN ZONE VEGETATION SUMMARY

REACH

REACH

Summary of Riparian Zone (0-30m)

6 transects

Total hardwoods/100	792
Total conifers/1000 ft	61
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	3.0	0.2	2.3	0.2	1.5	0.3	6.8
15-30cm	0.2	0.5	0.0	0.8	0.2	0.7	0.3	2.0
30-50cm	0.3	0.7	0.0	0.7	0.0	1.0	0.3	2.3
50-90cm	0.0	0.8	0.0	0.3	0.0	0.7	0.0	1.8
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.5	5.0	0.2	4.2	0.3	3.8	0.3	4.3

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	74		64		64	
Shrub cover	56		72		76	
Grass/forb cover	44		28		24	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	8		100		100	
High terrace	92		0		0	
Low terrace	0		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		0		0	
Riprap	0		0		0	
Surface slope (%)	1		23		34	

Summary of Riparian Zone (0-30m) for all reaches

6 transects

Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream

Total hardwoods/100	792
Total conifers/1000 ft	61
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

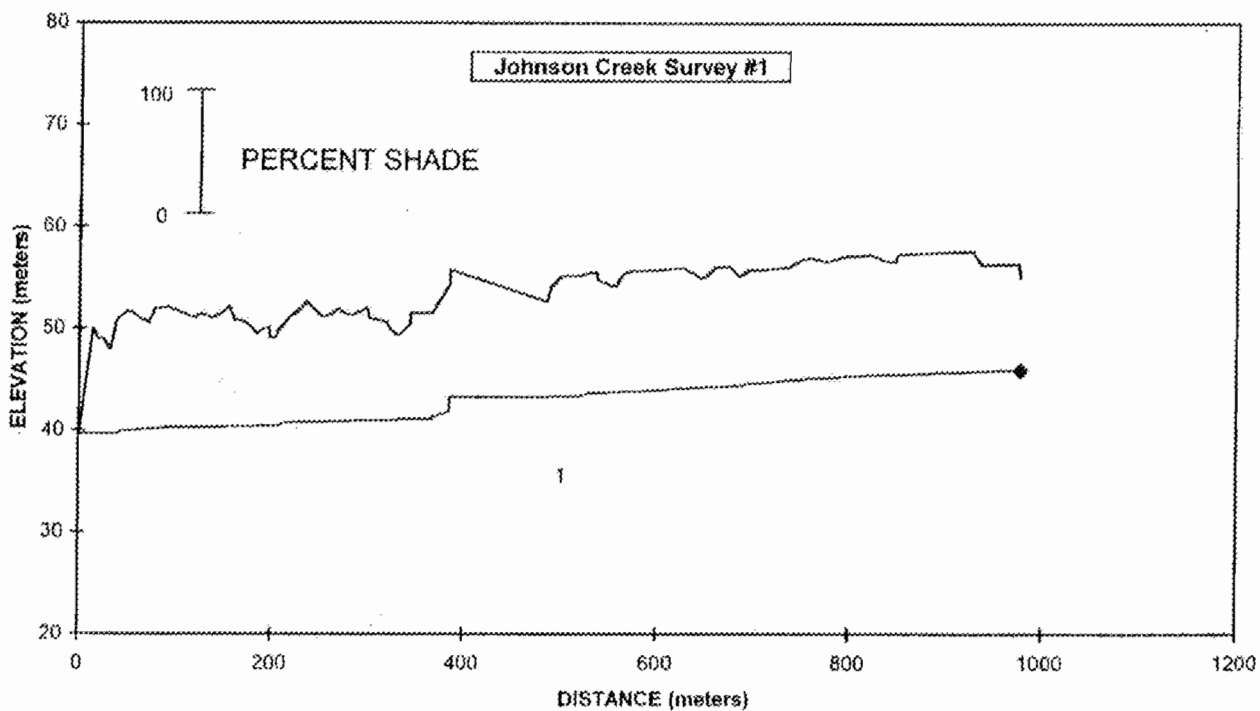
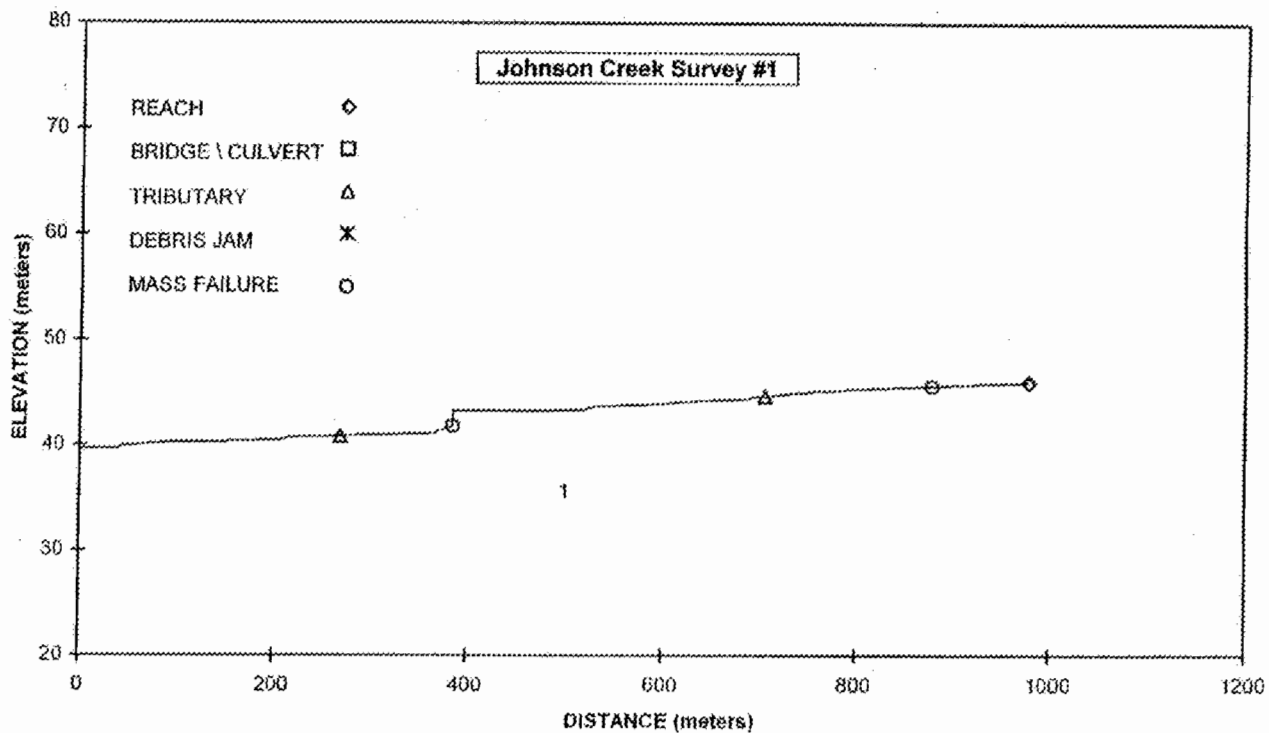
Average number of trees in a 5-m wide band

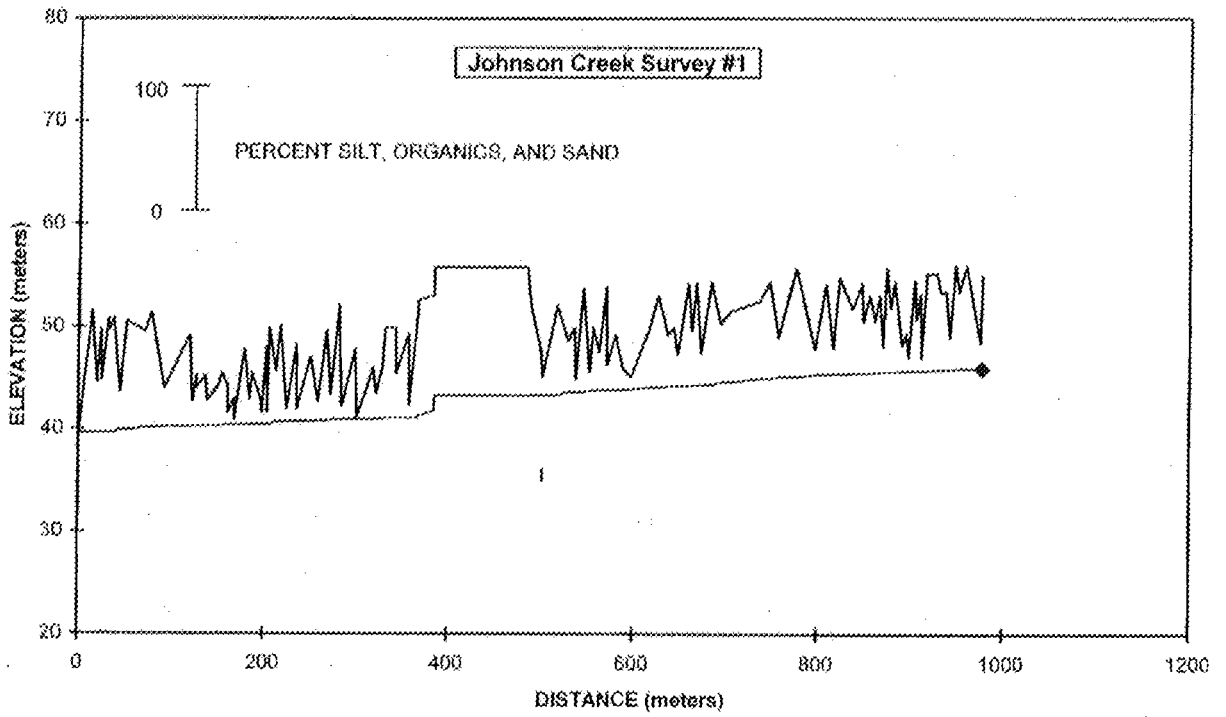
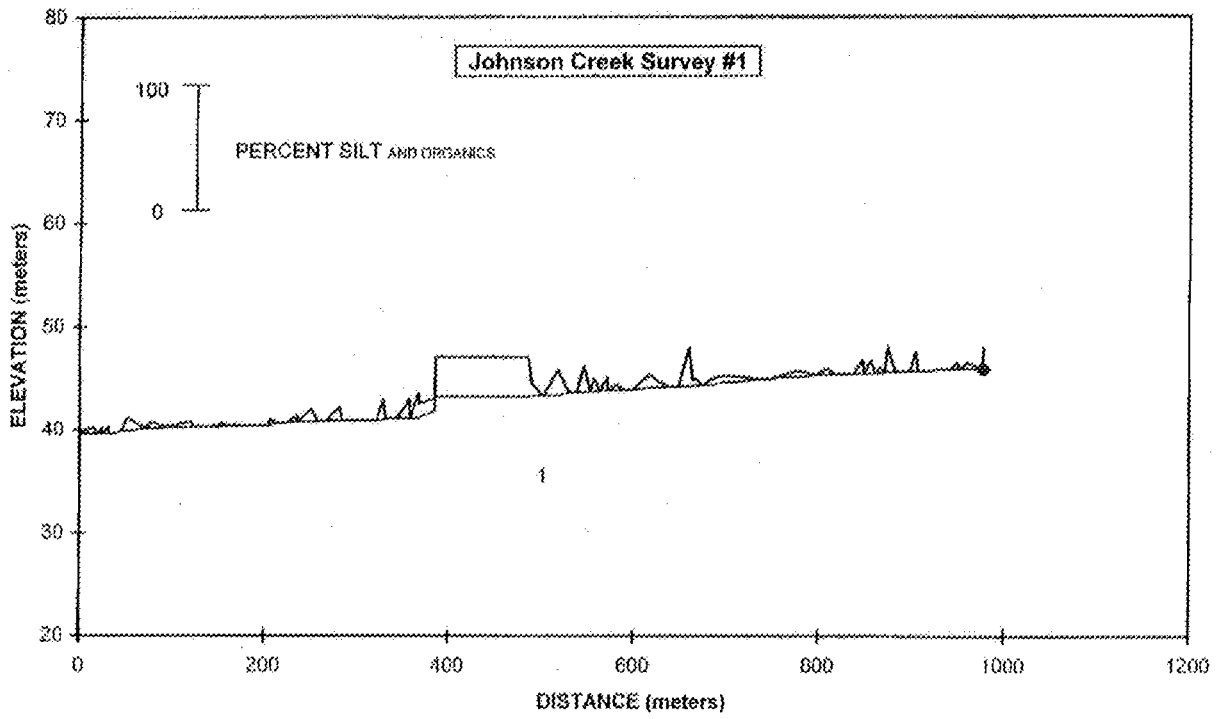
Diameter class (cm)	Zones 1-3	
	0-30 meters	
	Conifer	Hardwood
3-15cm	0.3	6.8
15-30cm	0.3	2.0
30-50cm	0.3	2.3
50-90cm	0.0	1.8
>90cm	0.0	0.0

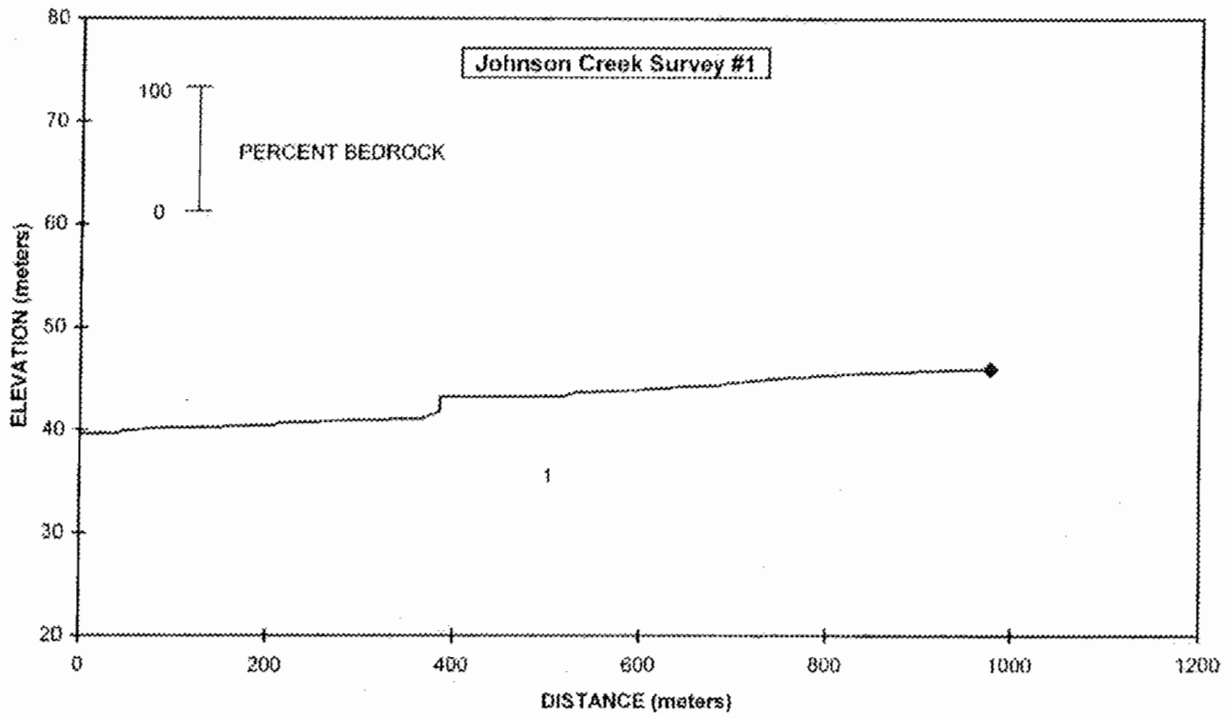
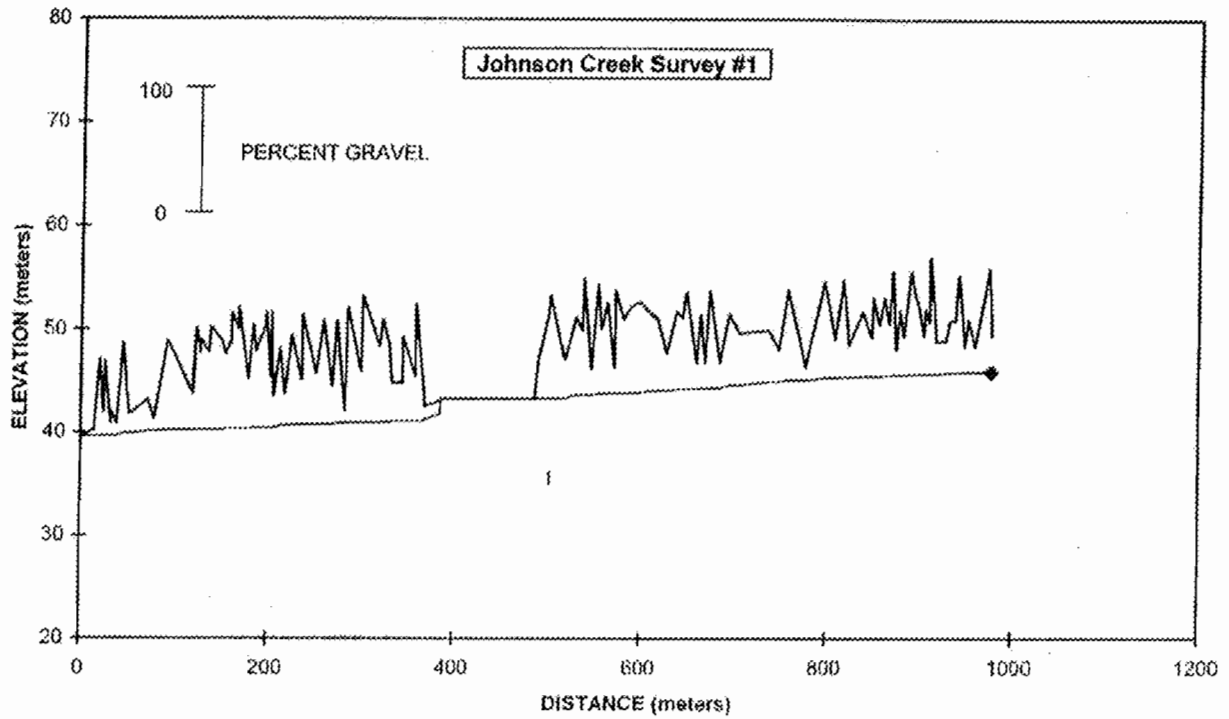
RIPARIAN ZONE VEGETATION

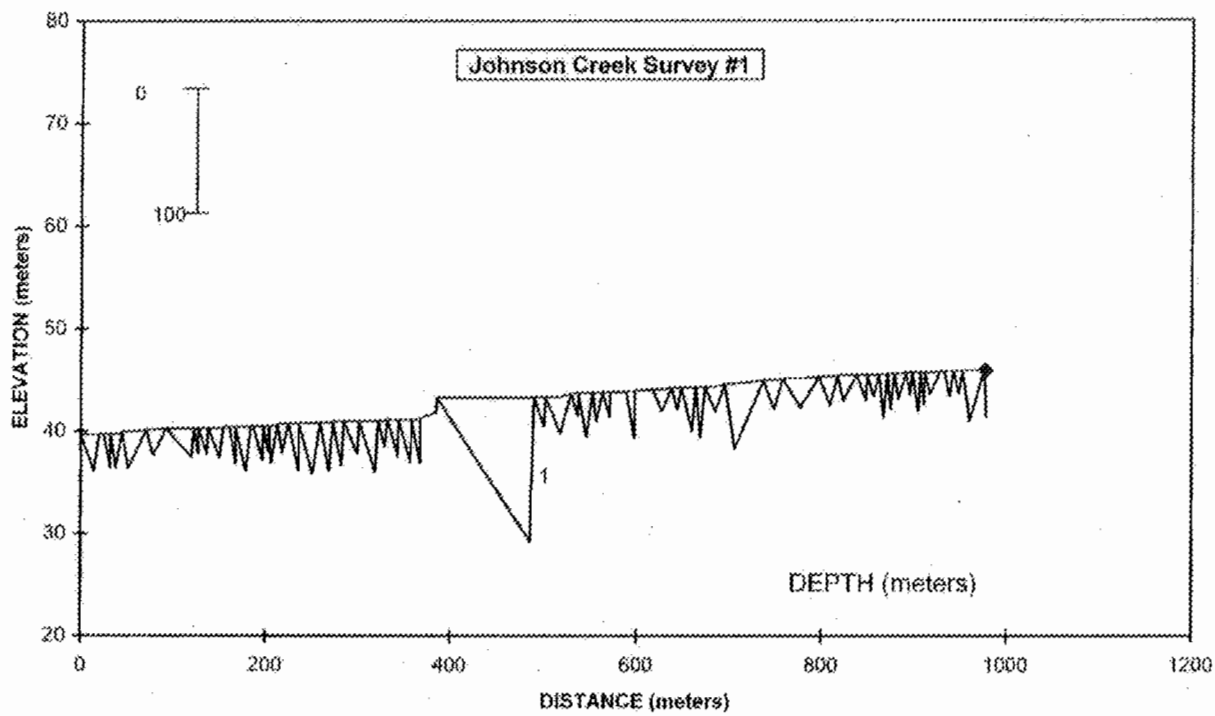
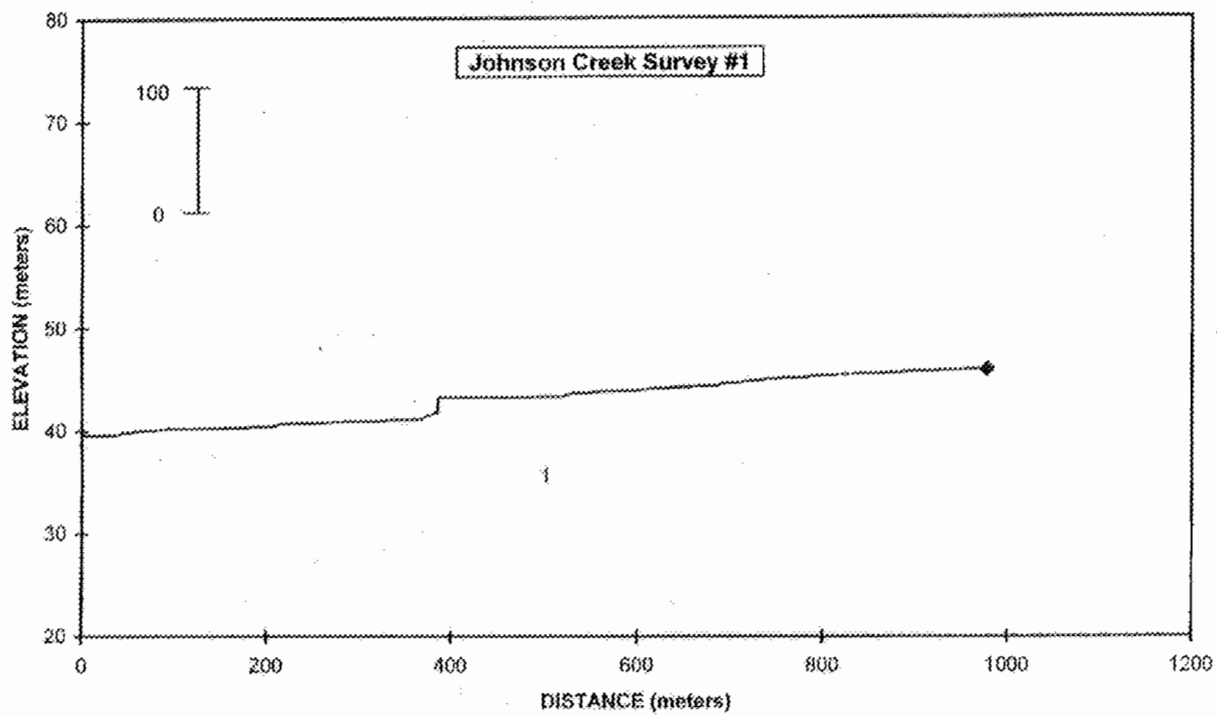
Reach		Reach												
Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
					Canopy	Shrub	Grass		3-15	15-30	30-60	60-90	>90	
1	LF	1	HT	0	70	10	90	Conifer	0	0	0	0	0	
								Hardwood	1	0	2	0	0	
1	LF	2	HS	10	75	70	30	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	
1	LF	3	HS	35	75	70	30	Conifer	0	0	0	0	0	
								Hardwood	2	0	0	0	0	
1	RT	1	HT	0	60	60	40	Conifer	0	0	0	0	0	
								Hardwood	5	0	0	0	0	
1	RT	2	HS	15	55	60	40	Conifer	0	0	0	0	0	
								Hardwood	2	0	0	0	0	
1	RT	3	HS	40	80	80	20	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	1	0	
30	LF	1	HT	0	75	30	70	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	1	0	
30	LF	2	HS	10	75	60	40	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
30	LF	3	HS	15	50	60	40	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	1	0	
30	RT	1	HT	0	50	80	20	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	1	0	
30	RT	2	HS	20	45	60	40	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
30	RT	3	HS	25	75	60	40	Conifer	1	0	0	0	0	
								Hardwood	0	0	1	1	0	
70	LF	1	HT	0	75	70	30	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	
70	LF	2	HS	15	70	90	10	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	1	0	
70	LF	3	HS	35	65	60	40	Conifer	0	0	0	0	0	
								Hardwood	2	0	1	0	0	
70	RT	1	HT	0	60	40	60	Conifer	0	0	0	0	0	
								Hardwood	5	0	0	0	0	
70	RT	2	HS	15	50	40	60	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
70	RT	3	HS	40	80	70	30	Conifer	0	1	0	0	0	
								Hardwood	2	1	0	0	0	
90	LF	1	HT	0	85	50	50	Conifer	0	0	1	0	0	
								Hardwood	0	0	1	1	0	

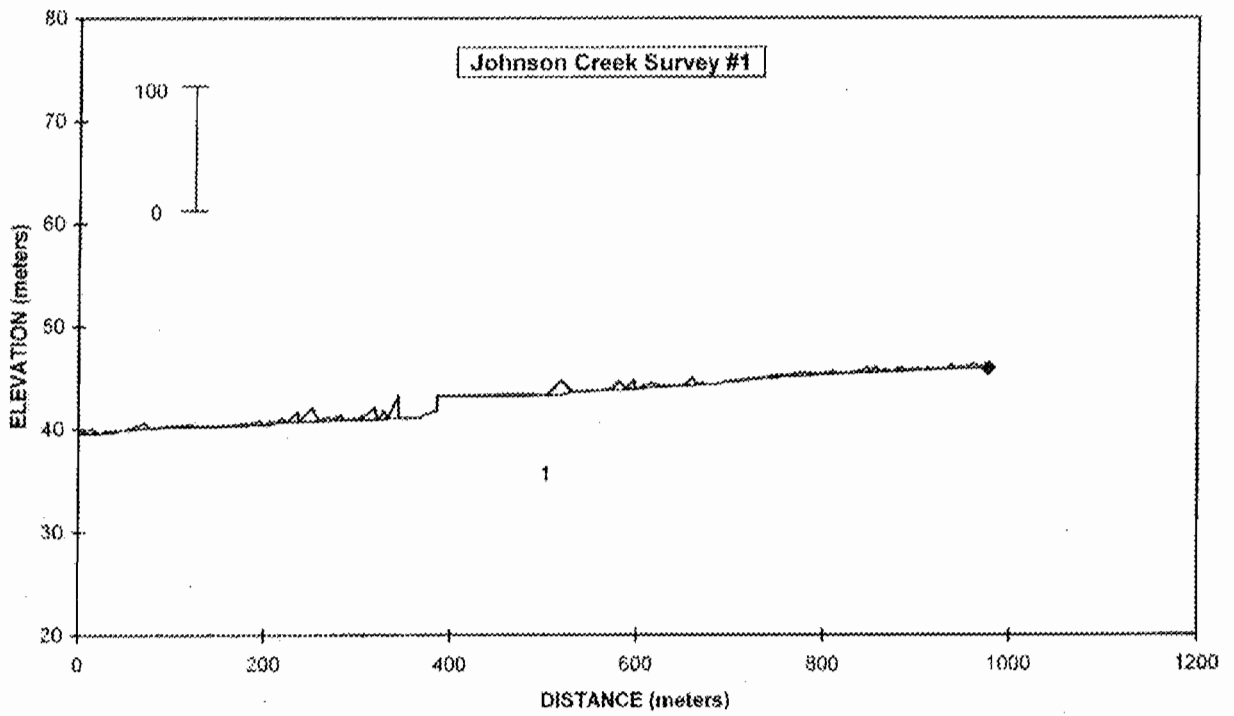
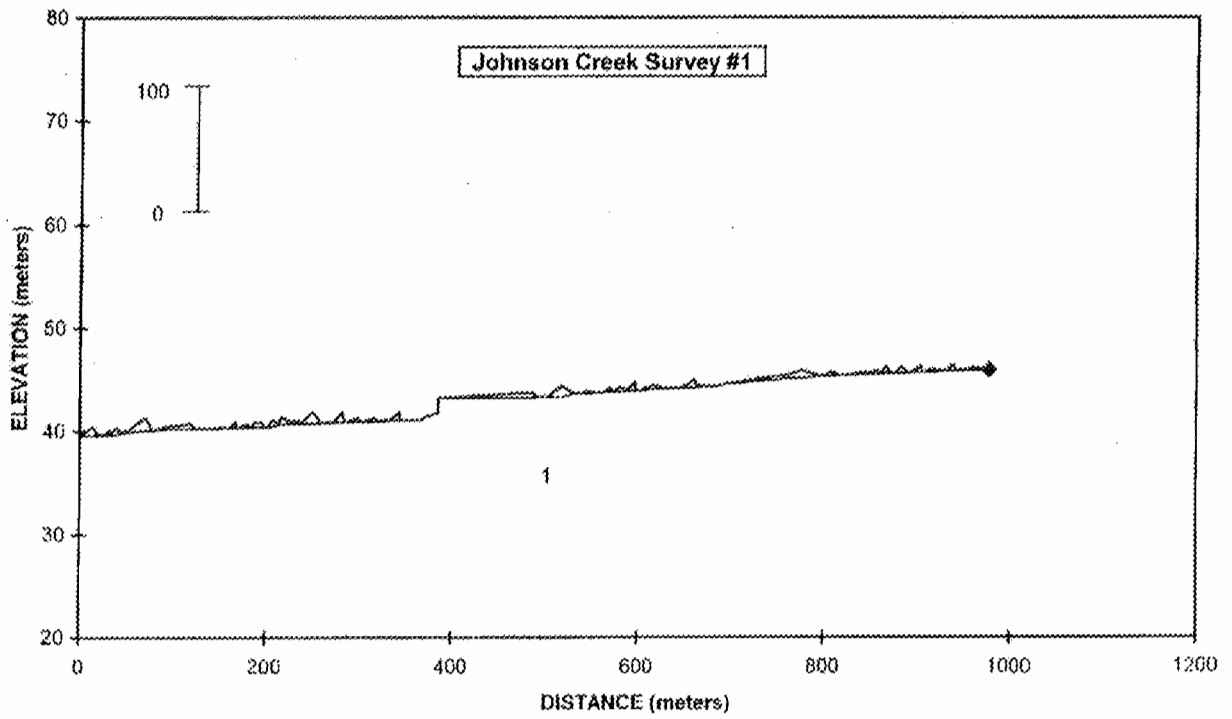
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90	LF	3	HS	25	55	65	35	Conifer	0	0	0	0	0
								Hardwood	0	0	1	0	0
90	RT	1	HT	0	85	80	20	Conifer	0	1	0	0	0
								Hardwood	0	0	0	1	0
90	RT	2	HS	45	85	90	10	Conifer	1	0	0	0	0
								Hardwood	2	0	0	0	0
90	RT	3	HS	45	75	90	10	Conifer	0	0	0	0	0
								Hardwood	0	0	2	0	0
120	LF	1	HS	15	85	50	50	Conifer	0	0	1	0	0
								Hardwood	1	0	0	1	0
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								Hardwood	1	0	0	0	0
120	LF	3	HS	40	20	90	10	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
120	RT	1	HT	0	85	80	20	Conifer	0	0	0	0	0
								Hardwood	3	0	0	0	0
120	RT	2	HS	25	60	80	20	Conifer	0	0	0	0	0
								Hardwood	5	0	0	0	0
120	RT	3	HS	25	60	80	20	Conifer	0	0	0	0	0
								Hardwood	3	1	0	0	0
128	LF	1	HT	0	75	60	40	Conifer	0	0	0	0	0
								Hardwood	0	3	0	0	0
128	LF	2	HS	40	60	80	10	Conifer	0	0	0	0	0
								Hardwood	1	2	2	0	0
128	LF	3	HS	45	50	90	10	Conifer	0	0	0	0	0
								Hardwood	0	1	0	0	0
128	RT	1	HT	0	80	60	40	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
128	RT	2	HS	35	80	95	5	Conifer	0	0	0	0	0
								Hardwood	0	2	0	0	0
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								Hardwood	0	1	0	1	0

