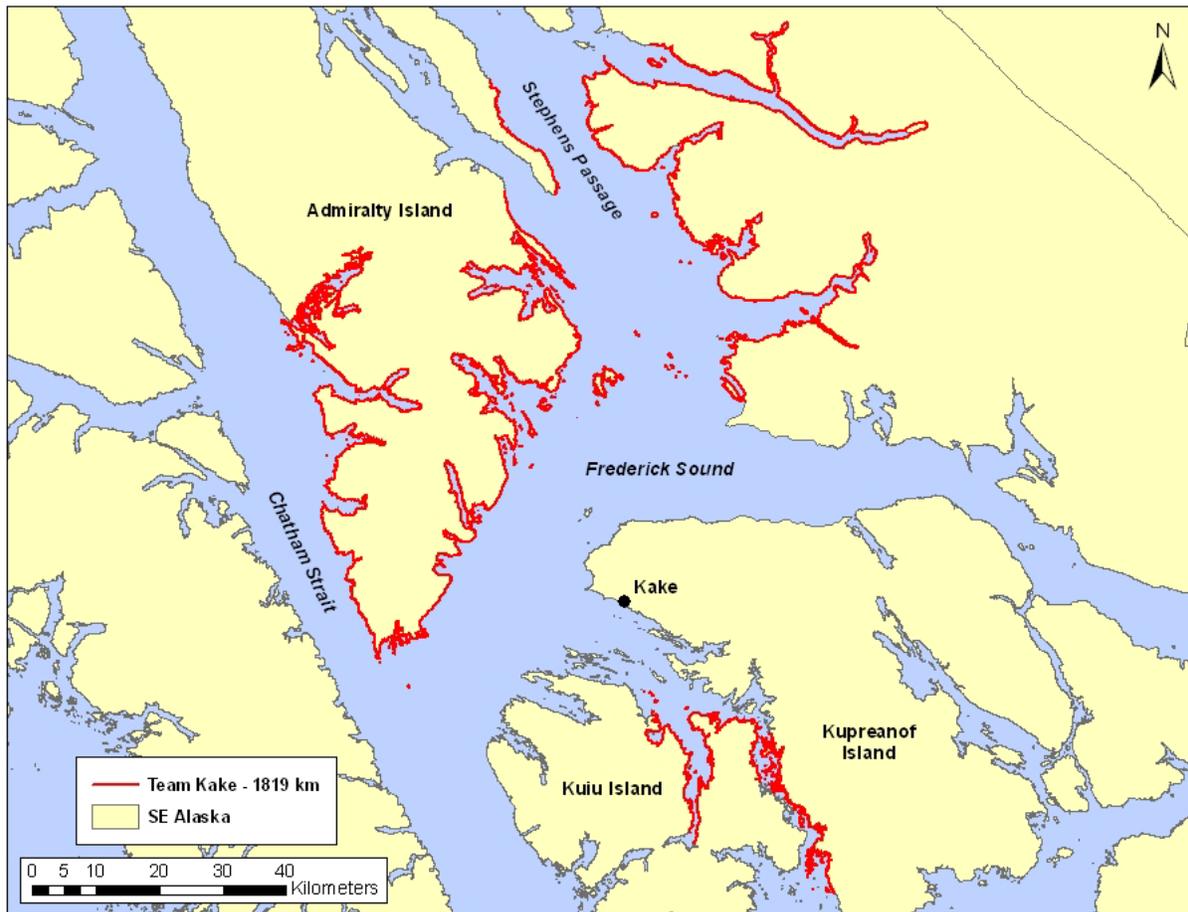


FLIGHT REPORT
ShoreZone Aerial Video Imaging (AVI) Survey
Southeast Alaska
July 20 – July 25, 2009
Team Kake (KK)



Prepared for:
NOAA National Marine Fisheries Service



By:

COASTAL & OCEAN RESOURCES INC.

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ShoreZone is a coastal habitat mapping and classification system in which georeferenced aerial imagery is collected specifically for the interpretation and integration of geological and biological features of the intertidal zone and nearshore environment. Oblique low-altitude aerial video and digital still imagery of the coastal zone is collected during summer low tides (zero tide level or lower), usually from a helicopter flying at <100 m altitude. The flight trackline is recorded at 1-second intervals using Fugawi electronic navigation software and is continuously monitored in-flight to ensure all shorelines have been imaged. Video and still imagery collected are georeferenced and time-synchronized. Video imagery is accompanied by continuous, simultaneous commentary by a geologist and a biologist aboard the aircraft. The imagery and commentary are later used in the definition of discrete along-shore coastal habitat units and the “mapping” of observed physical, geomorphic, sedimentary, and biological features in those units. More than 20 agencies and groups support the ShoreZone Coastal Habitat Mapping Program in Alaska. For more information on the ShoreZone program and its partners, please visit Coastal and Ocean Resources, Inc. web site at <http://www.coastalandoceans.com>.

The purpose of this flight report is to summarize the field activities of the ShoreZone aerial video imaging (AVI) survey conducted out of **Kake, Alaska** during the low-tide window of **July 20-25th, 2009**. The survey was conducted by Coastal & Ocean Resources Inc. (CORI) under contract with NOAA National Marine Fisheries Service. A coastal ecologist from Archipelago Marine Resources (AMR) provided biological observations during the flights. Table 2 provides a summary of crew affiliations and responsibilities.

The tables and figures on the following pages summarize the extent and location of the AVI data and imagery collected by the team, a total of **1,819 km of shoreline**. The team utilized a helicopter chartered from Coastal Helicopters in Juneau, Alaska. Imagery was collected looking at the shoreline from the left side of the aircraft with the rear door removed. A total of 21 mini DV master tapes were collected during the survey and recorded to DVDs. This report contains a summary table for each tape, illustrating its location, length, and key geographic points. Maps for each tape are annotated with representative geographic names, trackline times (in hh:mm:ss UTC in 24-hour clock time; UTC time is 8 hours ahead of Alaska Daylight Time), and photo numbers. The six-digit UTC time is also imprinted on the video imagery that is provided on DVDs with this report.

