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FINAL REPORT

DERELICT FISHING GEAR IDENTIFICATION AND RETRIEVAL PROJECT PORT SUSAN

PREPARED FOR:

STILLIGUAMISH TRIBE

PREPARED BY:

NATURAL RESOURCES CONSULTANTS, INC.

October 17, 2003

Introduction

Abandoned, lost and discarded fishing gear can present safety, liability, nuisance and environmental impact issues in marine waters. Identification, location and safe removal of derelict fishing gear can reduce these impacts. The Northwest Straits Commission (NWSC) recently teamed with the National Oceanic and Atmospheric Administration (NOAA) to address the issue of derelict fishing gear in north Puget Sound and the Strait of Juan de Fuca. The result of this project is a comprehensive program to safely remove derelict fishing gear from the marine environment in an environmentally acceptable manner. The Washington Department of Fish and Wildlife (WDFW) has recently published guidelines for derelict fishing gear removal in Washington marine waters based on the NOAA/NWSC project.

The Stilliguamish Tribe sought to locate and remove derelict fishing gear in Port Susan at the mouth of the Stilliguamish River. The Stilliguamish Tribe contracted with Natural Resources Consultants, Inc., (NRC) to manage the derelict fishing gear project. NRC subcontracted the Innerspace Exploration Team for sidescan sonar and diver gear recovery services. The derelict fishing gear survey and removal project followed the guidelines established by the WDFW and the NWSC and was conducted in collaboration with the WDFW, the Stilliguamish Tribe and the Tulalip Tribe.

Scope of Work

This project focused on the identification and removal of derelict nets and crab pots in Port Susan.

A derelict fishing gear removal plan was prepared and submitted to the WDFW. The plan was approved by the WDFW on September 23, 2003. Side-scan sonar and SCUBA diver surveys were conducted to locate derelict fishing gear and SCUBA divers were used to recover the lost crab pots. No derelict nets were found during the derelict fishing gear surveys.

Gear retrieved during the course of this project was treated in line with the Washington State Abandoned Property Rights Law and other salvage laws when applicable. The owners of the derelict fishing gear recovered, if identified, were contacted and provided an opportunity to recover their property. Derelict fishing gear that could not be identified to an owner was

donated to educational organizations, recycled or disposed of in the King County landfill.

Methodology

Sidescan Sonar Survey

The Innerspace Exploration Team performed the sidescan sonar surveys during the project. A Marine Sonic Sidescan Sonar System operating at 600 kHz and a differential global positioning system (DGPS) were used during the survey to locate derelict fishing gear. The sonar system employed a heavy towfish towed off the bow of a 24-foot survey vessel. A hydraulic wench and cable controlled the depth of the towfish. The survey image was projected on a monitor onboard the vessel and recorded onto a computer hard drive for later processing.

Generally, the sidescan sonar survey was conducted at 4.63 km/hr (2.5 knots) with a path width of 50 m on either side of the boat for an approximate area swept of 90 m (295 ft). The survey path width was occasionally decreased to 10 to 20 m on either side of the boat in shallow water (less than 5 m deep) or when a more detailed image of an object was desired. Survey depths generally ranged from about 3.7 m (12 ft) to 36.5 m (120 ft) in order to identify derelict fishing gear within the dive depth capabilities of the recovery team. The intent of the sidescan sonar survey was to subsample the fishing grounds in Port Susan for derelict fishing gear in order to estimate the total amount of derelict fishing gear in the area and to provide locations of derelict fishing gear for recovery operations. The project budget did not allow for comprehensive survey coverage of the fishing grounds but about one-half of fishing grounds within the operational depth range of the divers (less than 36.5 m) were surveyed. Some minor problems with sidescan sonar imaging were occasionally experienced during the survey due to salinity distortions near sources of freshwater runoff and due to surface noise from wind waves and other vessel activity. The total area surveyed was reduced by the areas of poor image quality and the area surveyed presented in this report represents only good to excellent image quality coverage.

Derelict crab pots were readily identified on the sidescan sonar images. Figure 1 shows a typical sidescan sonar image of a derelict sport crab pot (square image in upper portion of the figure) and a derelict commercial crab pot with attached line (round image in lower portion of the figure). Counts and precise locations of derelict fishing gear were recorded during post-

survey processing of the data that allowed greater time to examine the images.

During the sidescan sonar survey, nearshore areas with high relief or other obstructions were noted as possible locations for derelict gillnets. SCUBA divers searched these areas for derelict nets. However, no derelict nets were observed.

Gear Recovery

The Innerspace Exploration Team conducted the diver recovery of the derelict crab pots encountered. Two divers equipped with SCUBA operated off a 24-foot dive support and gear recovery vessel. The list of the precise locations of derelict crab pots detected during the sonar survey was used by the dive team to locate the derelict pots. Highest priority was given to locations with multiple derelict pots to maximize the number of derelict pots recovered during each dive operation. The dive team used a wide area augmented GPS system (WAAS) to locate the derelict gear locations. The dive support vessel was anchored in the vicinity of the reported derelict gear location. A clump weight with a line and float were deployed as near as possible to the derelict gear location. A 30 m (100 ft) length of rope was passed through a loop on the clump weight with one end of the rope attached to the support vessel and the other end held by one of the divers. When poor water visibility conditions were encountered, the diver would drag the 30 m rope around the clump weight in a circle until it tangled with the derelict fishing gear and then the diver worked back along the cable to the gear.

Once the diver found the derelict gear, a recovery line was attached to the gear and it was hauled aboard the recovery vessel by hand or with the aid of a hydraulic winch. In some cases the diver attached an air lift bag to the derelict pot and floated the pot to the surface where it was recovered by the vessel. Upon recovery of the derelict fishing gear a variety of information was recorded to describe the condition of the derelict gear and the associated organisms. Figure 2 provides an example of the data recording sheets used. Information collected included whether the derelict gear was commercial or sport, whether it was fishing or disabled, whether it was equipped with rot cord (pots), the number of live and dead Dungeness crab, other crab and fish entrapped and notes about the gear. The derelict fishing gear was stored on the deck of the recovery vessel and deposited in one or four shallow water dumpsites until it was convenient to transfer it to shore where it was stored in a secure location until returned, recycled or disposed.

Results

The sidescan sonar survey was conducted over a four-day period between August 19 and August 22, 2003. The SCUBA survey for derelict nets and derelict pot removal operations were conducted over a four-day period on August 30 and August 31 and September 6 and September 7, 2003. The derelict gear was recovered from the dump locations and transferred to shore on September 30, 2003. The derelict pots were recovered by their owners, donated, recycled or disposed of by October 10, 2003.

A total of 8.28 km^2 or 50% of the 16.56 km^2 area within the fishing grounds at depths of between 3.7 m and 36.6 m (2 to 20 fathoms) was surveyed with sidescan sonar (Figure 3). The sidescan sonar survey found 338 derelict crab pots and an additional six derelict crab pots were found during the diver surveys for derelict nets (Figure 4) (Appendix 1). Based on the area surveyed and the number of derelict pots detected by sidescan sonar, the density of derelict crab pots observed was approximately 41 crab pots per square kilometer of seabed. Since approximately 50% of the available crab pot fishing grounds within the depth range surveyed were covered by the survey, there may have been as many two times the number of pots observed or 675 derelict crab pots on the fishing grounds.

A total of 57 derelict crab pots were recovered during the removal operation consisting of 38 commercial pots and 19 sport pots (Table 1) (Appendix 2). Of the 38 commercial crab pots recovered, 28 (74%) were still actively fishing and 10 (26%) were no longer fishing. Of the 19 sport crab pots recovered, 9 (47%) were still actively fishing and 10 (53%) were no longer fishing.

Of the 38 commercial crab pots recovered, 8 (21%) were equipped with rot cord, 27 (71%) were not equipped with rot cord and on three pots (8%) it could not be determined if rot cord had been use or not. Of the 28 commercial crab pots still actively fishing, 24 (86%) did not have rot cord and four (14%) did have rot cord that had yet to disintegrate.