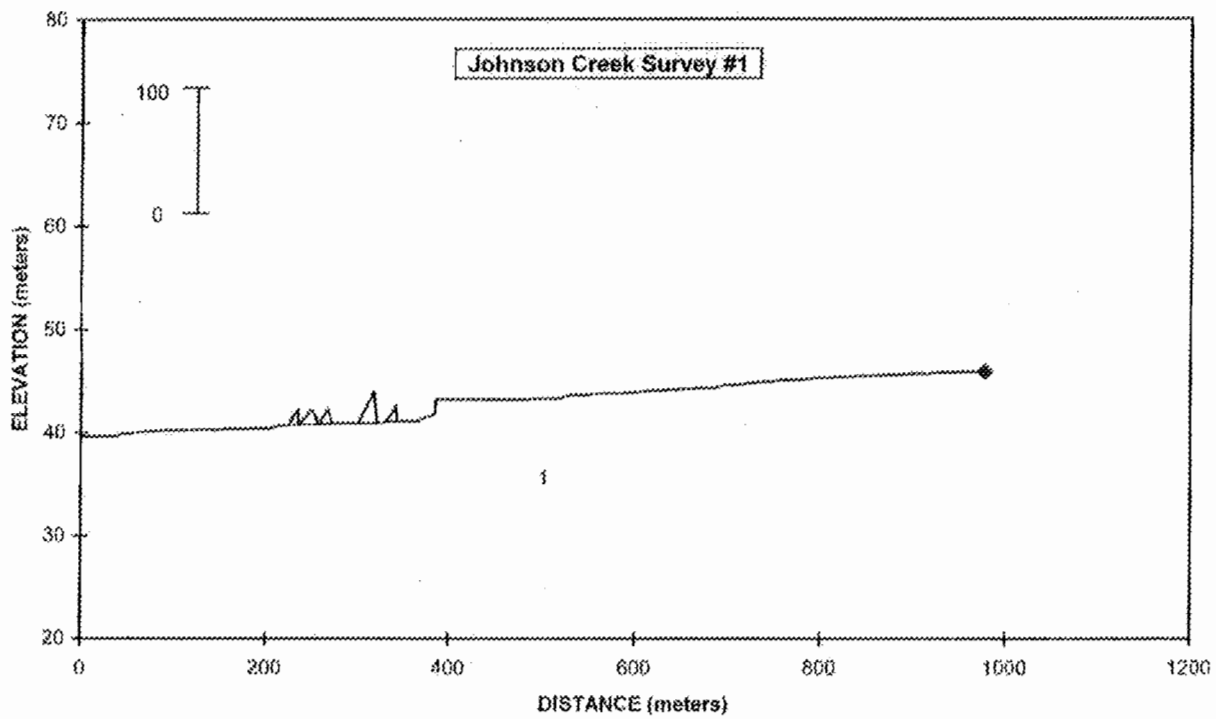




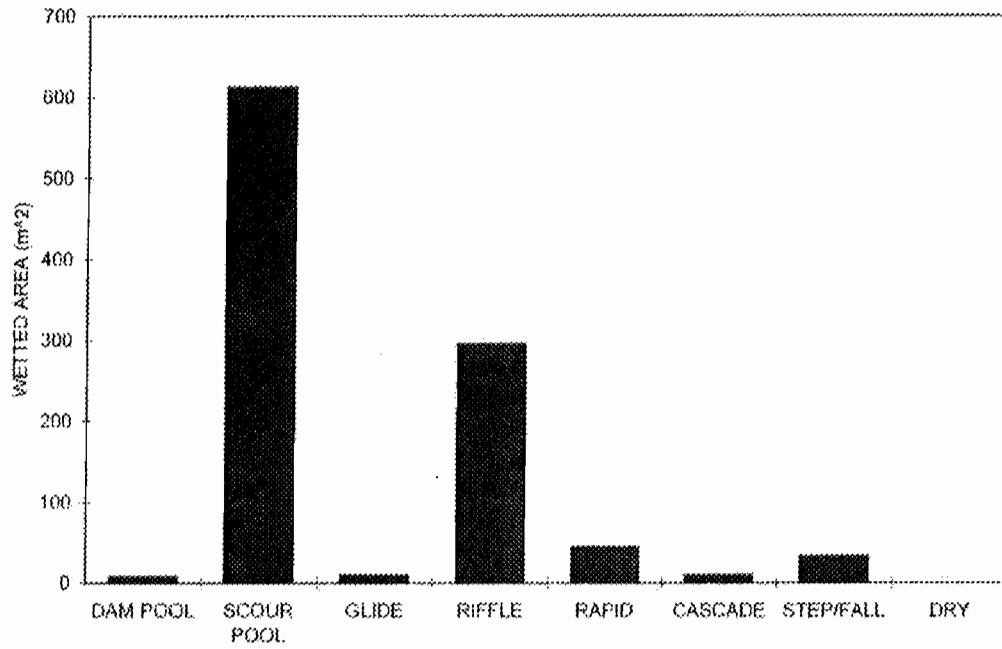








Johnson Creek Survey#1



Johnson Creek Survey #1

UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE_ESTIMATOR	NOTE_NUMERATOR
1	LP	00	14		T=47@11:45 RIP#1	T=47F
3	LP	00	24		FISH	
5	LP	00	31		FISH	
12	LP	00	78		FISH	
14	LP	00	120		SALMONIDS	SALMONIDS
27	RI	01	184	RB/		
28	RB	02			ACW= .3M FLAGING	
42	LP	01	268	/TJ	/TJ	
43	CB	11			ACW=0.3M	
58	SS	50	387		H=0.2M	
59	CC	00	385	CC	C=1.45Mx1.45M	
60	SS	00	385		H=1.5M, FISH	
61	LP	01	486	/SS	PUMPHOUSE/ ROAD ON LEFT	
62	IP	10			/PUMPHOUSE, SANDBAGS MAKE IP	
70	SC	00	538		RIPARIAN	
77	LP	00	580		FISH	
92	LP	01	705	TJ/		
93	RI	11			CULVERT AFTER RIFFLE	
96	RI	00	757	WL		FROG
110	RI	00	878	BV		
120	RI	00	927		FLAGS BOTH SIDES	

UNIT_NUMB	UNIT_LENST	UNIT_WIDTH	VER_LENGTH	VER_WIDTH
10.00000	20.80000	0.30000	21.30000	0.30000
20.00000	12.60000	1.80000	12.20000	1.50000
30.00000	10.00000	1.60000	9.60000	1.70000
41.00000	8.20000	0.50000	7.80000	0.50000
50.00000	3.50000	0.60000	3.50000	0.90000
70.00000	1.30000	0.90000	1.30000	0.90000
81.00000	20.40000	1.30000	20.70000	1.40000
90.00000	11.60000	1.80000	8.80000	
102.00000	14.80000	1.50000	13.70000	1.20000
110.00000	4.10000	0.80000	3.80000	0.60000
120.00000	10.80000	1.00000	9.44000	1.00000

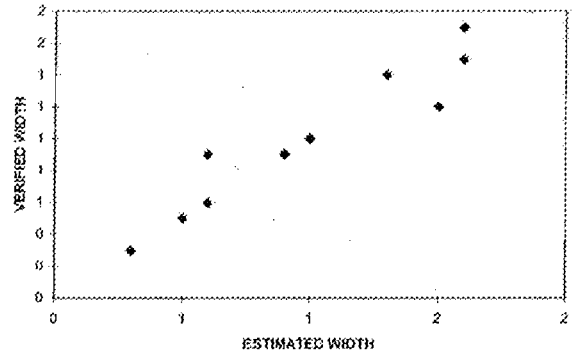
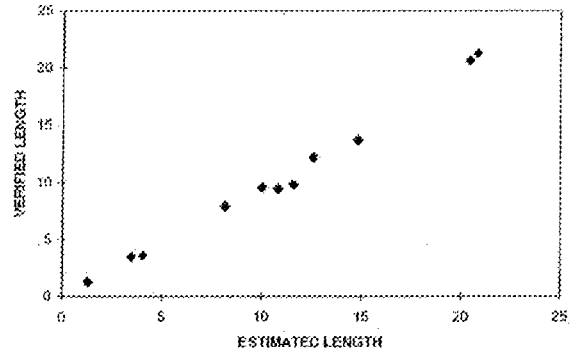
Johnson Creek #1 2005

LENGTH: REGRESSION OUTPUT

Constant:	0
Std Err of Y Est.	0.73
R Squared:	0.99
No. of Observations:	11
Correction Factor:	1.04

WIDTH: REGRESSION OUTPUT

Constant:	0
Std Err of Y Est.	0.16
R Squared:	0.90
No. of Observations:	11
Correction Factor:	1.18



Johnson Creek Survey#1 Pictures



Picture 1. Unit 29 looking upstream. Reach Photo.

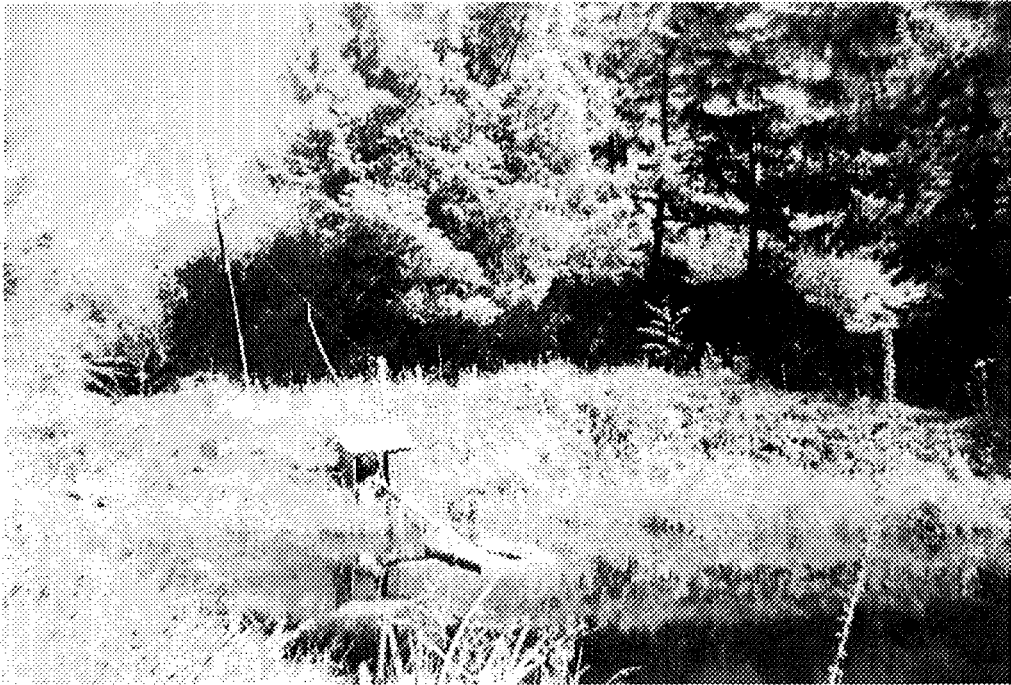


Photo 2. Unit 61. Diversion pool with pump house.



Picture 3. Unit 61 looking upstream. Diversion pool is approximately 100m long.



Picture 4. Unit 62 looking upstream. Sandbags form isolated pool on west side of channel for pump house.



Picture 5. Unit 115 looking upstream showing dense riparian typical to this survey.

CRAVEN CONSULTING

STREAM HABITAT INVENTORY REPORT

STREAM: Johnson Creek Survey#2

DATE: 9/20/05

ECOREGION: Coast Range Sedimentary

Survey Length: 0.46 km

Crew: Pete Baki, Brandon Marshall

Stream Order: 2

REPORT PREPARED BY: Pete Baki

Basin Area:

USGS Maps: Bandon

REACH DESCRIPTIONS:

Reach 1: Length 457m. Reach one begins approximately 200m East of Rosa road (UTM 10T 386647E, 4771057N) and ends at UTM 10T 386985E, 4771141N. This reach was constrained by alternating terraces and hill-slope. The valley width index is 4.2 (with a range of 3.7-4.8). The average unit gradient was 0.4%. The stream habitat was dominated by scour pools (72.51%) followed by riffles (18.9%). The wetted width to depth ratio is 8.2 The residual pool depth average is 0.62m. The stream substrate was dominated by sand (65%) and gravel (33%). There was 34% gravel in riffle units. There were 19.9 pieces of wood and 16.3m³ of wood per 100 m of stream. The most frequently appearing trees in this unit were hardwoods 3-15cm dbh. Large conifers in this reach were rare. Average shade for the reach was 86% (range 72-94). Land use for the reach was timber harvest and agriculture. There were three pools greater than 1m deep. Active erosion had an average of 18% and 12% undercut.

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #2

HABITAT INVENTORY

Report Date: 10/5/2005

Survey Date 9/20/2005

REACH

T29S-R14W-S05SW

REACH

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index 4.2		VWI Range: 3.7 - 4.8	

Channel Morphology (Percent Reach Length)

Constrained		Unconstrained	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	Braided Channel	0%
All Terrace/Hill	100%		
Landuse	0%		

Channel Characteristics

Type	Length (m)	Area (m ²)	Dry Units
Primary	457	1,494	0
Secondary	26	8	0

Channel Dimensions (m)

Wetted	Active	Floodprone n = 5	First Terrace n = 5
Width: 2.6	Width: 4.0	4.6 (4.2 - 5.2)	5.8 (4.6 - 7.2)
Depth: 0.35	Height: 0.5	1.0 (0.8 - 1.2)	1.3 (1.2 - 1.5)

W:D ratio: 8.2

Entrenchment (ACW:FPW ratio): 1.2

Stream Flow Type: LF

Habitat Units/100m (total channel length): 8.5

Average Unit Gradient: 0.4%

Habitat Units/100m (primary channel length): 9.0

Water temperature (°C): 48.0 - 48.0

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	AG	TH
Riparian Vegetation:	D3	S

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	18%	Reach avg: 86%
Undercut Banks:	12%	Range: 72 - 94

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	91	19.9
Volume (m ³):	75	16.3
Key pieces (>=12m x 0.60m):	2	0.4

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #2

HABITAT INVENTORY

Report Date: 10/5/2005

Survey Date:

9/20/2005

REACH		T29S-R14W-S05SW						REACH					
HABITAT DETAIL													
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area						
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk	
CASCADE/BOULDERS	2	20	0.2	0.01	4	0	0	53	47	0	0	0	
GLIDE	1	11	2.4	0.15	25	0	5	76	19	0	0	0	
POOL-LATERAL SCOUR	16	288	3.7	0.72	1,068	6	5	74	20	0	0	0	
POOL-PLUNGE	2	6	3.4	0.40	22	0	0	68	33	0	0	0	
RAPID/BOULDERS	2	24	2.5	0.08	67	0	0	45	55	0	0	0	
RIFFLE	8	114	2.3	0.12	284	0	0	64	34	0	1	0	
STEP/COBBLE	10	19	1.7	0.09	33	1	0	55	46	0	0	0	
Total:	41	483	2.6	0.35	1,503	7	Avg: 2	65	33	0	0	0	

HABITAT SUMMARY								
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m ²)	Percent	Number	(# / 100m ²)
Dammed & BW Pools	0	0			0	0.00%	0	0.0
Scour Pools	18	294	3.6	0.69	1,090	72.51%	6	0.6
Glides	1	11	2.4	0.15	25	1.69%	0	0.0
Riffles	8	114	2.3	0.12	284	18.89%	0	0.0
Rapids	2	24	2.5	0.08	67	4.44%	0	0.0
Cascades	2	20	0.2	0.01	4	0.27%	0	0.0
Step/Falls	10	19	1.7	0.09	33	2.20%	1	3.0
Dry	0	0			0	0.00%	0	0.0
Culverts	0	0			0	0.00%	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #2

HABITAT INVENTORY

Report Date: 10/5/2005

Survey Date:

9/20/2005

REACH

T29S-R14W-S05SW

REACH

POOL SUMMARY

	Total	Total of all Channel Lengths #/ Km	Primary Channel Length #/ Km
All Pools:	18	37.3	39.4
Pools >=1m deep:	3	6.2	6.6
Complex pools (LWD pieces>=3):	14	29.0	30.7
Pool frequency (channel widths/pool):	6.6		
Residual pool depth (avg):	0.62		

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #2

HABITAT INVENTORY Report Date: 10/5/2005

Survey Date: 9/20/2005

RIPARIAN ZONE VEGETATION SUMMARY

REACH

REACH

Summary of Riparian Zone (0-30m)

5 transects

Total hardwoods/100	561
Total conifers/1000 ft	122
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	2.0	0.2	2.2	0.2	1.2	0.4	5.4
15-30cm	0.2	0.6	0.6	1.0	0.6	0.6	1.4	2.2
30-50cm	0.2	0.0	0.0	0.6	0.0	0.6	0.2	1.2
50-90cm	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.4
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.4	2.8	0.8	4.0	0.8	2.4	0.7	3.1

Canopy closure and ground cover

	Zone 1	Zone 2	Zone 3
	0-10 meters (%)	10 - 20 meters (%)	20 - 30 meters (%)
Canopy closure	70	68	54
Shrub cover	52	74	83
Grass/forb cover	48	26	17

Predominant landform in each zone

	Zone 1	Zone 2	Zone 3
	0-10 meters (%)	10 - 20 meters (%)	20 - 30 meters (%)
Hillslope	70	90	100
High terrace	30	10	0
Low terrace	0	0	0
Floodplain	0	0	0
Wetland/meadow	0	0	0
Stream channel	0	0	0
Roadbed/Railroad	0	0	0
Riprap	0	0	0
Surface slope (%)	13	21	22

Summary of Riparian Zone (0-30m) for all reaches**5 transects****Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream**

Total hardwoods/100	561
Total conifers/1000 ft	122
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

Average number of trees in a 5-m wide band

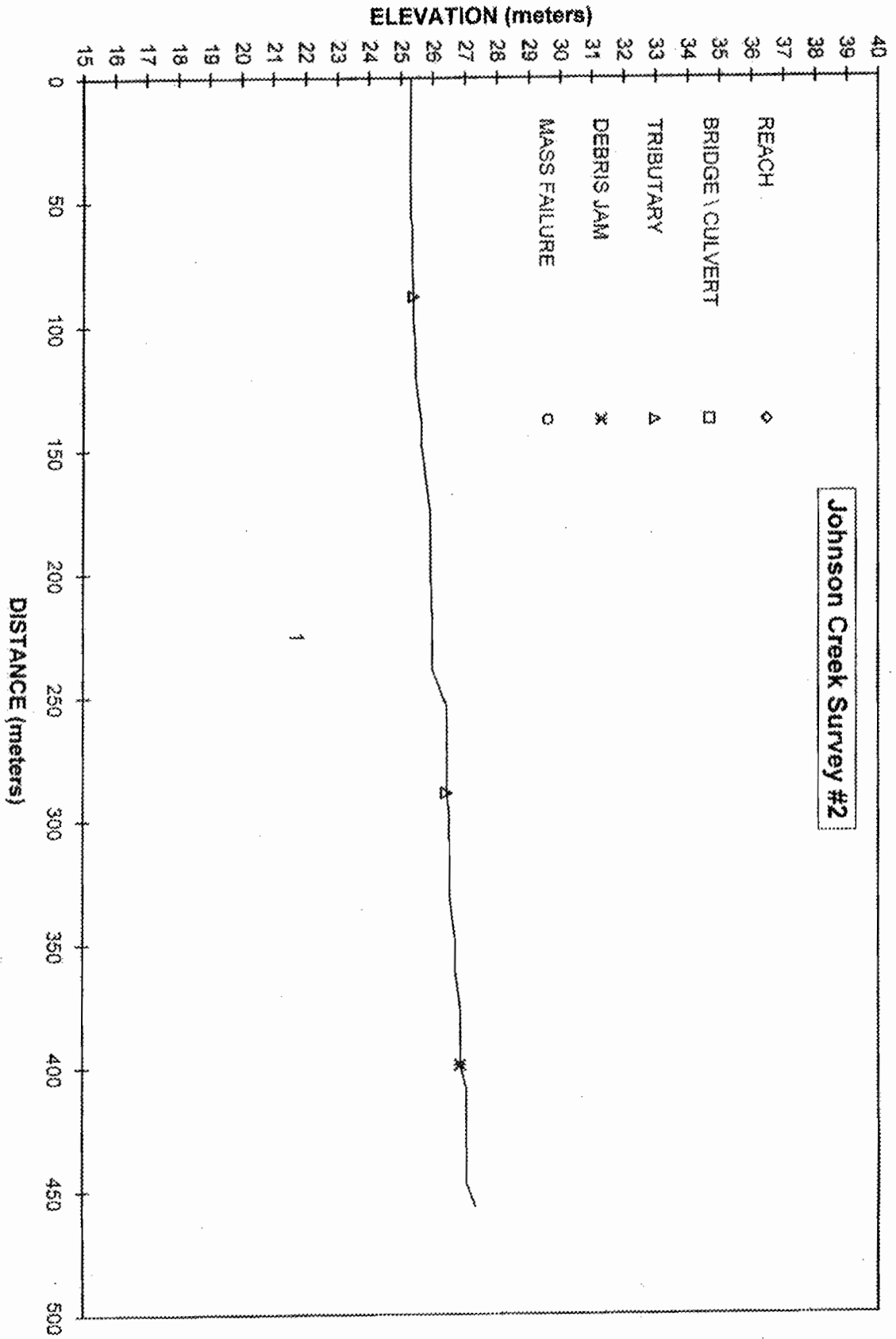
Diameter class (cm)	Zones 1-3 0-30 meters	
	Conifer	Hardwood
3-15cm	0.4	5.4
15-30cm	1.4	2.2
30-50cm	0.2	1.2
50-90cm	0.0	0.4
>90cm	0.0	0.0

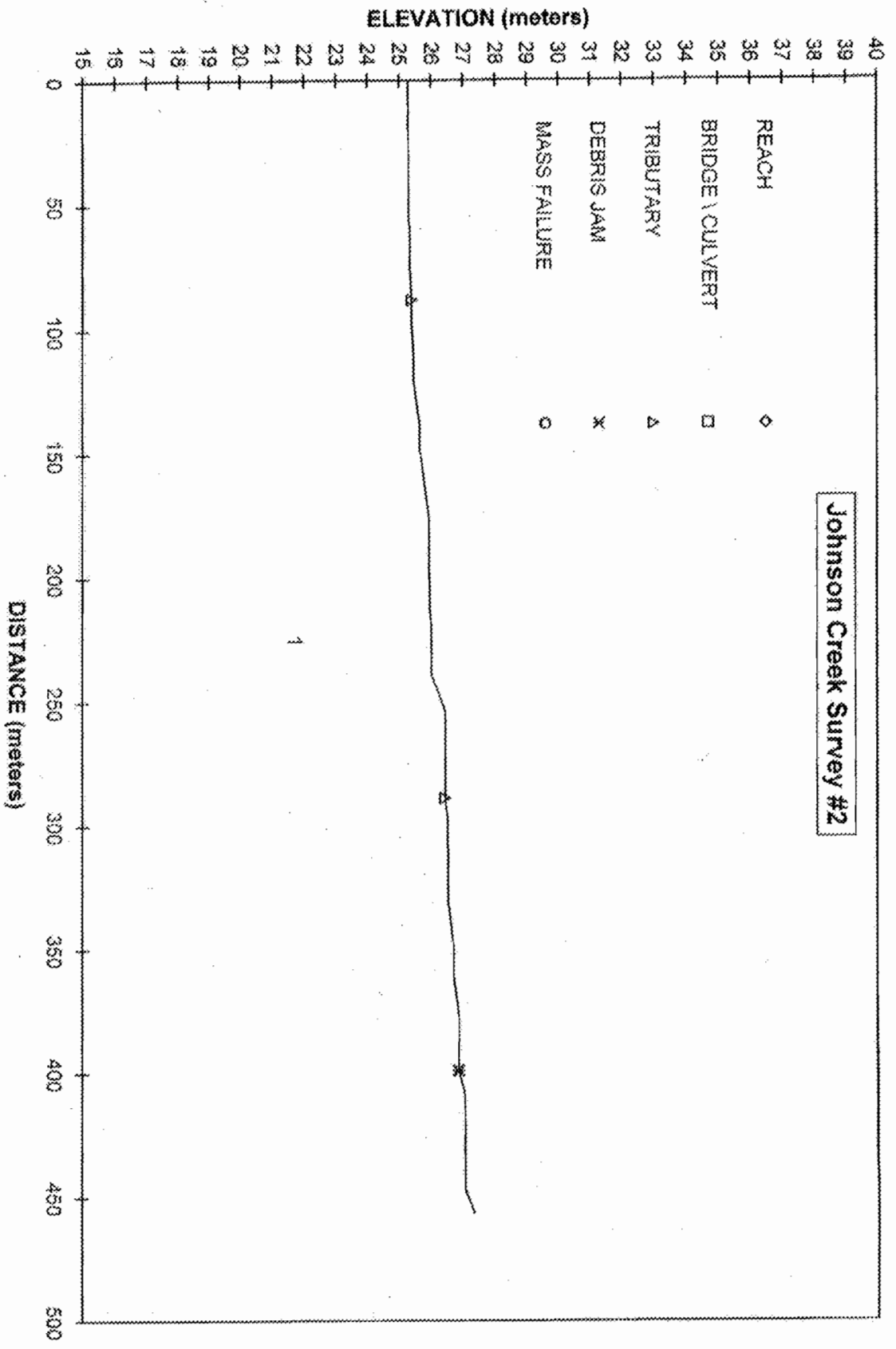
RIPARIAN ZONE VEGETATION

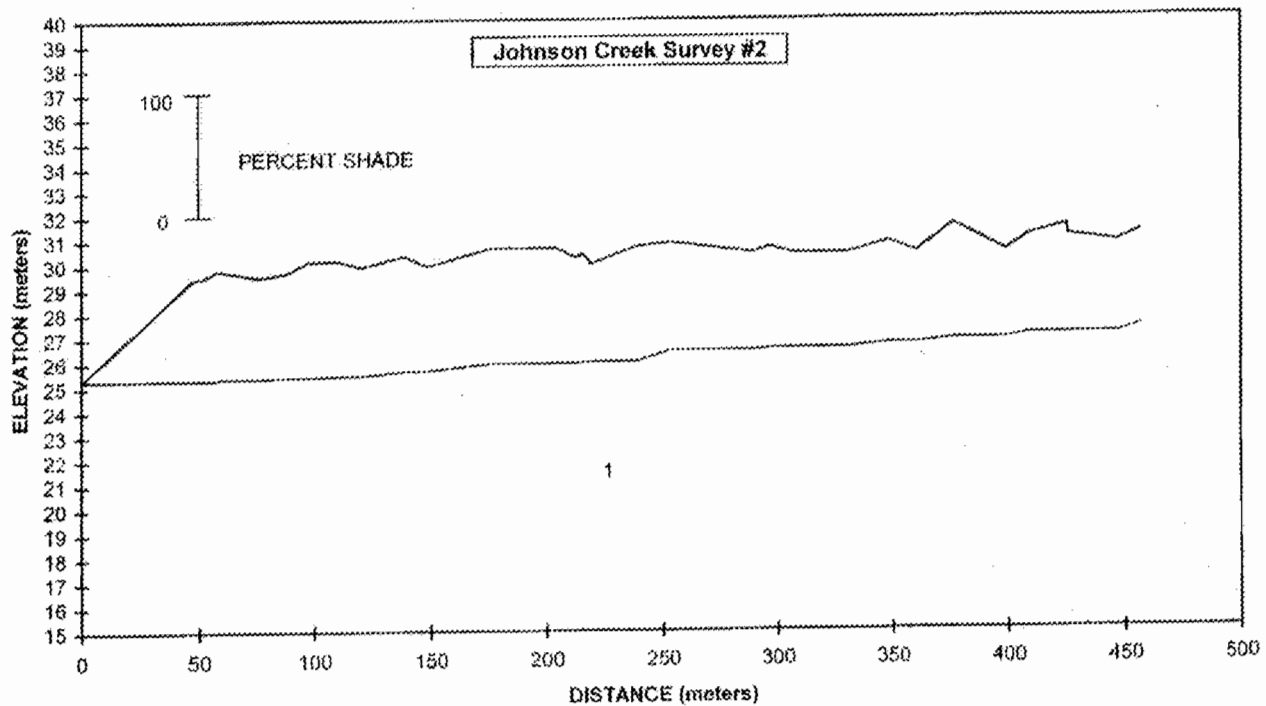
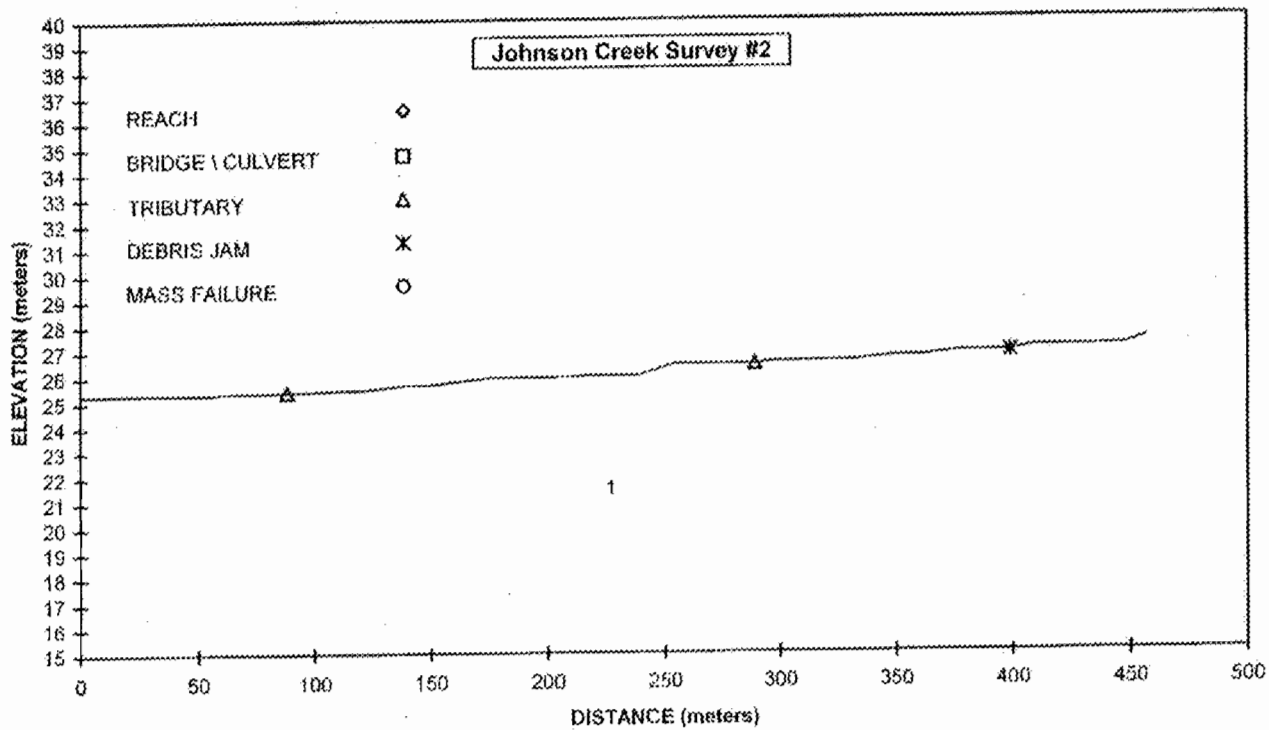
Reach Reach

