

Southern Montague Island 2012 Marine Debris Cleanup Final Report

By

Chris Pallister
Gulf of Alaska Keeper

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One of many debris piles collected from Macleod Harbor, Montague Island area beaches

For:
Marine Conservation Alliance Foundation
431 N Franklin St Suite 305
Juneau, Alaska 99801



Introduction

In spring of 2012, the Marine Conservation Alliance Foundation (MCAF) solicited proposals for removing marine debris (MD) from Alaskan ocean beaches. Gulf of Alaska Keeper (GoAK) submitted a proposal for cleaning beaches near the southern tip of Montague Island, from the Macleod Harbor area in Prince William Sound (PWS). MCAF funded the project through their Coastal Impact Assistance grant (CIAP) (F12AF 70202, CFDA 15.668). In addition to MCAF funding, GoAK obtained support from the Chugach National Forest to help with fuel and debris disposal costs associated with the MCAF project and other GoAK cleanup projects in PWS during 2012. Volunteers also donated time to the Macleod Harbor project and one vessel was donated to help support the cleanup crew. In addition to the MCAF project on southern Montague Island, MCAF, through a grant from the Alaska Brewery Company, supported the annual GoAK PWS volunteer cleanup which was held May 18 through 20 in the Bainbridge Passage area. This report describes the work and results of the PWS volunteer MD cleanup and the southern Montague Island professional MD removal project.

Cleanup Methods

PWS is located in the most northerly portion of the Gulf of Alaska. The composition of the beaches is similar to that of Outer Southeast Alaska with many uneven bays and islands. The shore is rocky with sand/pebble interspersed. Some beaches within PWS are relatively protected while the beaches on the outside are subjected to high winds and cleanups may only take place during periods of calm weather.

GoAK uses a combination of volunteer and professional crews to clean beaches in PWS. All the work is done essentially by hand, with minimal tools such as serrated knives and levers for extracting nets and ropes. Chainsaws are also occasionally used to cut drift logs for net and line removal. Nearly all other cleanup is done simply by picking up debris by hand. Debris is bagged if small enough and the bags and larger debris are then carried to a landing craft. If coastal conditions adverse enough, or either there is very large quantity of debris or the debris is too large to move easily, a helicopter is occasionally used to sling debris offshore onto a waiting vessel or to an area where a landing craft may more easily access it. Once aboard a landing craft, the debris is then transported to a port town where it is transferred to 40-yard dumpsters and transferred to a recycling center in Anchorage.

Volunteer Cleanups

Early each spring, preferably in mid-May, GoAK organizes and conducts a volunteer vessel-based marine debris cleanup project in Prince William Sound. Since initiating the volunteer cleanups in 2002, GoAK has developed a core group of experienced beach cleanup volunteers, and a dedicated group of vessel owners that donate their time and vessel to the project each year. The volunteer cleanups are limited in size by vessel capacity and by weather. Many of the shorelines cleaned each season are up to seventy miles from port, so the volunteer cleanups by necessity are 3 to 4 days long.

GoAK Professional Cleanups

The GoAK professional cleanups are comprised of experienced laborers who have worked with MD previously. They work in the more remote and rugged portions of the PWS area and the Gulf of Alaska coast where it is difficult to use volunteers efficiently. They also gather and haul the MD collected by the volunteers.

