

Table A-1. Pilot survey 4-hour soak time results 08/19/2003

Deployment date:	08/19/2003	Retrieval date:	08/19/2003
Higher high tide, ft. MLLW (time):	9.4 (22:42)	Lower high tide, ft. MLLW (time):	8.1 (11:56)
Higher low tide, ft. MLLW (time):	5.6 (16:50)	Lower low tide, ft. MLLW (time):	2.1 (05:06)
Crew:	Bob Complita and Shannon Pierce (Windward), Tim Hammermeister (SAIC)		

SAMPLE #	LOCATION		DEPL. TIME	RETR. TIME	SPECIES	LENGTH (MM)	SEX	COMMENTS
	LATITUDE	LONGITUDE						
WWS-1	47 34.08	122 20.98	10:25	14:00	Sunflower star	Crab trap, ~4 hr soak time		
					Sunflower star			
					Sunflower star			
					<i>C. gracilis</i>	98	M	
					<i>C. gracilis</i>	103	M	
					<i>C. gracilis</i>	105	M	
					<i>C. gracilis</i>	102	M	
					<i>C. gracilis</i>	98	M	
					<i>C. productus</i>	150	M	
					<i>C. productus</i>	160	M	
					<i>C. productus</i>	152	M	
					<i>C. productus</i>	160	M	
					<i>C. productus</i>	148	M	
					<i>C. productus</i>	158	M	
					<i>C. productus</i>	133	M	
					<i>C. productus</i>	127	M	
					<i>C. productus</i>	152	M	
					<i>C. magister</i>	155	M	
					<i>C. magister</i>	159	M	
					<i>C. magister</i>	158	M	
					<i>C. magister</i>	154	M	
					<i>C. magister</i>	160	M	
					<i>C. magister</i>	158	M	
WWS-1	47 34.08	122 20.98	10:32	14:17	<i>C. gracilis</i>	107	M	Shrimp trap, ~4 hr soak time, no shrimp caught
WWS-2	47 34.10	122 20.82	10:40	14:24	<i>C. gracilis</i>	99	M	Crab trap, ~4 hr soak time
					<i>C. gracilis</i>	93	M	
					<i>C. gracilis</i>	98	M	
					<i>C. gracilis</i>	101	M	
					<i>C. gracilis</i>	99	M	
					<i>C. gracilis</i>	101	M	
					<i>C. gracilis</i>	96	M	

SAMPLE #	LOCATION		DEPL. TIME	RETR. TIME	SPECIES	LENGTH (MM)	SEX	COMMENTS
	LATITUDE	LONGITUDE						
					<i>C. gracilis</i>	93	M	
					<i>C. gracilis</i>	103	M	
					<i>C. gracilis</i>	97	M	
					<i>C. productus</i>	133	F	
					<i>C. magister</i>	151	F	Hole/erosion in carapace
WWS-2	47 34.09	122 20.81	10:43	14:44	Shrimp trap, ~4 hr soak time, no shrimp caught			
WWS-4	47 33.96	122 20.85	10:49	14:49	Sunflower star	Crab trap, ~4 hr soak time		
					<i>C. gracilis</i>	102	M	
					<i>C. gracilis</i>	94	M	
					<i>C. gracilis</i>	97	M	
					<i>C. gracilis</i>	98	M	
					<i>C. gracilis</i>	106	M	
					<i>C. gracilis</i>	97	M	
					<i>C. gracilis</i>	100	M	
					<i>C. gracilis</i>	104	M	
					<i>C. gracilis</i>	103	M	
					<i>C. gracilis</i>	108	M	
					<i>C. gracilis</i>	92	M	
					<i>C. gracilis</i>	102	M	
					<i>C. productus</i>	127	F	
					<i>C. productus</i>	106	F	
					<i>C. magister</i>	159	M	
					<i>C. magister</i>	134	M	
					<i>C. magister</i>	177	M	
					<i>C. magister</i>	150	M	
					<i>C. magister</i>	163	M	
					<i>C. magister</i>	162	M	
					<i>C. magister</i>	142	M	
WWS-4	47 33.96	122 20.84	10:54	15:05	Staghorn sculpin	Shrimp trap, ~4 hr soak time, no shrimp caught		
					Sunflower star			
					<i>C. gracilis</i>	100	M	
WWS-8	47 33.70	122 20.74	11:01	15:13	<i>C. gracilis</i>	99	M	Crab trap, ~4 hr soak time
					<i>C. gracilis</i>	65	F	
					<i>C. gracilis</i>	90	M	
					<i>C. gracilis</i>	84	F	
					<i>C. gracilis</i>	94	M	
					<i>C. gracilis</i>	103	M	
					<i>C. gracilis</i>	98	M	
					<i>C. gracilis</i>	106	M	
					<i>C. gracilis</i>	109	M	
					<i>C. gracilis</i>	89	M	
					<i>C. gracilis</i>	102	M	
					<i>C. gracilis</i>	96	M	
					<i>C. gracilis</i>	85	M	
					<i>C. gracilis</i>	94	M	
					<i>C. magister</i>	146	M	
WWS-8	47 33.70	122 20.72	11:06	15:29	<i>C. gracilis</i>	80	M	Shrimp trap, ~4 hr soak time, no shrimp