Representative digital still photos from each day of the survey are provided in the last section of this report. All photos are supplied on DVD, organized by tape number for each team, consistent with the image library. More than 14,100 photos were collected by the team. The shapefiles and GIS data that accompany this report on DVD illustrate the flight trackline positions at 1-second intervals (displayed by tape number), as well as the digital shoreline segments flown. Within each survey, data and imagery are linked by a date time code (yyyymmddhhmmss). When processing is complete, all imagery will be posted online at the NOAA ShoreZone web site (<http://www.fakr.noaa.gov/maps/szintro.htm>).

Table 1. Flight Report Contents

Section	Details	Pages
Tape logs and maps	Tapes: SE09_KK_01 to SE09_KK_21	4 – 45
Daily sample photos	July 20 – July 25, 2009	47 – 52
References, Acknowledgments, and Use Constraints		53 – 53

Table 2. ShoreZone AVI Flight Personnel and Responsibilities

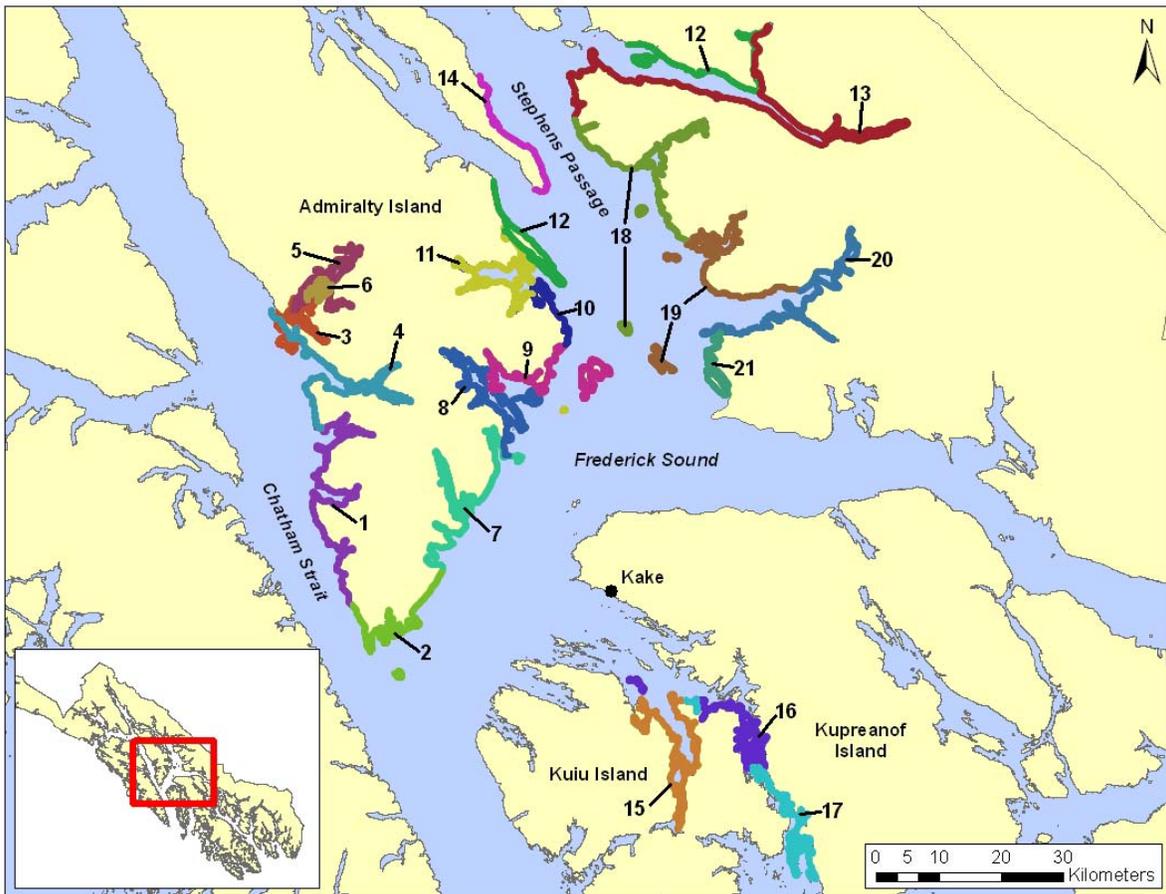
Crew Member	Individual / Affiliation	Responsibilities
<i>Geomorphologist</i>	John Harper / Kalen Morrow CORI, Sidney, BC	survey coordination, videography, geomorphic commentary, post-flight data processing, project reporting
<i>Coastal Ecologist</i>	Mary Morris AMR, Victoria, BC	digital photography, biologic commentary
<i>Navigators</i>	John Harper / Kalen Morrow CORI, Sidney, BC	in-flight navigation, post-flight data processing
	Colin Shanley TNC, Juneau, Alaska	in-flight navigation
<i>Pilot</i>	Jim Wilson Coastal Helicopters Juneau, Alaska	

Table 3. Survey Tapes for Team Kake (KK).

