

# Report on Removing Marine Debris from Beaches near Craig, Alaska in 2011

By

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## Island Charters



For

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Photo: The Crew - raising awareness of marine debris issue at Craig 4<sup>th</sup> of July parade

## Introduction

In spring of 2011, the Marine Conservation Alliance Foundation (MCAF) solicited proposals for removing marine debris from Alaskan ocean beaches. Island Charters prepared a proposal for cleaning the beaches near Craig Alaska which was submitted to MCAF. The project was selected and a contract executed in July of 2011. Funding came from National Oceanic and Atmospheric Administration's FY 08 Grant NA08NOS4630356. This report describes the work and the results of the project.

## Cleanup

Craig is located on the outer coast of Prince of Wales island in Southeast Alaska. The dominant current flows north while the dominant weather pattern is from the southeast. The coastline is uneven with many bays and islands. The shore is rocky with sand/pebble beaches interspersed. Cleanups on these outer exposed areas may only take place during periods of calm weather as access to the beaches is difficult and/or dangerous otherwise.

We used local knowledge based on years of traveling and hiking throughout the region to select areas that had large amounts of marine debris. Once the areas were identified we organized groups of paid laborers and volunteers to do the cleanup.

Debris was collected and put into plastic bags. Bags were then taken to a shore side location, sorted into debris types per the categories on Cleanup Data Form 2. Each type was weighed then was either recycled, used by locals, or disposed of at the Klawock Refuse center. Nets were used for fencing; many buoys were given to local fishermen and several are being used as “art” in yards. Several fathoms of line were salvaged and used as crab pot lines or tie up lines.



Kathy Peavey wrestles with some hawser line on San Fernando Island

## Cleanup Results

Cleanups began on July 30 and continued through October 24 (Table 1). A total of 25 different beaches, ranging from 275 to 2,932 yards were cleaned (Figure 1). A survey on Forrester Island was also conducted.

Many individuals, including nine paid laborers and 36 volunteers, worked a total of 766 hours to collect, sort and dispose of 17,664 pounds of marine debris from 31,116 yards of beach. These statistics compare to the prior years as follows:

	2009	2010	2011
Labor Hours	781	944	766
Pounds	20,355	20,389	17,664
Yards of Beach	18,561	20,673	31,116

The chart above demonstrates that it took more hours in 2010 and 2011 to collect a similar amount of debris as 2009. However, in 2009 the debris was sorted as it was collected. In 2010 and 2011, all debris was bagged together and sorted and weighed by hand back in Craig. The number of hours spent on sorting explains most of the difference. This resulted in more accurate data for the debris types for reporting to MCAF.



Julie Yates 5<sup>th</sup> grade class makes art out of debris; displayed at 2011 Whale Fest/Beachcomber Fun Fair.