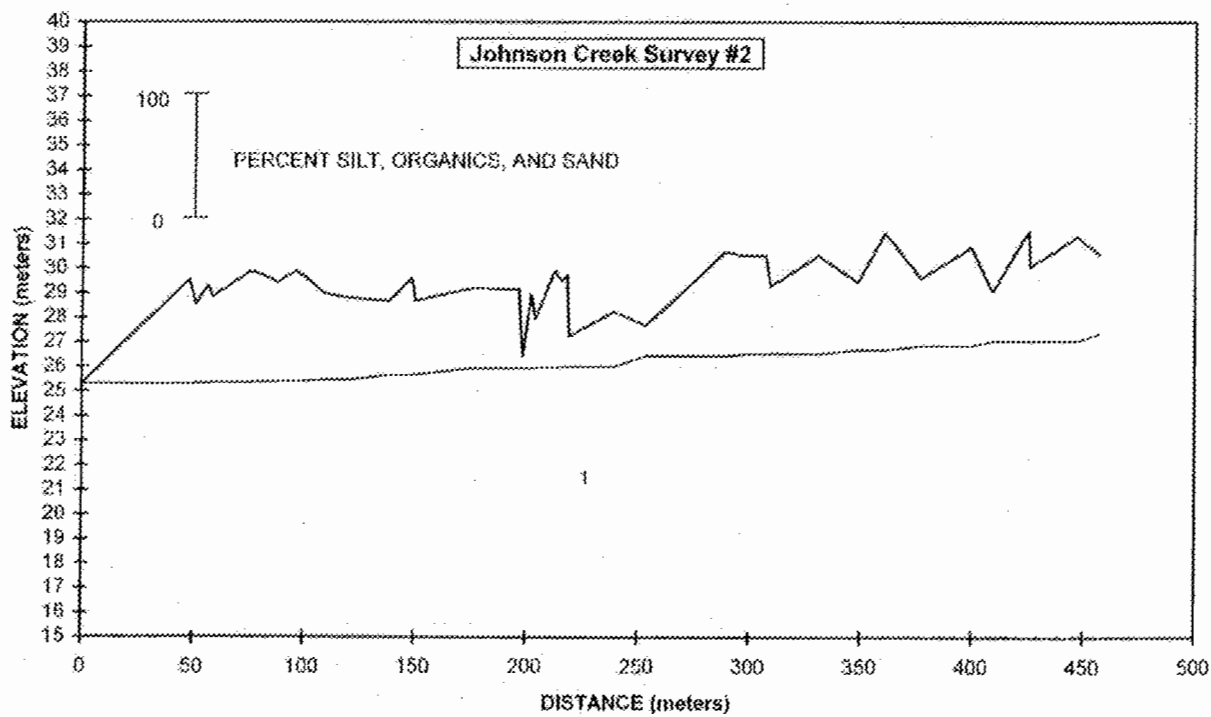
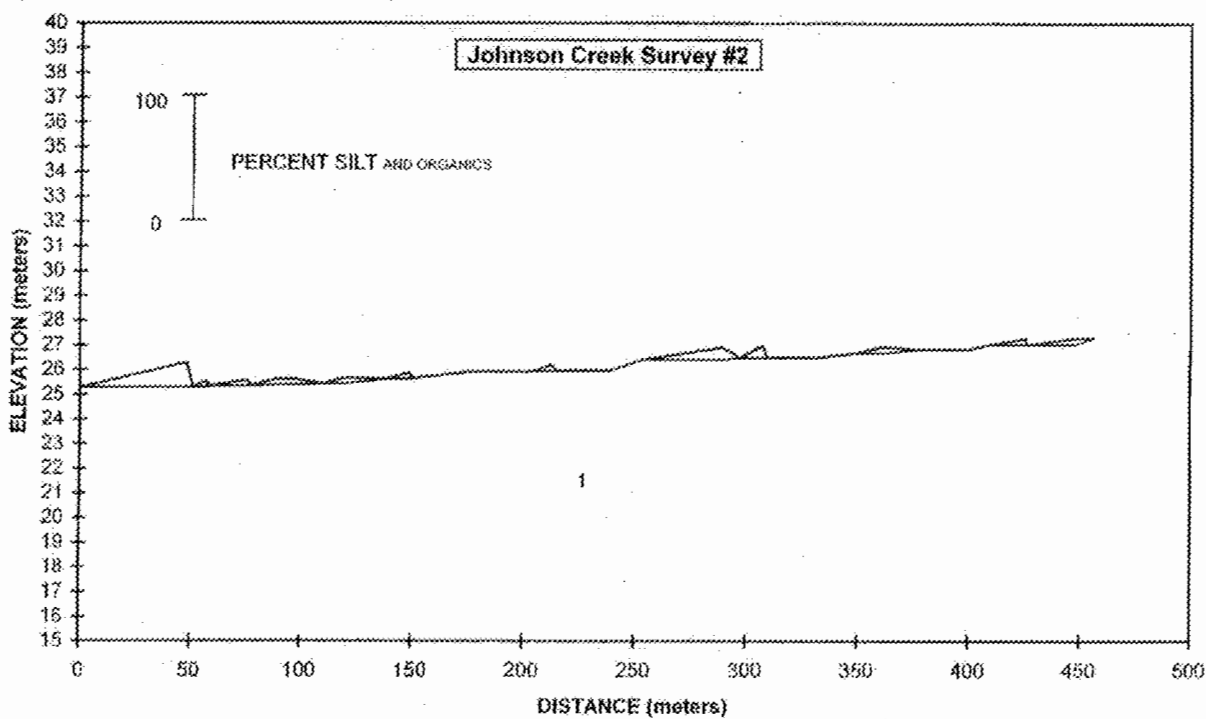
Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
					Canopy	Shrub	Grass		3-15	15-30	30-50	50-90	>90	
1	LF	1	HT	0	60	10	90	Conifer	0	0	1	0	0	
								Hardwood	1	0	0	0	0	
1	LF	2	HS	25	85	80	20	Conifer	1	2	0	0	0	
								Hardwood	0	1	0	0	0	
1	LF	3	HS	25	85	80	20	Conifer	0	2	0	0	0	
								Hardwood	1	0	0	0	0	
1	RT	1	HS	50	45	50	50	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
1	RT	2	HS	10	45	90	10	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
1	RT	3	HS	10	30	90	10	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
12	LF	1	HS	10	85	90	10	Conifer	0	0	0	0	0	
								Hardwood	0	1	0	0	0	
12	LF	2	HS	30	85	70	30	Conifer	0	0	0	0	0	
								Hardwood	3	0	0	0	0	
12	LF	3	HS	30	80	90	10	Conifer	0	0	0	0	0	
								Hardwood	0	0	1	0	0	
12	RT	1	HS	5	85	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	2	0	0	0	
12	RT	2	HS	20	85	60	40	Conifer	0	0	0	0	0	
								Hardwood	0	1	1	0	0	
12	RT	3	HS	20	85	90	10	Conifer	0	0	0	0	0	
								Hardwood	0	1	2	0	0	
23	LF	1	HS	5	75	60	40	Conifer	0	1	0	0	0	
								Hardwood	0	0	0	0	0	
23	LF	2	HS	20	60	80	20	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
23	LF	3	HS	20	40	80	20	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	0	0	
23	RT	1	HS	10	75	50	50	Conifer	0	0	0	0	0	
								Hardwood	0	0	0	1	0	
23	RT	2	HS	35	70	70	30	Conifer	0	1	0	0	0	
								Hardwood	0	0	0	1	0	
23	RT	3	HS	30	60	80	20	Conifer	1	0	0	0	0	
								Hardwood	1	0	0	0	0	
36	LF	1	HT	0	70	40	60	Conifer	0	0	0	0	0	
								Hardwood	4	0	0	0	0	

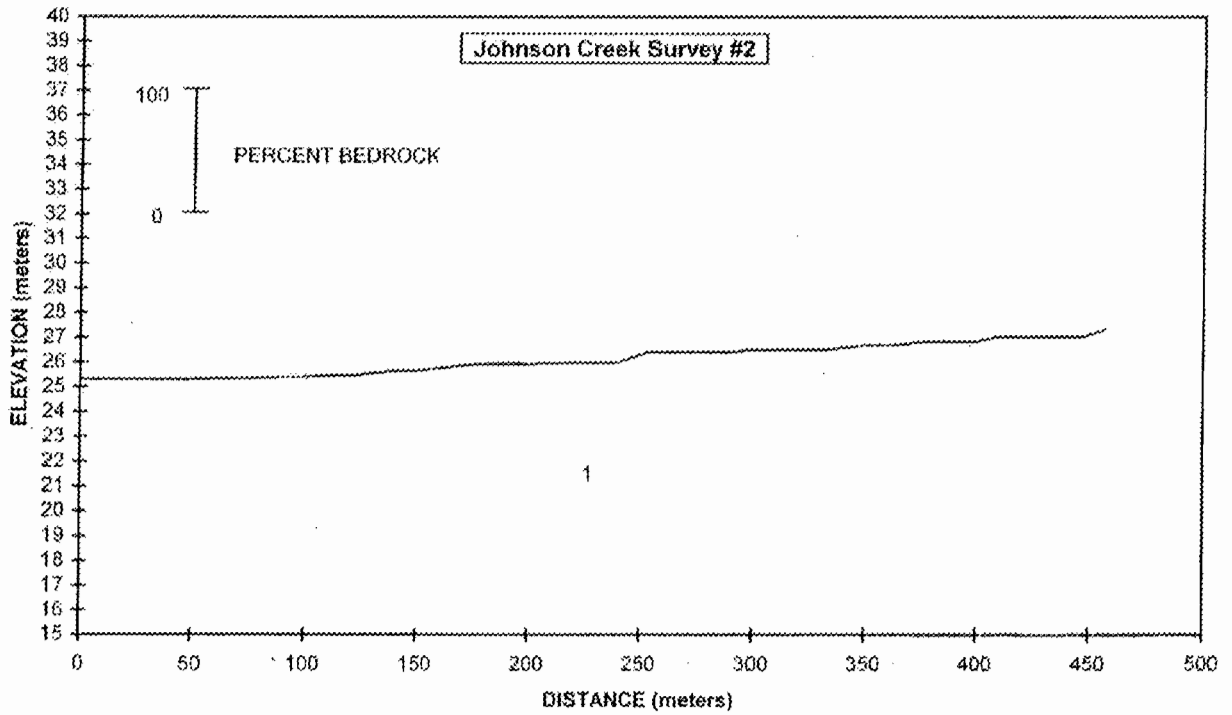
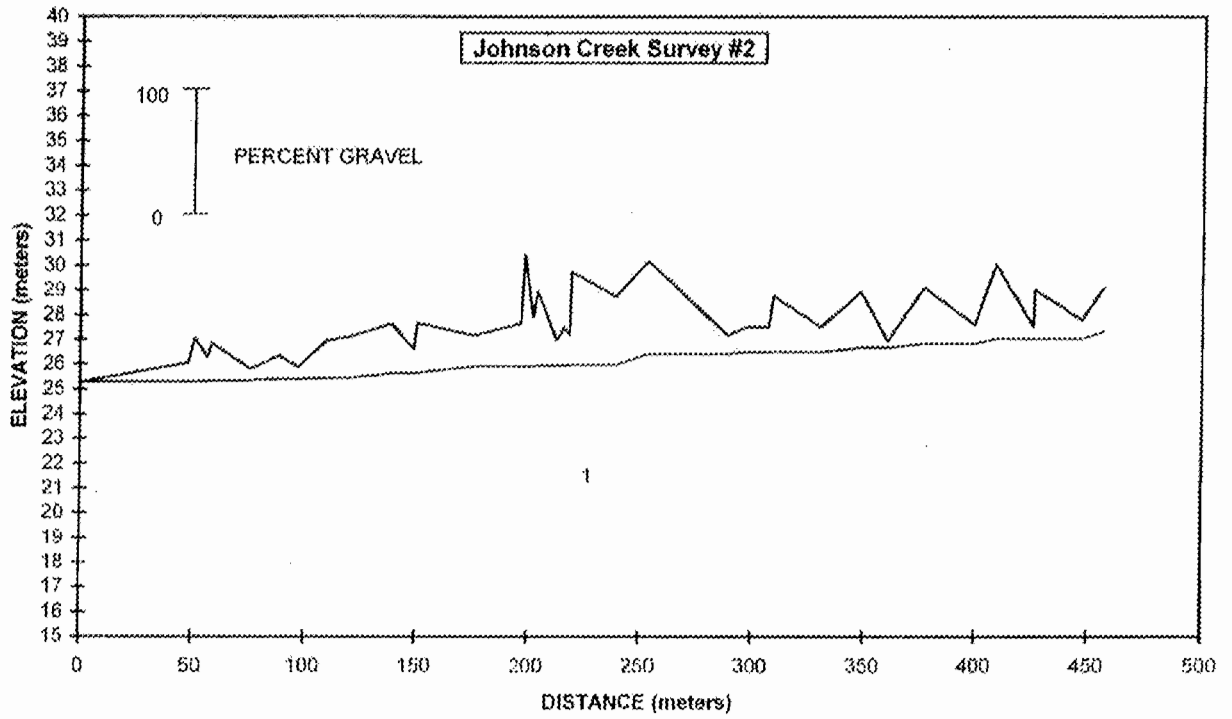
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								Hardwood	2	2	1	0	0
35	LF	3	HS	15	50	80	20	Conifer	0	0	0	0	0
								Hardwood	0	2	0	0	0
35	RT	1	HS	25	60	50	60	Conifer	0	0	0	0	0
								Hardwood	2	0	0	0	0
35	RT	2	HS	25	50	80	20	Conifer	0	0	0	0	0
								Hardwood	3	0	0	0	0
35	RT	3	HS	30	30	80	20	Conifer	0	0	0	0	0
								Hardwood	1	0	0	0	0
41	LF	1	HT	0	75	30	70	Conifer	0	0	0	0	0
								Hardwood	1	0	0	0	0
41	LF	2	HT	0	60	50	50	Conifer	0	0	0	0	0
								Hardwood	2	1	0	0	0
41	LF	3	HS	15	40	70	30	Conifer	0	0	0	0	0
								Hardwood	3	0	0	0	0
41	RT	1	HS	20	65	90	10	Conifer	0	0	0	0	0
								Hardwood	1	0	0	0	0
41	RT	2	HS	25	65	90	10	Conifer	0	0	0	0	0
								Hardwood	0	0	1	0	0
41	RT	3	HS	25	40	90	10	Conifer	0	1	0	0	0
								Hardwood	0	0	0	0	0

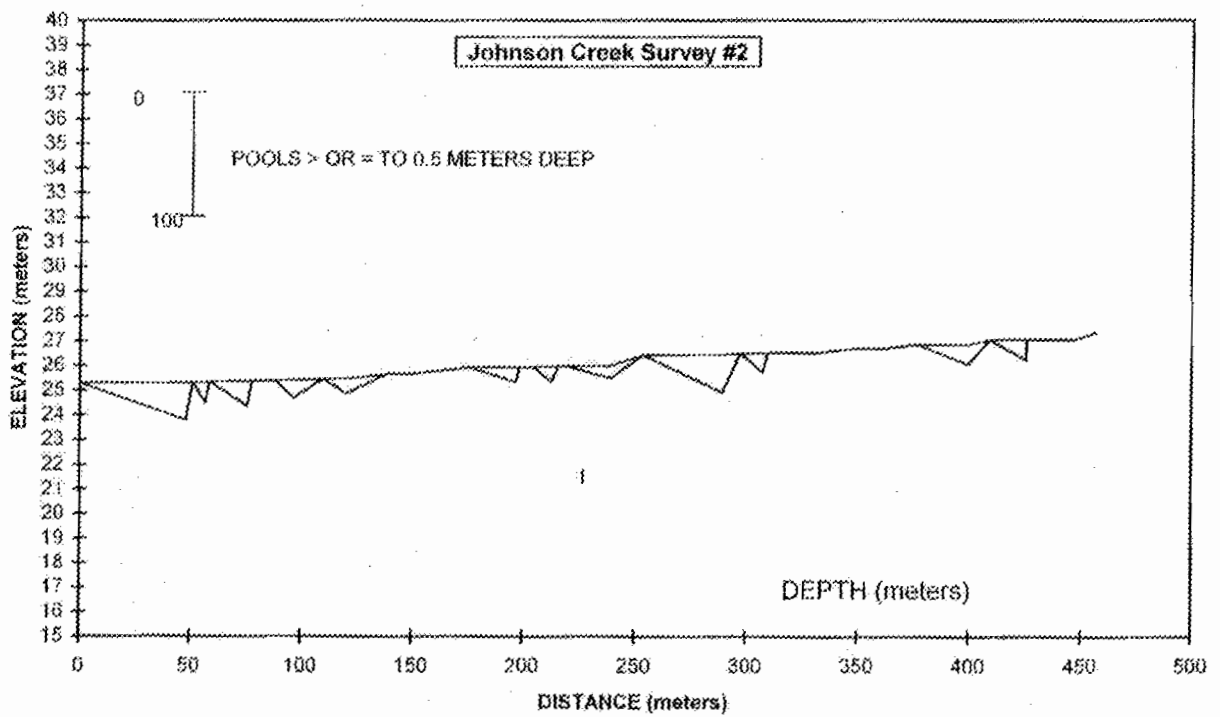
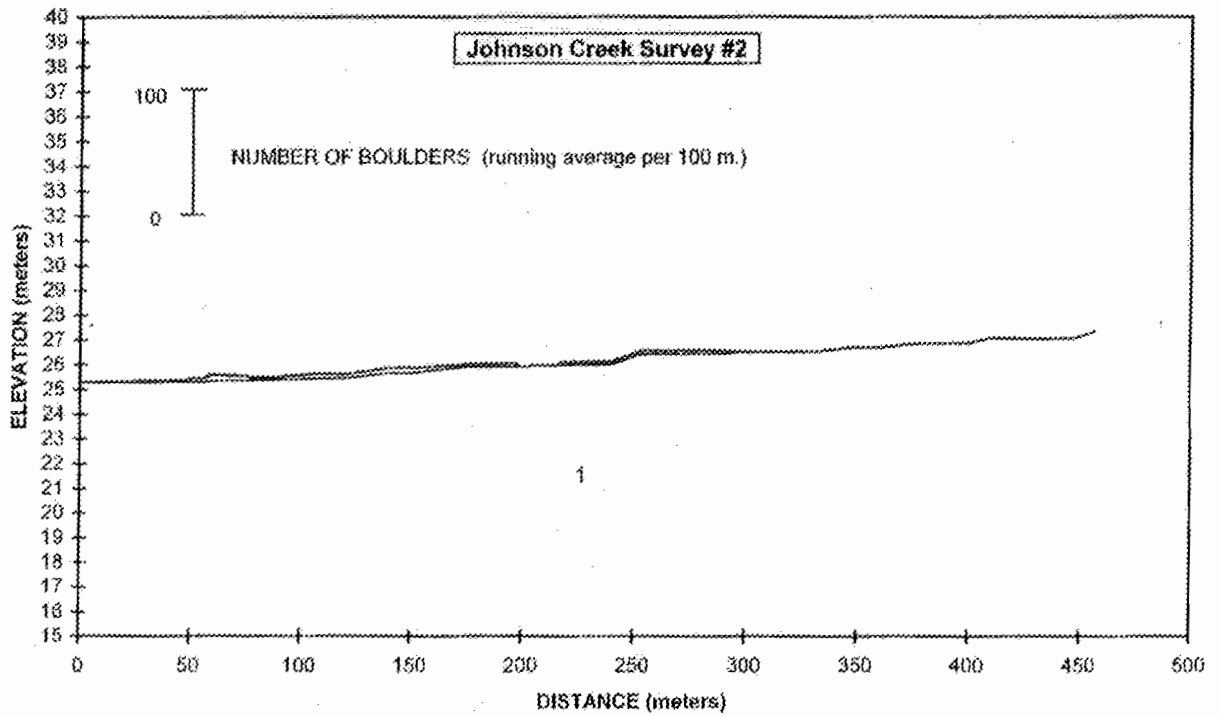


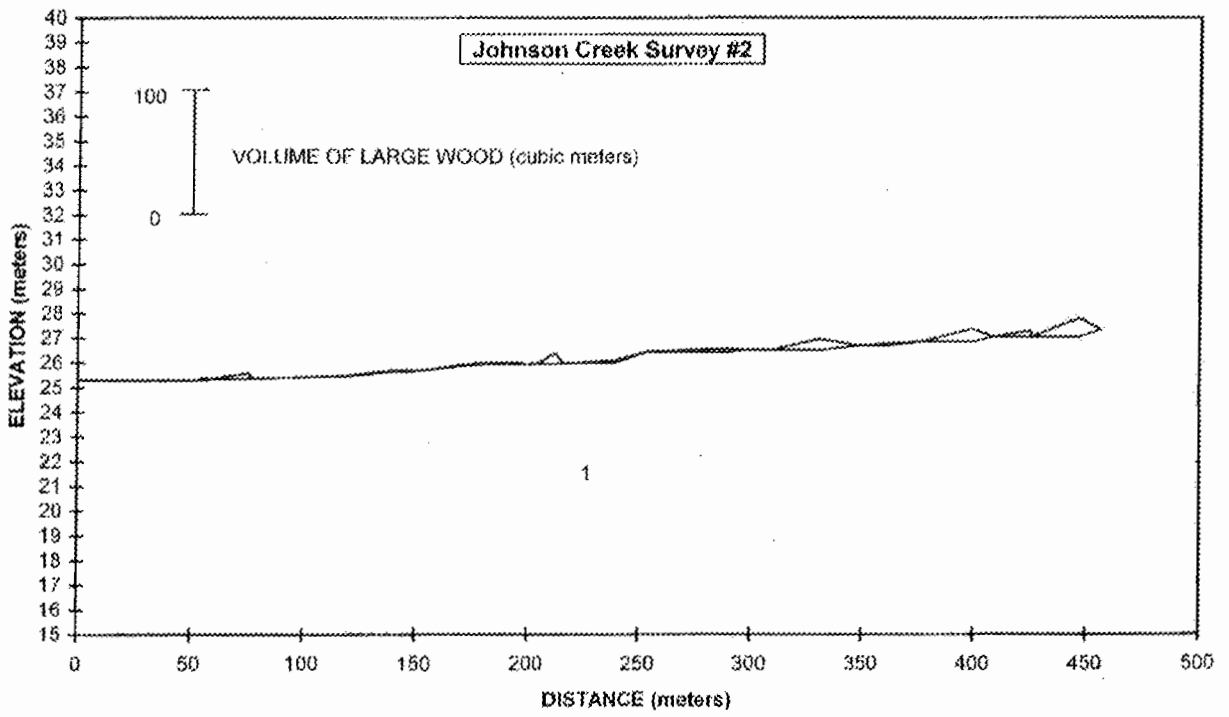
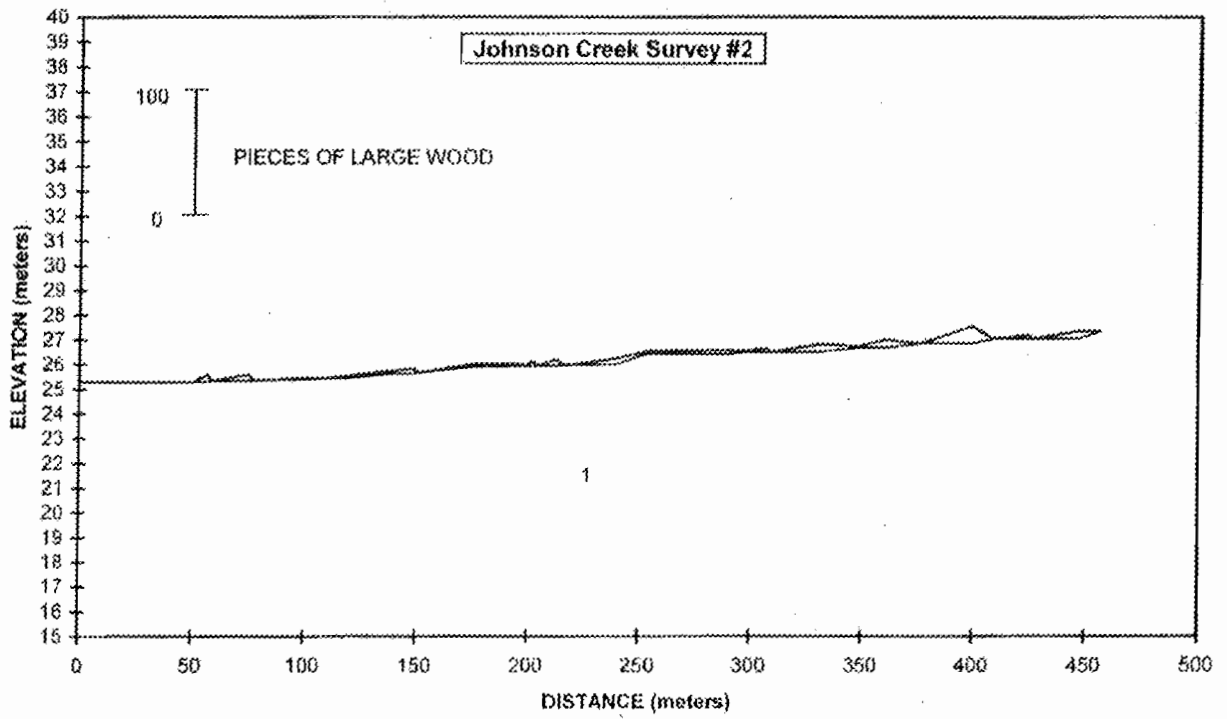


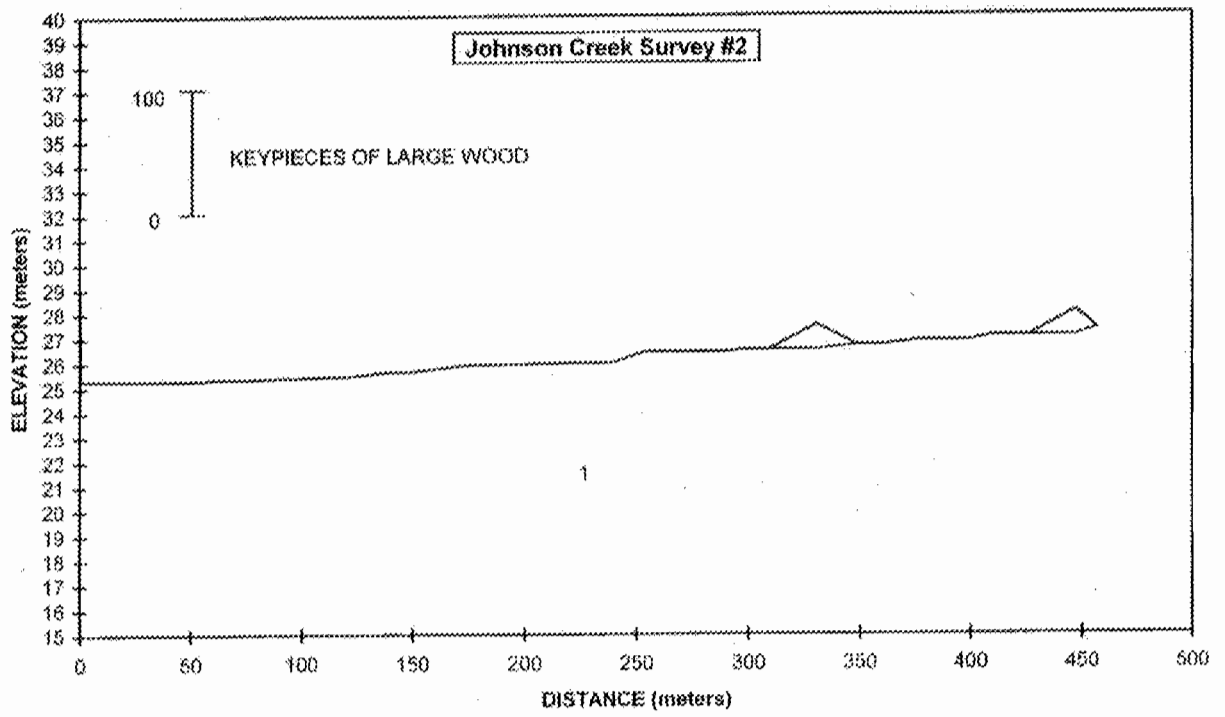




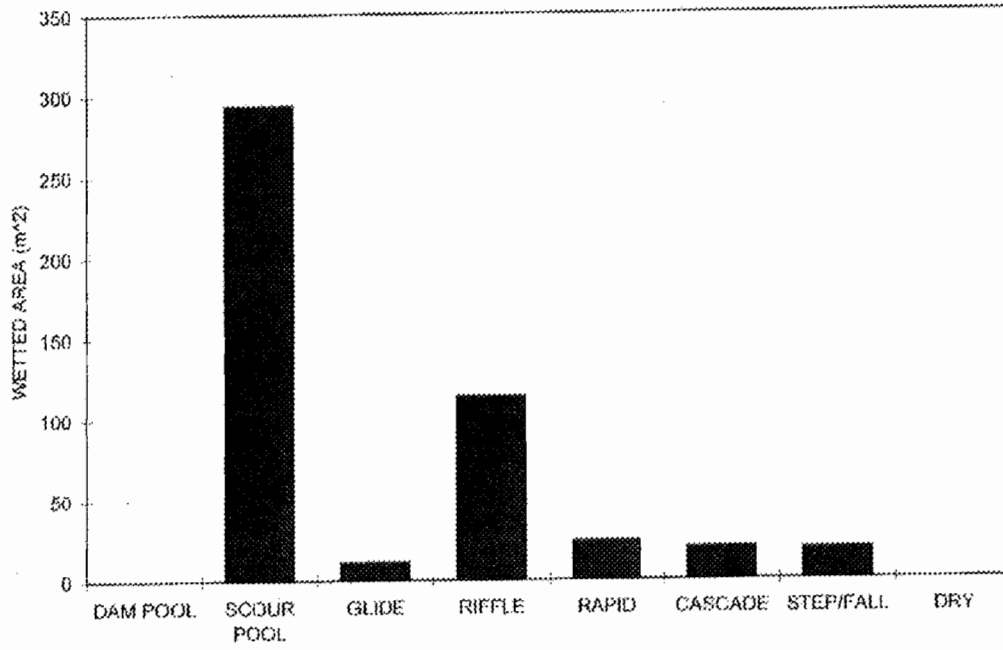








Johnson Creek Survey #2



comments

Johnson Creek Survey #2						
REACH	UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE ESTIMATOR
	1	LP	00	48		TEMP=48F@1000
	7	GL	01	88	TJ	
	8	CB	11			ACW=0.4M
	9	LP	00	97	/SS	FISH
	10	RI	00	110	/SS	
	27	LP	01	289	/TJ	/TJ
	28	CB	11			ACW=0.5M
	36	LP	00	399	DJ	

Johnson Creek Survey #2 Pictures

Picture 1. Unit 5 looking upstream. Reach photo.