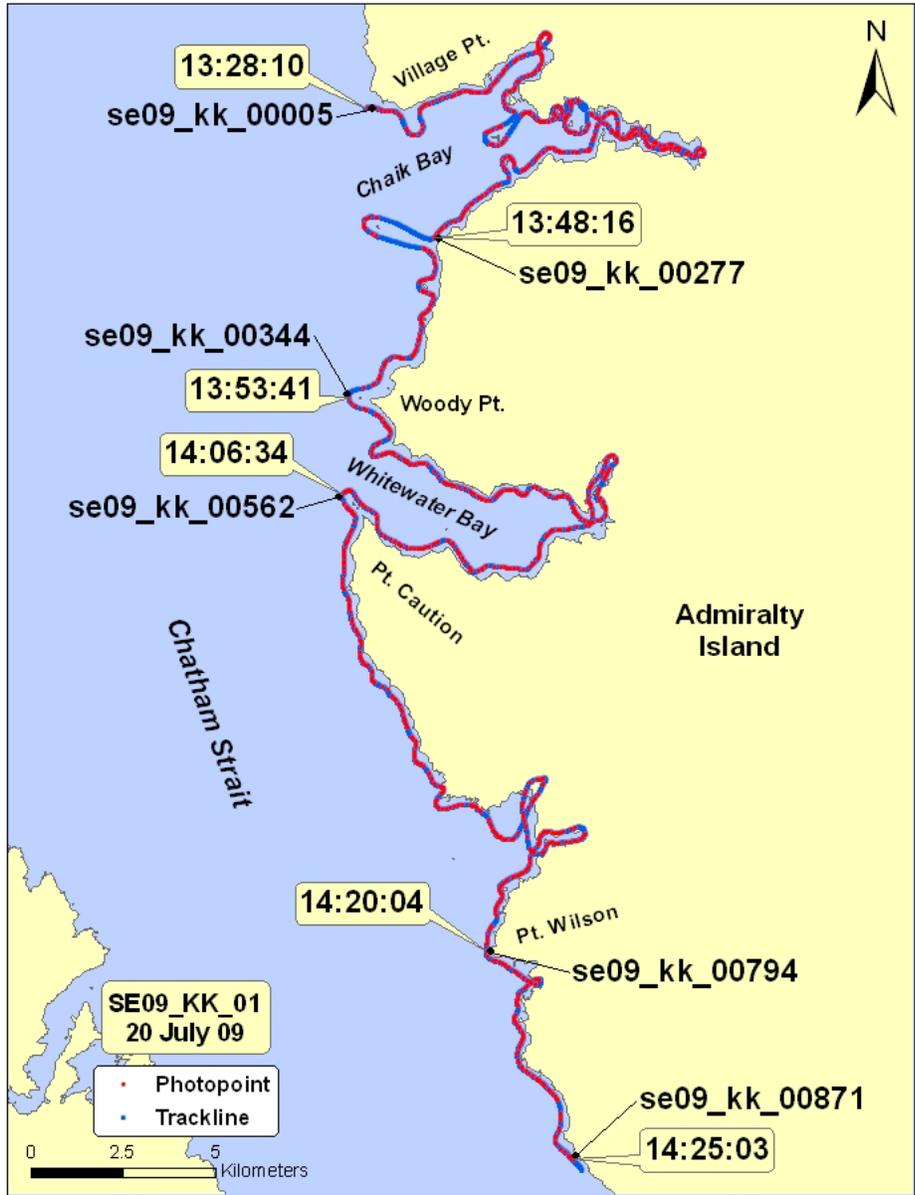
Team	Tape	Location
Kake (KK)	SE09_KK_01	SW Admiralty Island, Chatham Strait
	SE09_KK_02	South Admiralty Island, Frederick Sound
	SE09_KK_03	Favorite Bay, Kootznahoo Inlet
	SE09_KK_04	Hood Bay, West Admiralty Island
	SE09_KK_05	Mitchell Bay, Kootznahoo Inlet
	SE09_KK_06	Mitchell Bay, Kootznahoo Inlet
	SE09_KK_07	Herring Bay, Eliza Harbor, South Admiralty Island
	SE09_KK_08	Pybus Bay, SE Admiralty Island
	SE09_KK_09	Pybus Bay, The Brothers, SE Admiralty Island
	SE09_KK_10	SE Admiralty Island, Stephens Passage
	SE09_KK_11	Gambier Bay, SE Admiralty Island
	SE09_KK_12	SE Admiralty Island, Fords Terror, Endicott Arm
	SE09_KK_13	Dawes Glacier, Endicott Arm
	SE09_KK_14	SE Glass Peninsula, Stephens Passage
	SE09_KK_15	Port Camden, Kuiu Island
	SE09_KK_16	Rocky Pass, Keku Strait
	SE09_KK_17	Keku Strait, Kupreanof Island
	SE09_KK_18	Windham Bay, Stephens Passage
	SE09_KK_19	Hobart Bay, Port Houghton, Stephens Passage
	SE09_KK_20	Port Houghton, Sandborn Canal
	SE09_KK_21	Cleveland Passage, Whitney Island, Stephens Passage

**ShoreZone Aerial Video Imaging (AVI) Survey
Southeast Alaska
July 20 – July 25, 2009**

Team Kake (KK)
Survey Maps and Tape Logs
DVDs: SE09_KK_01 to SE09_KK_21



Flight trackline map showing the location and extent of specific videotapes (DVDs) for the July 20 – July 25 **Team Kake (KK)** survey in Southeast Alaska.