Of the 19 sport crab pots recovered, 8 (42%) were equipped with rot cord, 10 (53%) did not have rot cord and for 1 (5%) pot it was impossible to determine if rot cord had or had not been used (Table 2). Of the 9 sport crab pots still actively fishing, 4 (44%) had rot cord that had not yet disintegrate and 5 (56%) had no rot cord. Of the 10 sport pots no longer actively fishing, 4 (40%) had rot cord, 5 (50%) did not have rot cord and for 1(10%) pot it was impossible to determine if rot cord had been used or not.

A total of 171 Dungeness crab were recorded from the 57 crab pots recovered including 145 live and 26 dead Dungeness crabs (Table 1) (Appendix 3). The overall catch rate observed was about three Dungeness crab per pot with 2.5 live and 0.5 dead crab. Additionally, there were 3 live red rock crab recorded and one live unidentified perch.

The 37 actively fishing commercial and sport crab pots combined accounted for 168 out of 171 or 98% of the Dungeness crab recovered and accounted for all of the 26 dead Dungeness crab recovered (Table 1). The overall catch rate for actively fishing pots was 4.5 crab per pot. The 28 commercial crab pots still actively fishing contained 125 live and 26 dead Dungeness crab for a total of 151 or 88% of the total Dungeness crab recovered. Nine of the 19 sport crab pots recovered were still actively fishing and contained 17 live Dungeness crab and no dead crab or 10% of the total 171 live and dead Dungeness crab recovered.

Of the total of 171 Dungeness crab recovered, there was a total of 122 male (71%), 24 female (14%) and 25 crab (15%) for which the sex could not be determined (Table 2). The ratio of male to female crab found in commercial pots was 8.7 to 1 compared with 1.2 to 1 for sport pots.

Conclusions

No gillnets were observed during the derelict fishing gear survey either by the sidescan sonar survey or by the divers.

The sidescan sonar survey effort covered most of the nearshore set gillnet fishing grounds and about 50% of the crab fishing grounds between 3.6 and 36.6 m (2 to 20 fm) depth range. A Tulalip Tribal shellfish biologist (M. McHugh pers. comm.) reported that crab pot fishing and shrimp pot fishing occurs at deeper depths in Port Susan out to 100 m (325 ft) or deeper. This area was not survey since it was beyond the depth range of the divers. Given that 338 derelict crab pots were surveyed over approximately 1/2 of the available crab pot fishing grounds, there could have been as many as 675 derelict crab pots on the fishing grounds within the depth range surveyed. Additional derelict pots may be located in deeper waters not surveyed. The 57 pots removed represents 17% of the 344 derelict crab pots found during the project. Derelict crab pots remaining represent 83% of the derelict crab pots found during the project and there may be a total of 600 derelict crab pots remaining between 3.7 and 36.6 m (2 to 20 fm) in Port Susan.

The density of derelict crab pots encountered during the project was similar on both the mainland and Camano Island shorelines within Port Susan (Table 1). Derelict sport pots tended to be located in shallower water, 17 m (56 ft), compared with commercial derelict pots, 27 m (103 ft).

It is difficult to make projections about the total annual mortality resulting from either the recovered and/or projected remaining derelict fishing gear encountered during the survey. Assumptions about entrapped animal survival time, pot deterioration, pot self-baiting rates and seasonal animal densities in the area would be necessary to estimate the total annual impact of the derelict fishing gear on the mortality of the species they entrap. Developing estimates for each of these assumptions is beyond the scope of this study but should be addressed in future research.

However, the results of the project indicate that some level of continuous mortality is occurring for Dungeness and other crab due to derelict crab pots in Port Susan. An approximate estimate of annual mortality can be calculated if one assumes a fairly constant quantity of derelict fishing gear on the fishing grounds (newly lost gear replaces lost gear that becomes inactive), crab entrapment rates per actively fishing pot similar to those observed in this study (live crab replace dead crab) and mortality of entrapped crab within 30 days of capture. Since nearly all of the Dungeness crab entrapped were a size that prevented their escape through the escape rings on the pots, the estimates of annual mortality are based on the number of dead and live crab observed in the actively fishing pots.

Using the above assumptions, the live and dead Dungeness crab observed in the actively fishing derelict crab pots recovered in each area during the survey multiplied by 12 months provides an rough annual mortality estimate of Dungeness crab per actively fishing derelict pot. The total number of actively fishing derelict pots in the area is estimated from the total number of derelict pots projected from the sonar survey and the estimated size of the crab fishing grounds multiplied by the percentage of actively fishing to inactive pots observed in the pot recovery process. Total annual mortality of crab within each area is then the estimate of mortality per actively fishing derelict pot multiplied times the projected number of actively derelict crab pots on the fishing grounds.

In Port Susan, a total of 168 dead and live Dungeness crab were observed in 37 actively fishing derelict pots (Table 1), or 4.5 crabs per pot. Multiplying the observed entrapment rate of 4.5 crabs per pot by 12 months, provides an

annual mortality estimate of 54 crab per actively fishing derelict pot. The sonar survey projected a total of 675 derelict crab pots on the fishing grounds between 3.7 and 36.6 m (2 to 20 fm) and the pot recovery effort found 37 (65%) actively fishing pots out of 57 pots recovered. Applying the observed percentage of actively fishing derelict pots to the 675 derelict pots projected from the sonar survey produces an estimate of 439 actively fishing derelict crab pots on the fishing grounds within the depth range surveyed. Applying the estimate of annual mortality per actively fishing pot of 54 crab per pot to the estimate of 439 actively fishing derelict crab pots on the fishing grounds produces an overall rough annual mortality estimate of about 23,700 Dungeness crab in Port Susan. The estimate may be low if additional derelict crab pots are actively fishing in water deeper than the 36.6 m (20 fm) limit of the survey conducted during the project.

It is clear that the impacts of derelict pots could be reduced by fishers complying with the regulations for the use of rot cord in all pots.

Recommendations

Based on the observations and the results of the Port Susan derelict fishing gear project, the following are recommendations to further reduce the impact of derelict fishing gear on the marine environment of Port Susan.

- **The derelict crab pots located during the project and remaining on the fishing grounds should be removed.**

The concentration of derelict pots encountered and the number of crab and other organisms found in the gear is sufficiently high to warrant their removal.

- **Further sidescan sonar surveys should be conducted in areas not covered during the project.**

Sidescan sonar effort was concentrated within areas and at depths that the salvage divers were capable of working. Additionally, there was insufficient time and budget in the project to survey deeper water areas where commercial crab and shrimp pot fishing occurs. It would be useful to survey these deeper areas and determine the density of derelict fishing gear. There may be other means available to recover deepwater derelict pots and traps such as by a remote operated vehicle.

- **Fishing gear regulations should be enforced in commercial and recreational crab fisheries.**

Nine of 37 or 65% of the derelict crab pots recovered were not equipped with rot cord. The use of rot cord is essential to minimize the impact of derelict crab and shrimp pots.

- **Regulations against vandalism of commercial and subsistence crab pots should be strictly enforced.**

Tulalip Tribal commercial crab fishermen and Tulalip Tribal Fishery Enforcement Officers contacted during the project reported that floats on commercial and subsistence pots are repeatedly cut by vandals. Tribal fishermen have resorted to longlining multiple crab pots together and setting the gear without surface floats. They grapple for the line between the pots to recover the gear. If the longlined pots are not recovered, this may result in multiple pots being lost. Stricter enforcement of laws against fishing gear vandalism would allow for setting single pots.

Table 1. Number of derelict pots recovered, type of pot (commercial or sport), fishing status (actively fishing or not) and numbers of live and dead organisms observed during the Stilliguamish Tribe Derelict Fishing Gear Project, 2003. Source: NRC.