Table 1. Beaches Cleaned - Island Charters 2011

Date	Location	Beach	Latitude	Longitude	Length of Beach (yards)	Natural Accumulation Area?	Trawl Net Samples	HSDN Samples
19-Jun	Baker Island	Port San Antonio	55 21 685	133 35 652	275	Yes	9	
30-Jul	Lowery Island	Sea Lion Researchers	55 51 23 58	133 52 12 52	573	Yes	No	No
8-Aug	San Fernando	San Clemente N.	55 28 19 64	133 24 06 87	2559	Yes	Yes	No
9-Aug	Prince of Wales	Shinaku	55 36 08 25	133 08 46 42	2312	Yes – mild	Yes	No
10-Aug	San Fernando	Cabbage Patch upper	55 29 27 72	133 24 42 35	2147	Yes	Yes	Yes
12-Aug	Ignace Island	Backside	55 25 20 88	133 26 15 43	2932	Yes	Yes	Yes
27-Aug	Sumez Island	Mears Pass Seaweed	55 13 09 24	133 16 13 90	613	Yes	Yes	No
31-Aug	Cone Island	East Side	55 26 26 35	133 36 51 21	786	Yes	Yes	No
22-Aug	San Fernando/Cruz Isl	11 Mile	55 33 53 12	133 18 38 17	789	Yes	Yes	No
24-Aug	Prince of Wales	Il Defonso	55 34 54 87	133 14 29 40	505	Yes	Yes	No
30-Aug	Baker Island	Port Assumption	55 22 30 79	133 30 45 31	663	Yes	No	No
5-Sep	San Fernando	Sand Hill Crane	55 32 02 86	133 17 07 43	414	Yes	No	No
8-Sep	San Fernando	Butler Bay	55 29 56 36	133 17 31 94	922	Yes	No	No
10-Sep	Dahl Island	Farrallon Bay	55 11 26 11	133 06 31 37	682	Yes	Yes	No
11-Sep	Dahl Island	My Beach	55 12 57 29	133 05 45 84	1312	No	No	No
11-Sep	Dahl Island	Barbis Beach	55 13 19 69	133 06 05 36	1230	No	No	No
13-Sep	St. Johns Island	Piece together	55 25 49 85	133 14 03 25	1800	No	No	No
17-Sep	Prince of Wales	Kasaan Bay	55 32 27 16	133 25 06 48	1499	Yes	No	No
24-Sep	San Fernando	Amagura	55 27 15 17	133 21 39 90	2743	Yes	Yes	No
1-Oct	Channel Island	Fish Ball Beach	54 52 50 17	132 49 38 66	1775	Yes	Yes	No
2-Oct	Dahl Island	North Bay	55 12 32 75	133 08 08 65	604	Yes	Yes	No
5-Oct	San Fernando	Rock Haven	55 28 29 99	133 18 58 94	2571	Yes	Yes	No
8-Oct	Abness	Peter & Diane Day	55 33 05 49	133 10 54 82	708	Yes	No	No
24-Oct	San Fernando	Geoduck	55 29 33 32	133 17 49 02	702	Yes	Yes	No
				<b>Totals</b>	31,116			



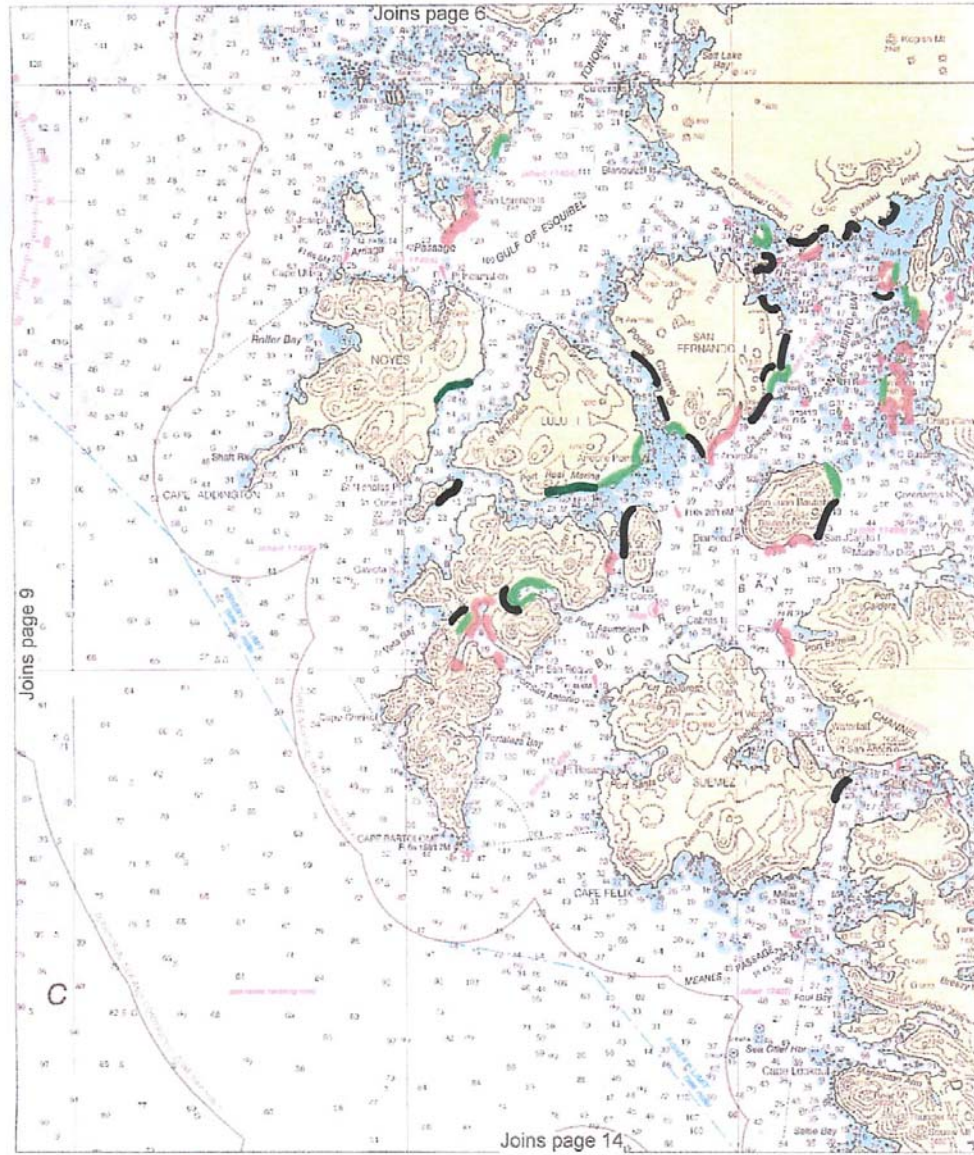
Workers (L to R): Kathy Butz, Katrina Peavey, and Shannon on Ignace Island.