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

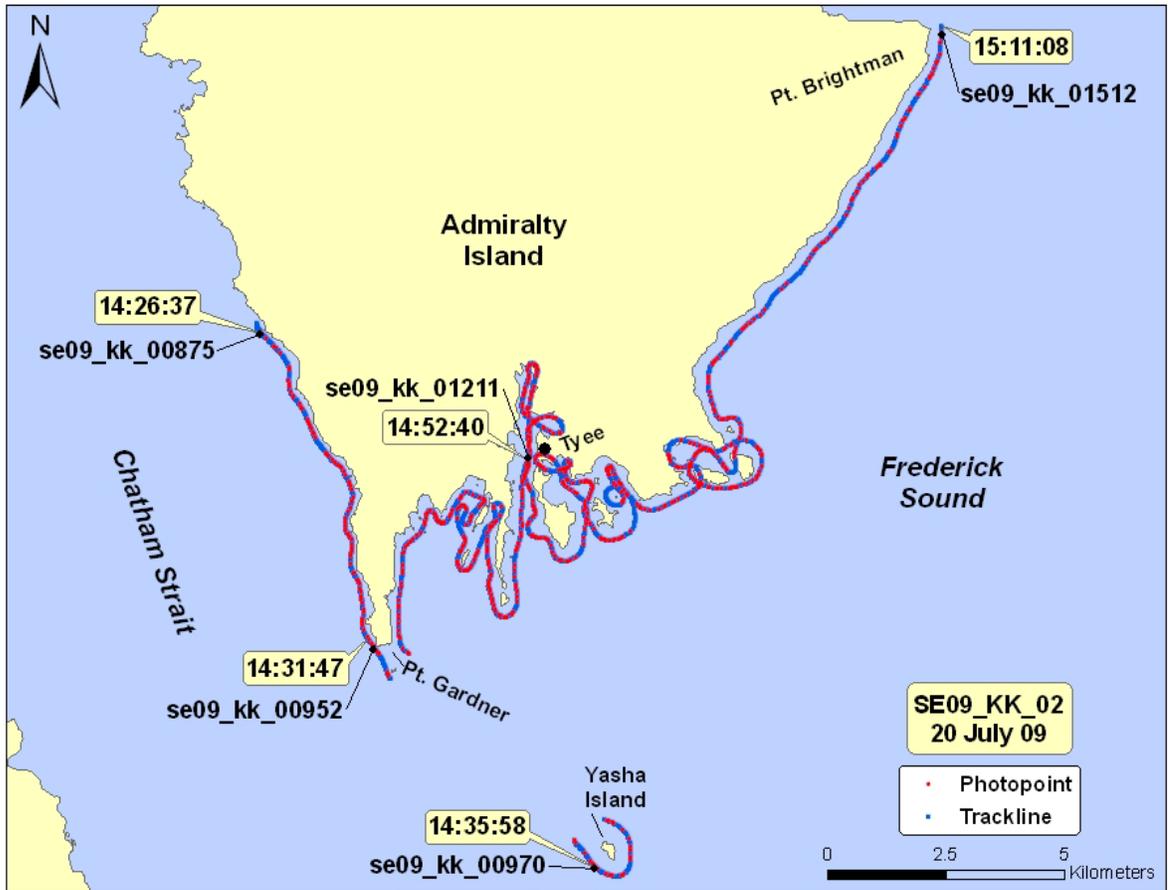
Tape: SE09_KK_01 **Date:** 20 July 09

General Location: SW Admiralty Island

Time Start (UTC): 13:28:10	Geo: Harper
Fuel Break: None	Bio: Morris
Time End (UTC): 14:25:20	Nav: Morrow
Tape Length: 59 min 59 sec	Pilot: Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
13:28:10	Village Pt., Chaik Bay	se09_kk_00005
13:48:16	Rocky Pt., Chaik Bay	se09_kk_00277
13:53:41	Woody Pt., Whitewater Bay	se09_kk_00344
14:06:34	Pt. Caution, Whitewater Bay	se09_kk_00562
14:20:04	Pt. Wilson, SW Admiralty Island	se09_kk_00794
14:25:03	South of Pt. Wilson, Chatham Strait	se09_kk_00871



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

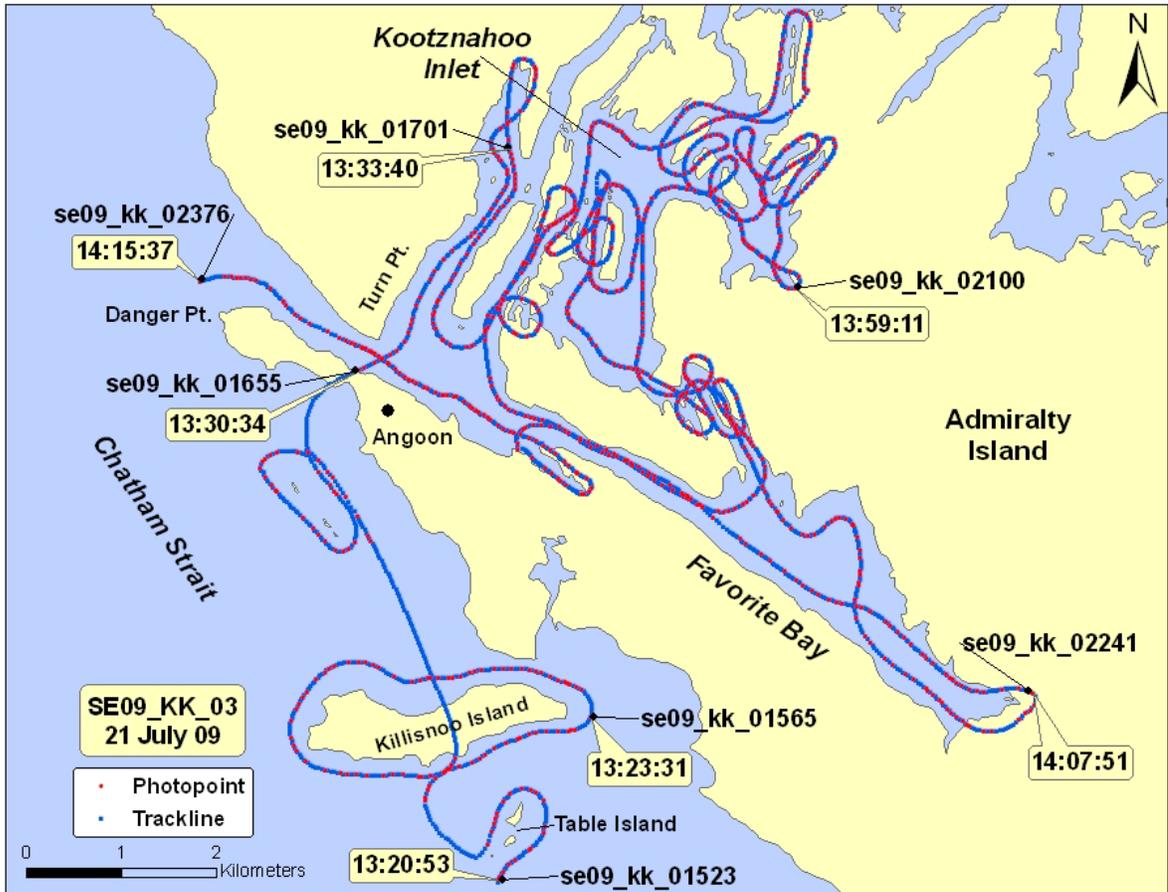
Tape: SE09_KK_02 **Date:** 20 July 09

General Location: SW Admiralty Island

Time Start (UTC): 14:26:21 **Geo:** Harper
Fuel Break: None **Bio:** Morris
Time End (UTC): 15:11:08 **Nav:** Morrow
Tape Length: 46 min 58 sec **Pilot:** Wilson