Picture 2. Unit 12 looking at the west bank riparian zone.



Photo 3. Unit 36 looking upstream. Typical dense riparian for this survey.

CRAVEN CONSULTING

STREAM HABITAT INVENTORY REPORT

STREAM: Johnson Creek Survey#3

DATE: 9/20/05

ECOREGION: Coast Range Sedimentary

Survey Length: 1307 km

Crew: Pete Baki, Brandon Marshall

Stream Order: 2

REPORT PREPARED BY: Pete Baki

Basin Area:

USGS Maps: Bandon

REACH DESCRIPTIONS:

Reach 1: Length 1,307m. Reach one begins at the high tide mark with confluence of the Pacific ocean and continues to the end of the property line of the golf course. This reach was constrained by alternating terraces and hill slopes. The valley width index is 18.3 (with a range of 4.1-34.1). The average unit gradient was 0.1%. The stream habitat was dominated by scour pools (88.55%) followed by riffles (9.23%). The wetted width to depth ratio is 8.7. The residual pool depth average is 1.04m. The stream substrate was dominated by sand (75%) followed by gravel (21%). There was 46% gravel in riffle units. There were 2.7 pieces of wood and 1.5m³ of wood per 100 m of stream. The most frequently appearing trees in this unit were hardwoods 3-15cm dbh. Large conifers in this reach were rare. Average shade for the reach was 21% (range 0-100). Land use for the reach was recreational (golf course). There were eleven pools greater than 1m deep. Active erosion had an average of 14% and 9% undercut. The entire reach is on private land. The stream has very little Riparian and appears to be heavily chanelized.

OREGON DEPARTMENT OF FISH AND WILDLIFE

Johnson Creek Survey#3

HABITAT INVENTORY

Report Date: 10/13/2005

Survey Date 9/20/2005

REACH

T29S-R15W-S01NW

REACH

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

Narrow Valley Floor		Broad Valley Floor	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	18.3	VWI Range:	4.1 - 34.1

Channel Morphology (Percent Reach Length)

Constrained		Unconstrained	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	Braided Channel	0%
Alt. Terrace/Hill	100%		
Landuse	0%		

Channel Characteristics

Type	Length (m)	Area (m ²)	Dry Units
Primary	1,307	4,390	0
Secondary	79	19	0

Channel Dimensions (m)

Wetted	Active	Floodprone n = 8	First Terrace n = 7
Width: 2.1	Width: 4.5	8.4 (3.4 - 32.8)	7.2 (4.5 - 10.5)
Depth: 0.55	Height: 0.7	1.4 (0.5 - 2)	2.3 (1.9 - 3.2)

W:D ratio: 8.7

Entrenchment (ACW:FPW ratio): 1.6

Stream Flow Type: LF

Habitat Units/100m (total channel length): 3.8

Average Unit Gradient: 0.1%

Habitat Units/100m (primary channel length): 4.1

Water temperature (°C): 58.0 - 58.0

Riparian, Bank, and Wood Summary

	Primary	Secondary
Land Use:	GN	RR
Riparian Vegetation:	G	D3

Bank Condition and Shade

Bank Status	Percent Reach Length	Shade (% of 180)
Actively Eroding:	14%	Reach avg: 21%
Undercut Banks:	9%	Range: 0 - 100

Large Wood Debris

	Total	Total / 100m primary channel
All pieces (>=3m x 0.15m):	35	2.7
Volume (m ³):	19	1.5
Key pieces (>=12m x 0.60m):	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

Johnson Creek Survey#3

HABITAT INVENTORY

Report Date: 10/13/2005

Survey Date:

9/20/2005

REACH		T29S-R15W-S01NW						REACH					
HABITAT DETAIL													
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area						
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk	
CASCADE/BOULDERS	1	8	0.2	0.01	1	0	10	50	40	0	0	0	
CULVERT CROSSING	9	108	0.6	0.07	56	2	1	81	18	0	0	0	
POOL-LATERAL SCOUR	20	1,133	2.9	1.21	3,899	18	8	77	15	0	0	0	
POOL-PLUNGE	1	2	4.0	0.45	6	0	1	99	0	0	0	0	
RIFFLE	7	116	3.0	0.25	407	0	1	51	46	3	0	0	
STEP/COBBLE	10	18	2.2	0.19	40	0	1	78	21	0	0	0	
STEP/STRUCTURE	5	1	0.2	0.01	0	0	1	86	13	0	0	0	
Total:	53	1,366	2.1	0.55	4,409	20	Avg: 3	75	21	1	0	0	

HABITAT SUMMARY								
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m ²)	Percent	Number	(# / 100m ²)
Dammed & BW Pools	0	0			0	0.00%	0	0.0
Scour Pools	21	1,135	2.9	1.18	3,905	88.55%	18	0.5
Glides	0	0			0	0.00%	0	0.0
Riffles	7	116	3.0	0.25	407	9.23%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	1	8	0.2	0.01	1	0.03%	0	0.0
Step/Falls	15	19	1.5	0.13	40	0.92%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	9	108	0.6	0.07	56	1.27%	2	3.6

OREGON DEPARTMENT OF FISH AND WILDLIFE

Johnson Creek Survey#3

HABITAT INVENTORY

Report Date: 10/13/2005

Survey Date:

9/20/2005

REACH

T29S-R15W-S01NW

REACH

POOL SUMMARY

	Total of all Channel Lengths		Primary Channel Length
	Total	# / Km	# / Km
All Pools:	21	15.2	16.1
Pools >=1m deep:	11	7.9	8.4
Complex pools (LWD pieces>=3):	5	3.6	3.8
Pool frequency (channel widths/pool):	14.8		
Residual pool depth (avg):	1.04		

RIPARIAN ZONE VEGETATION SUMMARY

REACH

REACH

Summary of Riparian Zone (0-30m)

6 transects

Total hardwoods/100	254
Total conifers/1000 ft	51
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	1.2	0.0	1.0	0.5	1.2	0.5	3.3
15-30cm	0.0	0.3	0.0	0.0	0.2	0.0	0.2	0.3
30-50cm	0.0	0.3	0.0	0.0	0.2	0.0	0.2	0.3
50-90cm	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.0	2.0	0.0	1.0	0.8	1.2	0.3	1.4

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)	(%)	(%)	(%)	(%)	(%)
Canopy closure	20	15	13			
Shrub cover	28	17	14			
Grass/forb cover	56	69	73			

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)	(%)	(%)	(%)	(%)	(%)
Hillslope	17	33	42			
High terrace	83	67	58			
Low terrace	0	0	0			
Floodplain	0	0	0			
Wetland/meadow	0	0	0			
Stream channel	0	0	0			
Roadbed/Railroad	0	0	0			
Riprap	0	0	0			
Surface slope (%)	4	4	8			

Summary of Riparian Zone (0-30m) for all reaches

6 transects

Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream

Total hardwoods/100	254
Total conifers/1000 ft	51
Total conifers >20" dbh/1000 f	0
Total conifers >35" dbh/1000 f	0

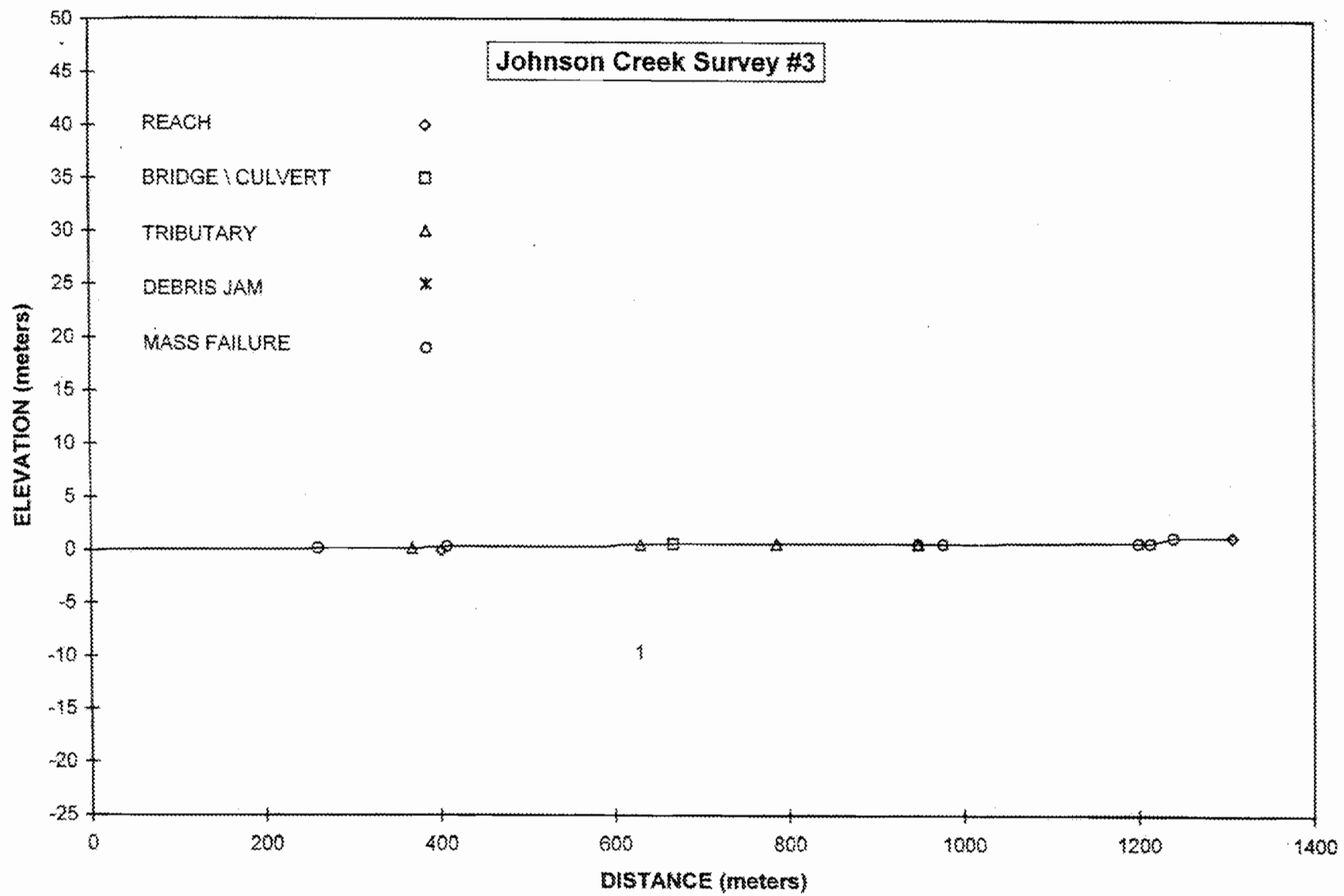
Average number of trees in a 5-m wide band

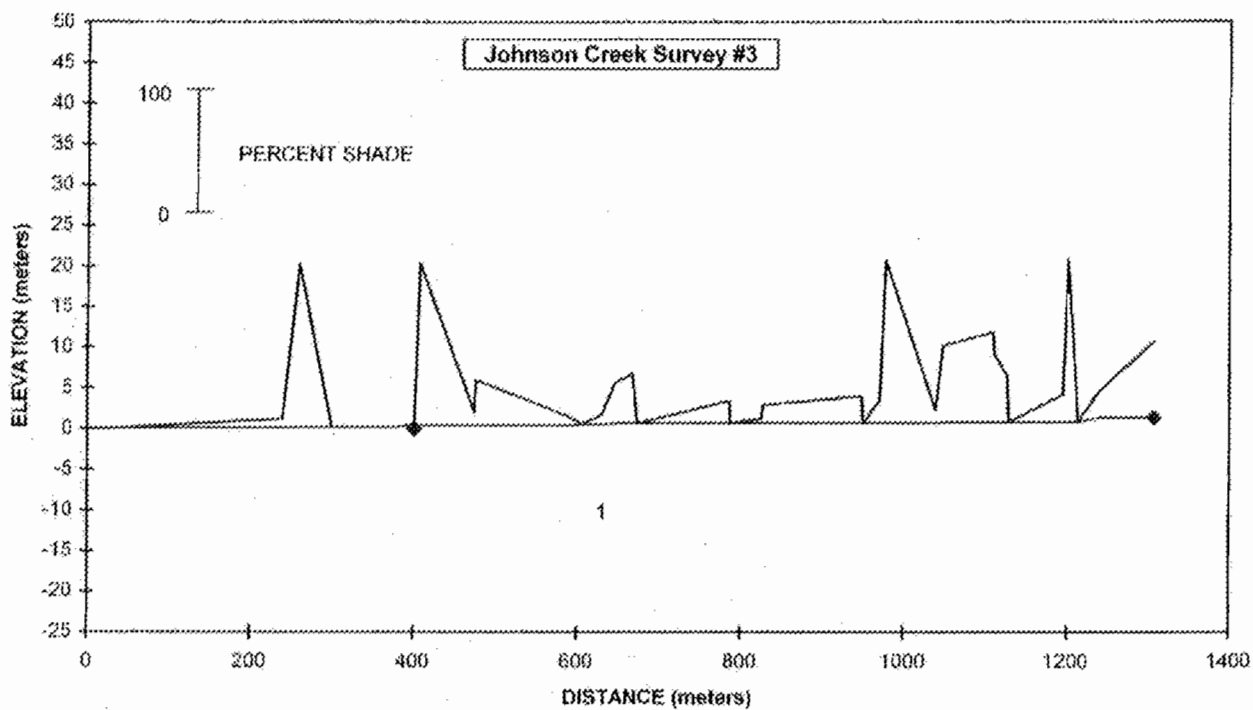
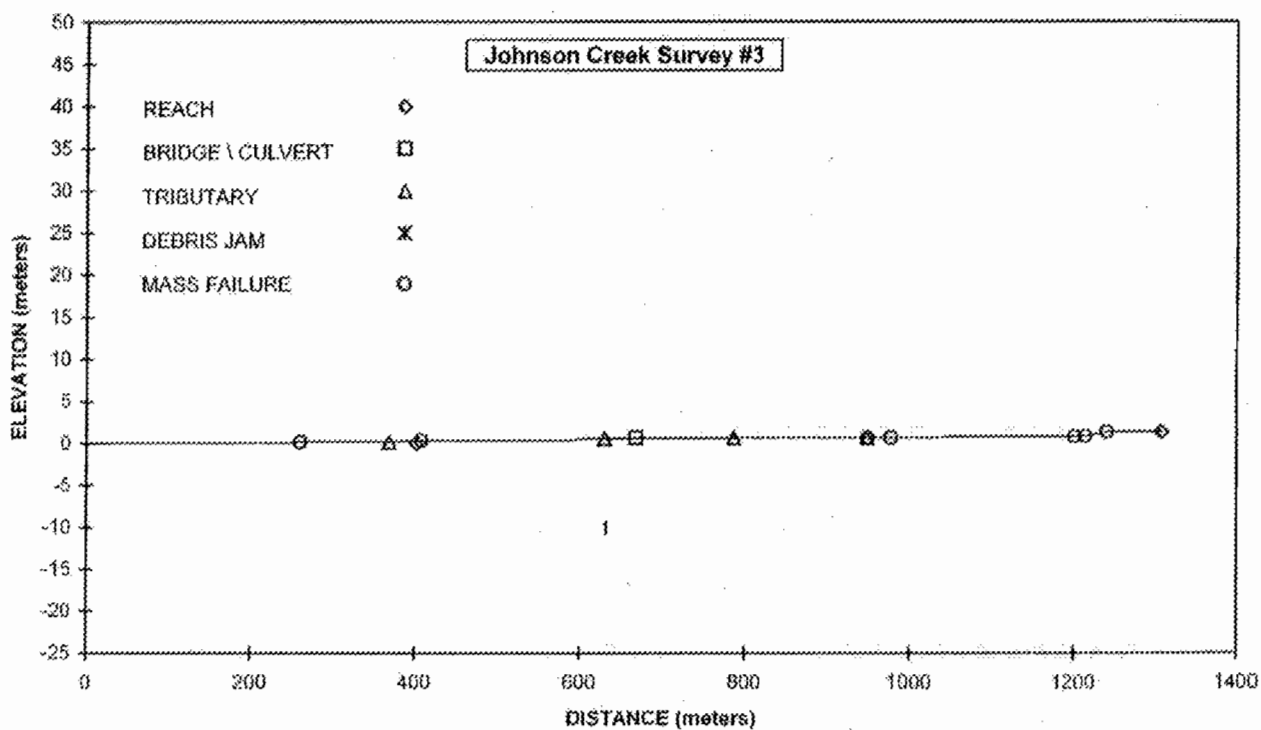
Diameter class (cm)	Zones 1-3	
	0-30 meters	
	Conifer	Hardwood
3-15cm	0.5	3.3
15-30cm	0.2	0.3
30-50cm	0.2	0.3
50-90cm	0.0	0.2
>90cm	0.0	0.0

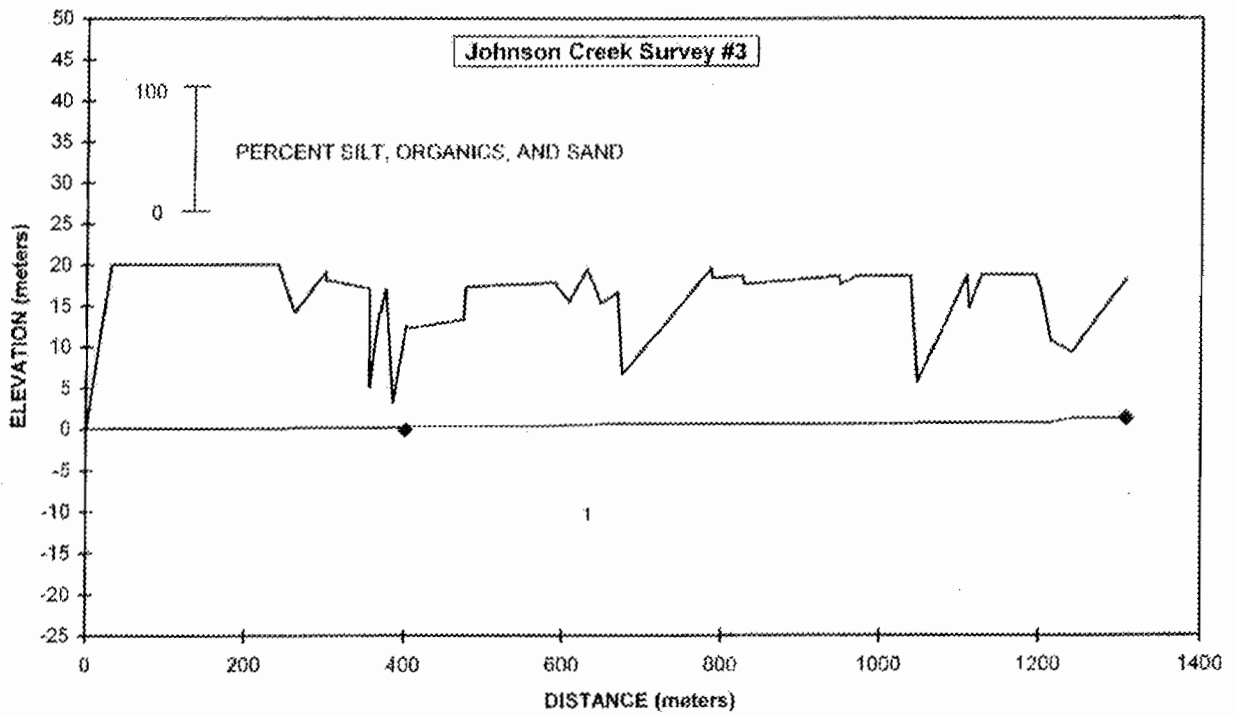
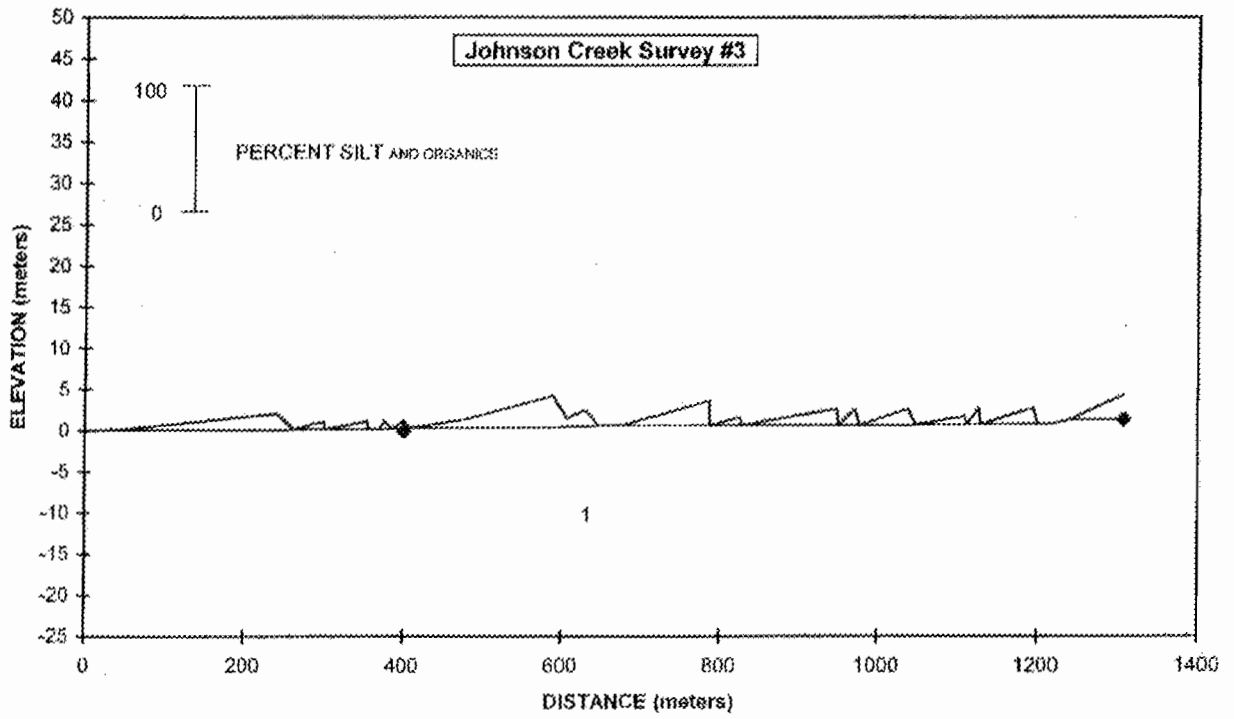
RIPARIAN ZONE VEGETATION

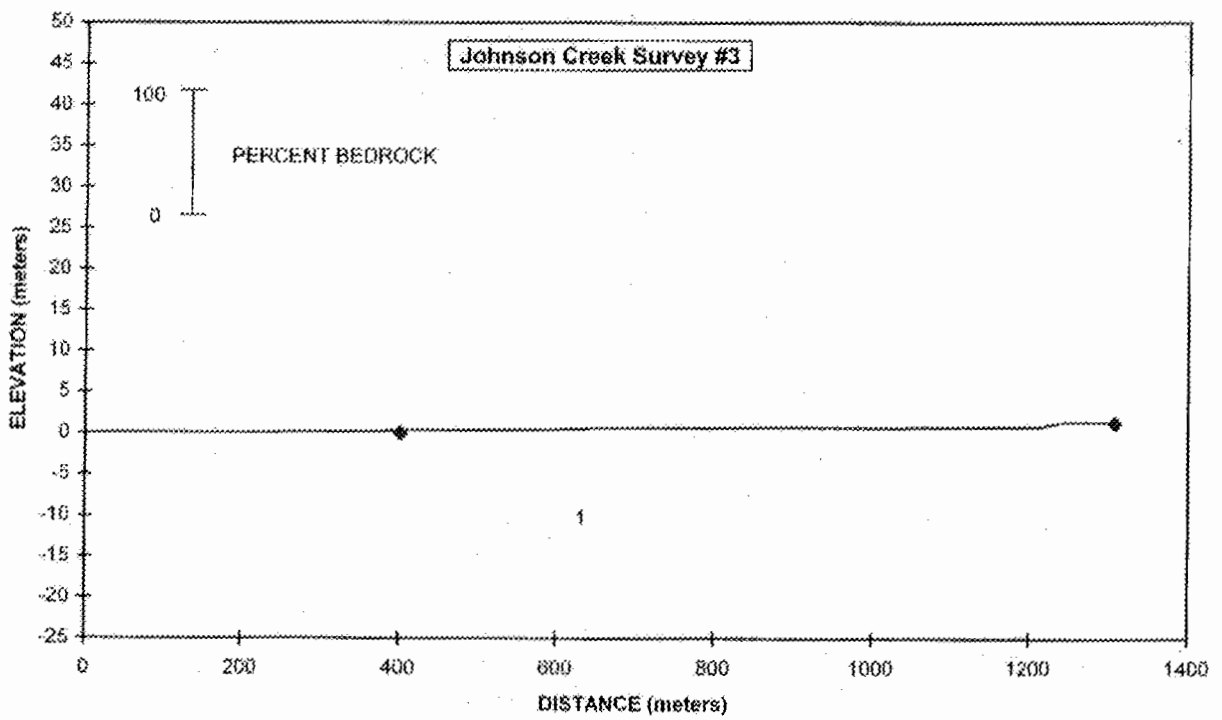
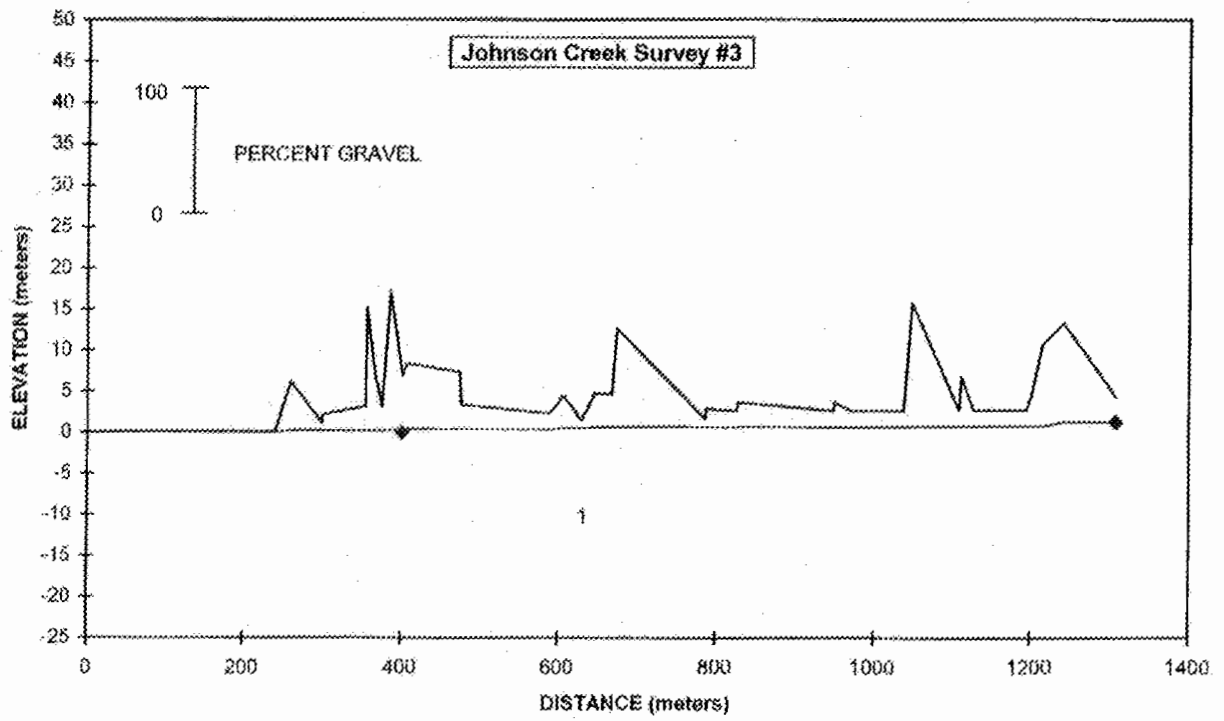
Reach	Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
						Canopy	Shrub	Grass		3-15	15-30	30-60	60-90	>90	
1	LF	1	HT	0	0	0	0	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	LF	2	HS	3	0	0	30	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	LF	3	HS	2	0	0	5	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	RT	1	HT	0	0	0	0	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	RT	2	HT	0	0	0	0	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	RT	3	HS	30	0	0	40	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
6	LF	1	HT	0	0	60	40	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
6	LF	2	HT	0	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
6	LF	3	HT	0	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
6	RT	1	HT	0	40	80	20	Conifer	0	0	0	0	0		
								Hardwood	0	0	1	0	0		
6	RT	2	HT	0	20	10	90	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
6	RT	3	HT	0	0	10	90	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
12	LF	1	HT	0	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
12	LF	2	HS	5	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
12	LF	3	HS	15	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
12	RT	1	HT	0	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
12	RT	2	HT	0	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
12	RT	3	HT	0	0	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
23	LF	1	HT	0	25	0	100	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	1	0		