Offloading at Craig harbor (l to r: volunteers Michelle & Dennis Nickerson from Kasaan, Dolores Owen, Peter Murphy, and Diane Scoboria)

Figure 1. Location of cleanup areas in 2009 (red), 2010 (green), and 2011 (black).

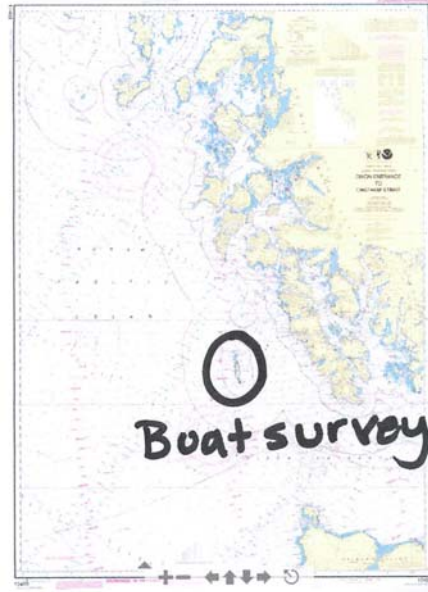
Figure 1. Location of cleanup areas in 2009 (red), 2010 (green), and 2011 (black).



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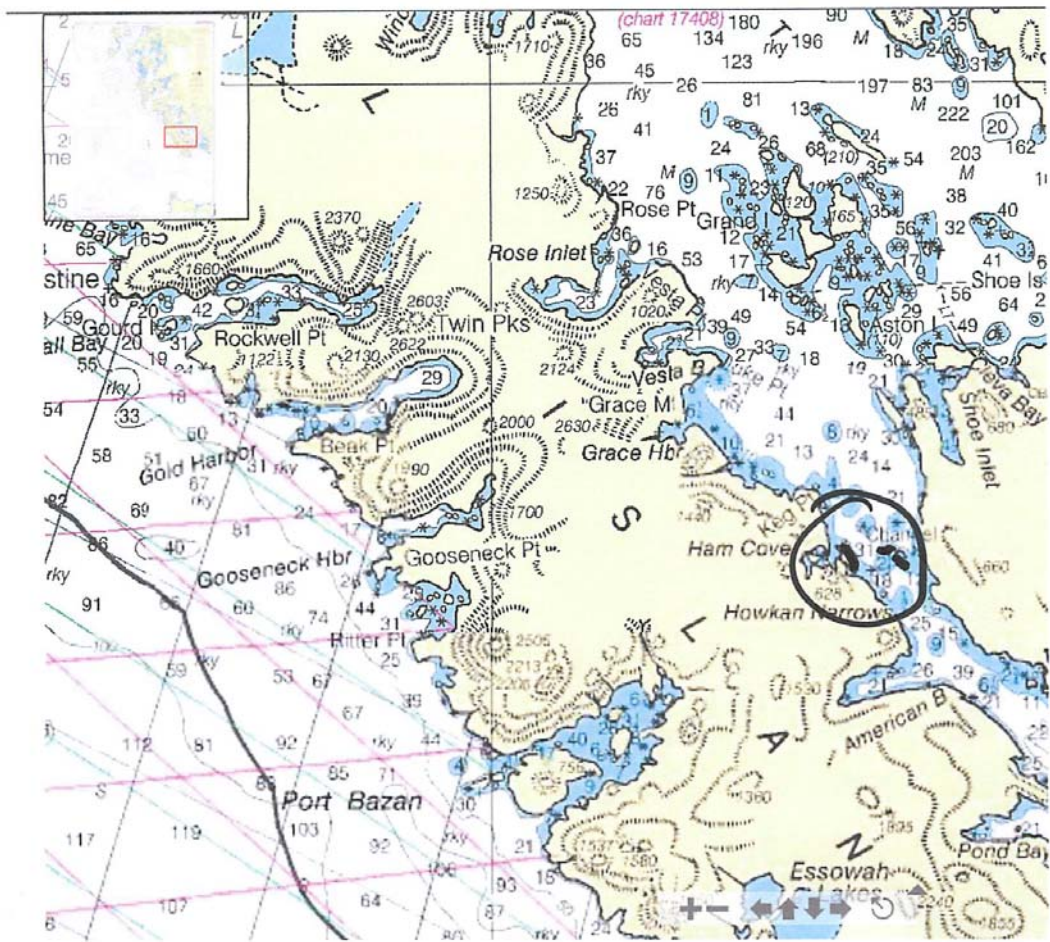
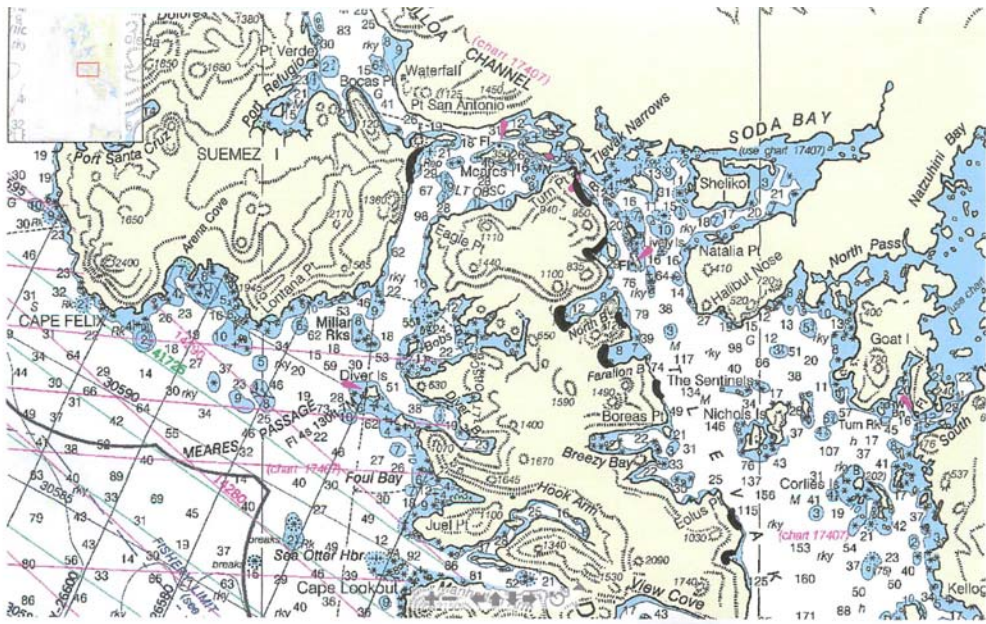
Red represents 2009  
Green represents 2010  
Black represents 2011



Boat survey Forrester Island  
- Needs to be Cleaned!



Debris on Forrester Island.







Steven Peavey marking net samples with GPS coordinates.

The amount, type, and density of debris varied by location (Table 2). Miscellaneous rope and line accounted for the most pounds of debris, followed by trawl net and non-beverage plastic.



The largest percentage of a single type of debris was miscellaneous rope and line at 61 percent from St. Johns Island (Table 3). Overall, miscellaneous line and rope accounted for 31.8 percent of the total weight, followed by trawl line at 15.6 percent and non-beverage plastic at 14.5 percent. Together, these comprised over 50% of the total weight removed in the Craig area in 2011, which is the same as 2010.

