



**THE
IKKATSU
PROJECT**

SOUTH KUIU CLEANUP 2018

SOUTH KUIU CLEANUP 2018 SUMMARY REPORT

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OVERVIEW

The issue of marine debris and the high concentration of plastic in the marine environment has been the driving focus of the Ikkatsu Project since it first began operations in 2012.

Every year, between 8 and 12 million tons of plastic enter the ocean. While larger pieces may break into smaller ones in the water and on the beaches, that plastic never completely breaks down. Individual pieces of plastic are rendered microscopic, very difficult to see, but they are not gone. The effects of this growing plastic load in the oceans – on all kinds of sea life, from plankton to whales, and even the people who depend on seafood in their diets – are only beginning to be understood.

Cape Decision, on the southern tip of Kuiu Island, is one of the most remote locations in southeast Alaska, about 100 miles west of Wrangell and 100 miles south of Sitka. The beaches on the windward side of the peninsula are exposed to the full force of the Pacific while the coves and inlets to the east are more protected. The waters are busy with whales and otter, sea lion and salmon. Kelp forests run along the near shore in many places and there is always an eagle or two watching from the tall cedars.



Although Decision Pass is often host to transient cruise ships and fishing vessels, Cape Decision itself is difficult to access. The area is prone to high winds and often inclement weather that makes dependable travel to and from the Cape, as well as between certain points on south Kuiu, virtually impossible. Beaches are rocky

and when combined with large swells, make landing and launching in small craft a risky proposition. As with other projects in Alaska, flexibility is key to success.

While there was prior cleanup activity on one of the beaches studied in this program (Comma Cove, Beach 3), there were no coordinated surveys or sampling and no follow-up actions. The most recent cleanup was over 10 years ago.

The main objectives of the 2018 program were to conduct debris surveys on several remote wilderness beaches near the south end of Kuiu Island, collect water samples for microplastics screening and clean accumulated debris from target beaches. Survey results will be shared to the national NOAA database and will be available online for use by research partners. Water samples will be processed and results used as baseline records for the area, to be compared with future samples.

In addition, one specified beach was singled out to be the location of the multi-year deposition study. Special effort was taken to ensure complete debris removal, to the point that we can say it is 99% clean. When surveys and cleanup are done again in 2019, anything that is collected will be known



to have arrived in the intervening time. By repeating the process each year, we will begin to have a better understanding of how debris travels and the rate at which it builds up on shore. To our knowledge, this is the first such deposition study in this area.

PERSONNEL

The surveys and cleanup efforts involved volunteers as well as lighthouse personnel and staff. A total of fifteen individuals worked on some aspect of the program, over a three-week period from July 10th – 29th, 2018.

PROTOCOL

For purposes of debris counting, the NOAA Standing Stock Survey protocol was used. Because this method is constructed for beaches of 100 meters or more in overall length, some modification was necessary on several of the smaller beaches that were studied. (The Landing and Wolf Track Beach were laid out according to established protocol; for identification purposes, Comma Cove beaches are numbered 1-4, with two transects surveyed on the first beach and one transect each on the others.)

Water sampling was conducted using methods adapted from EPA grab sampling protocols and involved collection in stainless steel 1-liter sample bottles for later analysis.



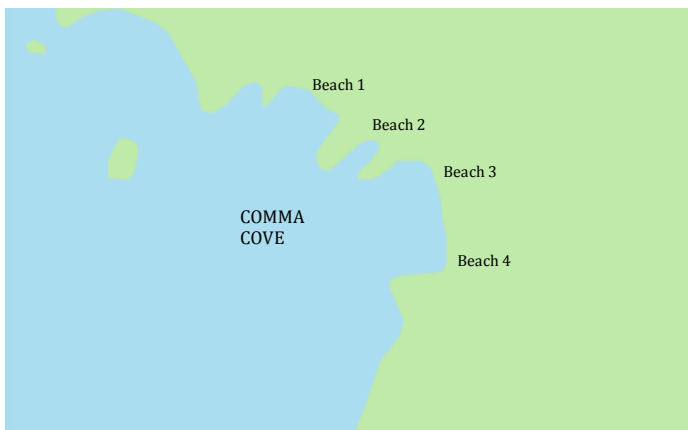
FIELD SITES

Given the amount of logs lining the high-water mark of all of these beaches and the way they are deposited in shifting piles, often many layers deep, it can be difficult to determine exactly how much debris remains after cleanup operations are completed. All efforts were made to get to

beach level and where debris was spotted, it was retrieved, even under the logjams.