		Commercial			Sport			Total		
Area	Category	Active	Inactive	Total	Active	Inactive	Total	Active	Inactive	Total
Port Susan - Camano Side										
	# Pots Recovered	17	6	23	1	3	4	18	9	27
	# Dead Dung Crab	9	0	9	0	0	0	9	0	9
	# Live Dung Crab	76	1	77	0	2	2	76	3	79
	Total Dung Crab	85	1	86	0	2	2	85	3	88
	# Dead Other Crab	0	0	0	0	0	0	0	0	0
	# Live Other Crab	0	0	0	0	0	0	0	0	0
	Total Other Crab	0	0	0	0	0	0	0	0	0
	# Dead Fish	0	0	0	0	0	0	0	0	0
	# Live Fish	0	0	0	0	0	0	0	0	0
	Total Fish	0	0	0	0	0	0	0	0	0
Port Susan - Tulalip Side										
	# Pots Recovered	11	4	15	8	7	15	19	11	30
	# Dead Dung Crab	17	0	17	0	0	0	17	0	17
	# Live Dung Crab	49	0	49	17	0	17	66	0	66
	Total Dung Crab	66	0	66	17	0	17	83	0	83
	# Dead Other Crab	0	0	0	0	0	0	0	0	0
	# Live Other Crab	0	0	0	0	3	3	0	3	3
	Total Other Crab	0	0	0	0	3	3	0	3	3
	# Dead Fish	0	0	0	0	0	0	0	0	0
	# Live Fish	0	0	0	0	1	1	0	1	1
	Total Fish	0	0	0	0	1	1	0	1	1
Port Susan - Totals										
	# Pots Recovered	28	10	38	9	10	19	37	20	57
	# Dead Dung Crab	26	0	26	0	0	0	26	0	26
	# Live Dung Crab	125	1	126	17	2	19	142	3	145
	Total Dung Crab	151	1	152	17	2	19	168	3	171
	# Dead Other Crab	0	0	0	0	0	0	0	0	0
	# Live Other Crab	0	0	0	0	3	3	0	3	3
	Total Other Crab	0	0	0	0	3	3	0	3	3
	# Dead Fish	0	0	0	0	0	0	0	0	0
	# Live Fish	0	0	0	0	1	1	0	1	1
	Total Fish	0	0	0	0	1	1	0	1	1

Table 2. Number of live and dead animals recovered from derelict crab pots with and without rot cord during the Stilliguamish Tribe Port Susan Derelict Fishing Gear Project, 2003. Source: NRC.

Type	Crab Species	Rot Cord				No Rot Cord				All Pots*			
		Male	Female	Unknown	Total	Male	Female	Unknown	Total	Male	Female	Unknown	Total
Commercial													
	# Pots Recovered	-	-	-	8	-	-	-	27	-	-	-	38
	# Dung Crab Dead	0	0	1	1	0	1	24	25	0	1	25	26
	# Dung Crab Alive	4	0	0	4	109	12	0	121	113	13	0	126
	# Other Crab Dead	0	0	0	0	0	0	0	0	0	0	0	0
	# Other Crab Alive	0	0	0	0	0	0	0	0	0	0	0	0
	# Total Crab Dead	0	0	1	1	0	1	24	25	0	1	25	26
	# Total Crab Alive	4	0	0	4	109	12	0	121	113	13	0	126
Sport													
	# Pots Recovered	-	-	-	8	-	-	-	10	-	-	-	19
	# Dung Crab Dead	0	0	0	0	0	0	0	0	0	0	0	0
	# Dung Crab Alive	6	6	0	12	3	3	0	6	9	10	0	19
	# Other Crab Dead	0	0	0	0	0	0	0	0	0	0	0	0
	# Other Crab Alive	2	0	0	2	1	0	0	1	3	0	0	3
	# Total Crab Dead	0	0	0	0	0	0	0	0	0	0	0	0
	# Total Crab Alive	8	6	0	14	4	3	0	7	12	10	0	22
All Pots													
	# Pots Recovered	-	-	-	16	-	-	-	37	-	-	-	57
	# Dung Crab Dead	0	0	1	1	0	1	24	25	0	1	25	26
	# Dung Crab Alive	10	6	0	16	112	15	0	127	122	23	0	145
	# Other Crab Dead	0	0	0	0	0	0	0	0	0	0	0	0
	# Other Crab Alive	2	0	0	2	1	0	0	1	3	0	0	3
	# Total Crab Dead	0	0	1	1	0	1	24	25	0	1	25	26
	# Total Crab Alive	12	6	0	18	113	15	0	128	125	23	0	148

* 1 commercial and 1 sport pot recovered rot cord status was unable to be deteremined recorded as unknown, they held 2 live female crab.

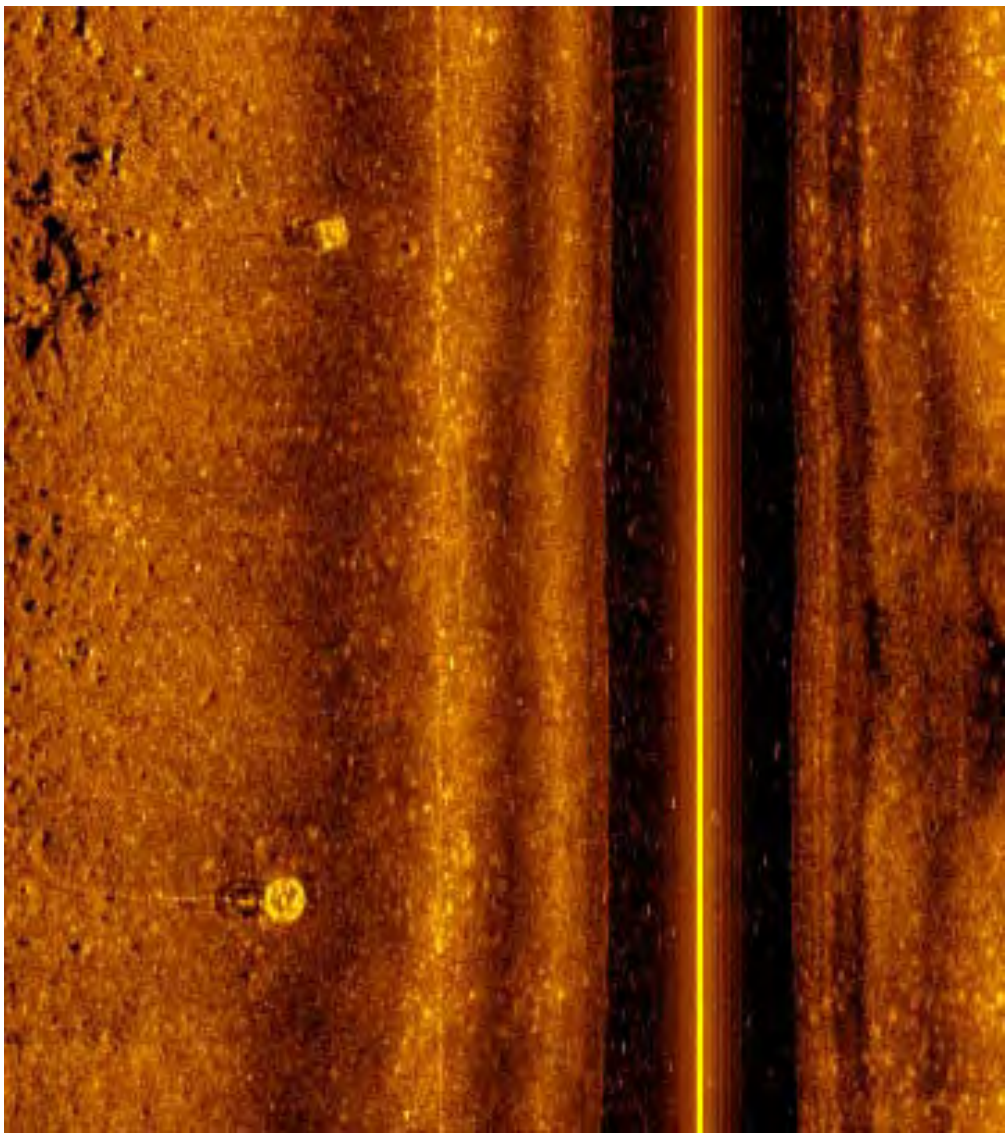

Figure 1. An example of a sidescan sonar image of derelict crab pots. (Square sport pot in upper image and round commercial pot with line in lower image). Source: Innerspace Exploration Team.