Table 2. Type of debris collected by location (pounds),(\*only total weight is available).

Location	Beach	Trawl Net	All other Line/Rope	Domestic Gill Net	HSDN	Floats	Other Fishing Related	Banding	Plastic Beverage Bottles	Other Non-Beverage Plastic	Metal	Foam	Other Non-Vessel	Total
Baker Island	Port San Antonio *													250
Lowery Island	Sea Lion Researchesrs	-	150	-	-	400	-	-	15	50	-	20	-	635
San Fernando	San Clemente N.	295	464	-	2	42	47	12	2	59	45	82	65	1,115
Prince of Wales	Shinaku	125	291	-	-	15	17	-	2	111	38	46	52	697
San Fernando	Cabbage Patch upper	189	372	-	7	15	45	3	2	92	-	38	47	810
Ignace Island	Backside	760	440	-	8	17	72	-	1	125	49	26	72	1,570
Sumez Island	Mears Pass Seaweed	-	268	-	-	15	125	1	1	355	75	20	40	898
Cone Island	East Side	124	72	-	-	28	56	-	-	102	77	23	35	517
San Fernando/Cruz Isl	11 Mile	76	224	-	-	11	125	-	1	15	-	48	80	580
Prince of Wales	Il Defonso	62	198	-	-	8	62	-	1	172	-	28	48	578
Baker Island	Port Assumption	-	120	-	-	15	51	-	4	35	-	-	-	225
San Fernando	Sand Hill Crane	32	394	-	-	15	125	1	1	350	48	37	120	1,122
San Fernando	Butler Bay	52	37	-	-	12	-	-	4	28	45	27	44	245
Dahl Island	Farrallon Bay	191	372	-	2	38	44	5	2	270	-	30	66	1,020
Dahl Island	My Beach	32	122	-	-	15	41	-	1	52	-	6	48	317
Dahl Island	Barbis Beach	-	90	-	-	12	-	-	-	72	20	10	-	204
St. Johns Island	Piece together	73	400	-	-	8	-	1	1	9	6	2	11	661
Prince of Wales	Kasaan Bay													2,000
San Fernando	Amagura	294	252	-	-	38	26	5	10	122	80	45	126	998
Channel Island	Fish Ball Beach	58	420	-	33	7	-	1	1	88	22	11	70	710
Dahl Island	North Bay	168	211	-	2	12	-	1	1	99	38	50	44	625
San Fernando	Rock Haven	125	376	-	7	19	-	1	2	140	58	27	80	834
Abbess	Peter & Diane Day	-	94	-	-	15	54	-	2	52	12	63	-	292
San Fernando	Geoduck	103	255	-	-	24	-	-	5	162	47	77	88	761
	Totals	2,759	5,622	-	61	781	890	31	59	2,560	660	716	1,136	17,664



Barbi Armstrong cuts tangled line on Dahl Island.



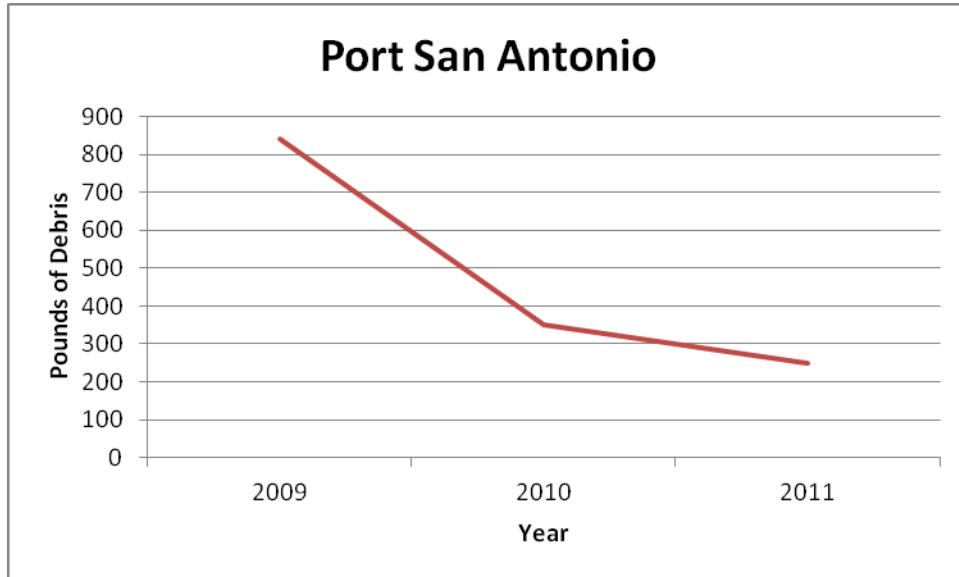
Haley Armstrong hauls net to the skiff on San Fernando Island.