The Landing

Located approximately a half-mile northeast of the lighthouse, the Landing was chosen as the beach for the multi-year deposition study because of its accessibility in all weather conditions and its clearly defined boundaries. Although there are a considerable number of drift logs at the top of the rocky cove, it was possible to work around them with more success than at other locations. Also, because this beach is accessed more frequently than the others in the program, it will be easier to monitor over time.



Comma Cove

A semi-circular cove on the western side of the island with four separate and distinct beaches. The deposition pattern overall resulted in a noticeable difference in debris concentration, with southern and central sections being more heavily littered than those to the north.

Lighthouse Inlets

A collection of three slot beaches immediately west of the lighthouse is more exposed to the incoming swells than those on the east side and yielded mostly smaller debris. Logs were less of an issue on these beaches and items were relatively easy to locate and remove, including remains of items associated with the Coast Guard era at the lighthouse: glass fragments, china and metal.

Wolf Track Beach

This beach is the only beach surveyed that is on National Forest property, located about 4 miles north of the lighthouse. (The original plan was for surveys and sampling at Howard Cove, on the west side of the peninsula, but inclement weather and transportation problems forced cancellation.) The

debris collected here was transported back to the lighthouse by dory and kayaks. Oversized items left in place (mostly buried) included plastic culvert, bait barrel and a large plastic dock bumper. (The dock bumper was mixed in with drift logs and with a weight in excess of 500 lbs, could not be moved with the equipment on hand.)

RESULTS

Standing Stock surveys at each of the locations yielded varying degrees of debris, with the outer coast beaches of Comma Cove being more affected than those on the protected east side of the peninsula. That said, every beach



had significant amounts of marine plastics; general observations of beaches further north in Affleck Canal and Kell Bay revealed extensive debris, and are areas that should be looked at more closely in 2019. (Individual survey forms are included in the Appendix.)

Six water samples were collected. In addition to samples from the surveyed beaches, a sample from Kell Bay and another from Howard Cove provided more diverse data points that will be used to direct further research. Collected samples have gone through preliminary analysis and plastic fiber has been present in all of them. (A list of collection sites and information about the amount of plastic found is included in the Appendix.)

An estimated total of 2625 lbs. of debris, most of it plastic, was removed from beaches. 575 lbs. of this total was transported to Wrangell for disposal. The remaining debris is concentrated in areas above the beach, past the high tide mark and storm surge zone, and will be removed in the 2019 cleanup as part of a larger transport operation. (Specific locations of remaining debris are included in the Appendix.)

- Large debris, including several buoys, assorted metal objects and a chair, was collected from the Landing and concentrated in one site above the high tide line for removal in 2019. Smaller items were bagged and transported to Wrangell for disposal. (350 lbs.) Total combined weight: 450 lbs.
- Debris collected from the four Comma Cove beaches was concentrated in three sites in the woods above the high tide line for removal in 2019. Total combined weight: 1750 lbs.
- Debris collected from lighthouse beaches was bagged and transported to Wrangell for disposal. Total weight: 150 lbs.
- Debris collected from Wolf Track Beach was divided, with a load of smaller items returned to the lighthouse via dory, then transported to Wrangell for disposal. Larger items, including an oyster buoy and nets, were placed in the woods above the high tide line for removal in 2019. Total weight: 275 lbs.

NEXT STEPS

Planning is already underway for the 2019 project. Priority will be given to the deposition study and to monitoring the beaches already been cleaned and surveyed in 2018. Data collected from these areas will be immediately

relevant and able to be compared with baselines.



Also, more attention will be given to other east side beaches because of their relative accessibility compared to the west side of the peninsula. There are two large

bays north of Cape Decision: Kell Bay and Port McArthur. At the head of each of these are beaches that appear to be choked with plastic debris. Getting to these areas and cleaning them up will be another focus of the 2019 effort.