Cleanup Results

2012 Volunteer Cleanup

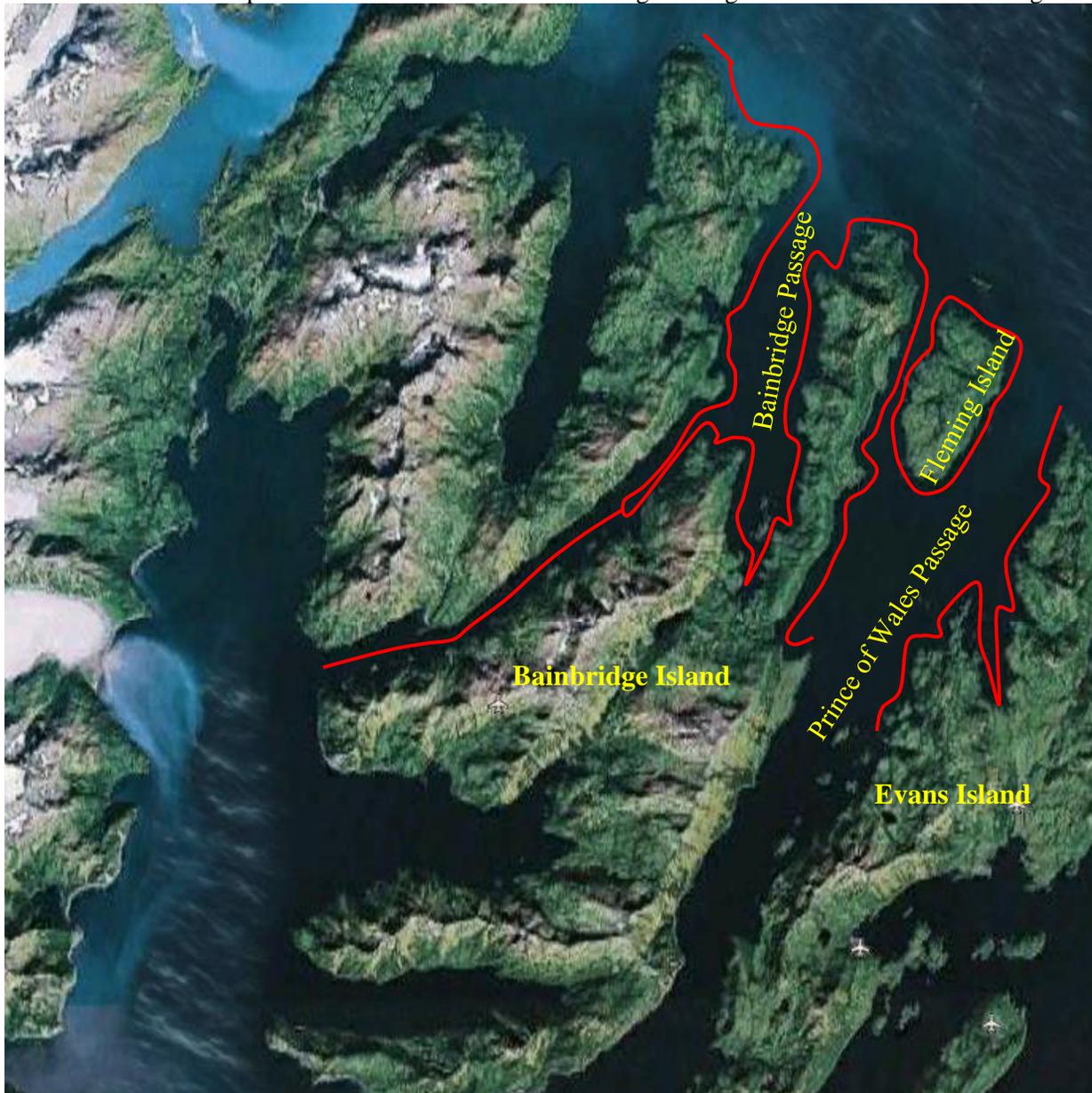
GoAK's 2012, 11th annual PWS volunteer MD cleanup was held May 17th through May 20th with the target area being Bainbridge Passage and Port Bainbridge. The volunteer cleanup this year was delayed one week because of the record snow depths PWS accumulated over the winter. We hoped an extra week would allow snow to melt further back from area beaches. Unfortunately, considerable amounts of snow still lingered on many of the beaches we hoped to clean and southern Bainbridge Passage and Port Bainbridge itself had so much snow that the beaches, and all marine debris in those areas, were completely buried. The volunteers therefore focused on cleaning northern Bainbridge Passage, Fleming Island, northern Bainbridge Island, and the northern Prince of Wales Passage area.

In addition to the heavy snow cover, this volunteer cleanup project was hampered by unseasonably cold weather. Heavy rains and ceaseless winds plagued the project. Unprotected beaches were hammered by heavy surf that made accessing them difficult. While most volunteers traditionally camp on shore, the weather turned so nasty that most of them transferred to the vessels for shelter the second night in the field. A considerable amount of time was lost during this project protecting the volunteers from the weather. However, despite the nasty weather conditions and snow cover, the volunteers were still able to pick up a landing-craft load of debris that was hauled back to Whittier on May 20th. Typically, a volunteer cleanup project will remove approximately 6 tons of MD from PWS. However, because of the conditions, this cleanup only removed about 4 tons of debris, slightly less than a full 40-yard dumpster. A majority of the debris by weight and volume was comprised of old nets, lines, buoys and fenders. This particular area of PWS had not yet been hit by the Japanese tsunami debris, and, therefore the volume of Styrofoam and other foam debris was similar to that of past years.