Table 3. Percentage of debris by type and Overall (\* only total weight is available).

Location	Beach	Trawl Net	All other Line/Rop	Domestic Gill Net	HDSN	Floats	Related Fishing	Other	Banding	Beverage Bottles	Plastic container	Plastic non-beverage	Metal	Foam	Other
Baker Island	Port San Antonio *														100
Lowery Island	Sea Lion Researches	0	24	0	0	63	0	0	0	2	8	0	3	0	
San Fernando	San Clemente N.	26	42	0	1	4	4	1	1	1	5	4	7	6	
Prince of Wales	Shinaku	18	42	0	0	2	2	0	1	1	16	5	7	7	
San Fernando	Cabbage Patch upper	23	46	0	1	2	6	1	1	1	11	0	5	6	
Ignace Island	Backside	48	28	0	1	1	5	0	1	1	8	3	2	5	
Sumez Island	Mears Pass Seaweed	0	30	0	0	2	14	1	1	1	40	8	2	4	
Cone Island	East Side	24	14	0	0	5	11	0	0	0	20	15	4	7	
San Fernando/Cruz Isl	11 Mile	13	39	0	0	1	22	0	1	1	3	0	8	14	
Prince of Wales	Il Defonso	11	34	0	0	1	11	0	0	0	30	0	5	8	
Baker Island	Port Assumption	0	47	0	0	2	20	0	2	2	14	0	0	0	
San Fernando	Sand Hill Crane	3	35	0	0	1	11	1	1	1	31	4	3	11	
San Fernando	Butler Bay	21	15	0	0	5	0	0	0	1	11	18	11	18	
Dahl Island	Farrallon Bay	19	36	0	1	4	4	1	1	1	26	0	3	6	
Dahl Island	My Beach	1	38	0	0	5	13	0	1	1	16	0	2	15	
Dahl Island	Barbis Beach	0	44	0	0	6	0	0	0	0	35	10	5	0	
St. Johns Island	Piece together	11	61	0	0	1	0	1	1	1	9	6	2	11	
Prince of Wales	Kasaan Bay*														100
San Fernando	Amagura	29	25	0	0	4	3	1	1	1	12	8	5	13	
Channel Island	Fish Ball Beach	8	59	0	5	1	0	1	1	1	12	3	2	10	
Dahl Island	North Bay	27	34	0	1	2	0	1	1	1	16	6	8	7	
San Fernando	Rock Haven	15	45	0	1	2	0	1	1	1	17	7	3	10	
Abness	Peter & Diane Day	0	32	0	0	5	18	0	0	1	18	4	22	0	
San Fernando	Geoduck	14	34	0	0	3	0	0	0	1	21	6	10	12	
	Overall	15.6	31.8	-	0.3	4.4	5.0	0.0	0.0	0.3	14.5	3.7	4.0	6.4	

We were able to establish a monitoring plot at Port San Antonio. We collected approximately 250 pounds off 275 yards of beach. In 2010 350 pounds was collected, and in 2009 we collected 840 pounds off this same area of beach (Figure 2). An additional monitoring plot has been established this year on San Fernando Island at Butler Bay. We feel that there is a significant visual difference after the beaches are cleaned. However, as time passes, debris begins to collect again and eventually the beaches become littered once more.

Figure 2. Results from the Port San Antonio monitoring plot



We also examined the percentage distribution of the most common types of debris. The Trawl, Seine and Cargo nets were on almost all beaches (Figure 3). The greatest percentage occurred on Backside Beach (48%). All other beaches were less than 30%.

Line was found on most beaches. Line was much more evenly distributed than the trawl, seine and cargo net pieces.