Derelict Gear Reporting Form: Crab Pots

Survey Date: _____ Survey Area: _____

Rec #	Sport (S) Comm. (C)	Fishable (Y/N)	Rot Cord (Yes/No)	ALIVE		DEAD		ALIVE	DEAD	Notes
				Dung. Crab (#)	Other Crab (#)	Dung. Crab (#)	Other Crab (#)	All Fish (#)	All Fish (#)	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
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Figure 2. An example of the data sheets used for describing the derelict fishing gear recovered during the Stilliguamish Tribe Derelict Fishing Gear Project. Source: NRC.

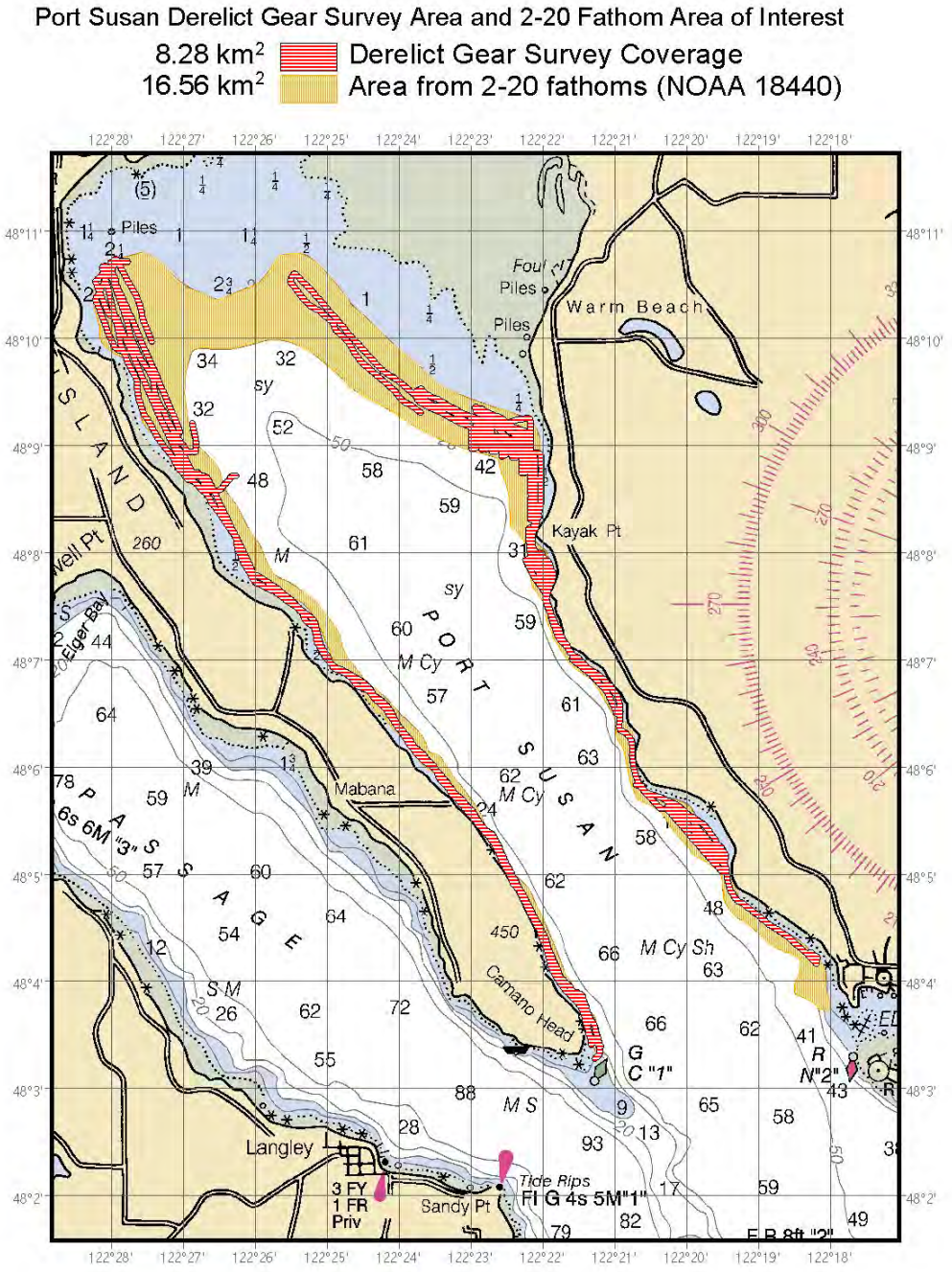

Figure 3. The location of sidescan sonar survey effort conducted during the Stilliguamish Tribe Derelict Fishing Gear project and fishing grounds between the depths of 3.7 m to 36.6 m (2 to 20 fathoms) in Port Susan. Source: NRC and the Innerspace Exploration Team.

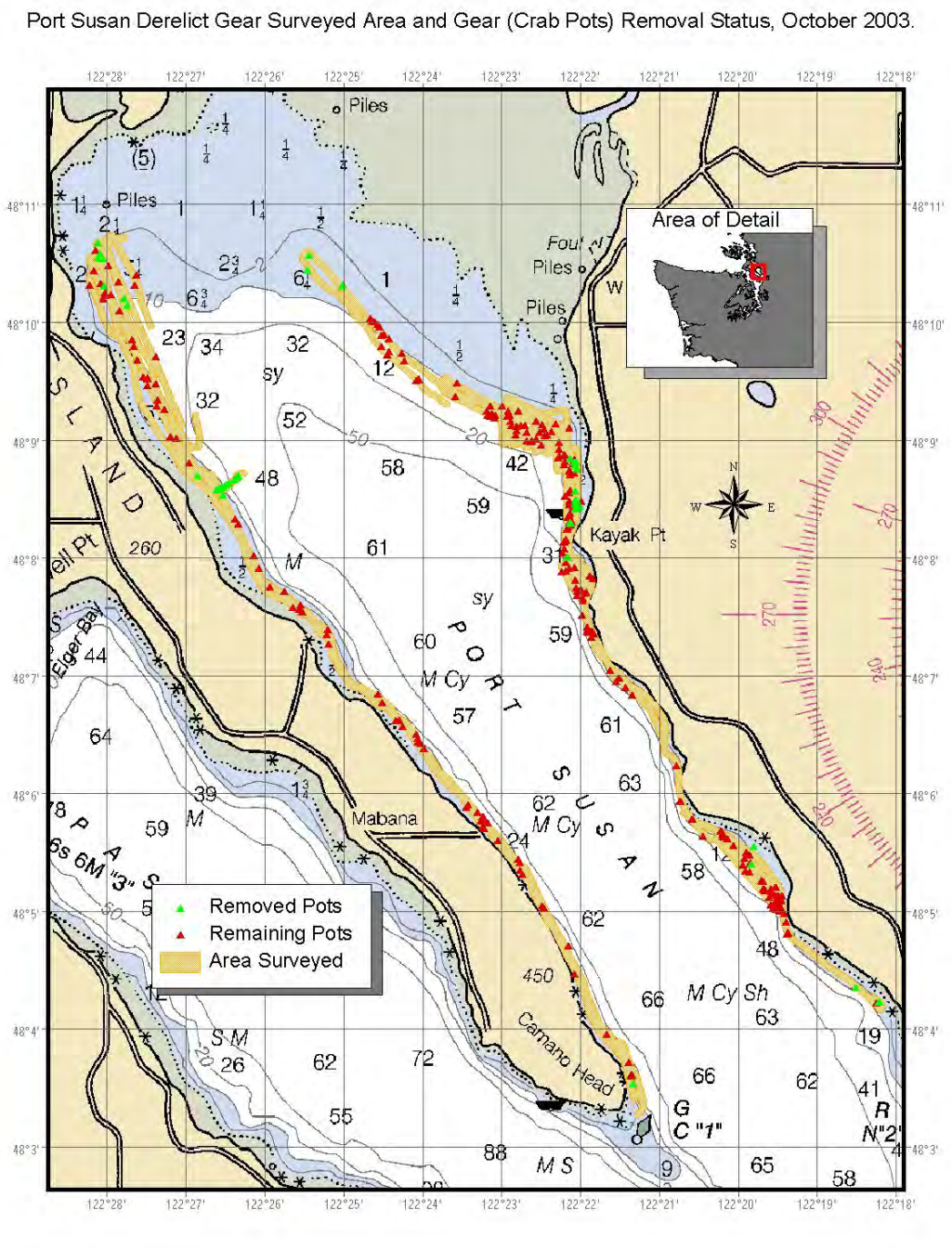

Figure 4. The location of sidescan sonar survey effort and derelict fishing gear encountered and removed in Port Susan during the Stilliguamish Tribe derelict fishing gear project. Source: NRC and the Innerspace Exploration Team.