Some of the 18 volunteers who sought shelter on the C~KEPR from the weather, May 19, 2012

2012 Volunteer Cleanup Shoreward of **Red** Line in Bainbridge Passage and Prince of Wales Passage



Most vessels and volunteers departed the morning of May 18th for the cleanup target area but two vessels departed earlier on May 17th. These two vessels and crews began cleaning in the northern areas of Port Bainbridge and Prince of Wales Passage. The remaining 7 vessels and volunteers joined them on May 18. Two of the vessels from the Forest Service cleaned into southern Bainbridge Passage and then into Port Bainbridge where they were eventually turned back by deep snow. 73 volunteers spent several days cleaning beaches. Nine donated vessels transported volunteers and hauled debris for the volunteer cleanup. Volunteers and GoAK board members donated 2330 hours to this project. Eight kayak volunteers cleaned the more inaccessible pocket beaches along the headlands on either side of the entrance to Bainbridge Passage, around the north end of Bainbridge Island to the northwest side of Prince of Wales Passage, and around Fleming Island. Vessel-based volunteers cleaned beaches in the northern half of Prince of Wales Passage and the northern half of Bainbridge Passage. None of these areas had ever been cleaned before.



Volunteers amongst Port Bainbridge icebergs

Antonia Fowler

Most of the debris collected during the volunteer cleanup, both by weight and volume, was comprised of old derelict fishing gear such as floats, buoys, nets and lines. While most of the debris was loaded into the CKER for transport to Whittier several piles of debris were stashed on the northern end of Bainbridge Island and Fleming Island by the kayak volunteers. Those debris piles were removed later in the summer during the southwest PWS professional cleanup.



Load of debris from the Bainbridge Island area.

Professional Cleanup

On April 25, as part of MCAF's Montague project, GoAK flew to Jeannie Cove on Montague Island to access snow conditions. It was during this aerial survey that the full extent of the tsunami debris problem became apparent. The survey also showed that beaches in many of the 2012 project areas were still snow covered. Because of snow, both the volunteer and professional cleanup were delayed one to two weeks.

On May 26, following the volunteer cleanup project, GoAK's professional crew began the MCAF 12-day southern Montague Island cleanup project. Macleod Harbor is the only area that provided shelter for the work vessels in that area, so the vessels anchored there. The cleanup plan was to work south out of Macleod Harbor, around the southern tip of Montague Island and up the outer coast toward Jeannie Cove. However, like the volunteer project a week earlier, this project too was plagued by hard rains, high winds and rough surf throughout its duration. Macleod Harbor turned out to be a blow hole with winds reaching 70 knots at times. The saving factor was that the beaches in this area were readily accessible to foot traffic without blocking headlands that would have forced the crew to be transported by inflatable beach to beach. Consequently, once ashore, the crew was able to work for miles in either direction.

However, because of the rough surf that plagued this project throughout, the crew often had to be transported to distance locations by a larger vessel rather than by the customary inflatables. On one occasion a visiting press helicopter transported some of the cleanup crew to San Juan Bay.



Crew ready to depart Macleod Harbor for San Juan Bay



Press helicopter dropping cleanup crewman at San Juan Bay. Note remnants of wrecked vessel in the sand.

A relatively large amount of debris was collected during this project, particularly from Point Bryant through San Juan Bay to Cape Cleare at the southern end of Montague Island. The northern entrance to Macleod Harbor north around to Point Woodcock also had heavy debris deposits. Many unique large items were found including a derelict 16-foot fiberglass skiff, a wrecked airplane, a large fiberglass electrical or telephone utility box, and a large outfitter's tent buried in beach sand. The remnants of a wrecked seine vessel were found buried in the sand at San Juan Bay. No attempt was made to remove the airplane. Removal of the skiff was abandoned when it proved to be holed and, hence, non-floatable. It was too heavy to lift.

Many large nets were scattered along the length of the shoreline cleaned during this project. Several very large nets were found in the Point Bryant area between Macleod Harbor and San Juan Bay. Point Bryant was exceedingly difficult to access because of extensive rocky reefs and high surf. Approximately two miles of heavily fouled shoreline in this area were not cleaned because we ran out of time. Because a Japanese NHK TV news team was in the area with a helicopter, we were able to hire the helicopter to haul over 3 tons of debris from an area near Point Bryant that we could not access by boat. One partial net hauled by the helicopter alone weighed 4200 pounds. We were only able to extract approximately half of that particular net from the beach. The 2 miles of shore remaining to be cleaned in the Point Bryant area will probably need to be done with the help of a helicopter, both for crew access and then removal of collected debris.

