

Appendix D. Field Notes from Gastropod Pilot Survey

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/16/04 Location: T105, GLA
 Start/Stop time: 0855 X: _____
 Sampling Method: _____ Y: _____
 Weather: SONNY CLOUD Sample ID: _____
 Crew: Helle Andersen, Derek Pelletier, Bob Conlith

Gastropods	#	Photograph #	Comments to picture
-	-	3,12	Photo taken at On flag
-	-	4-7	Looking upstream Panorama photo set taken from the waterway looking on shore ^{N→S} riprap habitat w/ fucus + barnacles + mussels, and broken piling interspersed
-	-	8-9	collection of organisms from survey area including amphipods, isopods, polychaetes, mussels, barnacles and shore crabs.
-	-	10-11	limpet
-	-	13	Photo taken onshore looking SE
-	-	14	2nd frame Infaunal Sample Macoma + Corophium
-	-	15	Looking S, numerous cut off piles w/ fucus + barnacles
-	-	16	Looking N, riprap w/ barnacles + fucus + mussels
-	-	17-18	Looking N-NW from 100m flag
		19	Looking N, Photo taken 2100ft E of 100 m flag

Distance

0 m

100 m

Comments:

Start Coord: Lat = 47°34.046N Long = 122°21.010W

End Coord: Lat = 47°34.001N Long = 122°21.022W

INFAUNAL DATA

1) COARSE SAND ONLY COROPHIUM, 2) MACOMA BARTHELEMI
 COROPHIUMS, 3) 1 M. BARTHELEMI, 4) COROPHIUM 5) NOTHING

100m TRANSECT: 1, 3 COROPHIUM, 45 MIN

Lower Duwamish Waterway Group

Port of Seattle | City of Seattle | King County | The Boeing Company

FINAL

Gastropod Pilot Survey

June 4, 2004

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GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/17/04 Location: G2A
 Start/Stop time: 1115 - 1145 AM X: _____
 Sampling Method: _____ Y: _____
 Weather: SUNNY CLOUD Sample ID: _____
 Crew: DP, BC, WA

Gastropods	#	Photograph #	Comments to picture
STARTING POINT	47 33	670	
	122 20	999	
END POINT	47 33	621	
	22 21	002	
		PHOTOS # 69 - 76	
100 m TRANSITS:	1, 3 CROW, EHL		
EPI FAUNA:			
CRABS, BARNACLES, MUSSELS, SOME AMPHIPODS, NO			
100 FEET			
VERY MUDDY - MUD COULED IN MUD			
ROCKY ON W SIDE - SUN BAKED			
IN FAUNA			
FEW COLEPHERA			
5 MACOMA SP	FORME	(OUT OF 5 FRAMES)	
NO POLYCHAETES			

Comments:

LOTS OF ORGANIC MATTER IN SEDS - WOOD CHIPS
 LEFT IN SIEVE, FINE GRAINED SEDS.

GASTROPOD FIELD COLLECTION FORM

Project Name:		Project no.	
Date:	6/16/04	Location:	639
Start/Stop time:	1035 AM	X:	
Sampling Method:		Y:	
Weather:	CLEAR WINDY SUNNY	Sample ID:	
Crew:	DP, RC, HA		

[illegible]

D. St. John

Comments:

Start Coordinates Lat = $47^{\circ} 33.412' N$ Long. = $122^{\circ} 20.682' W$

End coordinates Lat = 47° 33.424' N Long = 122° 20.748' W

Lat = 47° 33.459' N Long = 122° 20.797' W

On Start Goods (same as above: 47 33.459 122 20.797) *photo 26

100 m End course Lat = $47^{\circ} 33.508' N$ Long = $122^{\circ} 20.816' W$

GASTROPOD FIELD COLLECTION FORM

Project Name:	_____	Project no.:	_____
Date:	_____	Location:	63 a Kuluobu Isang
Start/Stop time:	_____	X:	_____
Sampling Method:	_____	Y:	_____
Weather:	_____	Sample ID:	_____
Crew:	_____		

[illegible]

Comments:

GASTROPOD FIELD COLLECTION FORM

Project Name:

Project no.