Appendix 1

Location of Derelict Fishing Gear

Detected During the Sidescan Sonar Survey

in Port Susan

Record Number	Date	Latitude	Longitude	Depth (Meters)	Status	DG Removal Number
1	08/19/03	4804.463	12222.076	24	Remaining	
2	08/19/03	4805.026	12222.461	10	Remaining	
3	08/19/03	4805.040	12222.482	10	Remaining	
4	08/19/03	4805.309	12222.731	18	Remaining	
5	08/19/03	4805.341	12222.761	23	Remaining	
6	08/19/03	4805.596	12223.050	7	Remaining	
7	08/19/03	4805.700	12223.216	8	Remaining	
8	08/19/03	4805.715	12223.246	8	Remaining	
9	08/19/03	4805.764	12223.260	8	Remaining	
10	08/19/03	4805.878	12223.446	7	Remaining	
11	08/19/03	4805.899	12223.426	7	Remaining	
12	08/19/03	4806.435	12224.062	7	Remaining	
13	08/19/03	4806.562	12224.250	17	Remaining	
14	08/19/03	4806.615	12224.340	21	Remaining	
15	08/19/03	4807.266	12225.191	9	Remaining	
16	08/19/03	4807.576	12225.647	16	Remaining	
17	08/19/03	4810.234	12227.955	11	Remaining	
18	08/19/03	4810.302	12228.039	10	Removed	46
19	08/19/03	4810.530	12228.052	7	Removed	43
20	08/19/03	4810.540	12228.112	7	Removed	42
21	08/19/03	4810.578	12228.093	7	Removed	41
22	08/19/03	4810.667	12228.117	6	Removed	44
23	08/19/03	4810.475	12227.981	8	Remaining	
24	08/19/03	4810.198	12227.780	15	Removed	39
25	08/19/03	4810.191	12227.786	16	Removed	40
26	08/19/03	4810.135	12227.750	16	Removed	45
27	08/19/03	4809.473	12227.379	21	Remaining	
28	08/19/03	4809.258	12227.277	22	Remaining	
29	08/19/03	4804.226	12218.203	5	Remaining	
30	08/19/03	4804.228	12218.219	5	Removed	24
31	08/19/03	4804.218	12218.246	5	Remaining	
32	08/19/03	4804.351	12218.512	5	Removed	47
33	08/19/03	4804.800	12219.377	13	Remaining	
34	08/19/03	4804.800	12219.378	13	Remaining	
35	08/19/03	4804.813	12219.374	13	Remaining	
36	08/19/03	4804.814	12219.372	13	Remaining	
37	08/19/03	4804.906	12219.397	24	Remaining	
38	08/19/03	4804.976	12219.410	24	Remaining	
39	08/19/03	4805.000	12219.470	27	Remaining	
40	08/19/03	4805.000	12219.453	27	Remaining	
41	08/19/03	4805.006	12219.473	28	Remaining	

42	08/19/03	4805.097	12219.500	18	Remaining	
43	08/19/03	4805.098	12219.459	18	Remaining	
44	08/19/03	4805.115	12219.496	19	Remaining	
45	08/19/03	4805.129	12219.494	13	Remaining	
46	08/19/03	4805.125	12219.447	20	Remaining	
47	08/19/03	4805.197	12219.524	8	Remaining	
48	08/19/03	4805.615	12220.131	15	Remaining	
49	08/19/03	4805.629	12220.179	13	Remaining	
50	08/19/03	4805.645	12220.192	13	Remaining	
51	08/19/03	4805.927	12220.743	21	Remaining	
52	08/19/03	4805.932	12220.731	21	Remaining	
53	08/19/03	4806.230	12220.787	8	Remaining	
54	08/20/03	4806.976	12221.513	7	Remaining	
55	08/20/03	4807.040	12221.625	7	Remaining	
56	08/20/03	4807.375	12221.892	15	Remaining	
57	08/20/03	4807.384	12221.902	15	Remaining	
58	08/20/03	4807.395	12221.903	16	Remaining	
59	08/20/03	4807.409	12221.915	16	Remaining	
60	08/20/03	4807.630	12221.972	24	Remaining	
61	08/20/03	4807.655	12221.964	17	Remaining	
62	08/20/03	4807.699	12221.938	17	Remaining	
63	08/20/03	4807.818	12221.841	9	Remaining	
64	08/20/03	4808.276	12222.129	10	Remaining	
65	08/20/03	4808.285	12222.119	10	Remaining	
66	08/20/03	4808.293	12222.115	10	Removed	38
67	08/20/03	4808.294	12222.126	15	Removed	36
68	08/20/03	4808.298	12222.126	14	Removed	37
69	08/20/03	4808.306	12222.108	17	Remaining	
70	08/20/03	4808.313	12222.116	13	Remaining	
71	08/20/03	4808.259	12222.147	24	Remaining	
72	08/20/03	4808.243	12222.166	24	Remaining	
73	08/20/03	4808.236	12222.171	24	Remaining	
74	08/20/03	4808.071	12222.207	23	Remaining	
75	08/20/03	4808.074	12222.207	23	Remaining	
76	08/20/03	4808.134	12222.208	27	Remaining	
77	08/20/03	4808.138	12222.206	27	Remaining	
78	08/20/03	4808.039	12222.229	26	Remaining	
79	08/20/03	4808.003	12222.159	32	Remaining	
80	08/20/03	4807.998	12222.168	33	Removed	32
81	08/20/03	4807.999	12222.158	33	Removed	34
82	08/20/03	4808.001	12222.173	33	Removed	35
83	08/20/03	4808.001	12222.160	32	Removed	33
84	08/20/03	4808.144	12222.189	24	Remaining	
85	08/20/03	4808.151	12222.186	24	Remaining	