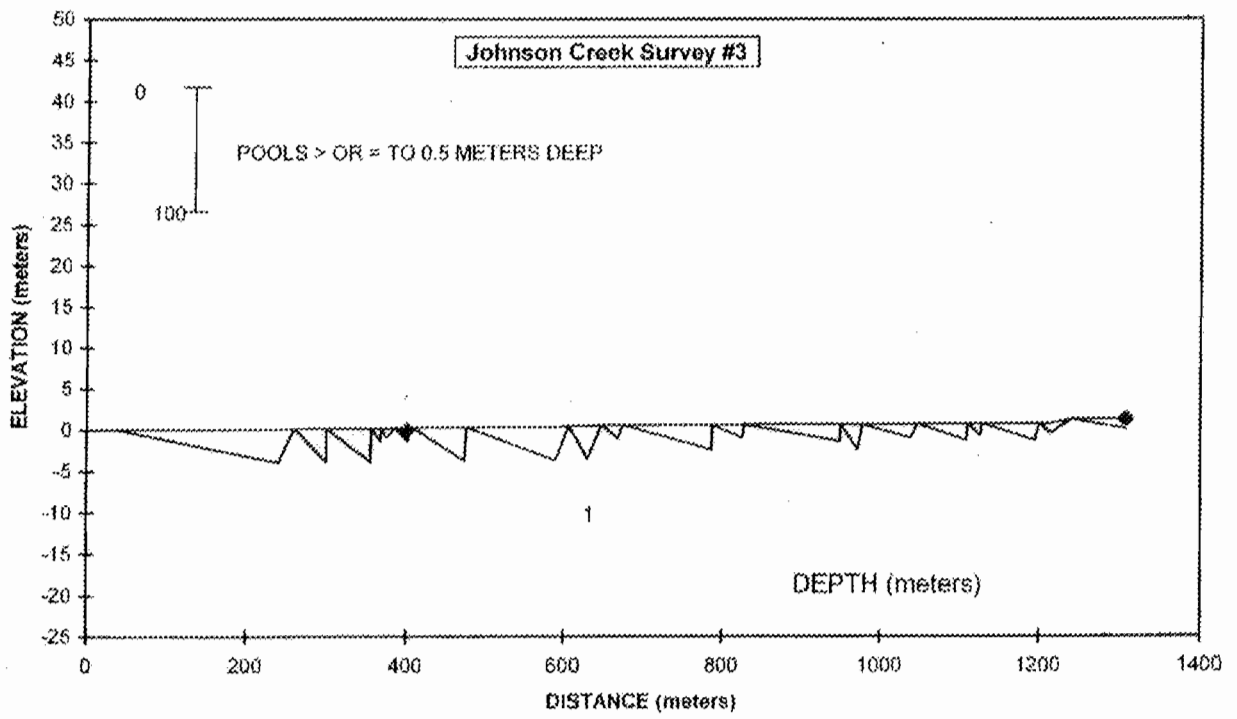
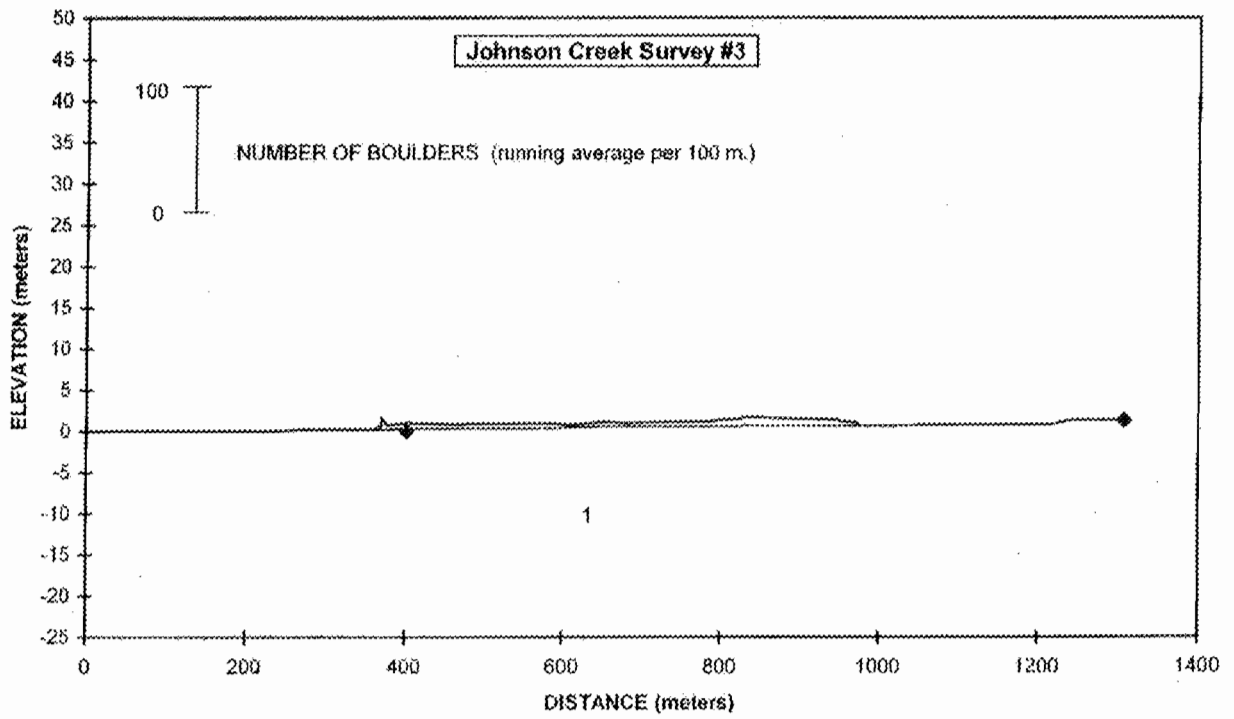
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								Hardwood	0	0	0	0	0
23	LF	3	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
23	RT	1	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
23	RT	2	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
23	RT	3	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
46	LF	1	HS	20	85	95	5	Conifer	0	0	0	0	0
								Hardwood	5	0	0	0	0
46	LF	2	HS	20	85	100	0	Conifer	0	0	0	0	0
								Hardwood	3	0	0	0	0
46	LF	3	HS	25	85	100	0	Conifer	2	0	0	0	0
								Hardwood	4	0	0	0	0
46	RT	1	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
46	RT	2	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
46	RT	3	HT	0	25	0	100	Conifer	0	1	1	0	0
								Hardwood	0	0	0	0	0
53	LF	1	HS	30	85	95	5	Conifer	0	0	0	0	0
								Hardwood	2	2	1	0	0
53	LF	2	HS	25	80	95	5	Conifer	0	0	0	0	0
								Hardwood	3	0	0	0	0
53	LF	3	HS	25	40	60	40	Conifer	1	0	0	0	0
								Hardwood	3	0	0	0	0
53	RT	1	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
53	RT	2	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0
53	RT	3	HT	0	0	0	100	Conifer	0	0	0	0	0
								Hardwood	0	0	0	0	0

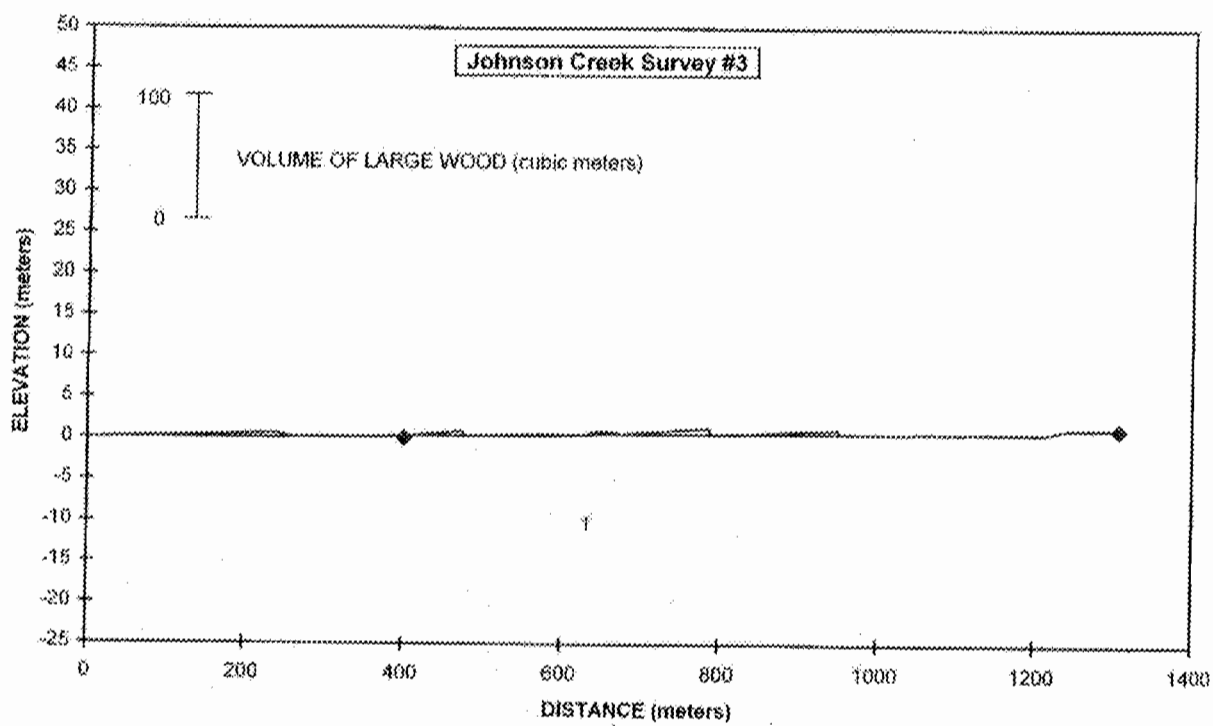
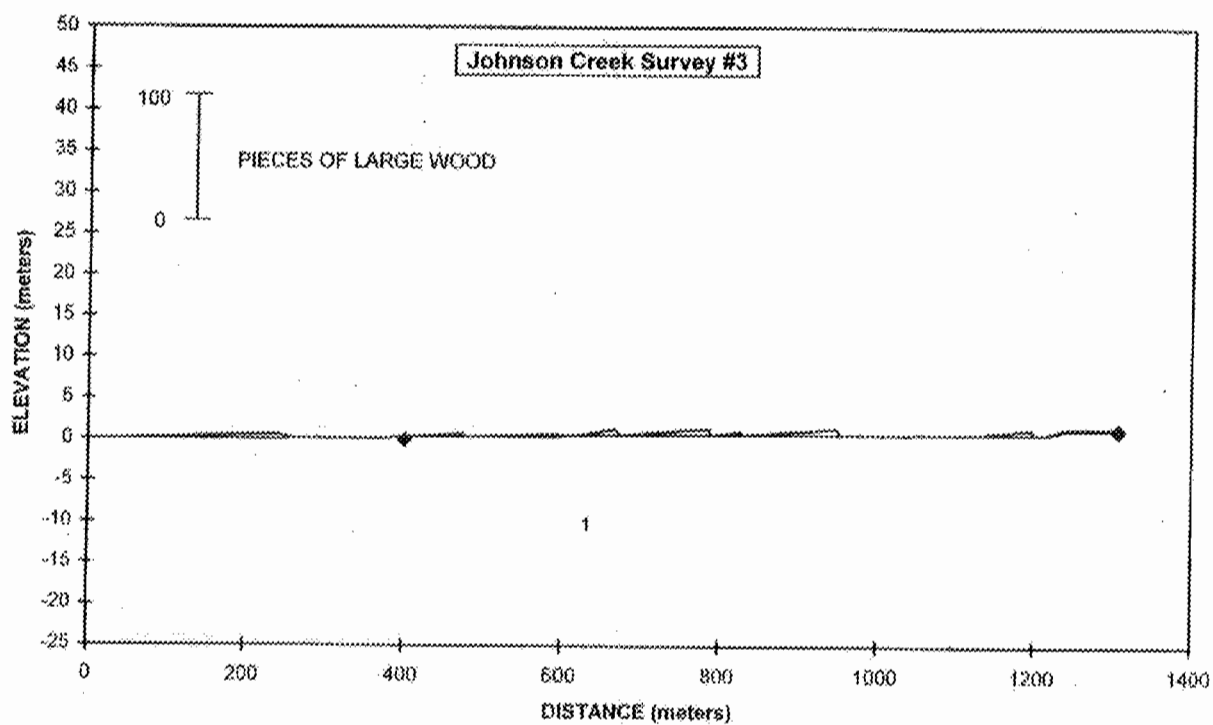


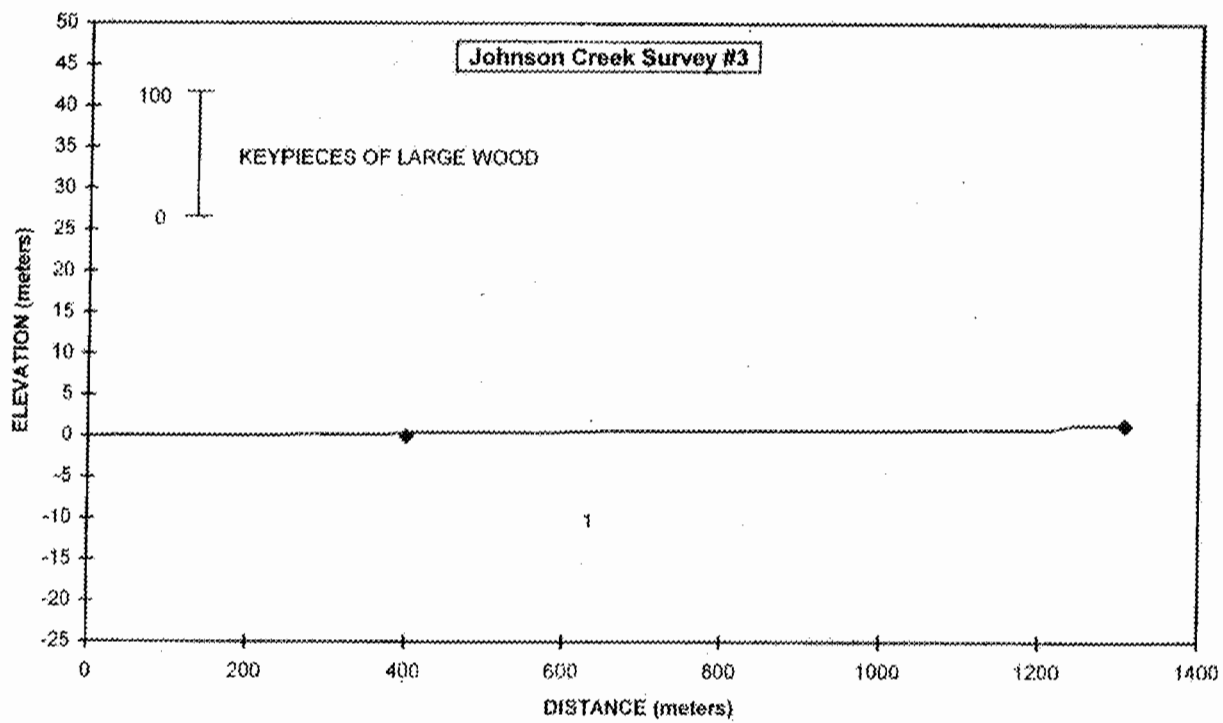




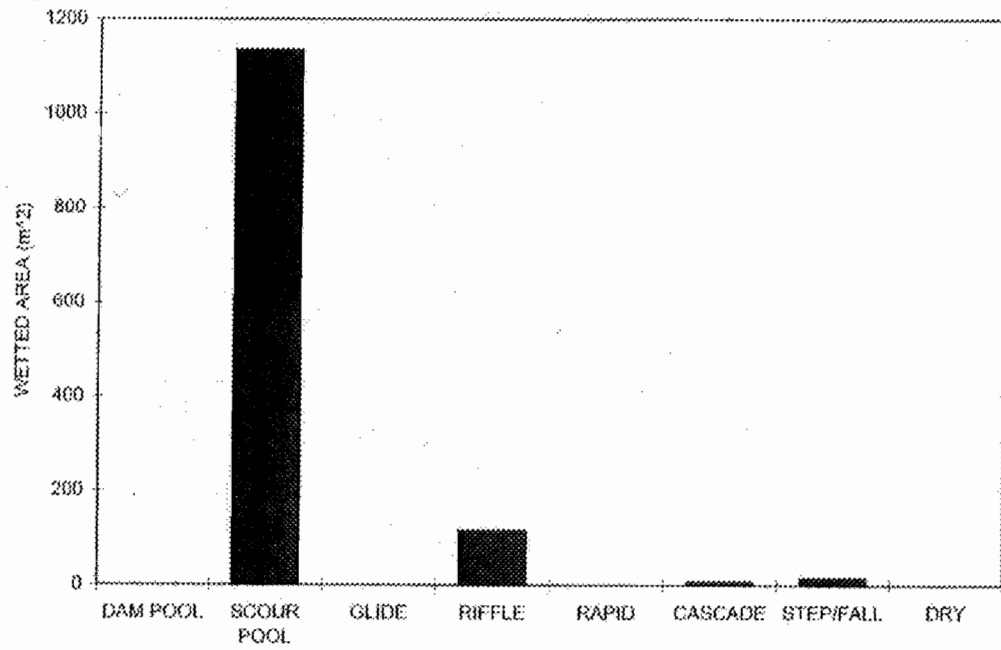








Johnson Creek Survey# 3



Johnson Creek Survey #3

UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE_ESTIMATOR	NOTE_NUMERATOR
1	RI	00	31		START @HIGH TIDE MARK	BEACH
2	PP	00	32		T=58F @1430	
3	SC	00	36	/SS		
4	LP	00	240			DEPTH 2+M
5	CC	00	260	/CS,CC	C=2.0X2.0M CROSSES ROAD	
6	LP	00	300		PUMP HOUSE ON RIGHT	DEPTH =2+M
8	LP	00	355			DEPTH =2+M
10	LP	01	368	/TJ		
11	SS	11			H=1.9M	
12	CC	11		CC		
17	CC	00	408	BC,CC	C=2MX2M GOLF CART BRIDGE	
18	LP	01	475	TJ/TJ	GOLF CART BRIDGE	DEPTH=2+M
19	CB	11			ACW=0.3M	
20	SS	12			H=1.8M	
21	CC	12		CC	C=0.2MX0.2M LEADS TO DRAINAGE	
23	LP	00	590	CS/CS	2 GOLF CART BRIDGES	
25	LP	01	630	/TJ		DEPTH=2+M
26	SS	11			H=0.2M	
27	CC	11		CC	C=.45MX.45M	
29	LP	00	668	BC	GOLF CART BRIFGE	
31	LP	01	786	TJ/CS		
32	SS	11			H=.8M	
33	CC	11		CC	C=0.3MX0.3M	
35	LP	00	825		GOLF CART BRIDGE	
37	LP	01	946	CS/TJ, LS/	GOLF CART BRIDGE	
38	SS	11			H=0.2M	
39	CC	11		CC		
41	LP	00	970	CS/		
42	CC	00	977	CC	CC=2X2M	
50	CC	00	1200	CC	C=2X2M	
51	LP	00	1214	/CS/, LA/		
52	RI	00	1240	LA/		

Johnson Creek Survey# 3 Pictures

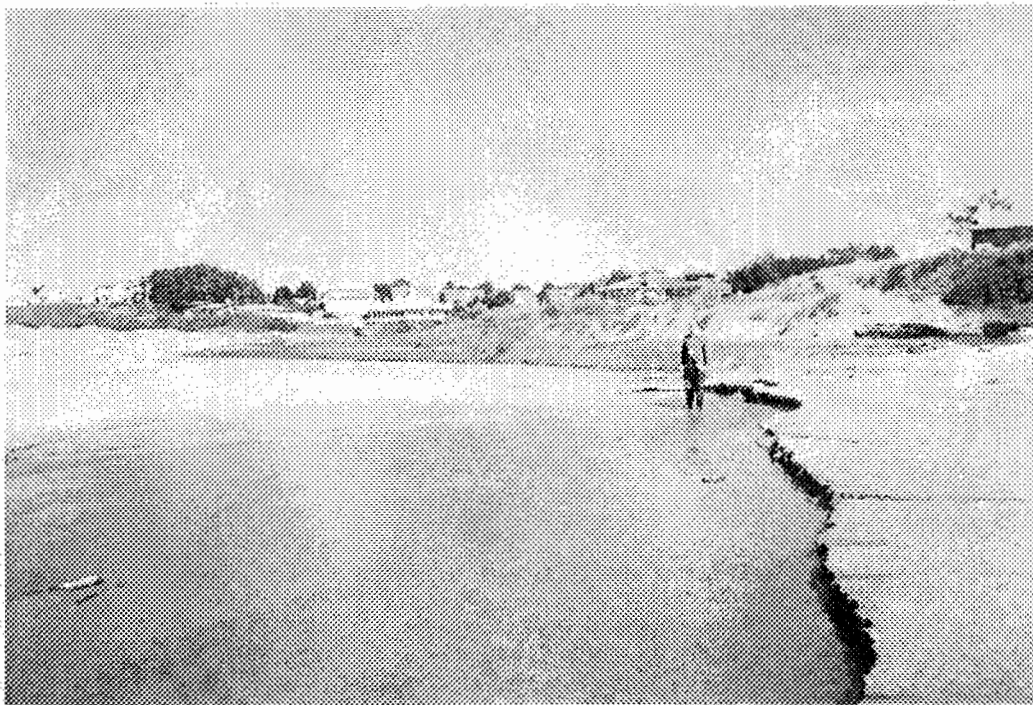
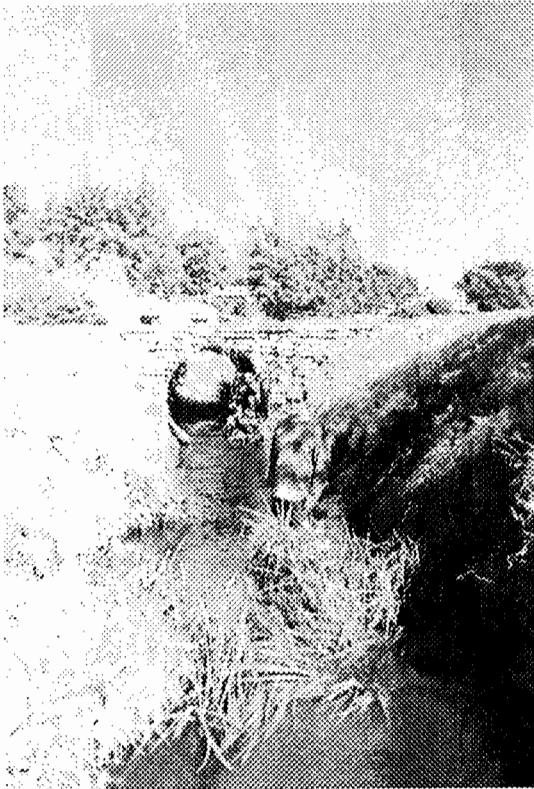


Photo 1. Unit 1. Johnson Creek confluence with the Pacific Ocean looking upstream.



Photo 2. Unit 10, lateral scour pool. Typical riparian and uniform channel for this survey which runs through a golf course.

Photo# 3. Unit #16 looking upstream at golf cart bridge and culvert.



CRAVEN CONSULTING

STREAM HABITAT INVENTORY REPORT

STREAM: Johnson Creek Survey#4

DATE: 9/21/05

ECOREGION: Coast Range Sedimentary

Survey Length: .28 km

Crew: Pete Baki, Brandon Marshall

Stream Order: 2

REPORT PREPARED BY: Pete Baki

Basin Area:

USGS Maps: Bandon

REACH DESCRIPTIONS:

Reach 1: Length 278m. Reach one begins 278m West of the Rosa road culvert and ends on the East side of Rosa road. This reach was constrained by terraces and is very marshlike. The valley width index is 16.2 (with a range of 3.8-28.6). The average unit gradient was 2.2%. The stream habitat was dominated by scour pools (87.47%). The wetted width to depth ratio is 6.1. The residual pool depth average is 0.4m. The stream substrate was dominated by sand (82%). There was 15% gravel in riffle units. There were 2.5 pieces of wood and 0.3m³ of wood per 100 m of stream. The most frequently appearing trees in this unit were hardwoods 3-15cm dbh. Large conifers in this reach were rare. Average shade for the reach was 92% (range 81-100). This was largely due to the abundance of wetland grasses and a steep narrow channel. Land use for the reach was rural residential. There was one pool greater than 1m deep. Active erosion had an average of 0% and 0% undercut.

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

Report Date: 10/13/2005

JOHNSON CREEK #4

Survey Date 9/21/2005

REACH

T29S-R14W-S06SE

REACH

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

<u>Narrow Valley Floor</u>		<u>Broad Valley Floor</u>	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	16.2	VWI Range:	3.8 - 28.6

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	100%	Braided Channel	0%
Alt. Terrace/Hill	0%		
Landuse	0%		

Channel Characteristics

<u>Type</u>	<u>Length (m)</u>	<u>Area (m²)</u>	<u>Dry Units</u>
Primary	278	373	0
Secondary	53	28	0

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 4	<u>First Terrace</u> n = 4
Width: 1.2	Width: 2.9	5.3 (2.3 - 11.6)	6.3 (3.2 - 12.1)
Depth: 0.43	Height: 0.6	1.3 (0.6 - 1.6)	1.5 (0.8 - 1.8)

W:D ratio: 6.1

Entrenchment (ACW:FPW ratio): 1.7

Stream Flow Type: LF

Habitat Units/100m (total channel length): 7.3

Average Unit Gradient: 2.2%

Habitat Units/100m (primary channel length): 8.6

Water temperature (°C): 50.0 - 50.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	WL	RR
Riparian Vegetation:	G	D3

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 180)</u>
Actively Eroding:		Reach avg: 82%
Undercut Banks:		Range: 81 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	7	2.5
Volume (m ³):	1	0.3
Key pieces (>=12m x 0.60m):	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #4

HABITAT INVENTORY

Report Date: 10/13/2005

Survey Date:

9/21/2005

REACH	T29S-R14W-S06SE						REACH					
HABITAT DETAIL												
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (>0.5m)	Substrate Percent Watted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
CASCADE/BOULDERS	1	10	0.3	0.01	3	0	0	75	15	10	0	0
CULVERT CROSSING	2	71	0.5	0.32	36	0	0	60	20	20	0	0
POOL-LATERAL SCOUR	14	235	1.5	0.61	351	6	9	68	1	1	1	0
RIFFLE	1	8	0.6	0.15	5	0	0	75	15	10	0	0
STEP/COBBLE	4	3	0.8	0.20	2	0	2	96	3	0	0	0
STEP/STRUCTURE	2	4	1.5	0.03	5	0	0	38	25	38	0	0
Total:	24	331	1.2	0.43	401	6	Avg: 8	82	6	6	0	0

HABITAT SUMMARY								
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Watted Area		Large Boulders	
					(m ²)	Percent	Number	(#/ 100m ²)
Dammed & BW Pools	0	0			0	0.00%	0	0.0
Scour Pools	14	235	1.5	0.61	351	87.47%	6	1.7
Glides	0	0			0	0.00%	0	0.0
Riffles	1	8	0.6	0.15	5	1.24%	0	0.0
Rapids	0	0			0	0.00%	0	0.0
Cascades	1	10	0.3	0.01	3	0.75%	0	0.0
Step/Falls	6	6	0.9	0.14	7	1.67%	0	0.0
Dry	0	0			0	0.00%	0	0.0
Culverts	2	71	0.5	0.32	36	8.87%	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #4

HABITAT INVENTORY

Report Date: 10/13/2005

Survey Date:

9/21/2005

REACH

T29S-R14W-S06SE

REACH

POOL SUMMARY

	<u>Total</u>	<u>Total of all Channel Lengths</u> <u># / Km</u>	<u>Primary Channel Length</u> <u># / Km</u>
All Pools:	14	42.3	50.4
Pools >=1m deep:	1	3.0	3.6
Complex pools (LWD pieces>=3):	1	3.0	3.6
Pool frequency (channel widths/pool):	8.1		
Residual pool depth (avg):	0.40		

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #4

HABITAT INVENTORY Report Date: 10/13/2005

Survey Date: 9/21/2005

RIPARIAN ZONE VEGETATION SUMMARY

REACH	Summary of Riparian Zone (0-30m)		REACH
			4 transects
Total hardwoods/100	411		
Total conifers/1000 ft	259		
Total conifers >20" dbh/1000 f	30		
Total conifers >35" dbh/1000 f	0		

Average number of trees in a 5-meter wide band

Diameter class (cm)	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters		Zones 1-3 0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.0	2.0	2.5	0.3	0.0	3.0	2.5	5.3
15-30cm	0.0	0.0	0.3	0.5	0.0	0.5	0.3	1.0
30-50cm	0.0	0.3	0.3	0.3	0.8	0.0	1.0	0.5
50-90cm	0.3	0.0	0.3	0.0	0.0	0.0	0.5	0.0
>90cm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total/100m2	0.3	2.3	3.3	1.0	0.8	3.5	1.4	2.3

Canopy closure and ground cover

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Canopy closure	16		33		41	
Shrub cover	13		49		72	
Grass/forb cover	68		50		28	

Predominant landform in each zone

	Zone 1 0-10 meters		Zone 2 10 - 20 meters		Zone 3 20 - 30 meters	
	(%)		(%)		(%)	
Hillslope	0		25		63	
High terrace	88		63		38	
Low terrace	13		0		0	
Floodplain	0		0		0	
Wetland/meadow	0		0		0	
Stream channel	0		0		0	
Roadbed/Railroad	0		13		0	
Riprap	0		0		0	
Surface slope (%)	1		4		14	