Weather: Overcast, windy, rainy

Time (UTC)	Location	Photo
14:26:37	North of Pt. Gardner, SW Admiralty Island	se09_kk_00875
14:31:47	Pt. Gardner	se09_kk_00952
	Transit to Yasha Island 14:32:28 to 14:35:24	
14:35:58	Yasha Island	se09_kk_00970
	Transit to Pt. Gardner 14:37:07 to 14:39:03	
14:52:40	Tyee	se09_kk_01211
15:11:08	Pt. Brightman, Herring Bay	se09_kk_01512



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

Tape: SE09_KK_03 **Date:** 21 July 09

General Location: Angoon, Kootznahoo Inlet

Time Start (UTC): 13:20:52 **Geo:** Morrow
Fuel Break: None **Bio:** Morris
Time End (UTC): 14:15:37 **Nav:** Harper
Tape Length: 57 min 29 sec **Pilot:** Wilson

Weather: Overcast, calm, partly sunny

Time (UTC)	Location	Photo
13:20:53	Table Island, Killisnoo Harbor	se09_kk_01523
13:23:31	Eastern tip of Killisnoo Island	se09_kk_01565
13:30:34	Turn Pt., entrance to Kootznahoo Inlet	se09_kk_01655
13:33:40	Pillsbury Pt., Kootznahoo Inlet	se09_kk_01701
13:59:11	SE corner of Kootznahoo Inlet	se09_kk_02100
14:07:51	Head of Favorite Bay	se09_kk_02241
14:15:37	Danger Point	se09_kk_02376



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

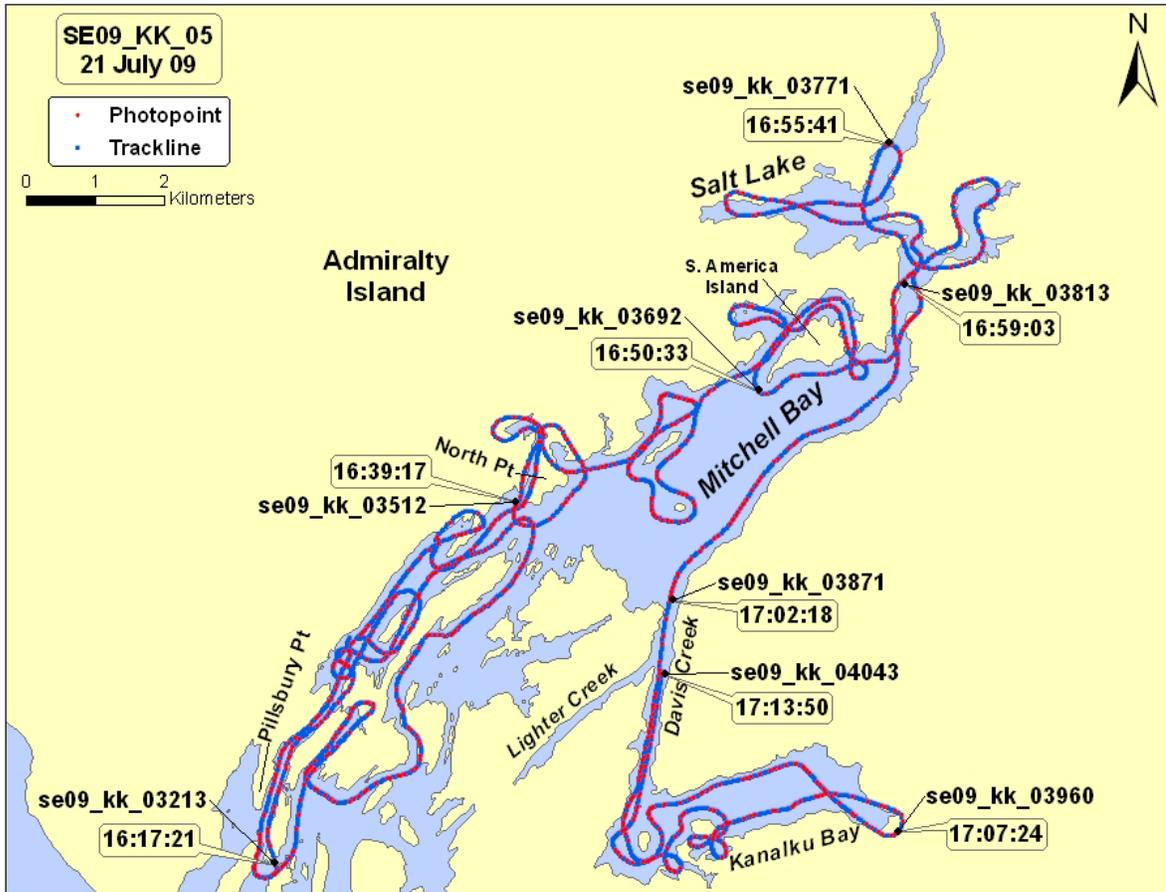
Tape: SE09_KK_04 **Date:** 21 July 09

General Location: Angoon

Time Start (UTC): 14:16:29	Geo: Morrow
Fuel Break: 15:00:26 to 16:01:22	Bio: Morris
Time End (UTC): 16:09:48	Nav: Harper
Tape Length: 55 min 12 sec	Pilot: Wilson

Weather: Overcast, calm

Time (UTC)	Location	Photo
14:16:29	Danger Pt., Angoon	se09_kk_02379
14:20:54	Killisnoo Harbor	se09_kk_02472
14:33:11	Cabin Pt., Hood Bay	se09_kk_02651
14:40:24	Head of North Arm, Hood Bay	se09_kk_02777
14:48:39	Head of South Arm, Hood Bay	se09_kk_02876
15:00:25	House Pt., west entrance to Hood Bay	se09_kk_03073
	Fuel break 15:00:26 to 16:01:22	
16:09:36	Village Pt., Chaik Bay	se09_kk_03202