Because the landing craft we used was too small for the helicopter pilot to safely sling the debris directly aboard, the Super Sacks of debris were dropped in front of the LC and the laboriously emptied and transferred to the LC. Helicopter sling work requires a large barge or landing craft.



Bailing and digging out derelict skiff.



Extracting net from Macleod Harbor beach



Unloading hawser from Macleod Harbor



An airplane wrecked on the beach at the head of Macleod Harbor. No effort was made to extract the plane other than to remove broken pieces scattered about the site.



Buried outfitter's tent in Macleod Harbor



Derelict fiberglass electrical utility box on Macleod Harbor Beach



A-Star helicopter used to sling debris from Point Bryant to Macleod Harbor



Crew extracting Point Bryant nets and hawsers. The portion of the net partially extracted here weighed 4,200 pounds and was hauled out with an A-Star helicopter.



Sling loads of nets and other debris transferred to Macleod Harbor from Point Bryant. The nets were cut into large chunks and loaded into Super Sacks for helicopter slinging.



Dropping a load of Super Sacks on Macleod Harbor Beach.



Emptying Super Sacks of nets for transfer to a landing craft.

Because there turned out to be so much debris along the southwest Montague Island coast, the crew collected and piled it up much faster than the landing craft could haul it 100 miles back to Whittier. In order to catch up on the collected debris, we hired Lazy Charter to haul a load of Macleod Harbor debris to Whittier.



Load of Macleod Harbor debris on Lazy Otter 45-foot landing craft



Macleod Harbor debris being transferred to the Center for Alaskan Coastal Studies art project

In total, we hauled 3.5 loads or 15 tons of debris from this cleanup to Whittier. About two thirds of the Lazy Otter load was taken by the Center for Alaskan Coastal Studies to be used in a marine debris art project. The remainder of the Macleod Harbor debris was transferred by Alaska Waste from Whittier to Central Alaska Recycling in Anchorage for sorting.

While most of the debris collected during this project predated the arrival of Japanese tsunami debris, as can be seen in the picture of the Lazy Otter landing craft above, a considerable number of Japanese aquaculture floats were collected. However, nearly all of those floats were collected during a short break in the weather that allowed the crew to briefly access the Gulf of Alaska side of Montague Island in area at the southern end of Jeannie Cove. Jeannie Cove was covered with tsunami debris, but the crew only had enough time to fill the work boat with floats before high surf made them abandon the effort. Many landing-craft loads of debris could be quickly collected in Jeannie Cove. However, because of offshore reefs and generally bad surf conditions, this area will need to be cleaned with the assistance helicopters and/or wheel planes to transport crews and remove collected debris.

While the Macleod Harbor project was originally scheduled to only be a 12-day cleanup, it turned into a considerably longer project. Three times the cleanup crew had to return to Macleod Harbor across Montague Straits from the Latouche Island area to help consolidate and load debris when landing craft were available. The crew spent 5 additional days removing all the debris that had been collected during the first twelve days of cleanup work. Volunteers also contributed 260 hours to this project.



Jeannie Cove tsunami debris



Patrick Chandler and Ryan Pallister with pile of Jeannie Cove tsunami debris

Patrick Chandler

Southern Montague Island May/June 2012 Marine Debris Cleanup
Beaches shoreward of **red line** cleaned





Landing craft load of Macleod Harbor debris in Whittier

David Janka



Emptying landing craft load of nets and lines from Macleod Harbor

Mika Zwollo

PWS Conclusion

Volunteers removed 4 tons of debris from beaches in the northern Bainbridge Passage and Prince of Wales Passage area with limited additional cleaning in Port Bainbridge. Heavy snow accumulation prevented much cleaning effort in Port Bainbridge. Most of the collected debris was concentrated in discrete pockets isolated by rocky headlands. The professional crew cleaned approximately 12 miles of shoreline in the Macleod Harbor area removing 3.5 landing-craft loads weighing approximately 15.5 tons. These loads were quite heavy because of the number of heavy trawl nets, lines and miscellaneous heavy debris removed from this area.

Tables 1-3 contain data related to the professional Macleod Harbor cleanup. No data from the volunteer cleanup is included in Table 1-3 because the volunteer cleanup was conducted over 4 days and scattered along over 45 miles of coastline with different groups of volunteers working on different beaches. There simply is no easy way to collect volunteer cleanup data other than to track gross weight of debris hauled back for disposal. Estimating from the debris transferred to a dumpster in Whittier, and consistent with other cleanup areas in the southern sound, the debris gathered during the volunteer cleanup was around 70% commercial fishing related debris by weight.