Summary of Riparian Zone (0-30m) for all reaches

4 transects

Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream

Total hardwoods/100	411
Total conifers/1000 ft	259
Total conifers >20" dbh/1000 f	30
Total conifers >35" dbh/1000 f	0

Average number of trees in a 5-m wide band

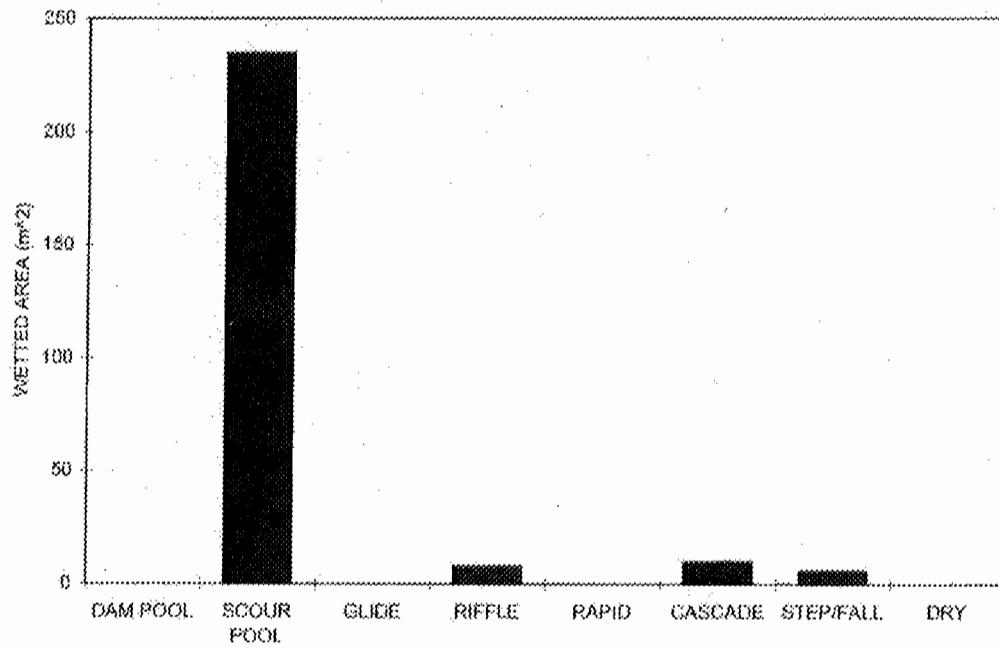
Diameter class (cm)	Zones 1-3 0-30 meters	
	Conifer	Hardwood
3-15cm	2.5	5.3
15-30cm	0.3	1.0
30-50cm	1.0	0.5
50-90cm	0.5	0.0
>90cm	0.0	0.0

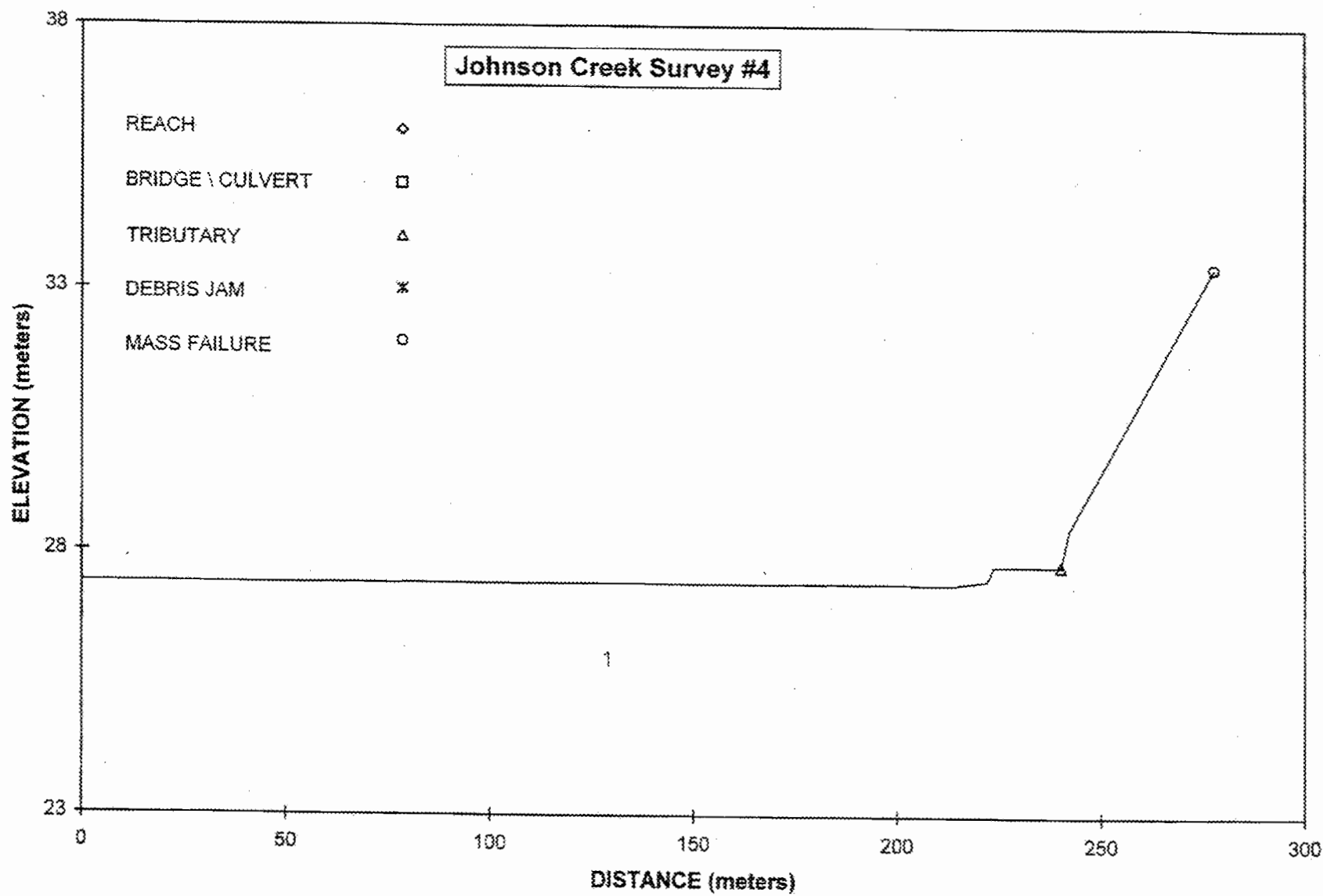
RIPARIAN ZONE VEGETATION

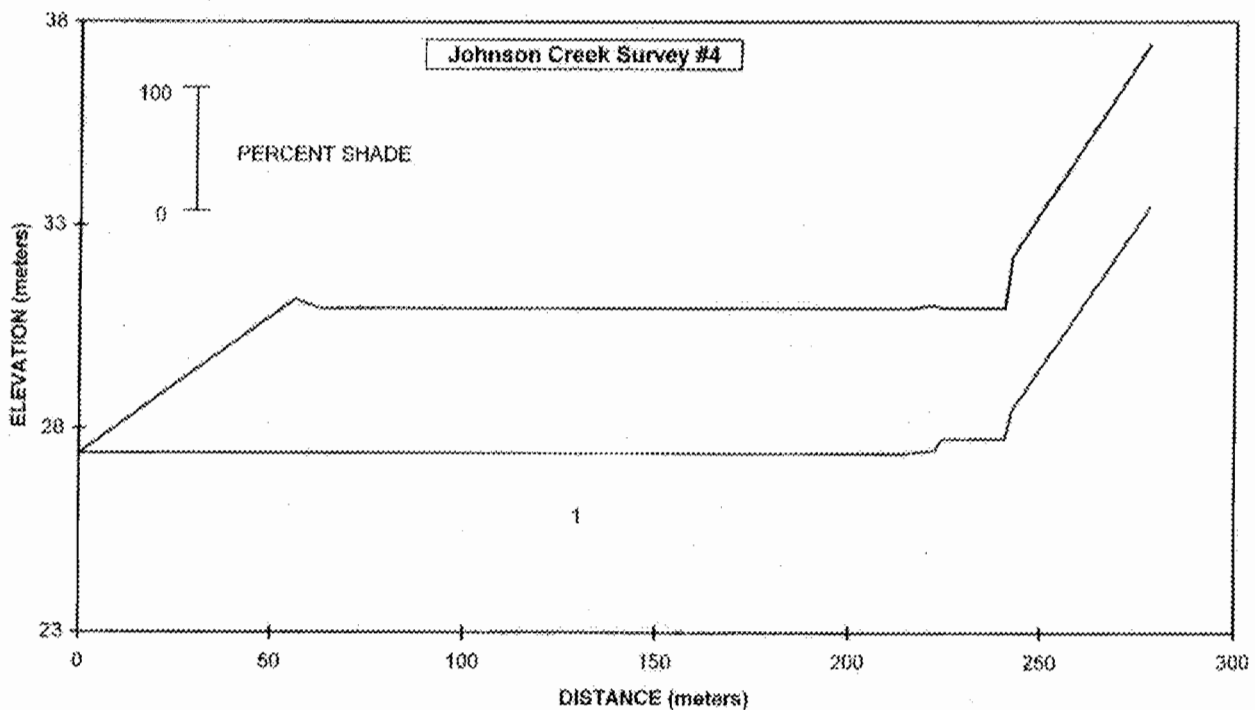
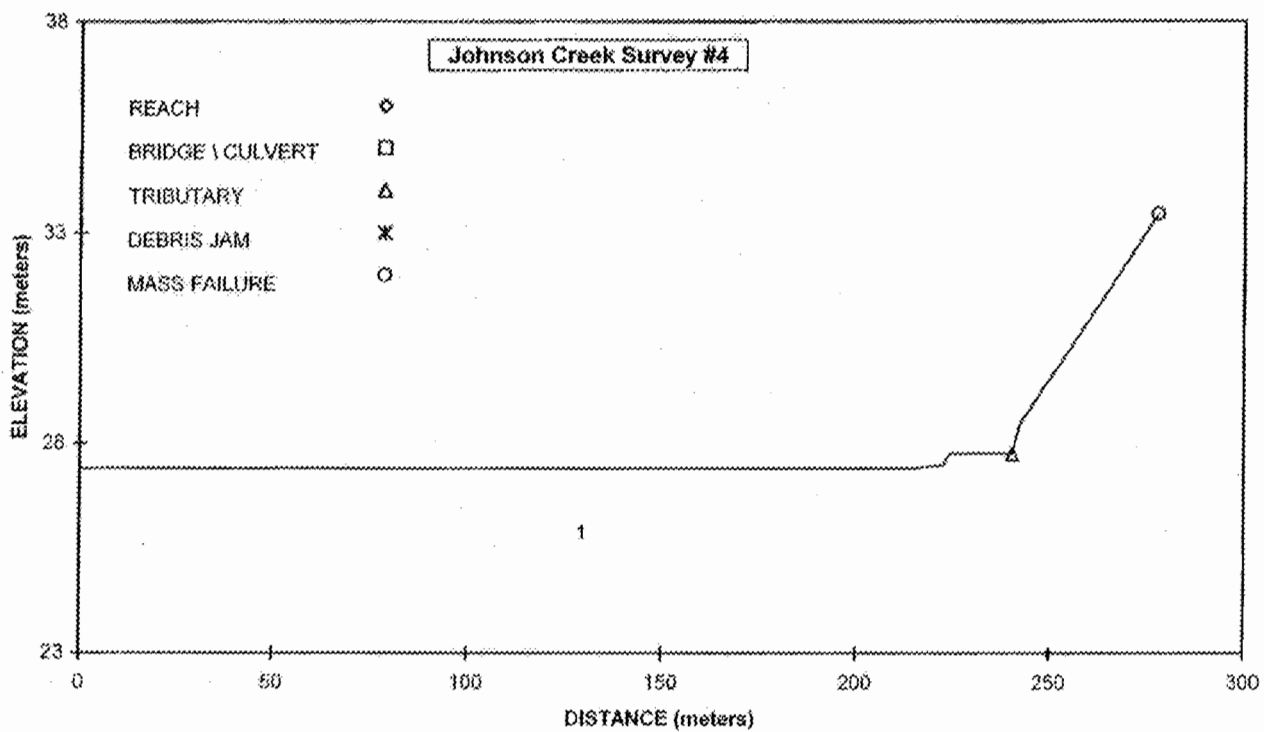
Reach		Cover (percent)							Diameter class (cm)					Reach	Notes
Unit	Side	Zone	Surface	Slope	Canopy	Shrub	Grass	3-15	15-30	30-50	50-90	>90			
1	LF	1	HT	0	0	5	95	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	LF	2	HT	0	0	40	60	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	LF	3	HT	0	0	80	20	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	RT	1	HT	0	0	10	90	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	RT	2	HT	0	0	50	50	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
1	RT	3	HT	0	0	40	60	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
9	LF	1	HT	0	0	5	95	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
9	LF	2	HT	0	0	5	95	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
9	LF	3	HS	5	40	60	40	Conifer	0	0	0	0	0		
								Hardwood	2	0	0	0	0		
9	RT	1	HT	0	0	10	90	Conifer	0	0	0	0	0		
								Hardwood	2	0	0	0	0		
9	RT	2	HT	0	20	60	40	Conifer	0	0	0	0	0		
								Hardwood	0	1	1	0	0		
9	RT	3	HS	10	70	80	20	Conifer	0	0	0	0	0		
								Hardwood	2	1	0	0	0		
13	LF	1	HT	0	5	5	95	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
13	LF	2	HS	5	60	80	20	Conifer	0	0	0	1	0		
								Hardwood	0	1	0	0	0		
13	LF	3	HS	20	50	90	10	Conifer	0	0	1	0	0		
								Hardwood	7	1	0	0	0		
13	RT	1	HT	0	15	50	50	Conifer	0	0	0	0	0		
								Hardwood	5	0	0	0	0		
13	RT	2	HT	0	5	70	30	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
13	RT	3	HT	5	60	70	30	Conifer	0	0	1	0	0		
								Hardwood	0	0	0	0	0		
19	LF	1	LT	0	40	10	90	Conifer	0	0	0	0	0		
								Hardwood	1	0	0	0	0		

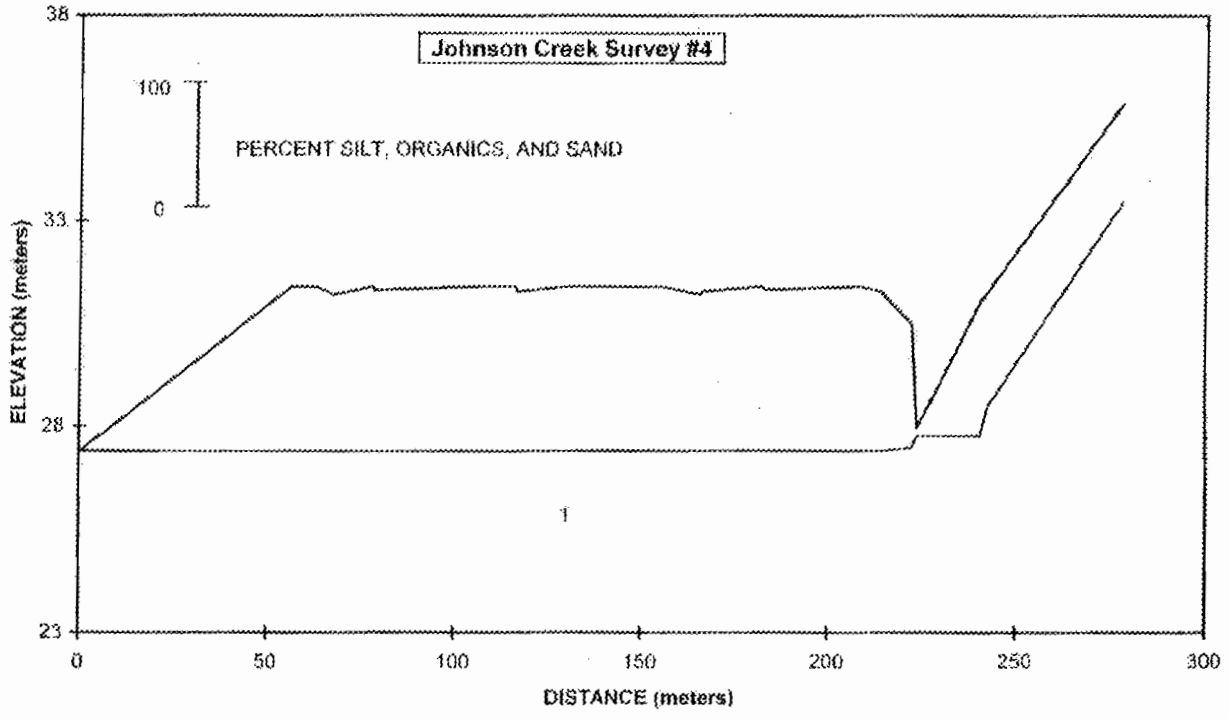
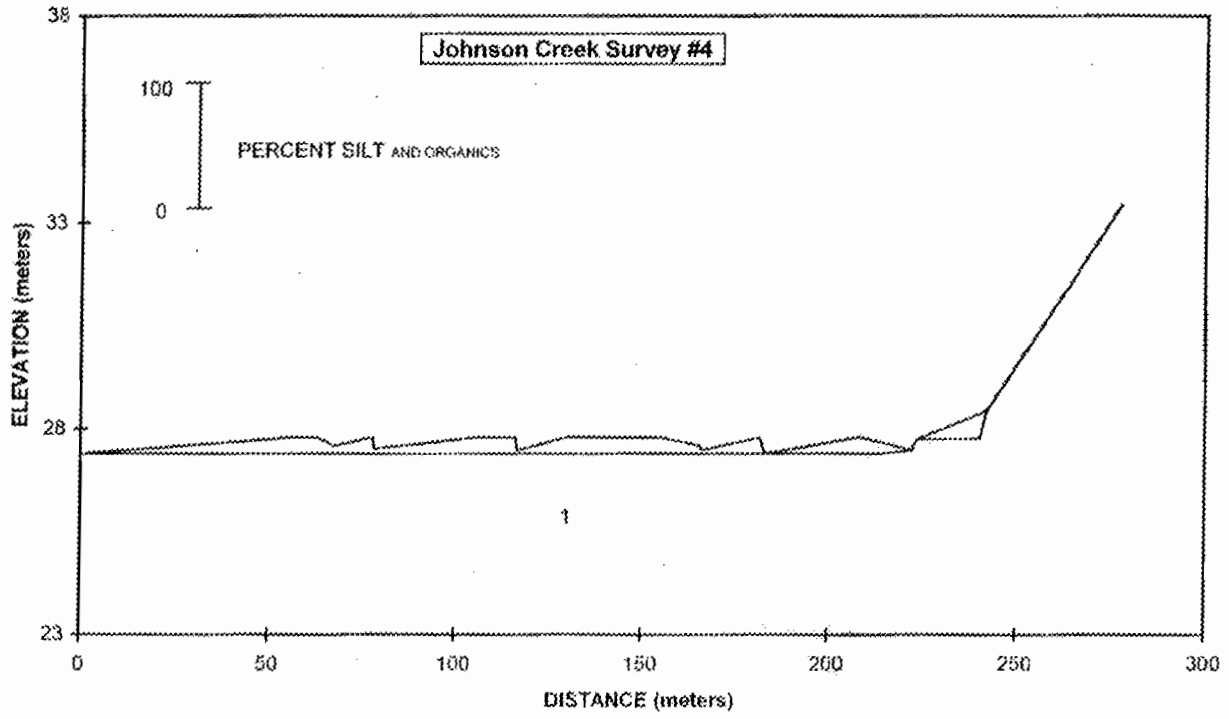
19	LF	2	RB	5	90	30	70	Conifer	10	0	0	0	0	ROADBED OVERGROWN
								Hardwood	1	0	0	0	0	
19	LF	3	HS	50	20	95	5	Conifer	0	0	0	0	0	
								Hardwood	1	0	0	0	0	
19	RT	1	HT	5	65	5	95	Conifer	0	0	0	1	0	
								Hardwood	0	0	1	0	0	
19	RT	2	HS	25	85	60	35	Conifer	0	1	1	0	0	
								Hardwood	0	0	0	0	0	
19	RT	3	HS	25	85	60	35	Conifer	0	0	1	0	0	
								Hardwood	0	0	0	0	0	

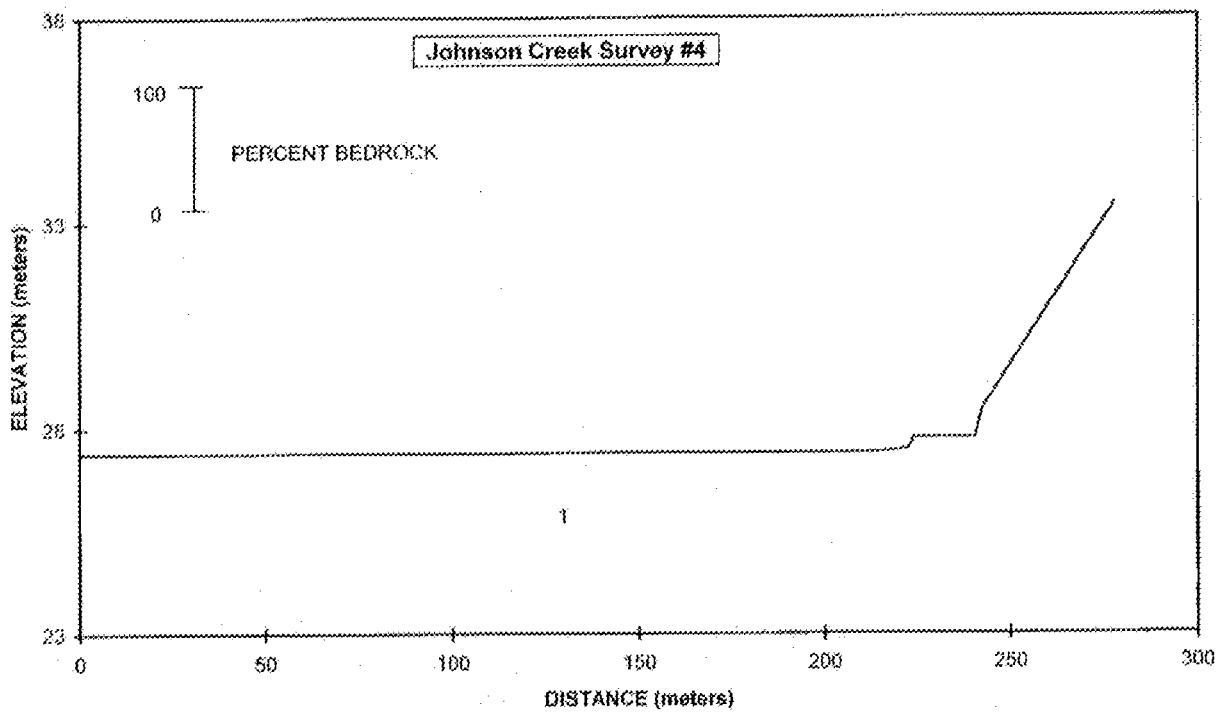
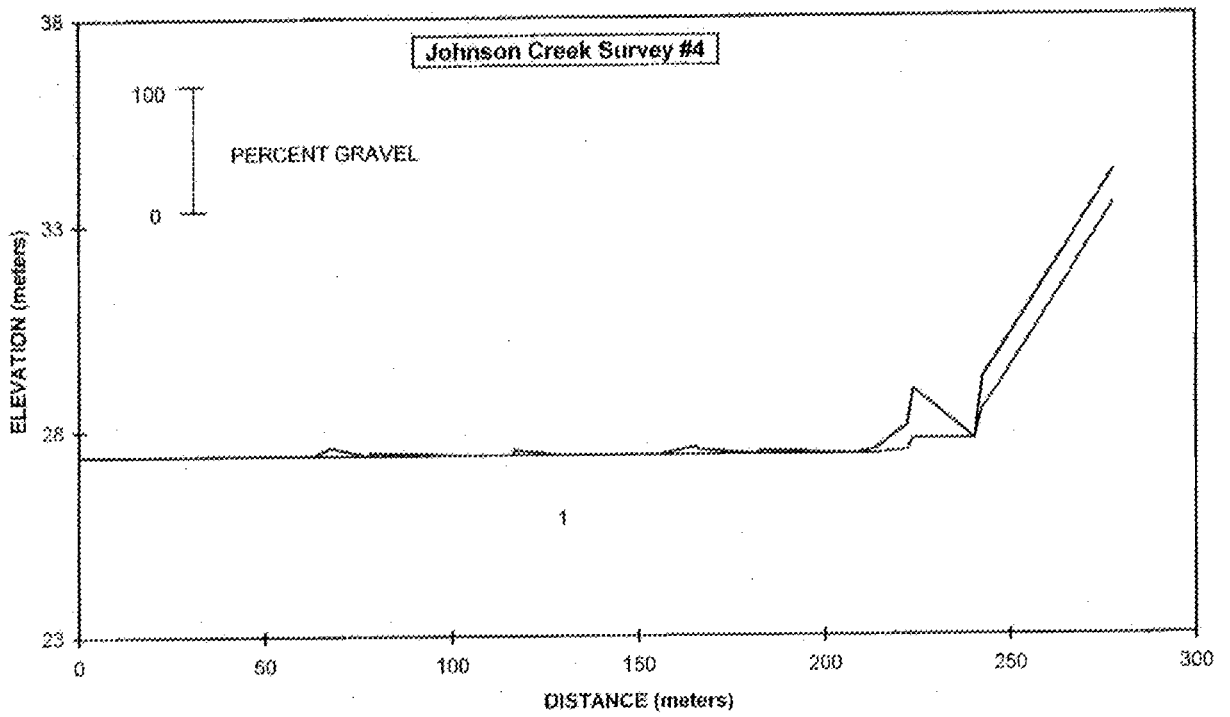
Johnson Creek Survey #4

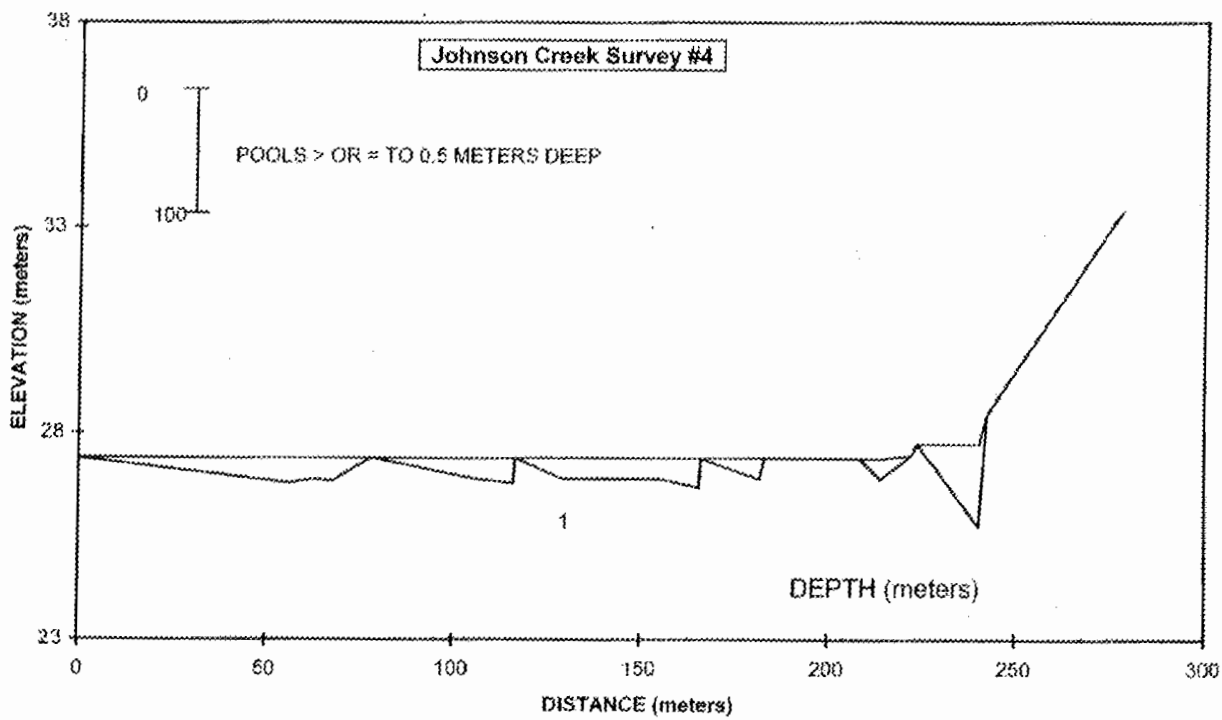
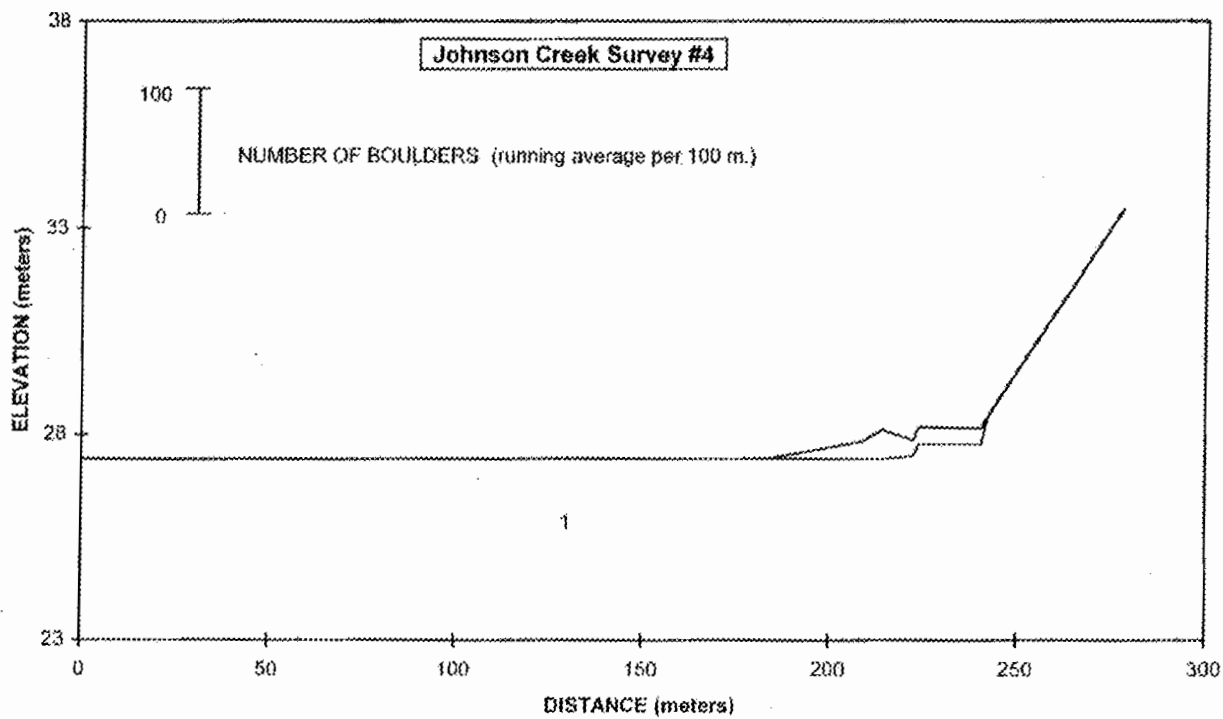