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

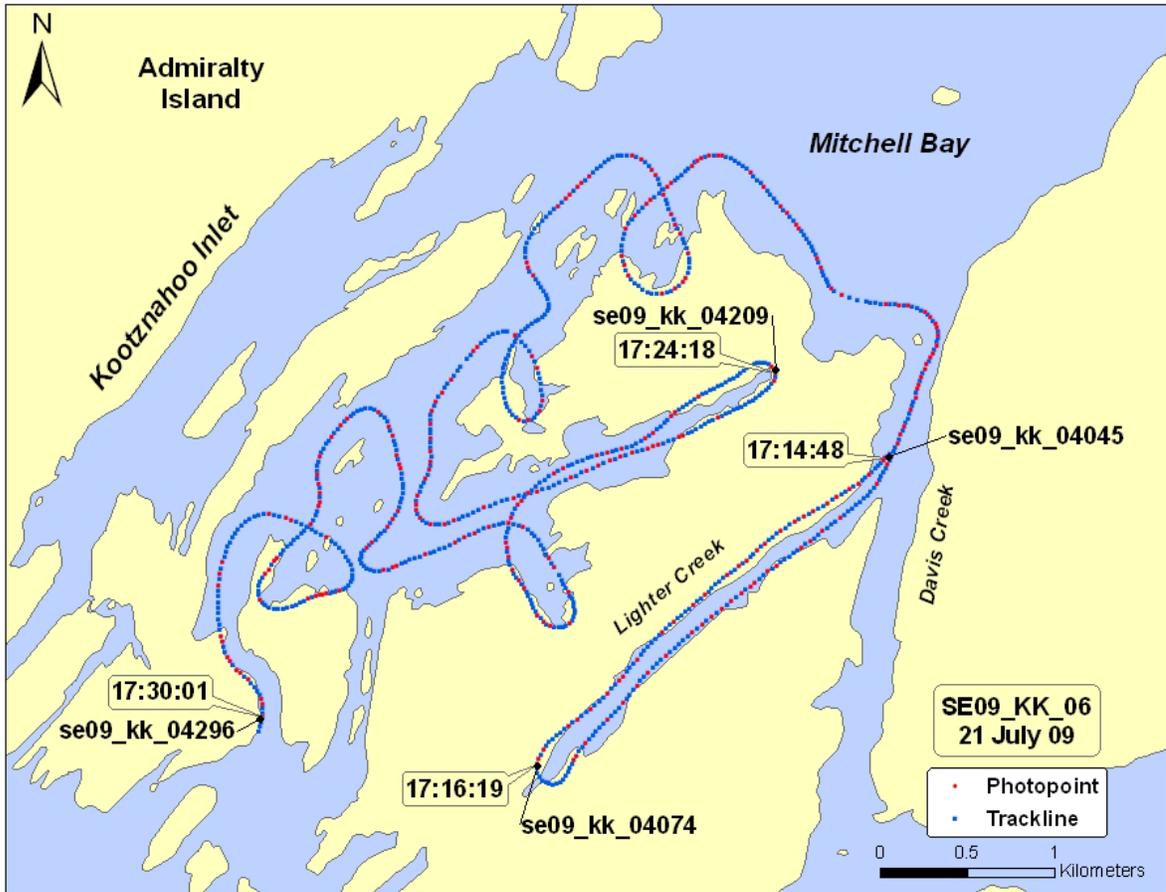
Tape: SE09_KK_05 **Date:** 21 July 09

General Location: Mitchell Bay, Kootznahoo Inlet

Time Start (UTC): 16:17:20	Geo: Harper
Fuel Break: None	Bio: Morris
Time End (UTC): 17:13:51	Nav: Morrow
Tape Length: 59 min 01 sec	Pilot: Wilson

Weather: Overcast, calm

Time (UTC)	Location	Photo
16:17:21	Pillsbury Pt.	se09_kk_03213
16:39:17	North Pt., Mitchell Bay	se09_kk_03512
16:50:33	SW tip or South America Island	se09_kk_03692
16:55:41	North tip of Salt Lake	se09_kk_03771
16:59:03	Salt Lake Falls	se09_kk_03813
17:02:18	Entering Davis Creek at Passage Pt.	se09_kk_03871
17:07:24	Head of Kanalku Bay	se09_kk_03960
17:13:50	Intersection of Lighter and Davis Creeks	se09_kk_04043