SAMPLE #	LOCATION		DEPL. TIME	RETR. TIME	SPECIES	LENGTH (MM)	SEX	COMMENTS
	LATITUDE	LONGITUDE						
								caught
					<i>C. gracilis</i>	99	M	
					<i>C. gracilis</i>	100	M	
					<i>C. gracilis</i>	83	F	Gravid
WWS-12	47 33.40	122 20.44	11:16	15:38	<i>C. gracilis</i>	102	M	Crab trap, ~4 hr soak time
					<i>C. gracilis</i>	105	M	
					<i>C. gracilis</i>	109	M	
					<i>C. gracilis</i>	109	M	
					<i>C. gracilis</i>	100	M	
					<i>C. gracilis</i>	102	M	
					<i>C. gracilis</i>	105	M	
					<i>C. gracilis</i>	102	M	
					<i>C. gracilis</i>	100	M	
					<i>C. gracilis</i>	79	F	
					<i>C. gracilis</i>	93	M	
					<i>C. magister</i>	125	F	
WWS-12	47 33.41	122 20.44	11:19	15:48	<i>C. gracilis</i>	80	M	Shrimp trap, ~4 hr soak time, no shrimp caught
WWS-14	47 33.33	122 20.79	11:26	15:53	Sunflower star	Crab trap, ~4 hr soak time		
					Gunnel			
					<i>C. gracilis</i>	103	M	
					<i>C. gracilis</i>	92	M	
					<i>C. gracilis</i>	85	M	
					<i>C. gracilis</i>	87	M	
					<i>C. gracilis</i>	89	M	
					<i>C. gracilis</i>	92	M	
					<i>C. gracilis</i>	89	M	
					<i>C. gracilis</i>	101	M	
					<i>C. gracilis</i>	85	M	
					<i>C. gracilis</i>	70	F	
					<i>C. magister</i>	145	M	
WWS-14	47 33.33	122 20.77	11:31	16:03	Staghorn sculpin	Shrimp trap, ~4 hr soak time, no shrimp caught		
					Staghorn sculpin			
					<i>C. gracilis</i>	86	F	

Table A-2. Pilot survey 24-hour soak time results 08/20/2003

Deployment date:	08/19/2003	Retrieval date:	08/20/2003
Higher high tide, ft. MLLW (time):	9.4 (22:42)	Higher high tide, ft. MLLW (time):	9.1 (23:21)
Lower high tide, ft. MLLW (time):	8.1 (11:56)	Lower high tide, ft. MLLW (time):	8.3 (13:33)
Higher low tide, ft. MLLW (time):	5.6 (16:50)	Higher low tide, ft. MLLW (time):	6.6 (17:59)
Lower low tide, ft. MLLW (time):	2.1 (05:06)	Lower low tide, ft. MLLW (time):	1.7 (06:02)
Crew:	Bob Complita and Shannon Pierce (Windward), Tim Hammermeister (SAIC) – deployment phase, Chris Hunt (SAIC) – retrieval phase		