Transport and disposal of collected debris will also be handled differently in 2019. It became obvious fairly quickly this year that we were picking up more debris than we had room for on the outgoing boat trips, which led to prioritizing what would go and what would stay. We are currently speaking with the US Coast Guard base in Sitka about conducting training lifts, moving netted debris by helicopter from beaches to a tender offshore, probably the most efficient way to get it done. Other contingency plans are being developed as well, with the goal of leaving behind as little as possible.

Finally, several films are being made about this year's project (a 28-minute feature, a 10 to 12-minute festival cut and several shorts), and will be finished and available in 2019. As part of engaging local communities in the project, a short tour of southeast Alaska is being scheduled featuring the film as part of a public presentation.

The 2018 cleanup was funded through a combination of individual donations and grants. Operating in Alaska is an expensive proposition; transportation expenses are high and supplies are all brought in by sea, making each

individual item that much more costly.

At this time, funding is actively being sought for the 2019 effort.



CONCLUSION

The problems associated with marine plastics are turning out to have serious consequences for people as well as other life up and down the aquatic food

chain. The fact that so much plastic is on these remote beaches and in the water illustrates the far-reaching nature of the situation. The debris removed from Cape Decision beaches is a small step in the direction we need to go to make our oceans healthier.

While the data provides critical information, what really matters is how it is used and how connections can be made between wild places like these and people everywhere. People protect what they know and love and it is important for us all to understand what is happening on these wilderness shorelines and how our own behaviors and habits play a part if there is to be any real progress in improving conditions. There needs to be that spark in each of us, that connection, and working consistently toward that point is one of the Ikkatsu Project's primary goals.

ACKNOWLEDGEMENTS

Thanks to the individual volunteers for all of their hard work and tireless effort: Mary Campbell, Micah Campbell, Lucas Drawdy, Beau Gaughran, Heather Gordon, Riley Haizlip, Amber Higgins, Eleanor Hines, Natalie Lord and JoAnn Moore. It could not have happened without you. Thanks also to the staff of the Cape Decision Lighthouse Society for the excellent base camp and the support throughout the project. Speaking of support, thanks also goes out to the Surfrider Foundation, Klean Kanteen, Werner Paddles and the University of Puget Sound for all they have done and continue to do to make this program a success.

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The Ikkatsu Project

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APPENDIX

- Whole Water Microplastic Sampling (p.11)
- Standing Stock Survey Worksheets (p.12-37)
- Debris Collection sites (Estimated Weight/Location)

Comma Cove

(Beach 1 & 2) 850 lbs.

N 56.5287°

W 134.81192°

(Beach 3) 500 lbs.

N 56.4768°

W 134.81453°

(Beach 4) 400 lbs.

N 56.3648°

W 134.82357°

Landing

100 lbs.

N 56.6157°

W 134.77545°



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WHOLE WATER MICROPLASTICS SAMPLING, SOUTH KUIU CLEANUP 2018

Date (MM-DD-YEAR)	Sample ID MICRO-WW-MMDYEAR-SAMPLE#-PROJECT ABBREVIATION	Time (military)	Latitude	Longitude	Beaufort Scale	Wind Direction	Water Temp (F)	Notes	Plastic per liter Fibers/Fragments
7/12/18	MICRO-WW-07122018-1-SKC	1500	N 56.3199°	W 134.7049°	2	SSW	49	Wolf Track Beach Port McArthur, Tongass Nat. Forest	25/0*
7/13/18	MICRO-WW-07132018-2-SKC	1615	N 56.9014°	W 134.1131°	N/A	N/A	51	Western Cove Kell Bay	5/0
7/20/18	MICRO-WW-07202018-3-SKC	1245	N 56.0277°	W 134.8998°	3	SW	47	Comma Cove Cape Decision	22/0
7/20/18	MICRO-WW-07202018-4-SKC	1700	N 56.3046°	W 134.93413°	6	W	N/A	Howard Cove Tongass Nat. Forest	13/0
7/27/18	MICRO-WW-07272018-5-SKC	1130	N 56.6111°	W 134.77432°	1	SW	49	The Landing Cape Decision	9/0
7/28/18	MICRO-WW-07282018-6-SKC	1430	N 56.1098°	W 134.80983°	5	WSW	47	Lighthouse Beaches (Gut) Cape Decision	7/0

*One fragment was found in one single subsample. This is the only fragment found in the samples analyzed so far.

Overall average plastic fibers per liter found is approximately 13.