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

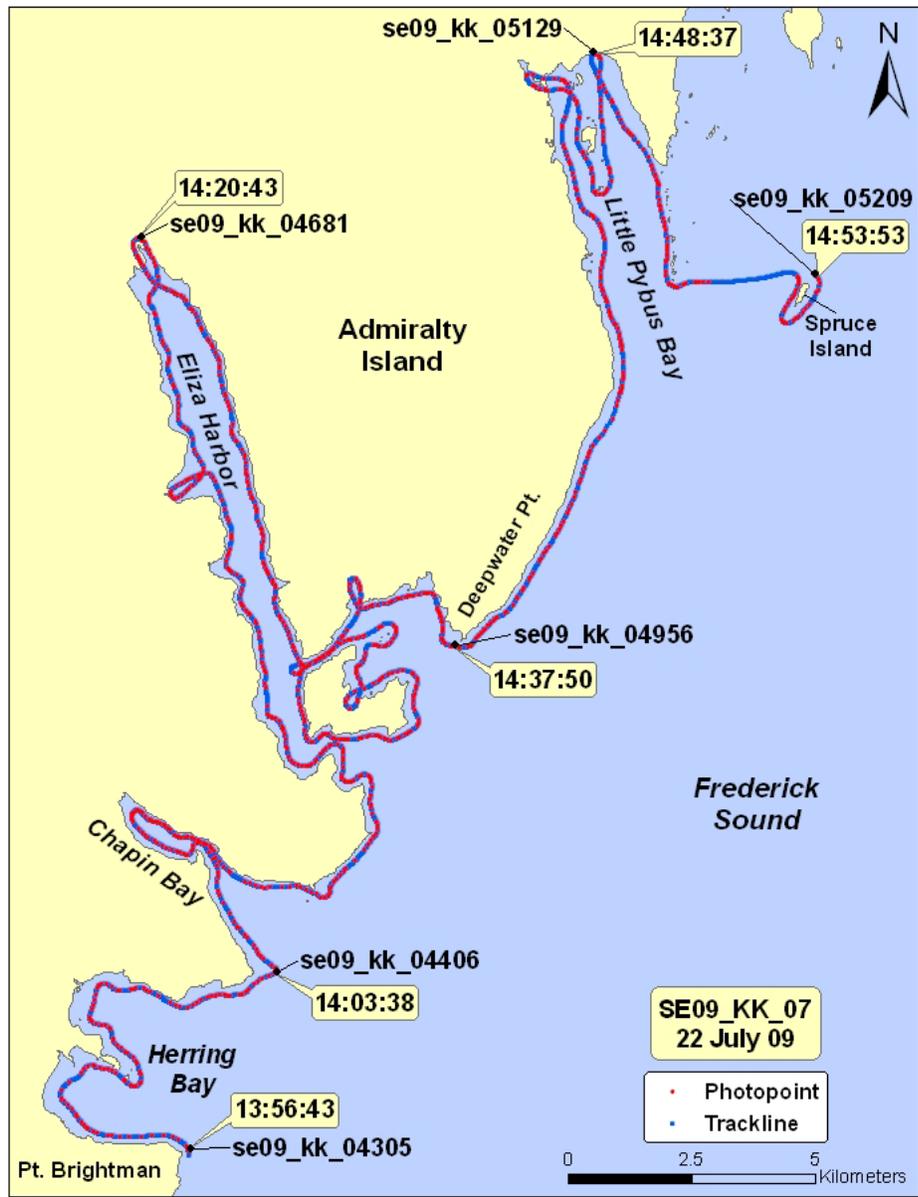
Tape: SE09_KK_06 **Date:** 21 July 09

General Location: Kootznahoo Inlet

Time Start (UTC): 17:14:46	Geo: Harper
Fuel Break: None	Bio: Morris
Time End (UTC): 17:30:04	Nav: Morrow
Tape Length: 17 min 24 sec	Pilot: Wilson

Weather: Partly cloudy, calm

Time (UTC)	Location	Photo
17:14:48	Intersection of Lighter and Davis Creek	se09_kk_04045
17:16:19	Head of Lighter Creek	se09_kk_04074
17:24:18	Bay north of Lighter Creek	se09_kk_04209
17:30:01	Mid Kootznahoo Inlet	se09_kk_04296



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Team Kake (KK)**

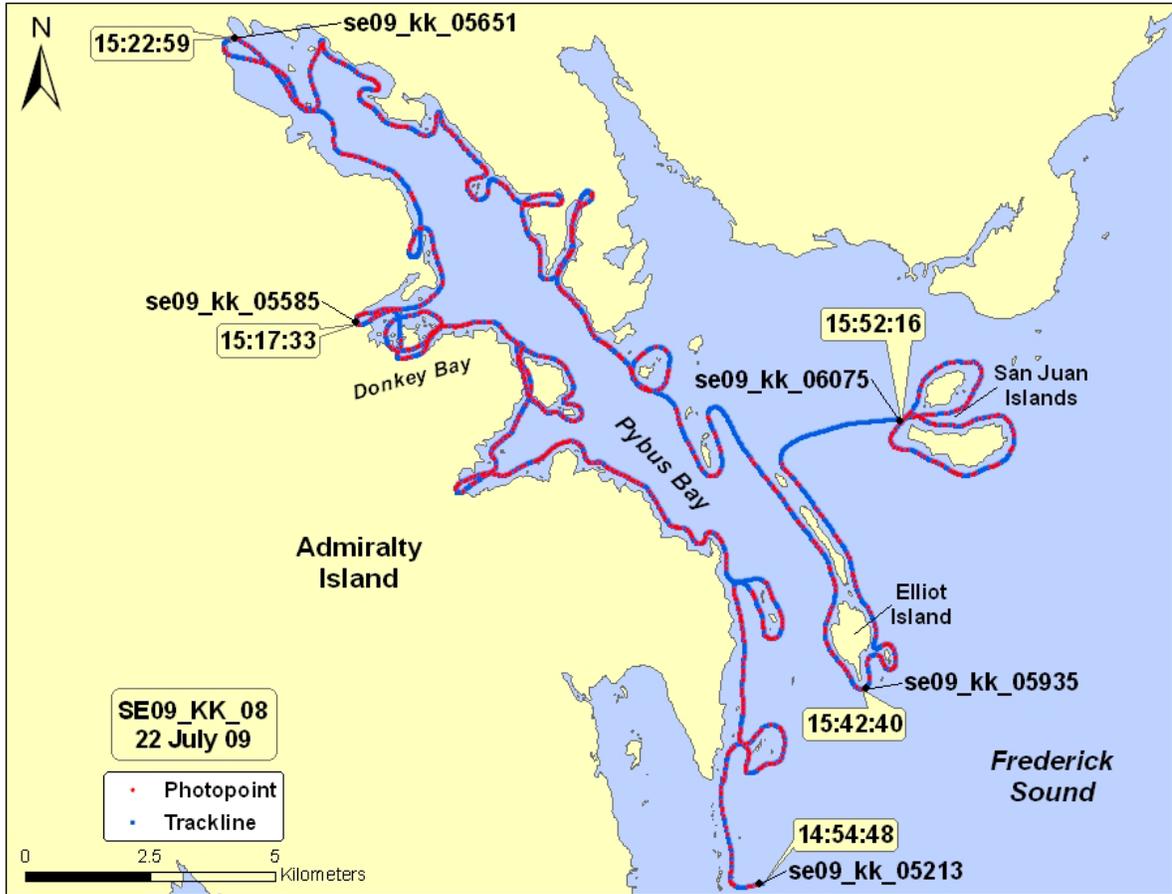
Tape: SE09_KK_07 **Date:** 22 July 09

General Location: Southern shore of Admiralty Island

Time Start (UTC):	13:56:37	Geo:	Harper
Fuel Break:	None	Bio:	Morris
Time End (UTC):	14:53:53	Nav:	Morrow
Tape Length:	59 min 56 sec	Pilot:	Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
13:56:43	Pt. Brightman, west Herring bay	se09_kk_04305
14:03:38	Point between Chapin and Herring Bays	se09_kk_04406
14:20:43	Head of Eliza Harbor	se09_kk_04681
14:37:50	Deepwater Point, Woewodski Harbor	se09_kk_04956
14:48:37	Head of Little Pybus Bay	se09_kk_05129
14:53:53	Spruce Island	se09_kk_05209