SAMPLE #	LOCATION		DEPL. TIME	RETR. TIME	SPECIES	LENGTH (MM)	SEX	COMMENTS
	LATITUDE	LONGITUDE						
WWS-1	47 34.07	122 20.96	14:15	13:50	Sunflower star	Crab trap, ~24 hr soak time		
					Sunflower star	Zinc timer not tested at this station		
					Sunflower star			
					Sunflower star			
					<i>C. productus</i>	173	M	
					<i>C. productus</i>	161	M	
					<i>C. magister</i>	148	M	
					<i>C. magister</i>	159	F	
					<i>C. magister</i>	156	M	
					<i>C. magister</i>	156	M	
					<i>C. magister</i>	175	M	
WWS-1	47 34.08	122 20.98	14:21	13:45	Sunflower star	Shrimp trap, ~24 hr soak time, no shrimp caught		
					<i>C. gracilis</i>	94	M	
					<i>C. gracilis</i>	92	M	
WWS-2	47 34.08	122 20.83	14:41	14:05	Sunflower star	Crab trap, ~24 hr soak time		
					<i>C. gracilis</i>	97	M	Zinc timer released within 24 hour period
					<i>C. magister</i>	141	F	
					<i>C. magister</i>	170	M	
					<i>C. magister</i>	163	F	
					<i>C. magister</i>	141	M	
					<i>C. magister</i>	161	M	
WWS-2	47 34.08	122 20.82	14:45	14:00	<i>C. gracilis</i>	97	M	Shrimp trap, ~24 hr soak time, no shrimp caught
					<i>C. gracilis</i>	98	M	
WWS-4	47 33.94	122 20.84	15:03	14:18	Sunflower star	Crab trap, ~24 hr soak time		

SAMPLE #	LOCATION		DEPL. TIME	RETR. TIME	SPECIES	LENGTH (MM)	SEX	COMMENTS
	LATITUDE	LONGITUDE						
					Sunflower star	Zinc timer released within 24 hour period		
					Sunflower star			
					Sunflower star			
					<i>C. productus</i>	151	M	
					<i>C. productus</i>	153	M	
					<i>C. productus</i>	152	M	
					<i>C. productus</i>	151	M	
					<i>C. magister</i>	177	M	
					<i>C. magister</i>	166	M	
					<i>C. magister</i>	142	M	
					<i>C. magister</i>	152	M	
					<i>C. magister</i>	153	M	
WWS-4	47 33.94	122 20.84	15:07	14:15	Sunflower star	Shrimp trap, ~24 hr soak time, no shrimp caught		
					<i>C. gracilis</i>	104	M	
WWS-8	47 33.72	122 20.74	15:26	14:36	<i>C. gracilis</i>	109	M	Crab trap, ~24 hr soak time
					<i>C. gracilis</i>	96	M	Zinc timer released within 24 hour period
					<i>C. gracilis</i>	111	M	
					<i>C. gracilis</i>	104	M	
					<i>C. productus</i>	139	F	
					<i>C. magister</i>	163	M	
WWS-8	47 33.71	122 20.73	15:31	14:31	<i>C. gracilis</i>	80	F	Shrimp trap, ~24 hr soak time, no shrimp caught
					<i>C. gracilis</i>	83	F	
					<i>C. gracilis</i>	93	M	
					<i>C. gracilis</i>	72	F	
WWS-12	47 33.40	122 20.45	15:47	14:53	Seastar (sp?)	Crab trap, ~24 hr soak time		
					<i>C. gracilis</i>	95	M	Zinc timer released within 24 hour period
					<i>C. gracilis</i>	99	M	
					<i>C. gracilis</i>	96	M	
					<i>C. gracilis</i>	98	M	
					<i>C. gracilis</i>	84	M	
WWS-12	47 33.40	122 20.45	15:49	14:50	Staghorn sculpin	Shrimp trap, ~24 hr soak time, no shrimp caught		