Date:

06/16/04

Location:

64a

Start/Stop time:

1210

X:

Sampling Method:

Y:

Weather:

Sunny, clear, windy 20-30 kts

Sample ID:

Crew:

BC, H A, DP

[illegible]

Comments:

Start cond

Lat: 47° 33.627 N

Long. $122^{\circ} 20.671$ W

End Coors

Lat: 47° 33.58' N

Lora 122° 20.648 W

1 TRANSECT, 2 CREW, $\frac{1}{2}$ HR

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/17/04 Location: 059
 Start/Stop time: 930 - 10 am X: _____
 Sampling Method: _____ Y: _____
 Weather: SWAY Sample ID: _____
 Crew: MW, DP, BC, HA

Gastropods	#	Photograph #	Comments to picture
STANDARD POINT	47	32 952 N	
	122	20 505 W	
END POINT	47	32 912 N	
	122	20 545 W	
		# 55-67	
		55-58	LOOKING WSW
		59	LOOKING NINE
		60	ROCKY MESSY
		61	MUD FLAT
		62-64	EPI BENTHOS
		65-67	SIEVE
EPI BENTHOS:			
CHARTS, ISOPODS (SMALLER)		NO 1 DOTA	MUSSELS, BENTHOS
BID MASS : MUSSEL, CHARTS (BENTHOS)			
INTERVAL FLAMES			
1-5) ROCKY SAND TO ROCKY MUD : CORALHUM, ROW			

MARLON ; ROCKY POLY CHARTS 1 PIC OF SIEVE

Comments:

100 m transect : 1, 3 core, 1/2 hr

GASTROPOD FIELD COLLECTION FORM

Project Name: _____

Project no. _____

Date: _____

Location: _____

Start/Stop time: _____

X: _____

Sampling Method: _____

Y: _____

Weather: _____

Sample ID: _____

Crew: _____

Gastropods	#	Photograph #	Comments to picture
SMALLER POINT 47	32 986		
122	20 323		
END POINT 47	32 938		
122	20 305		
EPI BENTHOS:			
BRYAZUS, CRABS (FEW) 1 DOZEN (FEWER THAN 6/16 AND			
SMALLER), MUREX, AMPHIPODS INCL COLDWATER (LOK)			
FUCKS BUT ON ROCKS ROCKY SANDY BOTTOM W/			
MUD LARVAE			
BIO MASS: MUREX, (BRYAZUS), 1 DOZEN, CRABS			
100 m TRANSVERSE: 1, 3 LOW, 1 HK			
INFRAHOL PLANKTON			
LOTS OF IDOLPHIDIN, 3 MACOMA SP. OUT OF ALL			
5 CRABS.			
ROCKY SEDIMENTS			
PHOTO: 63			

Comments:

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/17/04 Location: G1b
 Start/Stop time: _____ X: _____
 Sampling Method: _____ Y: _____
 Weather: SUNNY Sample ID: _____
 Crew: MW, DP, RC, WA

Gastropods	#	Photograph #	Comments to picture
1 TOW 7:30 AM 7:31 AM LAT 4734, 136 L 12220, 785			ALGAE, 1 PIECE OF PILING, SOME SAND 2 SLIPPER SNAIL 2 SHRIMP TOTAL # SNAILS: 8
2 TOW 7:47 AM 7:48 AM LAT 4734, 137 LONG 12230, 790	8	1 PHOTO	ALGAE, SAND 1 SHRIMP TOTAL # SNAILS: 12
3 TOW 8:05 AM 8:06 AM LAT 4734, 137 LONG 12220, 790	9	SEVERAL A TOW SHOOTS	1 SCALOP, ALGAE TOTAL # SNAILS: 9
4 TOW 8:27 AM 8:28 AM LAT 4734, 135 LONG 12220, 793	230	NO PHOTO	TOTAL # SNAILS: 30

Comments:			
1 TOW	1:4	1 min	DATA 30K
2 TOW	1:4	1 min	11
3 TOW	1:4	1 min	4
4 TOW	1:4	1 min	

GASTROPOD FIELD COLLECTION FORM

Project Name: LDW Project no. _____
 Date: 6/17/04 Location: G26
 Start/Stop time: _____ X: _____
 Sampling Method: _____ Y: _____
 Weather: SUNNY, WINDY Sample ID: _____
 Crew: HW, DP, RC, HA