86	08/20/03	4808.410	12222.067	15	Removed	48
87	08/20/03	4808.420	12222.022	15	Removed	49
88	08/20/03	4808.431	12221.998	15	Removed	50
89	08/20/03	4808.453	12222.067	15	Removed	51
90	08/20/03	4808.479	12221.994	12	Remaining	
91	08/20/03	4808.483	12222.062	10	Removed	52
92	08/20/03	4808.484	12222.041	12	Removed	56
93	08/20/03	4808.566	12222.062	11	Removed	53
94	08/20/03	4808.751	12222.046	11	Removed	54
95	08/20/03	4808.783	12222.062	11	Removed	55
96	08/20/03	4808.807	12222.059	11	Removed	29
97	08/20/03	4808.841	12222.134	15	Removed	30
98	08/20/03	4808.828	12222.074	15	Remaining	
99	08/20/03	4808.813	12222.072	15	Removed	31
100	08/20/03	4808.811	12222.091	16	Remaining	
101	08/20/03	4808.797	12222.094	16	Remaining	
102	08/20/03	4808.740	12222.137	17	Remaining	
103	08/20/03	4808.732	12222.132	17	Remaining	
104	08/20/03	4808.719	12222.077	17	Remaining	
105	08/20/03	4808.703	12222.126	17	Remaining	
106	08/20/03	4808.569	12222.127	27	Remaining	
107	08/20/03	4808.553	12222.144	36	Remaining	
108	08/20/03	4808.447	12222.137	24	Remaining	
109	08/20/03	4808.435	12222.088	24	Remaining	
110	08/20/03	4808.433	12222.101	24	Remaining	
111	08/20/03	4808.376	12222.135	25	Remaining	
112	08/20/03	4808.361	12222.146	24	Remaining	
113	08/20/03	4808.339	12222.164	24	Remaining	
114	08/20/03	4808.297	12222.141	24	Remaining	
115	08/20/03	4808.475	12222.146	41	Remaining	
116	08/20/03	4808.524	12222.193	39	Remaining	
117	08/20/03	4808.790	12222.211	21	Remaining	
118	08/20/03	4809.097	12222.145	12	Remaining	
119	08/20/03	4809.100	12222.139	12	Remaining	
120	08/20/03	4809.243	12222.785	14	Remaining	
121	08/20/03	4809.135	12222.318	12	Remaining	
122	08/20/03	4809.126	12222.487	14	Remaining	
123	08/20/03	4809.155	12222.559	14	Remaining	
124	08/20/03	4809.284	12222.994	8	Remaining	
125	08/20/03	4809.286	12223.148	8	Remaining	
126	08/20/03	4809.481	12223.564	16	Remaining	
127	08/20/03	4809.224	12223.120	19	Remaining	
128	08/20/03	4809.219	12223.121	19	Remaining	
129	08/20/03	4809.203	12223.075	19	Remaining	

130	08/20/03	4809.240	12222.920	16	Remaining
131	08/20/03	4809.201	12222.931	16	Remaining
132	08/20/03	4809.208	12222.896	16	Remaining
133	08/20/03	4809.063	12222.518	17	Remaining
134	08/20/03	4809.089	12222.466	17	Remaining
135	08/20/03	4809.040	12222.424	17	Remaining
136	08/20/03	4809.070	12222.371	17	Remaining
137	08/20/03	4808.875	12222.211	33	Remaining
138	08/20/03	4808.869	12222.194	35	Remaining
139	08/20/03	4808.817	12222.199	36	Remaining
140	08/20/03	4808.844	12222.279	50	Remaining
141	08/20/03	4808.863	12222.268	47	Remaining
142	08/20/03	4808.920	12222.266	31	Remaining
143	08/20/03	4808.975	12222.275	20	Remaining
144	08/20/03	4809.032	12222.456	21	Remaining
145	08/20/03	4809.032	12222.451	21	Remaining
146	08/20/03	4808.957	12222.496	30	Remaining
147	08/20/03	4808.990	12222.616	30	Remaining
148	08/20/03	4809.007	12222.560	26	Remaining
149	08/20/03	4809.059	12222.679	23	Remaining
150	08/20/03	4808.987	12222.683	34	Remaining
151	08/20/03	4808.981	12222.630	37	Remaining
152	08/20/03	4809.121	12222.705	20	Remaining
153	08/20/03	4809.122	12222.753	20	Remaining
154	08/20/03	4809.110	12222.812	21	Remaining
155	08/20/03	4809.079	12222.810	21	Remaining
156	08/20/03	4809.044	12222.820	24	Remaining
157	08/20/03	4809.119	12222.870	21	Remaining
158	08/20/03	4809.156	12222.885	20	Remaining
159	08/20/03	4809.182	12223.088	21	Remaining
160	08/20/03	4809.199	12223.142	21	Remaining
161	08/20/03	4809.203	12223.175	21	Remaining
162	08/20/03	4809.242	12223.186	21	Remaining
163	08/20/03	4809.367	12223.590	24	Remaining
164	08/20/03	4809.667	12224.228	18	Remaining
165	08/20/03	4809.735	12224.266	18	Remaining
166	08/20/03	4809.856	12224.427	18	Remaining
167	08/20/03	4809.890	12224.487	16	Remaining
168	08/20/03	4809.886	12224.520	16	Remaining
169	08/20/03	4809.959	12224.546	17	Remaining
170	08/20/03	4809.976	12224.565	17	Remaining
171	08/20/03	4810.001	12224.611	17	Remaining
172	08/20/03	4810.007	12224.630	17	Remaining
173	08/20/03	4810.009	12224.647	17	Remaining

174	08/20/03	4810.031	12224.660	17	Remaining	
175	08/20/03	4810.301	12225.017	16	Removed	20
176	08/20/03	4810.316	12225.004	16	Removed	21
177	08/20/03	4810.565	12225.438	9	Removed	23
178	08/20/03	4810.440	12225.460	12	Removed	22
179	08/20/03	4809.793	12224.528	20	Remaining	
180	08/20/03	4809.750	12224.430	21	Remaining	
181	08/20/03	4809.717	12224.451	21	Remaining	
182	08/20/03	4809.499	12224.083	22	Remaining	
183	08/20/03	4809.520	12224.046	22	Remaining	
184	08/20/03	4809.507	12224.044	22	Remaining	
185	08/21/03	4803.593	12221.354	24	Remaining	
186	08/21/03	4803.602	12221.342	24	Remaining	
187	08/21/03	4803.602	12221.348	24	Remaining	
188	08/21/03	4803.610	12221.355	24	Remaining	
189	08/21/03	4803.709	12221.385	19	Remaining	
190	08/21/03	4803.951	12221.670	28	Remaining	
191	08/21/03	4804.705	12222.156	28	Remaining	
192	08/21/03	4805.043	12222.485	26	Remaining	
193	08/21/03	4805.413	12222.770	27	Remaining	
194	08/21/03	4805.437	12222.783	27	Remaining	
195	08/21/03	4805.752	12223.171	26	Remaining	
196	08/21/03	4805.781	12223.225	25	Remaining	
197	08/21/03	4805.796	12223.237	12	Remaining	
198	08/21/03	4805.798	12223.234	12	Remaining	
199	08/21/03	4805.836	12223.300	12	Remaining	
200	08/21/03	4806.376	12223.985	11	Remaining	
201	08/21/03	4806.420	12224.024	17	Remaining	
202	08/21/03	4806.423	12224.028	17	Remaining	
203	08/21/03	4806.462	12224.057	17	Remaining	
204	08/21/03	4806.502	12224.077	33	Remaining	
205	08/21/03	4806.618	12224.302	35	Remaining	
206	08/21/03	4806.625	12224.300	35	Remaining	
207	08/21/03	4806.766	12224.508	38	Remaining	
208	08/21/03	4806.839	12224.562	39	Remaining	
209	08/21/03	4807.348	12225.218	30	Remaining	
210	08/21/03	4807.389	12225.199	30	Remaining	
211	08/21/03	4807.542	12225.531	35	Remaining	
212	08/21/03	4807.563	12225.562	35	Remaining	
213	08/21/03	4807.561	12225.566	35	Remaining	
214	08/21/03	4807.571	12225.562	35	Remaining	
215	08/21/03	4807.595	12225.548	35	Remaining	
216	08/21/03	4807.711	12225.750	36	Remaining	
217	08/21/03	4807.752	12225.936	23	Remaining	