SAMPLE #	LOCATION		DEPL. TIME	RETR. TIME	SPECIES	LENGTH (MM)	SEX	COMMENTS
	LATITUDE	LONGITUDE						
					<i>C. gracilis</i>	100	M	
					<i>C. gracilis</i>	97	M	
					<i>C. gracilis</i>	82	M	
					<i>C. gracilis</i>	77	M	
					<i>C. gracilis</i>	94	M	
					<i>C. gracilis</i>	80	F	
WWS-14	47 33.32	122 20.79	16:01	15:15	<i>C. gracilis</i>	107	M	Crab trap, ~24 hr soak time
					<i>C. gracilis</i>	96	M	Zinc timer not tested at this station
					<i>C. gracilis</i>	96	M	
					<i>C. gracilis</i>	103	M	
WWS-14	47 33.33	122 20.78	16:04	15:08	Staghorn sculpin	Shrimp trap, ~24 hr soak time, no shrimp caught		
					Shiner surfperch			
					<i>C. gracilis</i>	66	F	
					<i>C. gracilis</i>	89	M	
					<i>C. gracilis</i>	102	M	
					<i>C. gracilis</i>	96	M	
					<i>C. gracilis</i>	85	M	
					<i>C. gracilis</i>	94	M	
					<i>C. magister</i>	146	M	



CRA

8-19-03

Bob Compton & Shannon Pierce
 W. Orchard
 Tim Hammerman
 SAIC

WWS1 Station #1

CRA B A-1 (wild sal)
+ squid

10:25 am

47° 34' 08" N

122° 20' 98" W

SHRIMP A-1

10:32

47° 34' 08" N

WPT 218

4

122° 20' 98" W

WWS2 Station #2

10:40

CRA B A-1 (wild sal)

47° 34' 10" N

WPT 219

122° 20' 82" W

8-19-03

WWS2 cont

10:43 am SHRIMP B-1
 47°34.09N WPT 220
 122°20.81W

WWS4 - station #3

10:49 CRAB C-1 (with seal)
 WPT 221 (ground)
 47°33.96N
 122°20.85W

SHRIMP C-1

10:54 WPT 222
 47°33.96N
 122°20.84W

WWS8 - station #4

CRAB D-1
 11:01 WPT 223
 47°33.70N
 122°20.74W

8-19-03 5

WWS8 cont

11:06
 47°33.70N
 122°20.72W

SHRIMP D-1

WPT 224

WWS12 - station #5
(Slip 1)

11:16
 47°33.40N
 122°20.44W

CRAB E-1

WPT 225

SHRIMP E-1

11:19
 47°33.41N
 122°20.44W

WPT 226

8-19-03

WWS14 - Station #6
(S. Kollig Island)

CRAB F-1

11:26

47°33.33N

122°20.79W

~~WPT 227~~

WPT 227

~~SHRIMP~~ F-1

11:31

47°33.33N

122°20.77W

WPT 228

4 hr soak time

WWS1 - ~~Station #1~~

14:00

CRAB A - 1 pull up

3 ~~starfish~~ sunstars

SP	length	sex
slender crab	9.8cm	M
slender cb	10.3	M
slender cb	10.5	M
slender cb	10.2	m

8-19-03 7

Species	length (cm)	sex
Slender Cb	9.8	M
Red rock	15.0	M
Red rock	16.0	M
Red rock	15.2	M
Red rock	16.0	M
Red rock	14.8	M
Red rock	15.8	M
Red rock	13.3	M
Red rock	12.7	M
Red rock	15.2	M
Dungeness	15.5	M
Dungeness	15.9	M
Dungeness	15.8	M
Dungeness	15.4	M
Dungeness	16.0	M
Dungeness	15.8	M

Totals
 slender crab = 5
 red rock = 9
 dungeness = 6
 20 total

8-19-03

Redeploy WWS1

14:15³⁴ CRABA-2

47°45.07' N

122°20.96' W

WPT 229

4
18:17 SHRIMP A-1 - 4 pull up

1 slender crab, M, 10.7 (length)

Ø shrimp

Redeploy WWS1

14:21 SHRIMPA-2

47°34.08' N

WPT 230

122°20.98' W

WWS2 Station
Sample # 2

14:24

CRAB B-1 - pull up

8-19-03

Species	length (cm)	sex	notes
Dungeness	15.1	F	hole in
Red Rock	13.3	F	inside of carapace
Slender	9.9	M	
Slender	9.3	M	
Slender	9.8	M	
slender	10.1	M	
slender	9.9	M	
slender	10.1	M	
slender	9.6	M	
slender	9.3	M	
slender	10.3	M	
slender	9.7	M	