Gastropods	#	Photograph #	Comments to picture
1 TOW 1238 1239 LAT 47 34 039 LONG 122 20 P52	~50		LOTS OF SNAIL BROWN ALGAE SHRUBS, SAND
2 TOW 1254 1255 LAT 47 34 040 LONG 122 20 P51	5		FEW ALGAE SOME SAND 5 SNAILS POINT
3 TOW 1300 1301 LAT 47 34 038 LONG 122 20 P49	~20		~20 SNAILS
4 TOW 1311 1312 LAT 47 34 038 LONG 122 20 P50	~75		BROWN ALGAE SOME SAND LOTS OF SNAILS
5 TOW 1321 1322 LAT 47 34 045 LONG 122 20 P52			
LAT 47 33 993 LONG 122 20 P22	~25		SLIGHTLY DARK DARKER AS SAMPLE

Comments:			
1 TOW	1:4	1 MIN	40 FT
2 TOW	1:4	1 MIN	~
3 TOW	1:4	1 MIN	~
4 TOW	1:4		~

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/16/04 Location: 630
 Start/Stop time: 1354 - 1600 X: _____
 Sampling Method: _____ Y: _____
 Weather: CLEAR, WINDY, SUNNY Sample ID: _____
 Crew: TA, KL, BC, DP, HA

4 TOW
1447
1448

Gastropods	#	Photograph #	Comments to picture
LAT 47 34 , 055			FINE GRAINED TRIAT
LONG 122 20 , 994			THE OTHER BIG TOW
			(CLOW)
LAT 47 34 , 078			
LONG 122 20 , 006		1 PHOTO 3-6	CLINOCARDIUM
			2 SNAILS, 1 MHA (SMALL)
		→	TOTAL # SNAILS 21
			(DEAD & ALIVE)
			1 HERMIT CRAB
LAT 47 34 , 037			SPIDLE CRAB
LONG 122 20 , 987			TOTAL # SNAILS 23
			BALANUS
LAT 47 34 , 087			SLIPPER SNAIL
LONG 122 21 , 007			2 SNAIL
PHOTOS: 33, 34, 35, 36, 37, 38, 39, 42, 43, 44, 45			

5 TOW
1530
1532

Comments:

4 TOW 1 min 1:4 15 FT DEEP
 5 TOW 1 1/2 min 1:4 22 FT DEEP

GASTROPOD FIELD COLLECTION FORM

Project Name: L DW Project no. _____
 Date: 6/16/04 Location: G36 (T105 SUBTOWAL)
 Start/Stop time: 1354- X: _____
 Sampling Method: BENTHIC SCUDGEE Y: _____
 Weather: CLEAR WINDY SUNNY Sample ID: _____
 Crew: KL, TG, RC, DP, HA

Gastropods	#	Photograph #	Comments to picture
LAT 47 34.046 LONG 122 20.989		1 PHOTO	SPARKISH SWIMMING (3-5), MILLION
LAT 47 34.071 LONG 122 20.994			
LAT 47 34.044 } AT LONG 122 20.989 } SLEIGHT		NO	PHOTO NOTHING
LAT 47 34.069 LONG 122 20.994			
LAT 47 34.044 LONG 122 20.982		NO PHOTO	HEXAGONAL CLIP CRABGON
LAT 47 34.077 LONG 122 20.992			

Comments:

1 TOW 1 MIN TOW 5:1 15 FT
 2 TOW 2 MIN 4:1
 3 TOW 35 FT 1 MIN 4:1

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/17/04 Location: G-46
 Start/Stop time: _____ X: _____
 Sampling Method: _____ Y: _____
 Weather: SUNNY, WINDY Sample ID: _____
 Crew: MW, DP, RC, HB

Gastropods	#	Photograph #	Comments to picture
LAT 47 33 917 LONG 122 20 P74	210		SNAILS ABOUT 10 SOME SAND
—			—
LAT 47 33 912 LONG 122 20 P72	}	T00	DID ANSWER T00
LAT 47 33 P42 LONG 122 20 P33			
—			
LAT 47 33 918 LONG 122 20 P70	8		SNAILS ABOUT 8 NOT MUCH 1350
—			—
LAT 47 33 913 LONG 122 20 P65	225		MUD SLURRY ONLY 200
LAT 47 33 P34 LONG 122 20 P30			SNAILS ABOUT UPON
			SNAILS ABOUT 25

Comments:			
1 row	1:4	1 min	40 FT DEEP.
2 row	1:4	1 min	DIS LUMINOS
3 row	1:4	1 min	—

GASTROPOD FIELD COLLECTION FORM

Project Name:

Project no.