Figure 3. The percentage of trawl, seine and cargo net by beach.

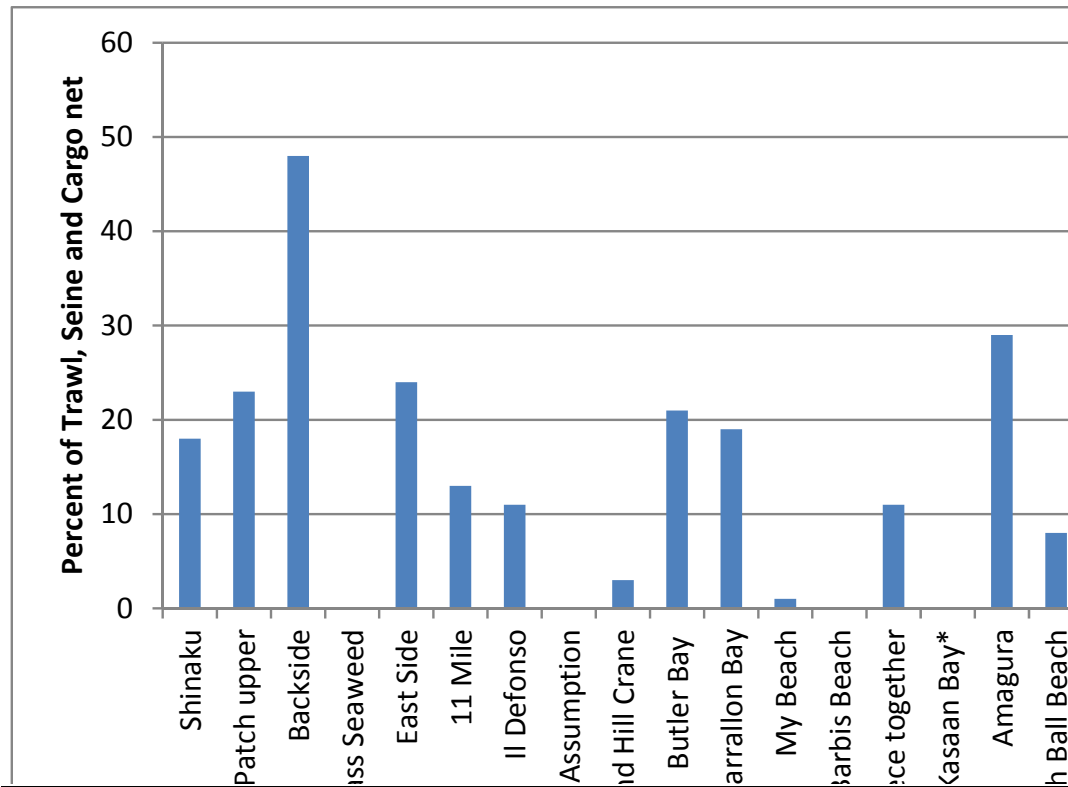
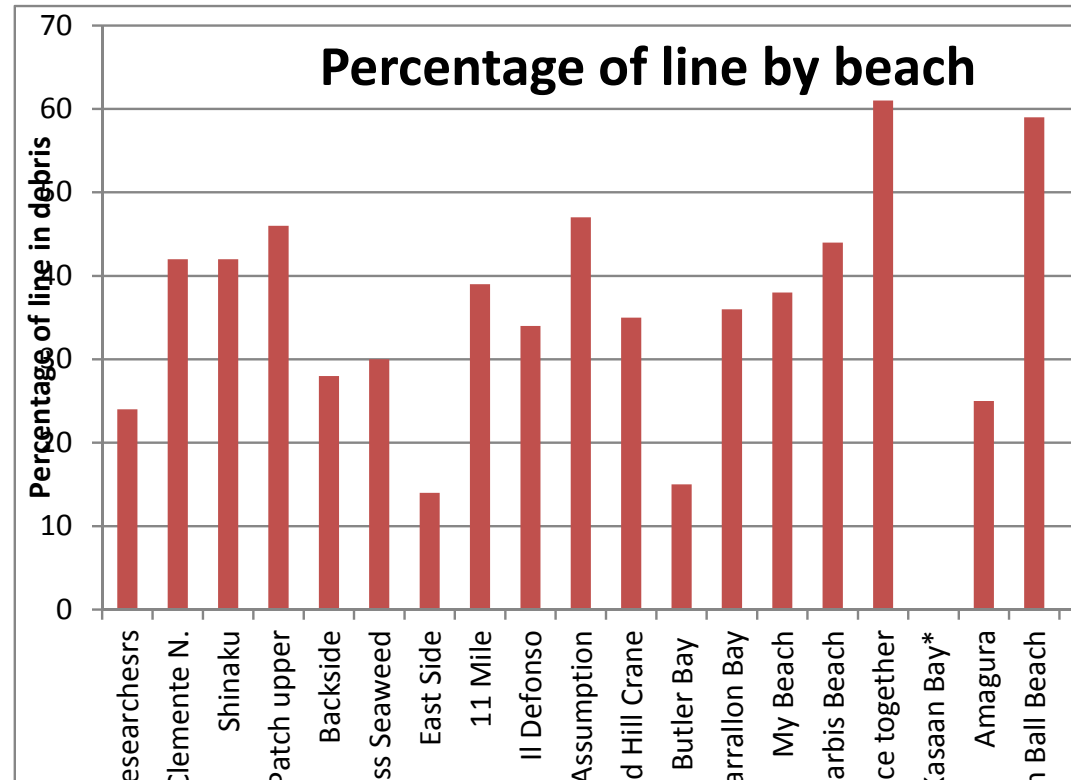