218	08/21/03	4807.910	12226.075	15	Remaining	
219	08/21/03	4808.016	12226.137	11	Remaining	
220	08/21/03	4808.282	12226.339	20	Remaining	
221	08/21/03	4808.328	12226.381	19	Remaining	
222	08/21/03	4808.530	12226.530	31	Removed	6
223	08/21/03	4808.571	12226.619	31	Removed	7
224	08/21/03	4808.578	12226.598	31	Removed	5
225	08/21/03	4808.585	12226.571	31	Removed	8
226	08/21/03	4808.591	12226.554	31	Removed	9
227	08/21/03	4808.695	12226.854	27	Removed	19
228	08/21/03	4808.804	12226.965	26	Remaining	
229	08/21/03	4809.012	12227.123	26	Remaining	
230	08/21/03	4809.027	12227.192	26	Remaining	
231	08/21/03	4809.285	12227.366	22	Remaining	
232	08/21/03	4809.336	12227.363	22	Remaining	
233	08/21/03	4809.458	12227.484	21	Remaining	
234	08/21/03	4809.514	12227.484	21	Remaining	
235	08/21/03	4809.522	12227.488	21	Remaining	
236	08/21/03	4809.534	12227.542	21	Remaining	
237	08/21/03	4809.675	12227.615	23	Remaining	
238	08/21/03	4809.788	12227.665	23	Remaining	
239	08/21/03	4809.848	12227.684	23	Remaining	
240	08/21/03	4810.092	12227.844	15	Remaining	
241	08/21/03	4810.222	12228.023	12	Remaining	
242	08/21/03	4810.192	12228.044	12	Remaining	
243	08/21/03	4810.248	12228.023	12	Remaining	
244	08/21/03	4810.321	12228.079	10	Remaining	
245	08/21/03	4810.605	12228.147	8	Remaining	
246	08/21/03	4810.341	12227.858	13	Remaining	
247	08/21/03	4809.701	12227.379	30	Remaining	
248	08/21/03	4808.592	12226.542	35	Removed	10
249	08/21/03	4808.608	12226.507	40	Removed	11
250	08/21/03	4808.621	12226.486	45	Removed	12
251	08/21/03	4808.631	12226.457	50	Removed	13
252	08/21/03	4808.657	12226.392	60	Removed	14
253	08/21/03	4808.668	12226.373	62	Removed	15
254	08/21/03	4808.677	12226.359	62	Removed	16
255	08/21/03	4808.686	12226.345	63	Removed	17
256	08/21/03	4808.694	12226.333	63	Removed	18
257	08/21/03	4805.775	12220.591	24	Remaining	
258	08/21/03	4805.776	12220.582	24	Remaining	
259	08/21/03	4805.636	12220.453	27	Remaining	
260	08/21/03	4805.386	12219.945	24	Remaining	
261	08/21/03	4805.340	12219.912	22	Remaining	

262	08/21/03	4805.185	12219.676	24	Remaining	
263	08/21/03	4805.182	12219.685	24	Remaining	
264	08/21/03	4805.176	12219.665	24	Remaining	
265	08/21/03	4805.115	12219.603	25	Remaining	
266	08/21/03	4805.051	12219.589	31	Remaining	
267	08/21/03	4805.076	12219.534	23	Remaining	
268	08/21/03	4805.024	12219.554	24	Remaining	
269	08/21/03	4805.016	12219.530	34	Remaining	
270	08/21/03	4805.016	12219.522	34	Remaining	
271	08/21/03	4805.014	12219.525	34	Remaining	
272	08/21/03	4805.012	12219.486	31	Remaining	
273	08/21/03	4805.036	12219.473	30	Remaining	
274	08/21/03	4805.004	12219.470	30	Remaining	
275	08/21/03	4805.011	12219.462	13	Remaining	
276	08/21/03	4805.037	12219.466	13	Remaining	
277	08/21/03	4805.011	12219.442	12	Remaining	
278	08/21/03	4805.036	12219.479	12	Remaining	
279	08/21/03	4805.084	12219.453	19	Remaining	
280	08/21/03	4805.073	12219.493	19	Remaining	
281	08/21/03	4805.096	12219.499	21	Remaining	
282	08/21/03	4805.130	12219.520	20	Remaining	
283	08/21/03	4805.145	12219.549	20	Remaining	
284	08/21/03	4805.163	12219.577	20	Remaining	
285	08/21/03	4805.188	12219.589	20	Remaining	
286	08/21/03	4805.174	12219.664	17	Remaining	
287	08/21/03	4805.187	12219.670	17	Remaining	
288	08/21/03	4805.249	12219.684	14	Remaining	
289	08/21/03	4805.250	12219.696	14	Remaining	
290	08/21/03	4805.259	12219.700	14	Remaining	
291	08/21/03	4805.331	12219.852	16	Remaining	
292	08/21/03	4805.398	12219.856	19	Remaining	
293	08/21/03	4805.443	12219.922	20	Remaining	
294	08/21/03	4805.680	12220.219	14	Remaining	
295	08/21/03	4805.680	12220.209	14	Remaining	
296	08/21/03	4805.646	12220.205	14	Remaining	
297	08/21/03	4805.634	12220.188	14	Remaining	
298	08/21/03	4805.556	12220.061	23	Remaining	
299	08/21/03	4805.493	12219.894	18	Remaining	
300	08/21/03	4805.472	12219.859	14	Remaining	
301	08/21/03	4805.407	12219.840	10	Remaining	
302	08/21/03	4805.398	12219.833	10	Removed	27
303	08/21/03	4805.393	12219.836	10	Removed	28
304	08/21/03	4805.200	12219.529	14	Remaining	
305	08/22/03	4810.312	12228.222	6	Remaining	

306	08/22/03	4810.429	12228.170	6	Remaining
307	08/22/03	4810.539	12228.112	6	Remaining
308	08/22/03	4810.394	12227.626	11	Remaining
309	08/22/03	4810.309	12227.648	13	Remaining
310	08/22/03	4807.842	12221.880	10	Remaining
311	08/22/03	4807.957	12222.181	30	Remaining
312	08/22/03	4807.916	12222.075	11	Remaining
313	08/22/03	4807.727	12221.992	25	Remaining
314	08/22/03	4807.722	12221.997	25	Remaining
315	08/22/03	4807.703	12221.923	30	Remaining
316	08/22/03	4807.675	12222.047	45	Remaining
317	08/22/03	4807.715	12222.033	45	Remaining
318	08/22/03	4807.721	12222.037	45	Remaining
319	08/22/03	4807.738	12222.052	45	Remaining
320	08/22/03	4807.885	12222.185	55	Remaining
321	08/22/03	4807.876	12222.235	55	Remaining
322	08/22/03	4807.908	12222.144	38	Remaining
323	08/22/03	4807.809	12222.061	22	Remaining
324	08/22/03	4807.511	12221.978	26	Remaining
325	08/22/03	4807.397	12221.903	25	Remaining
326	08/22/03	4807.385	12221.900	25	Remaining
327	08/22/03	4807.377	12221.910	25	Remaining
328	08/22/03	4807.377	12221.861	25	Remaining
329	08/22/03	4807.366	12221.908	25	Remaining
330	08/22/03	4807.377	12221.858	25	Remaining
331	08/22/03	4807.377	12221.854	25	Remaining
332	08/22/03	4807.365	12221.854	25	Remaining
333	08/22/03	4807.351	12221.833	18	Remaining
334	08/22/03	4807.320	12221.864	18	Remaining
335	08/22/03	4806.951	12221.546	29	Remaining
336	08/22/03	4806.977	12221.509	29	Remaining
337	08/22/03	4806.894	12221.425	22	Remaining
338	08/22/03	4806.833	12221.343	32	Remaining