Date:

Location:

Start/Stop time:

X:

Sampling Method:

Y:

Weather:

Sample ID:

Crew:

[illegible]

Comments:

40W	1:4	1 min	ABOUT	160V out
50W	1:4	1 min		

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/17/04 Location: G56
 Start/Stop time: _____ X: _____
 Sampling Method: _____ Y: _____
 Weather: SUNNY WINDY Sample ID: _____
 Crew: MW, DP, RL, HA

1 TOW
1453
1454

2 TOW
1501
1502

3 TOW
1507
1508

4 TOW
1519
1520

Gastropods	#	Photograph #	Comments to picture
LAT 47 33 929	2		A LITTLE SAND
LOW 120 20 933		NONE	2 SNAILS 1 HOLOCENE CRAB
LAT 47 33 925	1		
LOW 120 20 931		NONE	NOTHING CRAB
LAT 47 33 934			1 SNAIL
LOW 120 20 935			
LAT 47 33 921		NONE	EMPTY
LOW 120 20 926			
LAT 47 33 925			
LOW 120 20 926		NONE	EMPTY
LAT 47 33 935	END		
LOW 120 20 909			

Comments:			
1 TOW	1:4	1 min	23 FT
2 TOW	1:4	1 min	24
3 TOW	1:4	1 min	25 FT (100% out)
4 TOW	1:5	1 min	25 FT 125 out

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/17/04 Location: G 6b
 Start/Stop time: _____ X: _____
 Sampling Method: _____ Y: _____
 Weather: SUNNY WINDY Sample ID: _____
 Crew: RC, MW, DP, HA

1 TOW
1540
1541

Gastropods	#	Photograph #	Comments to picture
LAT 47 33 764 LONG 120 20 804	250		A LOT OF SNAILS MUD, WOOD DEBRIS ALONG, DARK SAND
LAT 47 33 763 LONG 120 20 805	13		13 SNAILS MUD, DARK SAND/DEBRIS
LAT 47 33 694 2 END LONG 120 20 763			
LAT 47 33 764 LONG 120 20 803	7		7 SNAILS DARK GRAVEL SHIMPS, YOUNG CRABS
LAT 47 33 762 LONG 120 20 794	2		YOUNG LITTLER IN TOW
LAT 47 33 763 LONG 120 20 793	7		7 SNAILS TOW

2 TOW
1551
1552

3 TOW
1520

4 TOW
1650
1651

5 TOW
1658

Comments:			
1 TOW	1:4	1 min	40 FT
2 TOW	1:4	1 min	~
3 TOW	1:4	1 min	~
4 TOW	1:4	1 min	~
5 TOW	1:4	1 min	~

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. LDN-676

Date: 6/18/04 Location: _____

Start/Stop time: 845 X: _____

Sampling Method: _____ Y: _____

Weather: SUNNY Sample ID: _____

Crew: MMV, DBBC, HA

Gastropods	#	Photograph #	Comments to picture
47 33 657 122 20 718	1		30' deep - gravelly substrate larger rocks
47 33 659 122 20 717	3		hit something @ ~30 second
47 33 663 122 20 713	Z →	Discarded	hit something @ ~20 sec
47 33 668 122 20 721	Ø		hit something @ ~40sec
47 33 664 122 20 714	Ø		hit something @ ~40sec
47 33 662 122 20 717	Z →		hit something @ ~40sec came up empty
47 30 666 122 20 721	1 (striped beauty!)		WIN lots of rocks
HITTING DISTURBANCE SITE?		SEE POLY REF AND GRILL	
BAY SURFACES			

Comments:	END CORDS:
1) 1:4 1 MIN	
2) 1:4 30 sec - stopped by something	
3) 1:4 20 sec - "	" , discarded sample
4) 1:4 40 sec "	"
5) 1:4 40 sec "	"
6) 1:4 40 sec "	"
7) 1:4 1 MIN	

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/18/04 Location: LDW - GPD
 Start/Stop time: 7:35 AM X: _____
 Sampling Method: _____ Y: _____
 Weather: _____ Sample ID: _____
 Crew: MW, DP, RC, HA

Gastropods	#	Photograph #	Comments to picture
LAT 47 33, 685	2	FULL	DISCARDED
LDW 122 20, 837	1		
LAT 47 33, 683	275		lots small bivalves (macoma) H
LDW 122 20, 838			
LAT 47 33, 683	15		
LDW 122 20, 834			
47 33 685	↔	FULL	DISCARDED
122 20 835			
47 33 681	20		
122 20 832			
47 33 684	30		
122 20 838			
47 33 683	→	Full	- Discarded
122 20 838			
47 33 683	13		
122 20 835			