Totals

slender crab = 10

red rock = 1

dungeness = 1

} 12 crabs

Redeploy WWS2

14:41

47°34.08' N

122°20.83' W

CRAB B-2 w/ zinc finger

WPT 231

8-19-03

(WWS2 cont)

14:44 SHRIMP B-1 → pull up

∅ shrimp

Redeploy WWS2 - SHRIMP B-2

14:45

47°34.08 N WPT 232

122°20.82 W

station

WWS4 - Sample #3

14:49

CRAB C-1 → pull-up

Species	length (cm)	Sex
Sunstar (1)		
red rock	12.7	F
red rock	10.6	F
slender	10.2	M
slender	9.4	M
slender	9.7	M
slender	9.8	M
slender	10.4	M

8-19-03

Species	length (cm)	Sex
slender	9.7	M
slender	10.0	M
slender	10.4	M
slender	10.3	M
slender	10.8	M
slender	9.2	M
slender	10.2	M
dungeness	15.9	M
dungeness	13.4	M
dungeness	17.7	M
dungeness	15.0	M
dungeness	16.3	M
dungeness	16.2	M
dungeness	14.2	M

Total

Red rock = 2
 slender = 12
 dungeness = 7
 } 21 crabs

Redeploy - WWS4 CRAB C-2

15:03

+ zinc timer

47°33.94 N

WPT 233

122°20.84 W

8-19-03

(WWS4 cont)

15:05 SHRIMP C-1 → pull-up

♂ shrimp

1 staghorn sculpin

1 slender crab, M, 10.0 cm (length)

1 sunstar

Redeploy WWS4 - SHRIMP C-2

15:07

47°33.94N

WPT 234

122°20.84W

WWS8 - station #4

15:13

CRAB D-1 → pull-up

Species	length (cm)	sex	notes
Dungeness	14.6	M	viral infection - 2nd leg
slender	9.9	M	
slender	6.5	F	
slender	9.0	M	
slender	8.4	F	
slender	9.4	M	

8-19-03

Species	length (cm)	sex
slender	10.3	M
slender	9.8	M
slender	10.6	M
slender	10.9	M
slender	8.9	M
slender	10.2	M
slender	9.6	M
slender	8.5	M
slender	9.4	M

Total

red rock = 0

dungeness = 1

slender = 14

} 15 crabs

Redeploy - WWS8 CRAB D-2
w/ zinc timer

15:26

47°33.72N

WPT 235

122°20.74W

8-19-03

(WWS8 cont)

15:29

SHRIMP D-1 - pull up

φ shrimp

species	length (cm)	sex	comments
slender	8.0	M	
slender	9.9	M	
slender	8.3	F	gravid - check?
slender	10.0	M	

Redeploy WWS8 - SHRIMP D-2

15:31

47°33.71 N WPT 236

122°20.73 W

WWS12 - station #5

15:38

CRAB E-1 - pull up

Species	length (cm)	sex
dungeness	12.5	F
slender	10.2	M
slender	10.5	M
slender	10.9	M

8-19-03 15

Species	length (cm)	sex
slender	10.9	M
slender	10.0	m
slender	10.2	M
slender	10.5	M
slender	10.2	M
slender	10.0	M
slender	7.9	F
slender	9.3	M

Totals

red rock = 0
 dungeness = 1
 slender = 11

} 12 crabs

Redeploy - WWS12 CRAB E-2

w/ 2 line timer

15:47

47°33.40 N

122°20.45 W

WPT 237

8-19-03

(WWS12 cont)

15:48 SHRIMP E-1 → pull up

♂ shrimp

1 slender crab, M, 8.0 cm (length)

Redeploy WWS12 - SHRIMP E-2

15:49

47°33.40N

WPT 238

122°20.45W

WWS14 - station # 6

15:53

CRAB F-1 → pull up

Species	length (cm)	sex
sunstar (i)	—	—
dungeness	14.5	M
slender	10.3	M
slender	9.2	M
slender	8.5	M
slender	8.7	M
slender	8.9	M