Appendix 2

Derelict Fishing Gear Removal Database

Port Susan

NRC

Stillaguamish Tribe Derelict Fishing Gear Survey and Removal Project

Port Susan

Derelict Gear Removal Database: Gear Removal Information

DGNumb	Date	Lat	Long	Derelict Gear Type	Commercial Sport	Fishable	Rot Cord	Water Depth (ft)	Bottom Type	Status	Surveyed
1	08/30/03	4803.531	12221.337	Pot	Commercial	Yes	Yes	82	clay	Removed	no
2	08/30/03	4803.531	12221.337	Pot	Commercial	No	Yes	82	clay	Removed	no
3	08/30/03	4803.531	12221.337	Pot	Commercial	No	Yes	82	clay	Removed	no
4	08/30/03	4803.531	12221.337	Pot	Commercial	No	Yes	82	clay	Removed	no
5	08/30/03	4808.578	12226.598	Pot	Commercial	Yes	No	90	mud	Removed	yes
6	08/30/03	4808.530	12226.530	Pot	Commercial	Yes	No	100	mud	Removed	yes
7	08/30/03	4808.571	12226.619	Pot	Commercial	Yes	No	110	mud	Removed	yes
8	08/30/03	4808.585	12226.571	Pot	Commercial	Yes	No	120	mud	Removed	yes
9	08/30/03	4808.591	12226.554	Pot	Commercial	Yes	No	130	mud	Removed	yes
10	08/30/03	4808.592	12226.542	Pot	Commercial	Yes	No	140	mud	Removed	yes
11	08/30/03	4808.608	12226.507	Pot	Commercial	Yes	No	150	mud	Removed	yes
12	08/30/03	4808.621	12226.486	Pot	Commercial	Yes	No	160	mud	Removed	yes
13	08/30/03	4808.631	12226.457	Pot	Commercial	Yes	No	170	mud	Removed	yes
14	08/30/03	4808.657	12226.392	Pot	Commercial	Yes	No	180	mud	Removed	yes
15	08/30/03	4808.668	12226.373	Pot	Commercial	Yes	No	190	mud	Removed	yes
16	08/30/03	4808.677	12226.359	Pot	Commercial	Yes	No	200	mud	Removed	yes
17	08/30/03	4808.686	12226.345	Pot	Commercial	Yes	No	210	mud	Removed	yes
18	08/30/03	4808.694	12226.333	Pot	Commercial	Yes	No	215	mud	Removed	yes
19	08/30/03	4808.695	12226.854	Pot	Commercial	Yes	No	220	mud	Removed	yes
20	08/30/03	4810.301	12225.017	Pot	Commercial	Yes	No	46	sand/eelgrass	Removed	yes

21	08/30/03	4810.316	12225.004	Pot	Commercial	Yes	No	46 sand/eelgrass	Removed	yes
22	08/30/03	4810.440	12225.460	Pot	Commercial	Yes	No	46 sand/eelgrass	Removed	yes
23	08/30/03	4810.565	12225.438	Pot	Commercial	Yes	No	46 sand/eelgrass	Removed	yes
24	08/31/03	4804.228	12218.219	Pot	Commercial	Yes	No	23 mud	Removed	yes
25	08/31/03	4804.228	12218.210	Pot	Commercial	Yes	No	23 mud	Removed	no
26	08/31/03	4804.228	12218.210	Pot	Commercial	Yes	No	23 mud	Removed	no
27	08/31/03	4805.398	12219.833	Pot	Commercial	No	Yes	33 mud	Removed	yes
28	08/31/03	4805.393	12219.836	Pot	Commercial	Yes	Yes	33 mud	Removed	yes
29	09/01/03	4808.807	12222.059	Pot	Commercial	Yes	No	36 mud	Removed	yes
30	09/01/03	4808.841	12222.134	Pot	Sport	Yes	No	49 mud	Removed	yes
31	09/01/03	4808.813	12222.072	Pot	Sport	Yes	Yes	49 mud	Removed	yes
32	09/06/03	4807.998	12222.168	Pot	Sport	No	Yes	108 mud	Removed	yes
33	09/06/03	4808.001	12222.160	Pot	Sport	No	No	108 mud	Removed	yes
34	09/06/03	4807.999	12222.158	Pot	Sport	Yes	Yes	108 mud	Removed	yes
35	09/06/03	4808.001	12222.173	Pot	Sport	No	Yes	108 mud	Removed	yes
36	09/06/03	4808.294	12222.126	Pot	Sport	No	No	49 mud	Removed	yes
37	09/06/03	4808.298	12222.126	Pot	Commercial	Yes	Yes	46 mud	Removed	yes
38	09/06/03	4808.293	12222.115	Pot	Sport	Yes	No	33 mud	Removed	yes
39	09/06/03	4810.198	12227.780	Pot	Sport	No	No	49 mud	Removed	yes
40	09/06/03	4810.191	12227.786	Pot	Sport	Yes	Yes	49 mud	Removed	yes
41	09/06/03	4810.578	12228.093	Pot	Sport	No	Yes	26 mud	Removed	yes
42	09/06/03	4810.540	12228.112	Pot	Commercial	Yes	No	26 mud	Removed	yes
43	09/06/03	4810.530	12228.052	Pot	Commercial	No	Unknown	26 mud	Removed	yes
44	09/06/03	4810.667	12228.117	Pot	Commercial	No	Unknown	26 mud	Removed	yes
45	09/06/03	4810.135	12227.750	Pot	Sport	No	Unknown	67 mud	Removed	yes
46	09/06/03	4810.302	12228.039	Pot	Commercial	No	Unknown	45 mud	Removed	yes
47	09/07/03	4804.351	12218.512	Pot	Commercial	No	No	16 sand	Removed	yes
48	09/07/03	4808.410	12222.067	Pot	Commercial	No	No	49 mud	Removed	yes
49	09/07/03	4808.420	12222.022	Pot	Commercial	No	No	49 mud	Removed	yes
50	09/07/03	4808.431	12221.998	Pot	Sport	Yes	No	49 mud	Removed	yes

51	09/07/03	4808.453	12222.067	Pot	Sport	No	No	49 mud	Removed	yes
52	09/07/03	4808.483	12222.062	Pot	Commercial	Yes	Yes	33 mud	Removed	yes
53	09/07/03	4808.566	12222.062	Pot	Sport	No	No	36 mud	Removed	yes
54	09/07/03	4808.751	12222.046	Pot	Sport	Yes	Yes	36 mud	Removed	yes
55	09/07/03	4808.783	12222.062	Pot	Sport	Yes	No	36 mud	Removed	yes
56	09/07/03	4808.484	12222.041	Pot	Sport	No	Yes	39 mud	Removed	yes
57	09/30/03	4805.550	12219.799	Pot	Sport	Yes	No	15 mud	Removed	No

Appendix 3

Derelict Fishing Gear Impact Database

Port Susan

Stillaguamish Tribe Derelict Fishing Gear Survey and Removal Project
Port Susan
Derelict Gear Removal Database: Impact Information

Derelict Gear Number	Species	Alive	Dead	Sex	Notes
1	Dungeness	2		Male	
2					Empty
3					Empty
4					Empty
5	Dungeness	7		Male	
5	Dungeness	1		Female	
5	Dungeness		1	Unknown	
6	Dungeness	5		Male	
6	Dungeness		3	Unknown	
7	Dungeness	6		Male	
7	Dungeness		1	Unknown	
8	Dungeness		1	Unknown	
8	Dungeness	5		Male	
9	Dungeness	2		Male	
9	Dungeness	2		Female	
10	Dungeness	4		Male	
11	Dungeness	2		Male	
12	Dungeness	3		Male	
12	Dungeness	1		Female	
12	Dungeness		1	Unknown	
13	Dungeness	8		Male	
13	Dungeness	2		Female	
14	Dungeness		1	Female	
15	Dungeness	6		Male	
16	Dungeness	8		Male	
17	Dungeness	10		Male	
18					Empty
19					Empty
20	Dungeness	10		Male	
20	Dungeness		9	Unknown	
21	Dungeness	1		Female	
21	Dungeness	16		Male	
22	Dungeness	14		Male	
23	Dungeness	4		Female	
23	Dungeness		1	Unknown	
24	Dungeness		1	Unknown	
25	Dungeness	1		Male	

26	Dungeness		1	Unknown
26	Dungeness	1		Male
27				Empty
28	Dungeness	1		Male
28	Dungeness		1	Unknown
29	Dungeness		4	Unknown
30	Dungeness	2		Female
31	Dungeness	2		Female
32	Red Rock Crab	2		Male
32	Perch	1		Unknown
33				Empty
34				Empty
35				Empty
36	Red Rock Crab	1		Male
37				Empty
38				Empty
39	Dungeness	1		Female
40				Empty
41				Empty
42	Dungeness	1		Female
42	Dungeness	1		Male
42	Dungeness		1	Unknown
43				Empty
44				Empty
45	Dungeness	1		Female
46	Dungeness	1		Female
47				Empty
48				Empty
49				Empty
50				Empty
51				Empty
52	Dungeness	1		Male
53				Empty
54	Dungeness	6		Male
54	Dungeness	4		Female
55	Dungeness	1		Male
56				Empty
57	Dungeness	2		Male