Comments:			
1 TOW	1:4	1 MIN	20 FT
2 TOW	1:3.5	1 MIN	end coords:
3 TOW	1:3.5	1 MIN	47 33 647
4 TOW	1:3.5	1 MIN	122 20 822
5 TOW	1:3.5	1 MIN	

GASTROPOD FIELD COLLECTION FORM

Project Name:		Project no.	
Date:	6/18/04	Location:	G96 LDW
Start/Stop time:	9:55	X:	
Sampling Method:		Y:	
Weather:	Sunny	Sample ID:	
Crew:	MW, DP, BC, HA		

[illegible]

Comments:

- 1) 1:4 1min } \rightarrow discarded
- 2) 1:3 1min } smaller slope due to amount of silt, mud
- 3) 1:3 1min }
- 4) 1:3 45 sec shortened sample time to get less silty mud
- 5) 1:3.5 45 sec let out more lime

6) $\sim 1.3.5$ 45 sec

GASTROPOD FIELD COLLECTION FORM

Project Name:

Project no.

Date:

Location:

Start/Stop time:

 x_i

Sampling Method:

Y:

Weather:

Sample ID:

Crew:

Gastropods	#		Photograph #	Comments to picture
47 32 881	Ø			
122 20 296				
47 32 884	1			
122 20 300				
47 32 885	—→	FULL	Discarded	
122 20 304				
DS → 47 32 855				
122 20 282				
47 32 882	1			
122 20 305				
47 32 881	1			
122 20 300				
47 32 876	→	DISCARD		
122 20 296				
47 32 880	,			
122 20 294				
			TOW 2+3 HAD 2 NUDIPUTANUS	
			SPIRIBES, LOTS OF SMALL	
			ZOONIDS, SWAMPY SEA ANIMALS	

Comments:

- 1) 1:4 1min : picked up little in sleep, will increase scope
- 2) 1:4 1min 21KT DEEP
- 3) 1:4 1min
- 4) 1:4 1min
- 5) 1:4 1min
- 7) 1:4 40 SEC 11 KT DEEP

GASTROPOD FIELD COLLECTION FORM

Project Name: _____ Project no. _____
 Date: 6/18/04 Location: G116
 Start/Stop time: _____ X: _____
 Sampling Method: _____ Y: _____
 Weather: SUNNY, WINDY Sample ID: _____
 Crew: MUR, PC, DP, MN, TG

Gastropods	#	Photograph #	Comments to picture
47 32 730	?		
122 20 219	} FULL	- DISCARDED	
47 32 740	Ø		H
122 20 217			
47 32 746	Ø		H
122 20 210			
47 32 743	Ø		B
122 20 209			
47 32 743	Ø		
122 20 203			
47 32 745	1		
122 20 208			
LESS BIRCHES, SUMMERS			

Comments:			
1:4	1 MIN	FULL - DISCARDED	15 VT REP
1:3	1 MIN		15 FT
1:3	1 MIN	half full + silty	"
1:3	1 MIN		"
1:3	1 MIN		

1:3:5 1 MIN

GASTROPOD FIELD COLLECTION FORM

Project Name: LDW G12b Project no. _____
 Date: 6/10/04 Location: G12b
 Start/Stop time: 13:40 - 1426 X: _____
 Sampling Method: _____ Y: _____
 Weather: Sunny Sample ID: _____
 Crew: MW/DPI/BC/HA/TOM

Gastropods	#	Photograph #	Comments to picture
1) 47 32 549 122 20 136	Ø		
2) 47 32 545 122 20 129	Ø		
3) 47 32 543 122 20 133	DISCARDED - FULL		
4) 47 32 545 122 20 134	DISCARDED		
5) 47 32 562 122 20 155	Ø		MOVED - NO STATION
6) 47 32 573 122 20 167	1		
7) 47 32 567 122 20 163	Ø		BALANUS ANIMALI FORM

Comments:			
1) 1:4	1 min		5 FT DEEP
2) 1:4	1 min		7 FT DEEP
3) 1:4	1 min		10 FT DEEP
5-7	1:4	1 min	16 FT DEEP

GASTROPOD FIELD COLLECTION FORM

Project Name:

Project no.