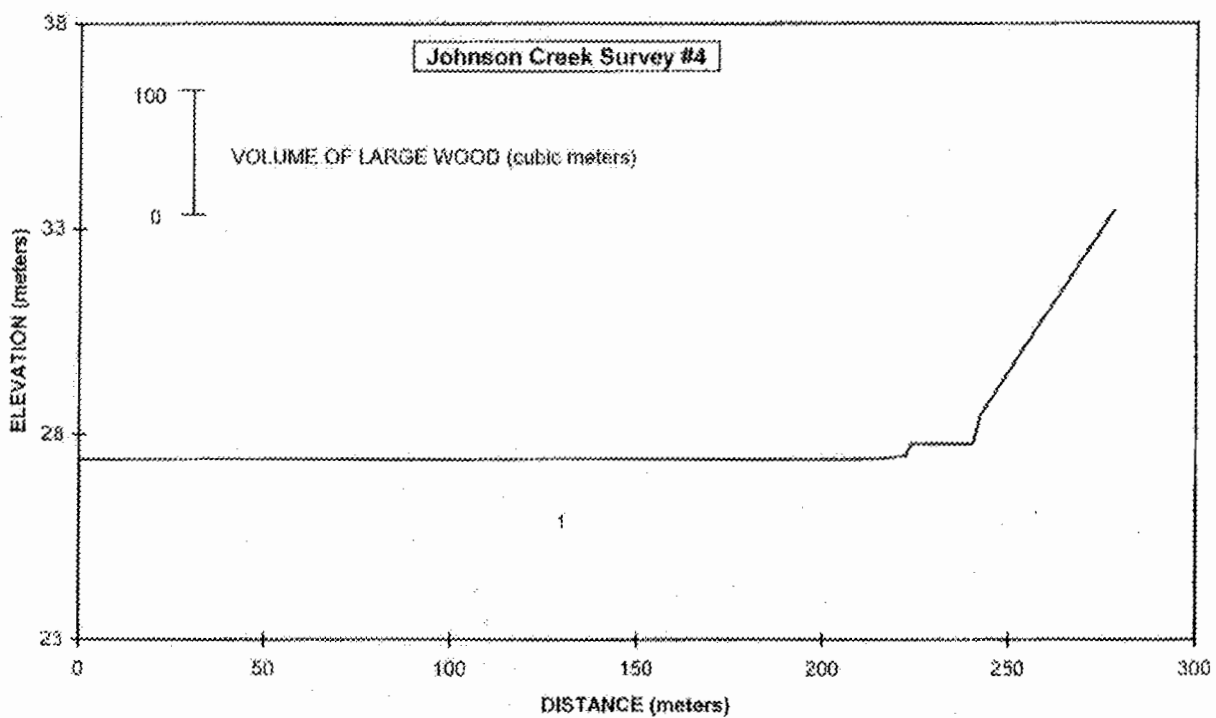
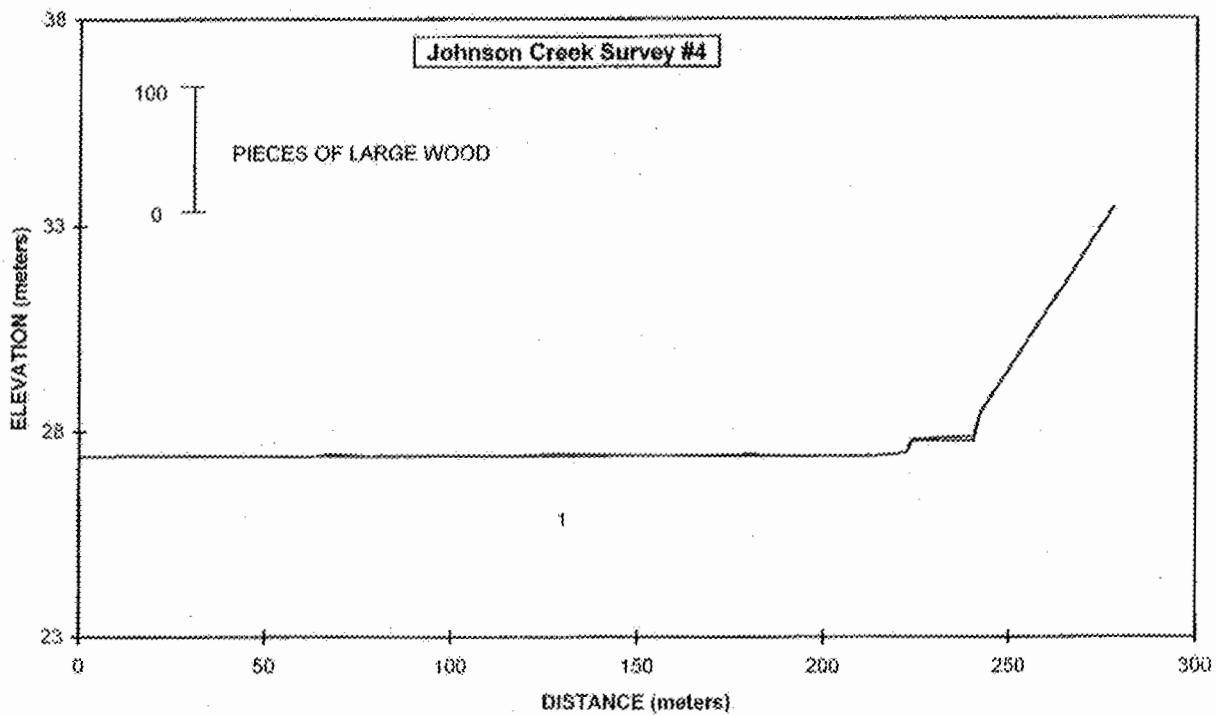


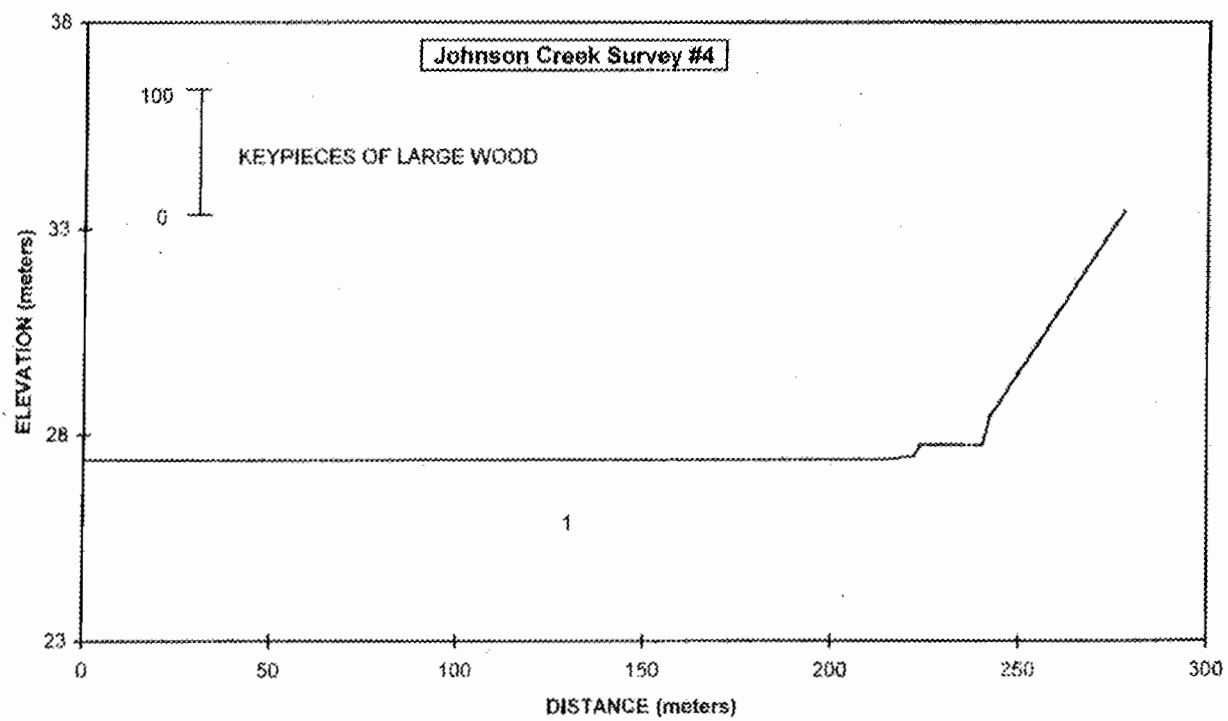












Johnson Creek Survey#4

UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE_ESTIMATOR	NOTE_NUMERATOR
1	LP	00	56		TEMP=60F@1115	
19	SS	00	224	CS		
20	LP	01	240	CS,TJ		PUMP POND
21	GB	11			ACW=0.9M	
22	SS	01	242		H=.7M	
23	CC	01	278	CC	C=0.8MX0.8M	ROSA ROAD
24	CC	02		CC	C=0.8MX0.8M	

Johnson Creek Survey#4 Pictures



Picture 1. Unit 1, lateral scour pool. Reach photo.

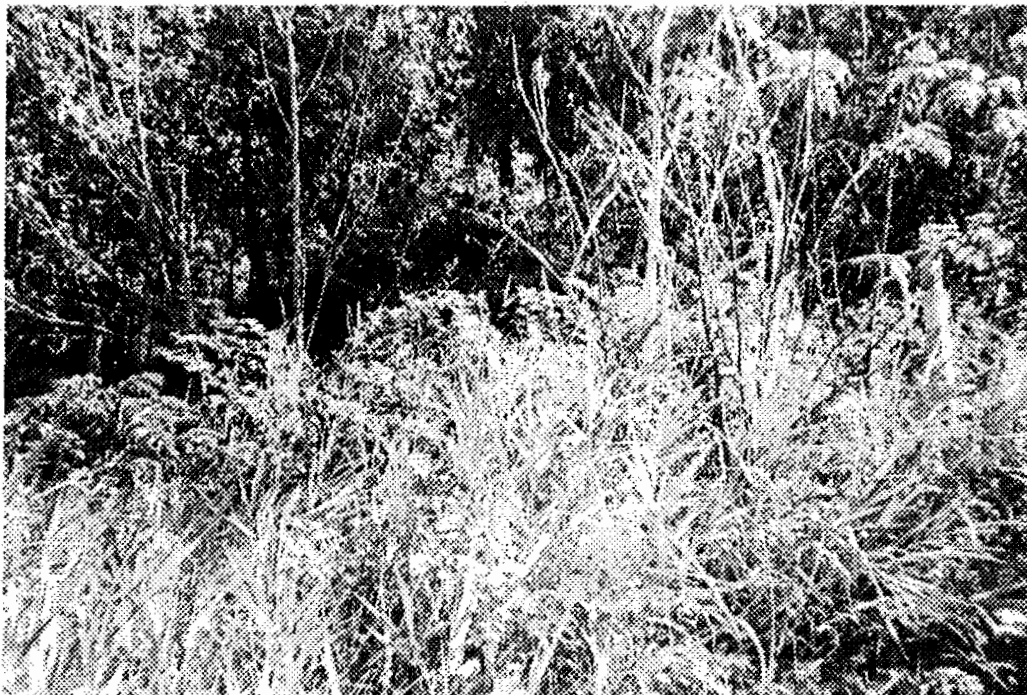


Photo 2. Unit 9. Riparian photo showing left bank (North side of creek).



Photo 3. Unit 9. Riparian photo showing right side of channel (South side of Johnson Creek).

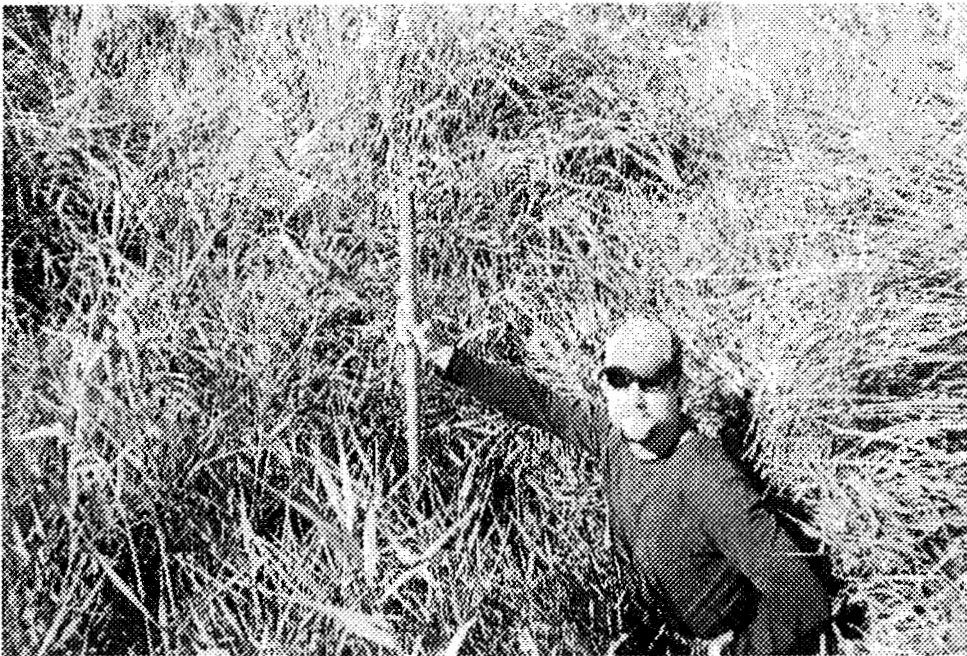


Photo 4. Unit 17, lateral scour pool. Photo taken from terrace looking down into creek channel. Creek channel is heavily incised throughout survey.



Photo 5. Unit 20. Diversion pool with pump just below Rosa Rd. Photo looking upstream.

CRAVEN CONSULTING

STREAM HABITAT INVENTORY REPORT

STREAM: Johnson Creek Survey#5

DATE: 9/22/05

ECOREGION: Coast Range Sedimentary

Survey Length: .45 km

Crew: Pete Baki, Brandon Marshall

Stream Order: 2

REPORT PREPARED BY: Pete Baki

Basin Area:

USGS Maps: Bandon

REACH DESCRIPTIONS:

Reach 1: Length 450m. Reach one begins 450m below the Stolz dam and ends at the dam itself. This reach was constrained by alternating terraces and hill slopes. The valley width index is 3.6 (with a range of 1.9-4.9). The average unit gradient was 1.6%. The stream habitat was dominated by scour pools (80.07%) followed by riffles (8.28%). The wetted width to depth ratio is 7.1. The residual pool depth average is 0.39m. The stream substrate was dominated by gravel (61%) followed by sand (33%). There was 62% gravel in riffle units. There were 28.2 pieces of wood and 26.3m³ of wood per 100 m of stream. The most frequently appearing trees in this unit were hardwoods 3-15cm dbh. Large conifers in this reach were rare. Average shade for the reach was 87% (range 56-100). Land use for the reach was agricultural and timber harvest. There was one pool greater than 1m deep. Active erosion had an average of 4% and 3% undercut. The entire reach is on private land.

OREGON DEPARTMENT OF FISH AND WILDLIFE
HABITAT INVENTORY

Report Date: 10/18/2005

JOHNSON CREEK #5

Survey Date 9/22/2005

REACH

T29S-R14W-S05SW

REACH

Valley and Channel Summary

Valley Characteristics (Percent Reach Length)

<u>Narrow Valley Floor</u>		<u>Broad Valley Floor</u>	
Steep V-shape	0%	Constraining Terraces	100%
Moderate V-shape	0%	Multiple Terraces	0%
Open V-shape	0%	Wide Floodplain	0%
Valley Width Index	3.6	VWI Range:	1.9 - 4.9

Channel Morphology (Percent Reach Length)

<u>Constrained</u>		<u>Unconstrained</u>	
Hillslope	0%	Single Channel	0%
Bedrock	0%	Multiple Channel	0%
Terrace	0%	Braided Channel	0%
Alt. Terrace/Hill	100%		
Landuse	0%		

Channel Characteristics

<u>Type</u>	<u>Length (m)</u>	<u>Area (m2)</u>	<u>Dry Units</u>
Primary	450	1,252	0
Secondary	64	61	4

Channel Dimensions (m)

<u>Wetted</u>	<u>Active</u>	<u>Floodprone</u> n = 5	<u>First Terrace</u> n = 3
Width: 2.2	Width: 3.9	6.0 (4.3 - 7.3)	6.0 (5.6 - 6.3)
Depth: 0.26	Height: 0.6	1.1 (1 - 1.2)	4.7 (1.4 - 11.3)

W:D ratio: 7.1

Entrenchment (ACW:FPW ratio): 1.7

Stream Flow Type: LF

Habitat Units/100m (total channel length): 14.8

Average Unit Gradient: 1.6%

Habitat Units/100m (primary channel length): 16.9

Water temperature (°C): 47.0 - 47.0

Riparian, Bank, and Wood Summary

	<u>Primary</u>	<u>Secondary</u>
Land Use:	ST	AG
Riparian Vegetation:	D15	S

Bank Condition and Shade

<u>Bank Status</u>	<u>Percent Reach Length</u>	<u>Shade (% of 160)</u>
Actively Eroding:	4%	Reach avg: 87%
Undercut Banks:	3%	Range: 56 - 100

Large Wood Debris

	<u>Total</u>	<u>Total / 100m primary channel</u>
All pieces (>=3m x 0.15m):	127	28.2
Volume (m ³):	118	26.3
Key pieces (>=12m x 0.60m):	6	1.3

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #5

HABITAT INVENTORY

Report Date: 10/18/2005

Survey Date:

9/22/2005

REACH		T29S-R14W-S05SW					REACH					
HABITAT DETAIL												
Habitat Type	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Total Area (m ²)	Large Boulders (#>0.5m)	Substrate Percent Wetted Area					
							S/O	Snd	Grvl	Cbl	Bldr	Bdrk
CASCADE/BOULDERS	2	14	2.1	0.02	18	0	0	45	53	3	0	0
CULVERT CROSSING	1	20	0.6	0.03	12	0	0	80	20	0	0	0
DRY UNIT	2	11	0.9	0.00	9	0	0	40	60	0	0	0
POOL-BACKWATER	3	9	2.2	0.37	20	0	5	52	43	0	0	0
POOL-LATERAL SCOUR	28	280	3.1	0.51	1,016	0	2	39	56	2	0	2
POOL-PLUNGE	4	11	3.8	0.26	35	0	1	32	64	3	0	0
PUDDLED UNIT	2	19	1.3	0.06	25	0	2	69	29	0	0	0
RAPID/BOULDERS	5	48	0.5	0.06	26	0	0	18	75	6	0	1
RIFFLE	9	74	1.5	0.12	109	0	0	28	62	5	0	5
STEP/COBBLE	17	27	1.5	0.09	41	0	0	15	78	4	0	4
STEP/LOG	2	1	1.5	0.05	2	0	0	33	68	0	0	0
STEP/STRUCTURE	1	0	0.6	0.03	0	0	0	80	20	0	0	0
Total:	76	514	2.2	0.26	1,313	0	Avg: 1	33	61	3	0	2

HABITAT SUMMARY								
Habitat Group	Number Units	Total Length (m)	Avg Width (m)	Avg Depth (m)	Wetted Area		Large Boulders	
					(m ²)	Percent	Number	(# / 100m ²)
Dammed & BW Pools	3	9	2.2	0.37	20	1.50%	0	0.0
Scour Pools	32	291	3.2	0.48	1,051	80.07%	0	0.0
Glides	0	0			0	0.00%	0	0.0
Riffles	9	74	1.5	0.12	109	8.28%	0	0.0
Rapids	5	48	0.5	0.06	26	1.99%	0	0.0
Cascades	2	14	2.1	0.02	18	1.36%	0	0.0
Step/Falls	20	28	1.4	0.09	43	3.28%	0	0.0
Dry	4	30	1.1	0.03	34	2.61%	0	0.0
Culverts	1	20	0.6	0.03	12	0.91%	0	0.0

OREGON DEPARTMENT OF FISH AND WILDLIFE

JOHNSON CREEK #5

HABITAT INVENTORY

Report Date: 10/18/2005

Survey Date: 9/22/2005

REACH

T29S-R14W-S05SW

REACH

POOL SUMMARY

	<u>Total</u>	Total of all Channel Lengths <u># / Km</u>	Primary Channel Length <u># / Km</u>
All Pools:	35	68.1	77.8
Pools >=1m deep:	1	1.9	2.2
Complex pools (LWD pieces>=3):	11	21.4	24.4
Pool frequency (channel widths/pool):	3.8		
Residual pool depth (avg):	0.39		

RIPARIAN ZONE VEGETATION SUMMARY

REACH	Summary of Riparian Zone (0-30m)						REACH	
	4 transects							
Total hardwoods/100	427							
Total conifers/1000 ft	305							
Total conifers >20" dbh/1000 f	76							
Total conifers >35" dbh/1000 f	46							
Average number of trees in a 5-meter wide band								
Diameter class (cm)	Zone 1		Zone 2		Zone 3		Zones 1-3	
	0-10 meters		10 - 20 meters		20 - 30 meters		0-30 meters	
	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood	Conifer	Hardwood
3-15cm	0.8	1.3	0.0	1.0	0.3	2.3	1.0	4.5
15-30cm	0.0	0.5	0.8	1.0	1.0	0.0	1.8	1.5
30-50cm	0.3	0.0	0.5	0.5	0.3	0.0	1.0	0.5
50-90cm	0.3	0.0	0.3	0.0	0.0	0.5	0.5	0.5
>90cm	0.5	0.0	0.0	0.0	0.3	0.0	0.8	0.0
Total/100m2	1.8	1.8	1.5	2.5	1.8	2.8	1.7	2.3
Canopy closure and ground cover								
	Zone 1		Zone 2		Zone 3			
	0-10 meters		10 - 20 meters		20 - 30 meters			
	(%)		(%)		(%)			
Canopy closure	79		71		76			
Shrub cover	48		71		78			
Grass/forb cover	53		29		22			
Predominant landform in each zone								
	Zone 1		Zone 2		Zone 3			
	0-10 meters		10 - 20 meters		20 - 30 meters			
	(%)		(%)		(%)			
Hillslope	75		88		100			
High terrace	25		13		0			
Low terrace	0		0		0			
Floodplain	0		0		0			
Wetland/meadow	0		0		0			
Stream channel	0		0		0			
Roadbed/Railroad	0		0		0			
Riprap	0		0		0			
Surface slope (%)	34		31		36			

Summary of Riparian Zone (0-30m) for all reaches 4 transects

Summary of riparian zone (0-100 feet) extrapolated to 1,000 feet along stream

Total hardwoods/100	427
Total conifers/1000 ft	305
Total conifers >20" dbh/1000 f	76
Total conifers >35" dbh/1000 f	46

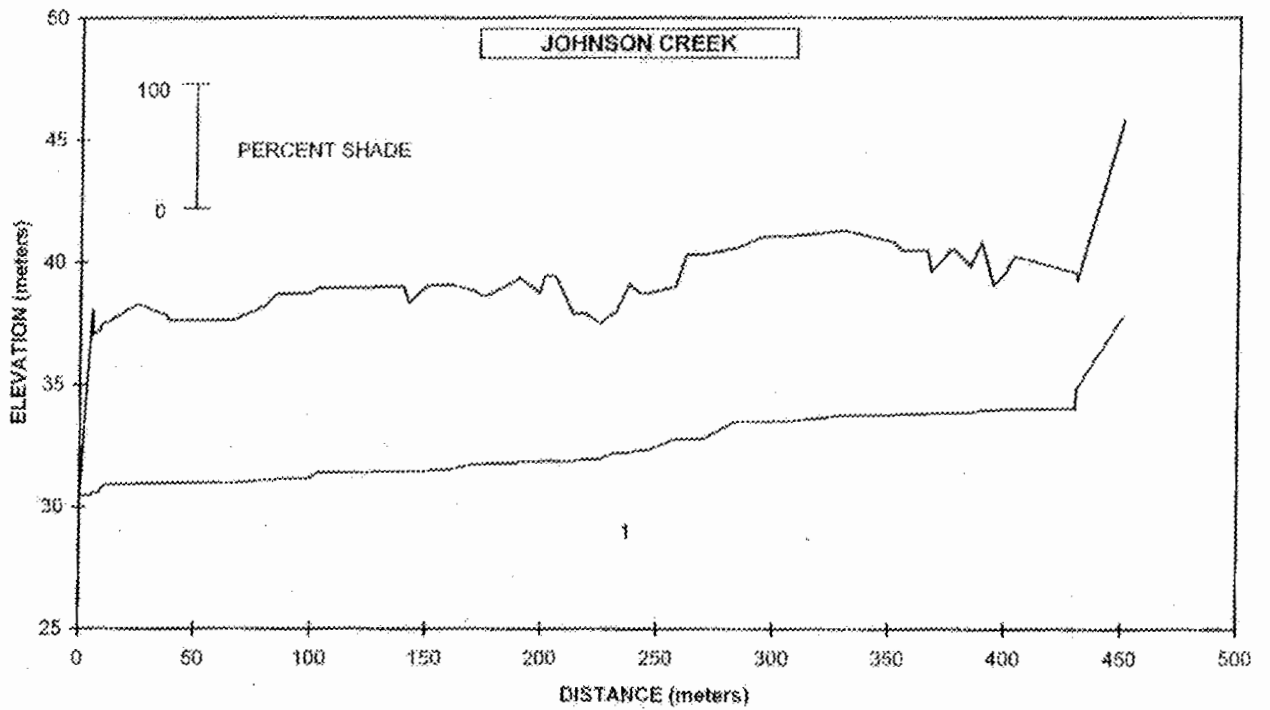
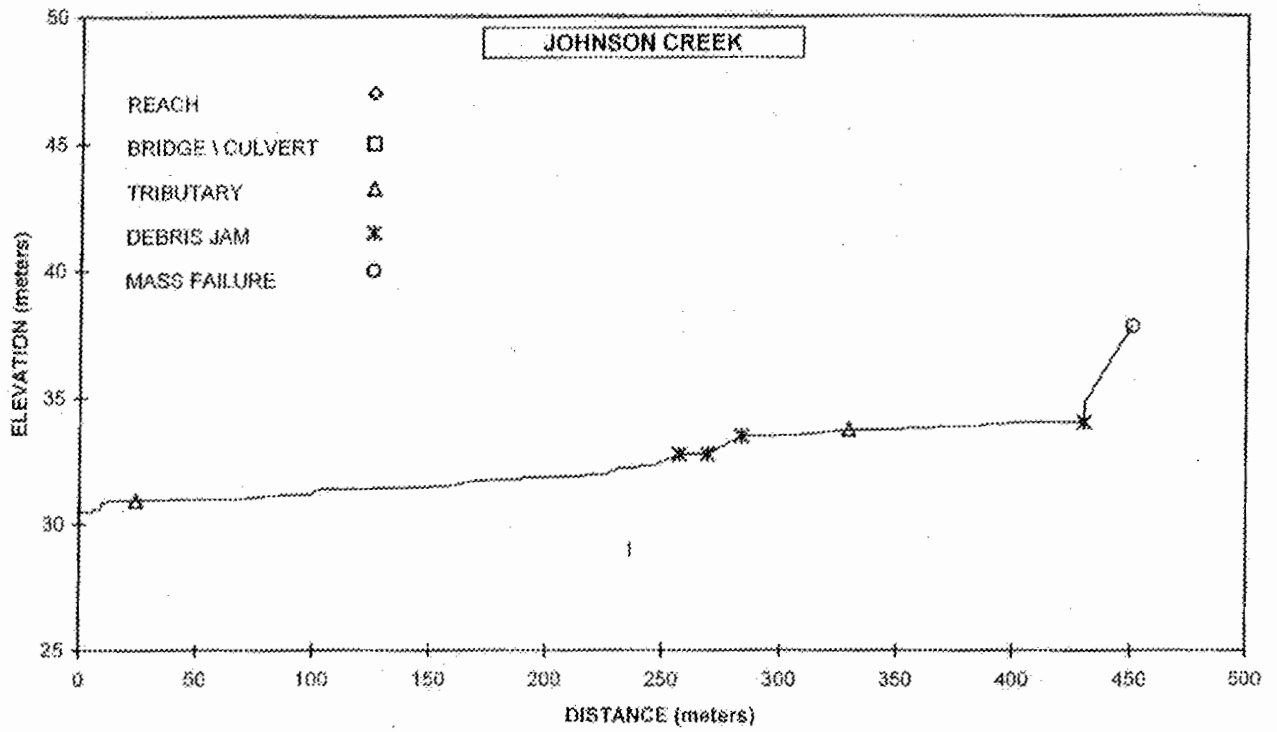
Average number of trees in a 5-m wide band