8-19-03

17

Species	length (cm)	sex
Slender	9.2	M
Slender	8.9	M
slender	10.1	M
Slender	8.5	M
slender	7.0	F
gannet	—	—
total		
red rock	= 0	} 11 crabs
dungeness	= 1	
slender	= 10	
Redeploy WWS14	CRAB F-2	
16:01	WPT 239	
47°33.32N		
122°20.79°W		
16:03	SHRIMP F-1 → pull up	
♂ shrimp		
2 staghorn sculpin		
1 slender crab, F, 8.6 cm (length)		

8-19-03

Redeploy WWS14 - SHRIMP F-2

16:04

47°33.33N

WPT 240

122°20.78W

24 hr soak

Head back to T-90

16:05

8-20-03

8-20-03

Bob Campbell, Shannon Pierce
Chris H., SAICAfter 24 hr soak - Pulling traps
WWS1 - station #1

13:45 SHRIMP A-2

Species	length (cm)	sex
sunstar		
slender	9.4	M
slender	9.2	M
Ø shrimp		

13:50 CRAB A-2

Species	length (cm)	sex
sunstar (4)	—	—
red rock	17.3	M
red rock	16.1	M
dungeness	14.8	M
dungeness	15.9	F

8-20-03

Species	length (cm)	sex
Dungeness	15.6	M
Dungeness	15.6	M
dungeness	17.5	M

red rock = 2
 dungeness = 5
 slender = 0 } 7 crabs

WWS2 - Station #2

14:00

SHRIMP B-2

Species	length	sex
Ø shrimp		
slender	9.7	M
Slender	9.8	M

14:05

(cm)

CRAB B-2

Species	length	sex
(1) sea star		
slender	9.7	m
dungeness	14.1	F
dungeness	17.0	M

8-20-03 21

Species	length (cm)	sex
dungeness	16.3	F
dungeness	14.1	M
dungeness	16.1	M

slender = 1
 red rock = 0
 dungeness = 5 } 6 crabs
 * 2 inc timer released

WWS4 - Station #3

14:15

SHRIMP C-2

Species	length (cm)	sex
slender	10.4	M
(1) sunstar	-	-
Ø shrimp		

CRAB C-2

14:18

(cm)

Species	length	sex
(4) sunstars	-	-
red rock	15.1	M
red rock	15.3	M

8-20-03

Species	length	Sex
Red rock	15.2	M
Red rock	15.1	M
dungeness	17.7	M
Jungeness	16.6	M
dungeness	14.2	M
dungeness	15.2	M
dungeness	15.3	M

red rock = 4
 dungeness = 5
 slender = 0 } 9 crabs

* zinc timer released

WWS8 - station #4

14:31 SHRIMP D-2

Species	length	sex
slender	8.0	F
slender	8.3	F
Slender	9.3	M
slender	7.2	F

Species	length (cm)	sex
dungeness	16.3	M
red rock	13.9	F
slender	10.9	M
slender	9.6	M
slender	11.1	M
slender	10.4	M

dungeness = 1
 red rock = 1
 slender = 4 } 6 crabs

* zinc timer released

WWS12 - station #5

14:50 SHRIMP E-2

Species	length	sex
staghorn sculpin	-	-
slender	10.0	M
slender	9.7	M
slender	8.2	M
slender	7.7	M
slender	9.4	M
slender	8.0	F

8-20-03

14:53

CRAB E-2

Species	length	sex
Sunstar	5 tagged (new spp)	
slender	9.5	M
slender	9.9	M
slender	9.6	M
slender	9.8	M
slender	8.4	M

slender = 5
 dunginess = 0
 red rock = 0 } 5 crabs

* Zinc timer released

WWS 14 - station # 6

15:08 SHRIMP F-2

Species	length (in)	sex
slender	6.6	F
slender	8.9	M
shiner perch	-	-
staghorn scallop	-	-

8-20-03²⁵

15:15

CRAB F-2

Species	length (cm)	sex
slender	10.7	M
slender	9.6	M
slender	9.6	M
slender	10.3	M

dunginess = 0
 slender = 4
 red rock = 0 } 4 crabs

finish pulling pots - head
 back to port T-90

15:20