Date:

6/18/04

Location:

G136

Start/Stop time:

X: LAT/LONG - ONE E

Sampling Method:

Y: BANK BUT MAY ON W/STAY

Weather:

SUNNY WINDY

Sample ID:

OUTSIDE UNITA XEROX WORK

Crew:

TG, MW, DP, RC, WA

STAYED INSIDE UNITA OR

SCAP METAL NEXT TO

Gastropods	#	Photograph #	Comments to picture
47 32 235			
122 19 678			END COORD - DISCARDED
47 32 261	0		
122 19 716			
47 32 254	0		
122 19 712			
47 32 247	HIT A	ROCK	IN GENERAL HIT OF OR MAYBE DEBRIS W/ SILT
122 19 758			
47 32 226	1		
122 19 746			
NO LAT / LONG	0		2 scapens
47 32 267	2		
122 19 722			COCKLES AND OTHER GASTROPOD SPECIES BIOLOGICALS

Comments:

1) 1:4	1 min	20 FT
2) 1:5	1 min	21 FT
3) 1:3	1 min	
ALL 1:3	1 min	

GASTROPOD FIELD COLLECTION FORM

Project Name:

Project no.

Date:

6/21/04

Location: G14B

Start/Stop time:

10:55

x: Barge was on the location

Sampling Method:

Y:

Weather:

Clear, Sunny, Wind 80's

Sample ID: _____

Crew:

A. Rodriguez, D. Rellier, T. Do, B. Camplita

[illegible]

Comments:	Tow #1 80ft 4:1 Scope for 1 minute
	Tow #2 80ft 3:1 Scope for 1 minute
	Tow #3 18ft 3:1 Scope for 30 seconds
	Tow #4 17ft 3:1 Scope for 30 seconds towing across the mouth of slip rather than into it
	Tow #5 17ft 3:1 Scope for 1 minute
	Tow #6 17ft 3:1 Scope for 1 minute
	Tow #7 18ft 3:1 Scope for 1 minute
	Tow #8 17ft 3:1 Scope for 1 minute

GASTROPOD FIELD COLLECTION FORM

Project Name:

Project no.

Date:

62104

Location:

G 15 B

Start/Stop time:

3:20 PM

X:

Sampling Method:

 Y_i

Weather: Clear, Sunny, Wind 80's

Sample ID:

Crew:

A. Rodriguez, D. Peltier, T. Do, B. Compiton

Text

[illegible]

Comments: Tow #1 1dft 4th Score for 1 minute

T_{DN} #2 10ft 3:1 slope for 1 minute

Ton#3 10 ft 3:1 Slope for 1 minute

Tow #4 15 ft 3:1 Slope for 1 minute

Tow #5 10 ft 3:1 Scope for 1 minute

Ton #6 10ft 3:1 Scope for 1 minute

Project _____

INCHES

[illegible]

6/21/04

Crew: RAK, T. Do, A.R., JMP

Intertidal Gastropod Survey

Station G8a

Time: 12:35

1 transect (100 m.), parallel to water

Captured all substrate
- Sand, Concrete debris

Location:

START 47° 32.460' N photo 84 downstream
① 122° 20.032' W from ①② 47° 32. —
122° 20. —③ 47° 32. —
122° 20. —④ 47° 32.483' N
122° 20.089' Wphoto 83 upstream from ④
84 to river from ④
85 from river (stream) ④

(Corophium)

Amphipods, isopods, barnacles, mussels, clams,
shore crabs, worms (oligochaetes, polychaetes)
bright red bug

Infaunal frame sampling

16 Macoma

3 polychaetes

few Corophium

Station G7A, 14:00

1 transect (100m) parallel to shore

Captured all substrate

pebbles, sand, gravel, cobble, concrete debris

Location

START

47° 32.681 N

122° 20.184 W

STOP

47° 32.723 N

122° 20.177 W

photo 87 from downstream (stop) to upstream

88 from upstream (start) to downstream

(Corophium)

Amphipods, mussels, shore crabs, barnacles
isopods, polychaete, oligochaete, bright red bug

Infaunal frame sampling

sand - fine sand - few Corophium

all else - nothing

Station G9A 14:45

photo 89 downstream from boat

90 upstream from boat

1 transect

START 47° 32.374 N

122° 19.738 W

STOP 47° 32.396 N

122° 19.800 W

mostly concrete debris, some pebbles,
cobble, gravel, sand

mussels, barnacles, shore crabs, Corophium,
isopods, bright red bug

Infaunal frame sampling - not enough space
to do complete frame area; still dug down
to 10 cm depth when possible; 5 frames