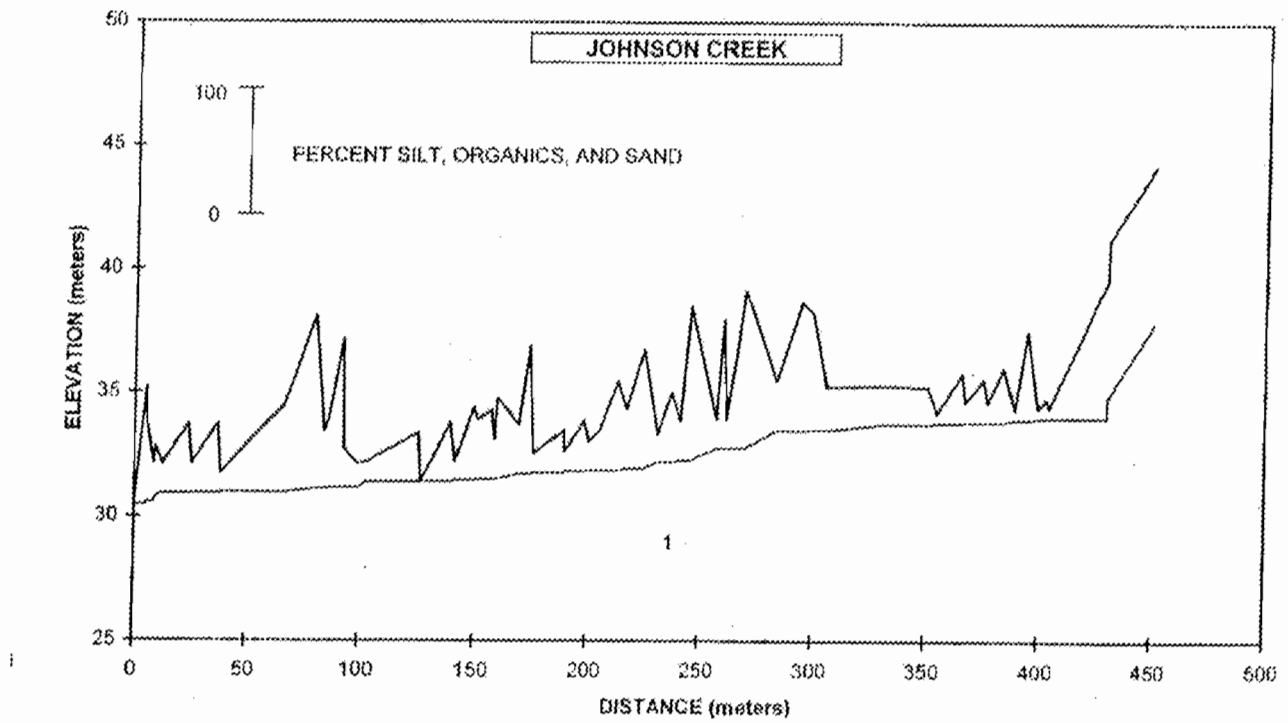
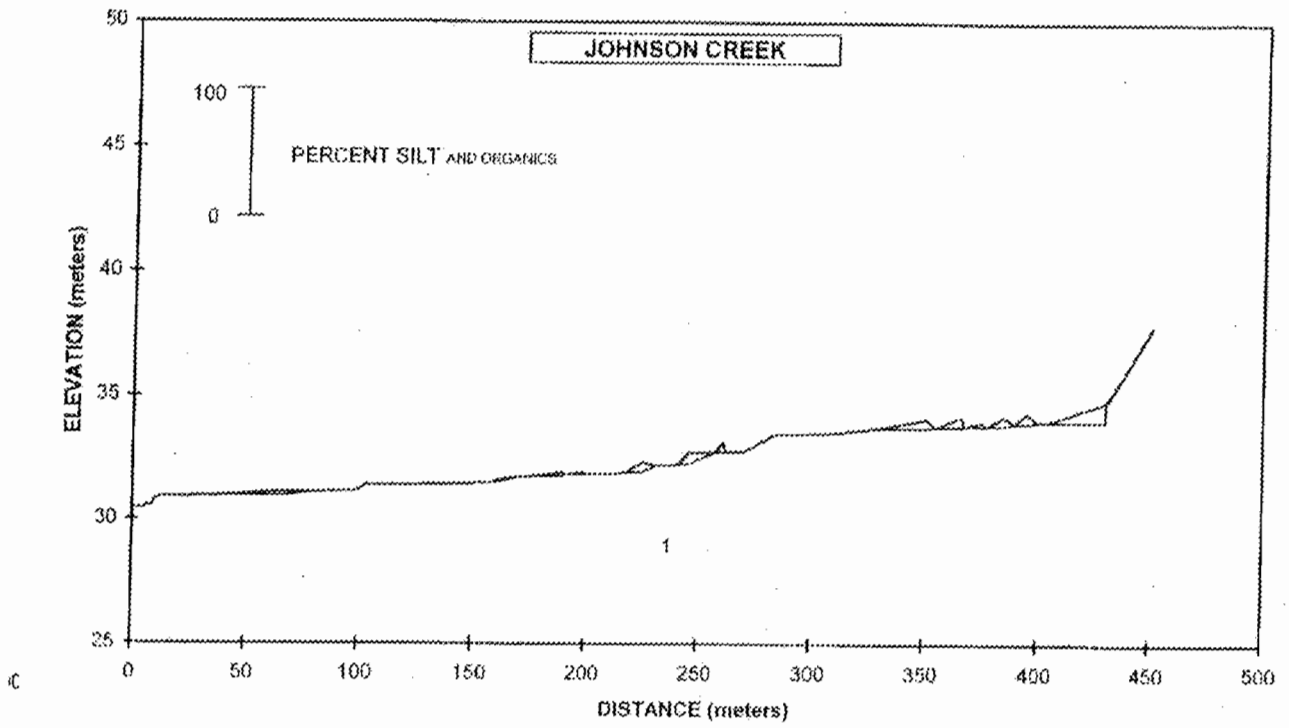
Diameter class (cm)	Zones 1-3 0-30 meters	
	Conifer	Hardwood
3-15cm	1.0	4.5
15-30cm	1.8	1.5
30-50cm	1.0	0.5
50-90cm	0.5	0.5
>90cm	0.8	0.0

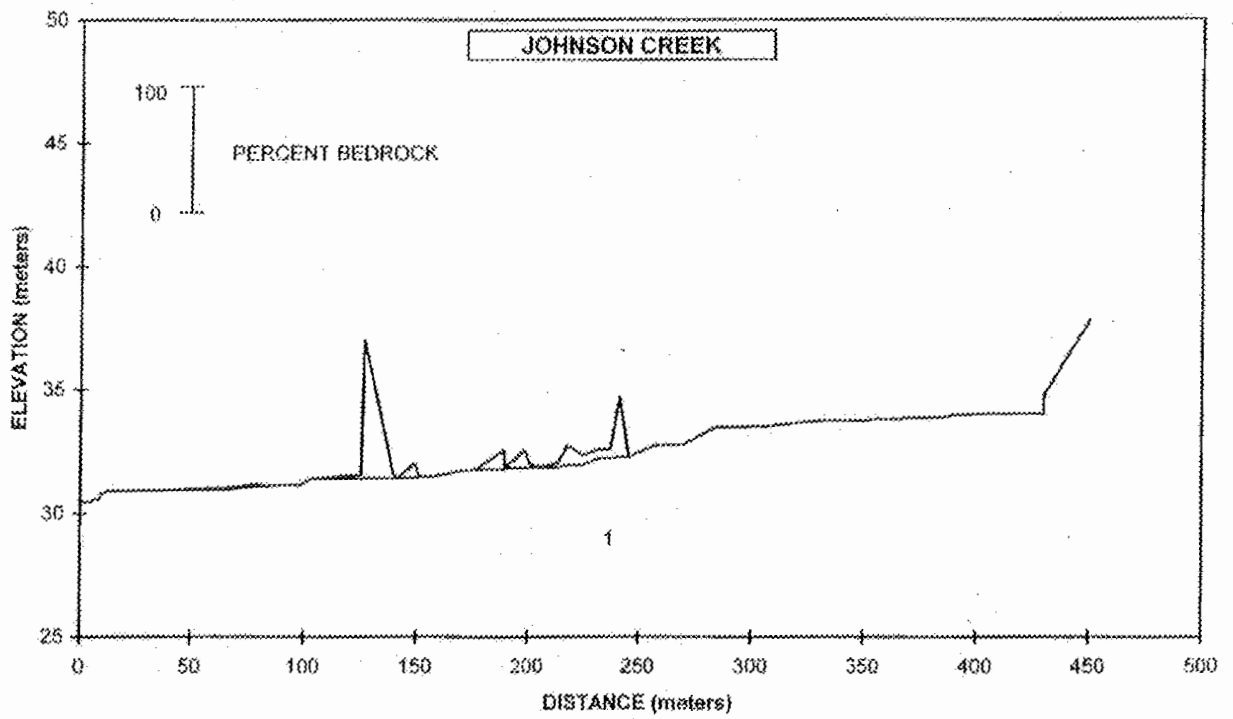
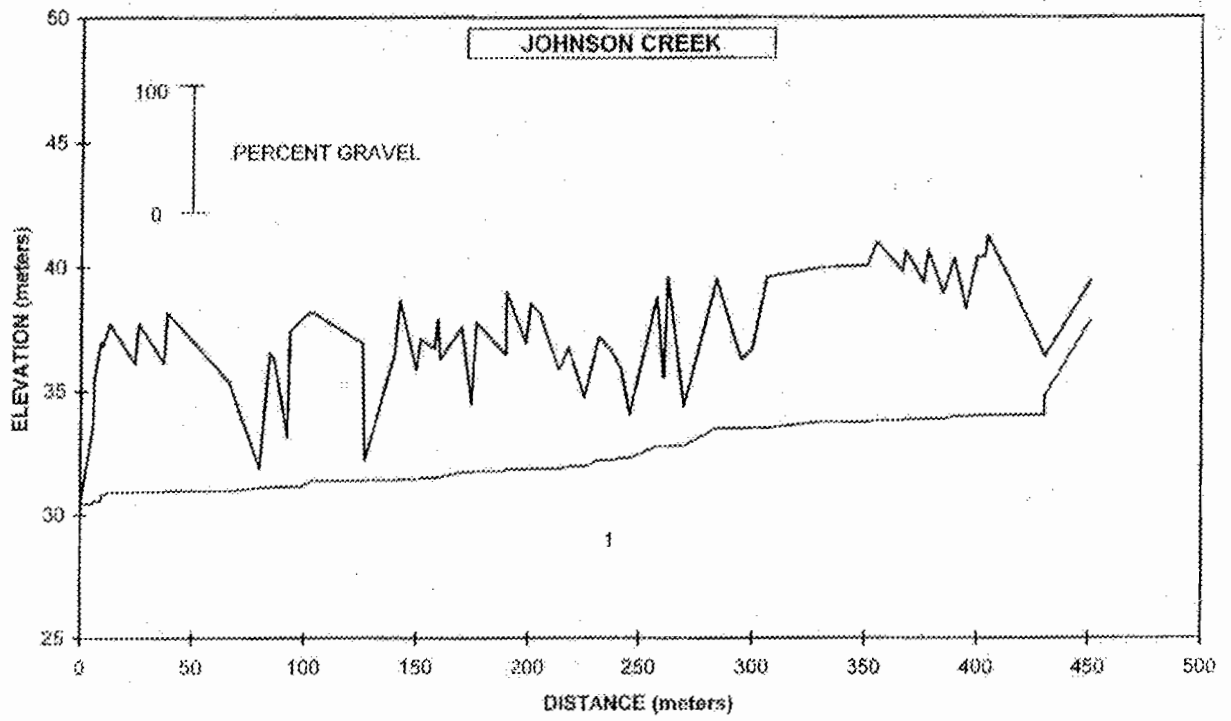
RIPARIAN ZONE VEGETATION

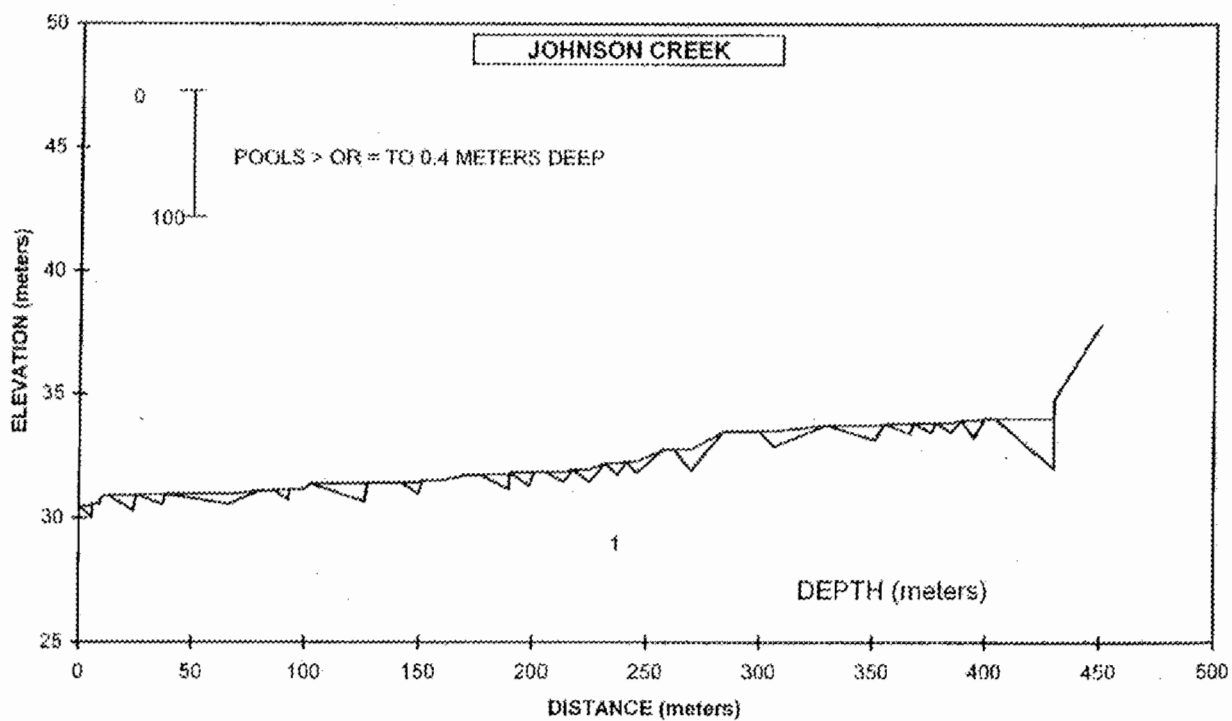
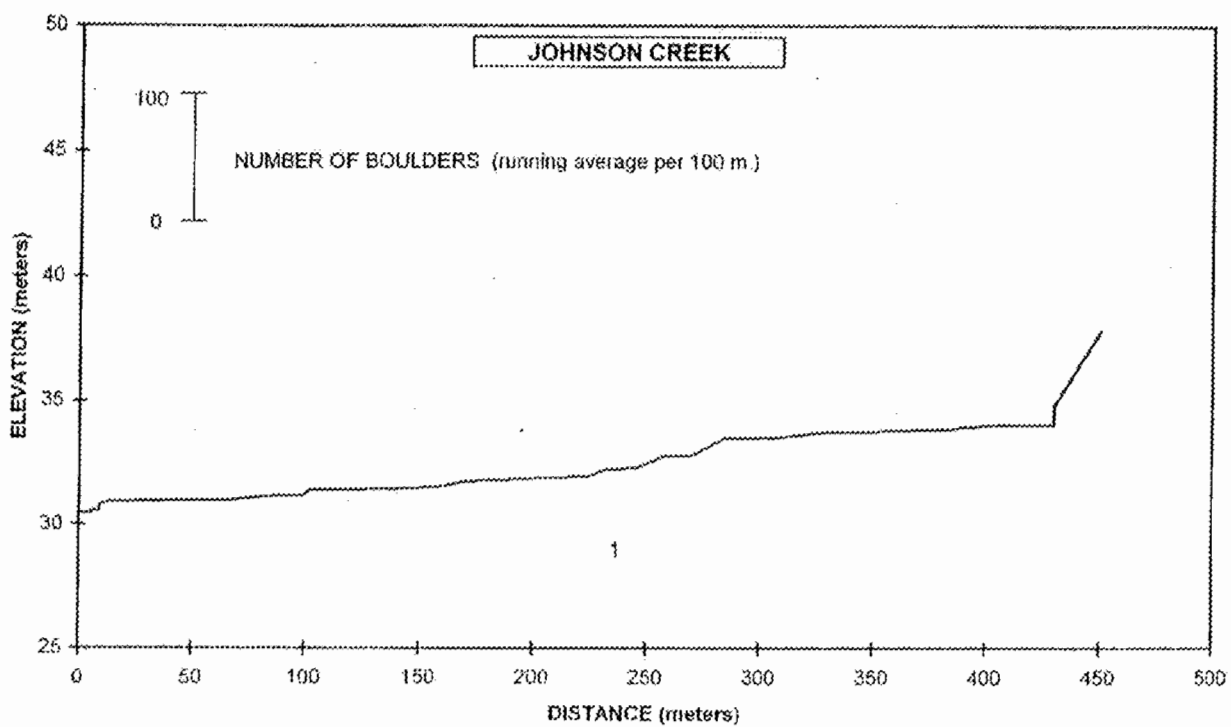
Reach	Unit	Side	Zone	Surface	Slope	Cover (percent)				Diameter class (cm)					Notes
						Canopy	Shrub	Grass		3-15	15-30	30-80	80-90	>90	
1	LF	1	HS	60	85	70	30	Conifer	0	0	0	0	0		
								Hardwood	1	1	0	0	0		
1	LF	2	HS	45	60	80	20	Conifer	0	1	1	0	0		
								Hardwood	0	0	0	0	0		
1	LF	3	HS	40	65	80	20	Conifer	0	1	0	0	0		
								Hardwood	2	0	0	0	0		
1	RT	1	HS	25	85	10	80	Conifer	3	0	0	1	0		
								Hardwood	0	0	0	0	0		
1	RT	2	HS	30	85	30	70	Conifer	0	0	0	1	0		
								Hardwood	0	0	0	0	0		
1	RT	3	HS	30	85	30	70	Conifer	0	1	0	0	0		
								Hardwood	0	0	0	0	0		
20	LF	1	HS	70	80	80	10	Conifer	0	0	0	0	0		
								Hardwood	3	0	0	0	0		
20	LF	2	HS	35	60	90	10	Conifer	0	1	0	0	0		
								Hardwood	0	0	0	0	0		
20	LF	3	HS	35	60	80	20	Conifer	0	0	0	0	1		
								Hardwood	0	0	0	0	0		
20	RT	1	HS	5	70	80	20	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
20	RT	2	HS	25	65	90	10	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	0	0		
20	RT	3	HS	45	80	90	10	Conifer	0	0	0	0	0		
								Hardwood	0	0	0	2	0		
46	LF	1	HT	0	65	20	80	Conifer	0	0	0	0	0		
								Hardwood	0	1	0	0	0		
46	LF	2	HT	0	70	40	60	Conifer	0	0	0	0	0		
								Hardwood	0	2	0	0	0		
46	LF	3	HS	20	70	90	10	Conifer	1	0	0	0	0		
								Hardwood	1	0	0	0	0		
46	RT	1	HS	65	80	80	20	Conifer	0	0	1	0	0		
								Hardwood	1	0	0	0	0		
46	RT	2	HS	60	75	95	5	Conifer	0	1	0	0	0		
								Hardwood	2	0	2	0	0		
46	RT	3	HS	40	80	95	5	Conifer	0	0	1	0	0		
								Hardwood	0	0	0	0	0		
61	LF	1	HT	0	85	10	90	Conifer	0	0	0	0	1		
								Hardwood	0	0	0	0	0		

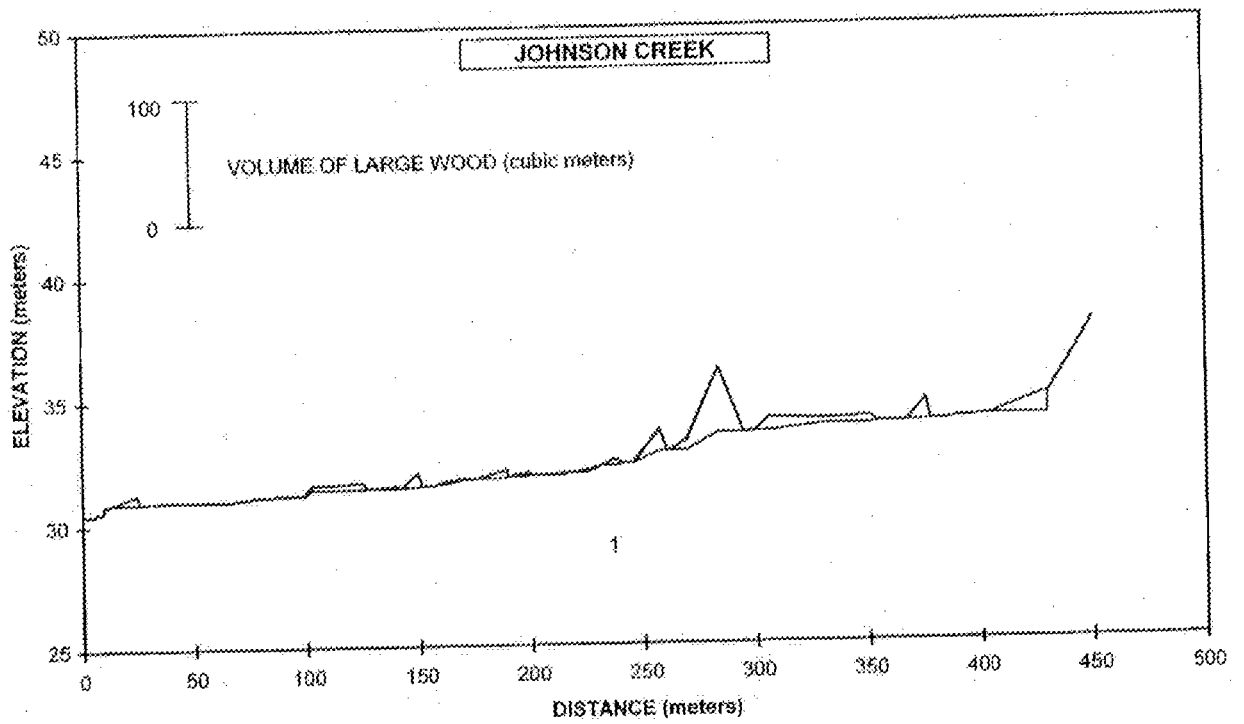
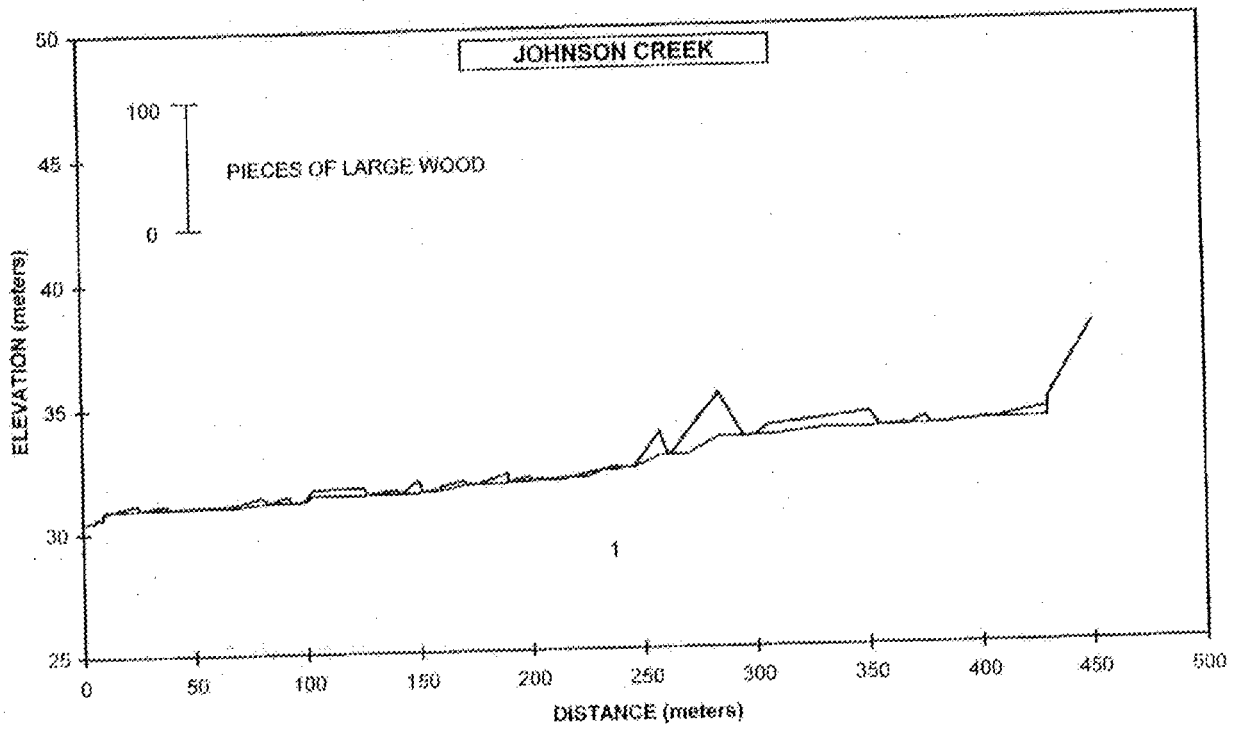
61	LF	2	HS	10	80	50	50	Conifer	0	0	0	0	0
								Hardwood	2	2	0	0	0
61	LF	3	HS	40	80	70	30	Conifer	0	0	0	0	0
								Hardwood	6	0	0	0	0
61	RT	1	HS	50	80	20	80	Conifer	0	0	0	0	1
								Hardwood	0	0	0	0	0
61	RT	2	HS	45	70	90	10	Conifer	0	0	1	0	0
								Hardwood	0	0	0	0	0
61	RT	3	HS	40	70	90	10	Conifer	0	2	0	0	0
								Hardwood	0	0	0	0	0

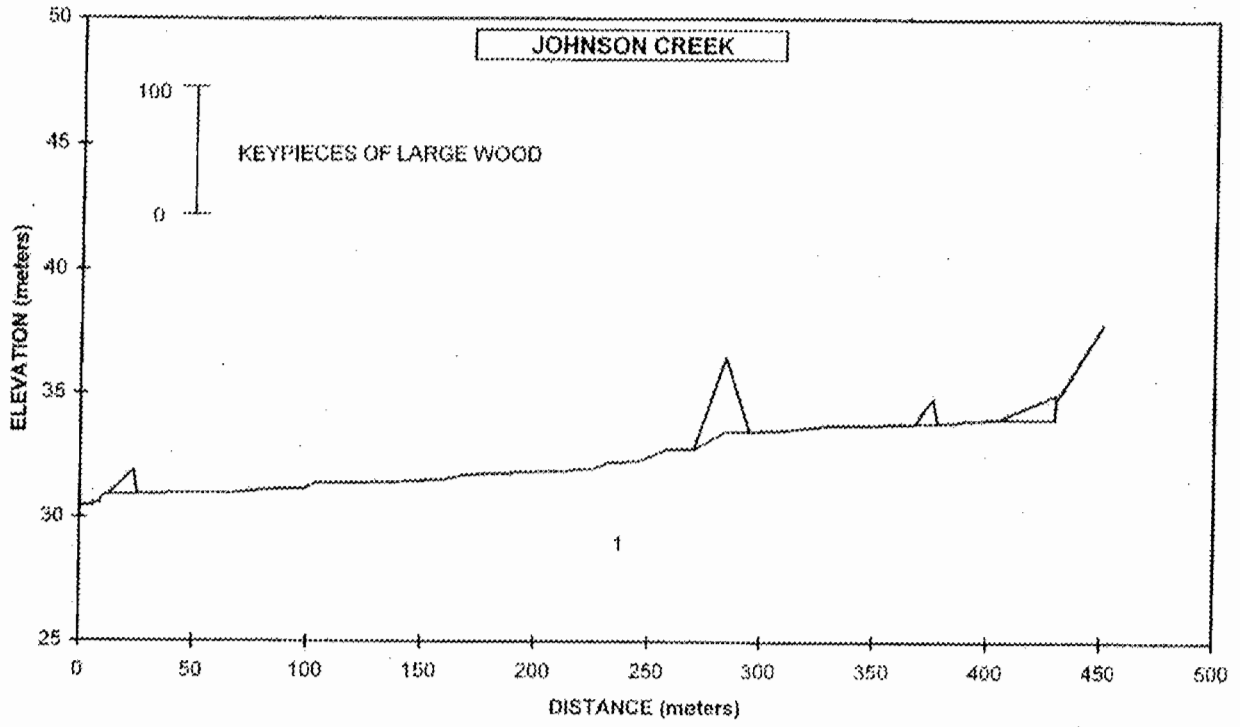




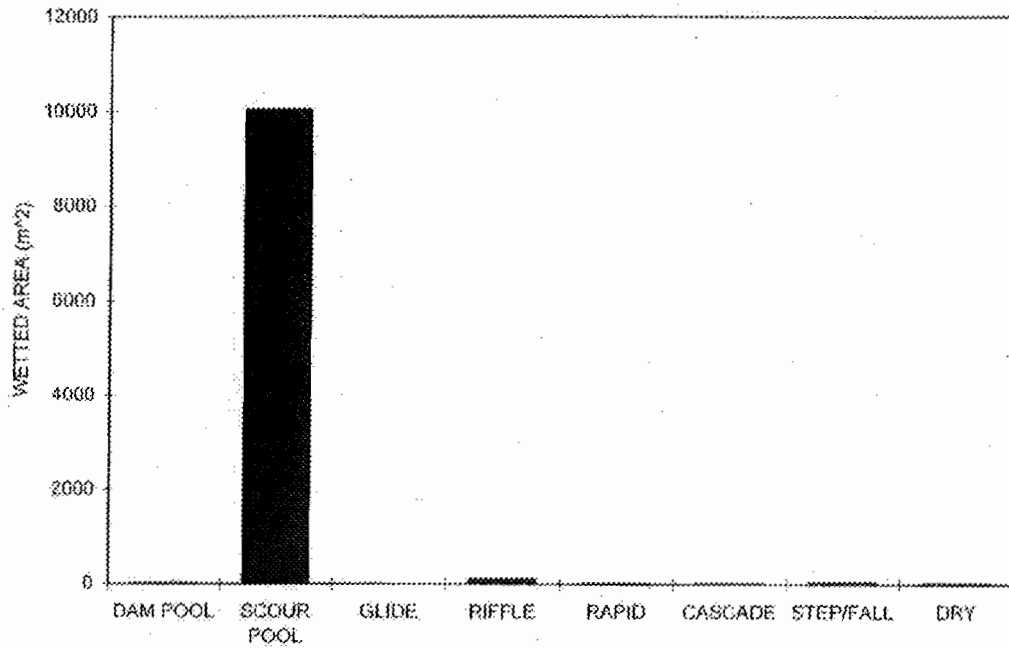








Johnson Creek Survey #5 2005



Johnson Creek Survey #5

REACH	UNIT#	TYPE	CHAN	DIST.(m)	COMMENTS	NOTE	ESTIMATOR
1	1	LP	00	6		TEMP=47F@0930	
	2	SL	00	6		H=0.1M	
	4	SL	00	10		H=0.25M	
	6	LP	01	24	TJ/		
	7	CB	11			ACW=0.3M	
	11	LP	00	66	SS/	FISH	
	40	RB	00	231		EQUISETUM BOTH SIDES3	
	44	RB	01	257	DJ		
	48	LP	01	269	DJ		
	49	RB	01	284	/SS, DJ		
	52	DU	03		DJ		
	56	RI	01	329	SS, TJ/		
	60	RB	11			ACW=1.2M	
	74	LP	00	430	DJ		
	75	SS	00	430		H=0.8M	
	76	CC	00	450	CC	SLOPE ESTIMATED	

Johnson Creek Survey#5 Pictures



Photo 1. Unit 15, lateral scour pool. Reach photo.



Photo 2. Unit 74, lateral scour pool. Photo looking upstream at Stolz's Dam.



Photo 3. Unit 74, lateral scour pool. Photo looking down from Stolz's dam.