* Table 1. Date, location, latitude, longitude, beach length and width, natural accumulation area, trawl net samples & number of HSDN samples.

Date 2012	Location	Beach	Lat.	Long.	Beach Length	Beach Width	Accumulation Area	Net Samples	HSDN Sample
Professional May 24-27	Macleod Harbor	Woodcock /Pt. Bryant	59.54.01 59.50.44	147.48.57 147.54.11	8 miles	100yd	yes	6	1
Professional May 27-29	San Juan Bay	Bryant to C. Cleare	59.49.29 59.47.02	147.54.39 147.55.46	4 miles	100yd	yes	11	1
Professional May 29-30	Jeannie Cove	South End	59.49.26	147.39.06	440yd	100yd	yes	no	0
TOTAL								17	2

* Table 2. Type and weight by location and pounds per 100yds

Location	Beach	Trawl Net	Crab Line	Dom. Gill Net	HSDN	Floats	Misc. Lines	Other Fishing Related	B a n d	Plastic Bev Bottle	Plastic Non-Bev Containers	Cans	Foam	Non Vessel Related	Total Weight	Lbs Per 100 yds
M. H.	All	5285	755	0	151	2265	1359	755	0	604	906	0	755	2265	15100	107
S.J.B.	All	6040	755	0	151	2265	1359	1510	0	302	453	0	755	1510	15100	214
Jeannie	South	0	0	0	0	450	0	0	0	0	0	0	250	100	800	159
	Total															

* Table 3. Percentage of debris by location and overall by weight

Location	Beach	Trawl Net	Crab Line	Domestic Gill Net	HSDN	Floats	Misc. Lines	Other Fishing Related	Banding	Plastic Bev Bottle	Plastic Non-Bev Containers	Cans	Foam	Non Vessel Related
M.H.	All	35	5	0	1	15	9	5	<1	4	6	<1	5	15
S.J.B.	All	40	5	0	1	15	9	10	<1	2	3	<1	5	10
Jeannie	South	0	0	0	0	65	0	0	0	0	5	0	30	15

* TABLE NOTES:

1. Only Japanese tsunami debris was collected at Jeannie Cove. The Jeannie Cove total percentage is greater than 100% because of the overlap of the foam, float, and non-vessel categories. Styrofoam Japanese oyster-culture floats comprised a significant amount of the total volume, but not nearly as much by weight. However, the Table 3 Jeannie Cove foam category includes both foam floats and foam building insulation. The float category for Jeannie Cove records only hard plastic floats...not foam floats which are recorded under the foam category. The foam category itself was approximately 70% Styrofoam floats. The non-vessel related category for Jeannie Cove also includes foam building insulation and items such as fuel containers. Although a few Styrofoam floats were found in San Juan Bay, their total component of the total debris collected was insignificant.
2. Several large debris items found during this project were not removed such as a wrecked airplane, a derelict skiff and parts of wrecked fishing vessels. However, some large items such as totes, a large fiberglass fishing vessel flybridge helm and cowling, and a heavy fiberglass electrical utility box were removed. The items not removed are not reflected in these tables. The tote and fishing vessel components are included in the "Other Fishing Related" category.
3. While many pieces of banding were recovered in both Macleod Harbor and San Juan Bay, their contribution toward the total weight of debris removed was considerably less than 1% and, therefore, is recorded only to indicate their presence but their percentage was not added to the total percentage in Table 3. The same holds true for cans.
4. These figures are all estimates taken from combined estimates of debris composition on the beach, debris composition as unloaded into dumpsters, from helicopter sling weights, and from the known total weight of the debris collected. Trawl nets are exceedingly heavy and difficult to weigh. On this project we weighed the approximately 50% portion of a trawl net extracted from a beach and then hauled out in 3 helicopter slings. The slings weighed 11,000, 14,000 and 17,000 pounds each or 42,000 pounds total for just a portion of one net. Three and half 40-yd dumpster loads of debris were extracted during this cleanup. The dumpster loads weighed 2.2, 4.3, 4.4, and 4.6 tons or 15.5 tons total collected during the Macleod Harbor cleanup.
5. Debris density per pound was much higher at San Juan Bay than in Macleod Harbor because of the number of heavy nets, totes, hawsers, tires, boat parts, and other large items found at San Juan Harbor. Hence, the estimated pounds per 100 yards at San Juan Bay is twice that of Macleod Harbor.