Figure 4. The percentage of line by beach.



## Discussion

The 2011 marine debris cleanup in the Craig area was very successful. We utilized a combination of paid staff and volunteers to collect 17,644 lbs of marine debris from 31,116 yards of beach. This is close to what was collected in past years (2009 and 2010). We were able to choose the days on which we worked and thus optimized good weather, but overall the weather was very poor all summer and fall and we were not able to get to some of the beaches we had targeted. There is still a lot of debris in the Craig area.

A beach on Forrester Island was surveyed. There is a lot of debris on the island and we would like to work on a plan to get it off. However, Forrester Island is a difficult place to work.

Island Charters established its safety plan prior to the start of debris collection. This plan was reviewed with all workers, paid and volunteer, before leaving the dock. Boating safety information was reviewed with each crew on every trip. Island Charters had no work related injuries during this year's clean up. This makes three consecutive years with no worker injuries.



Island Charters' Kathy Peavey uses inflatable skiff to transfer debris from beach to big boat



Volunteers Julie Yates-Fulton and son Hunter sort and weigh debris.

Once again this year all debris was bagged up and brought back to Craig. It was then sorted into more detailed category types and weighted. Although this method required more man hours than the prior year, we feel that it was worthwhile given the more accurate and detailed data obtained for reporting. We would recommend using this method again in the future.

#### Acknowledgements

This project took many people to implement. This project would not have been possible without the support of my family, Matt, Katrina, Melissa and Steven Peavey. Dolores Owen and Gail Slentz were instrumental in their knowledge of bookkeeping and payroll. Barbi Armstrong was a huge help and greatly appreciated – always willing to do any job needed. Thanks also to the City of Craig, City of Klawock, Organized Village of Kasaan, NOAA, SEACC, Craig Fisheries/EC Philips, ALPAR, and the many volunteers who came out to help. Thanks also to the staff at the MCAF for their guidance and support.

#### Enclosures

Form 2s  
Form 4  
Pictures



GALLERY



(L to R): Melissa Peavey, Betsy Claus, and Dolores Owen gear up for Craig 4<sup>th</sup> of July parade. The crew won first place for most creative float!



Kathy Peavey expands her beach cleanup project to Kilmore Quay, Ireland!



Shannon and Kathy with a nasty net – hard work!



As part of Craig Middle School Career day, Kathy Peavey educates kids on her beach cleanup project using video Steven Peavey made in 2010/11. Students sorted micro debris to be used in a mosaic project.



Barbi Armstrong, Doug Rhodes, and Cheryl Fecko using float plane dock to offload – another great haul.



Colorful debris pile...



John Weyhmiller and Gail Slentz offload debris from Kathy's boat  
To the M/V Mary Carl, which John then hauls to Craig



A handful of micro debris from Dahl Island hot spot.