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

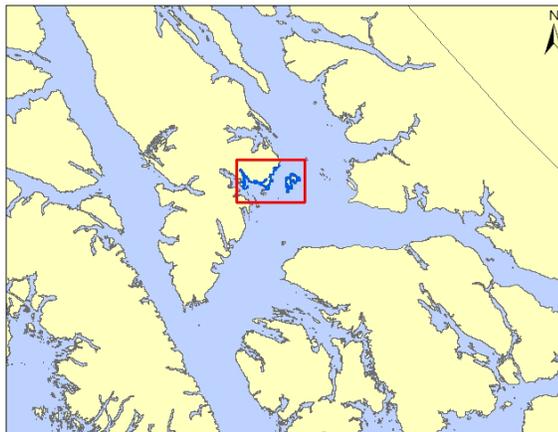
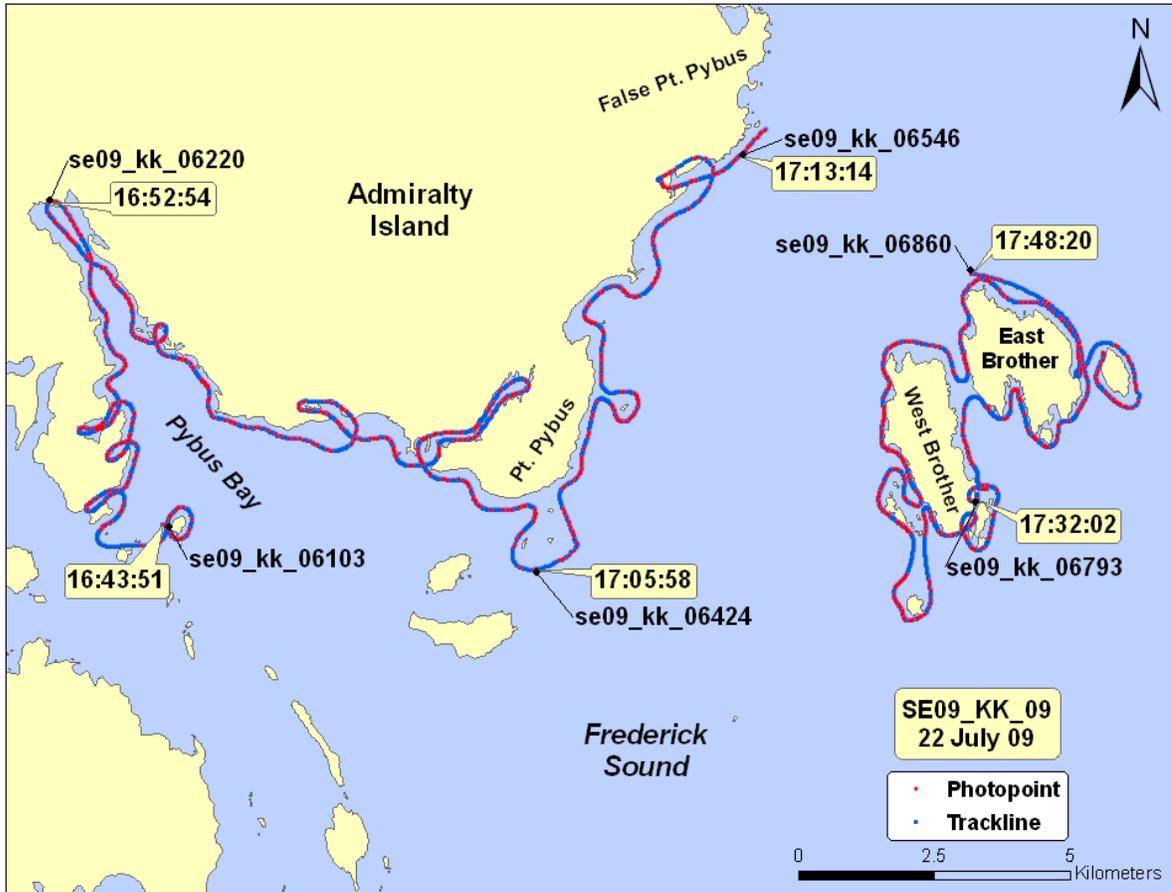
Tape: SE09_KK_08 **Date:** 22 July 09

General Location: Pybus Bay, SE Admiralty Island

Time Start (UTC):	14:54:48	Geo:	Harper
Fuel Break:	None	Bio:	Morris
Time End (UTC):	15:52:16	Nav:	Morrow
Tape Length:	59 min 46 sec	Pilot:	Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
14:54:48	West entrance to Pybus Bay	se09_kk_05213
15:17:33	Head of Donkey Bay	se09_kk_05585
15:22:59	Head of NW Pybus Bay	se09_kk_05651
15:42:40	South tip of Elliot Island	se09_kk_05935
15:52:16	San Juan Islands	se09_kk_06075



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

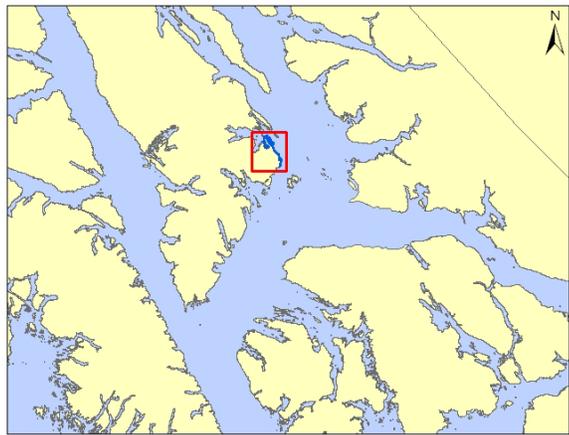
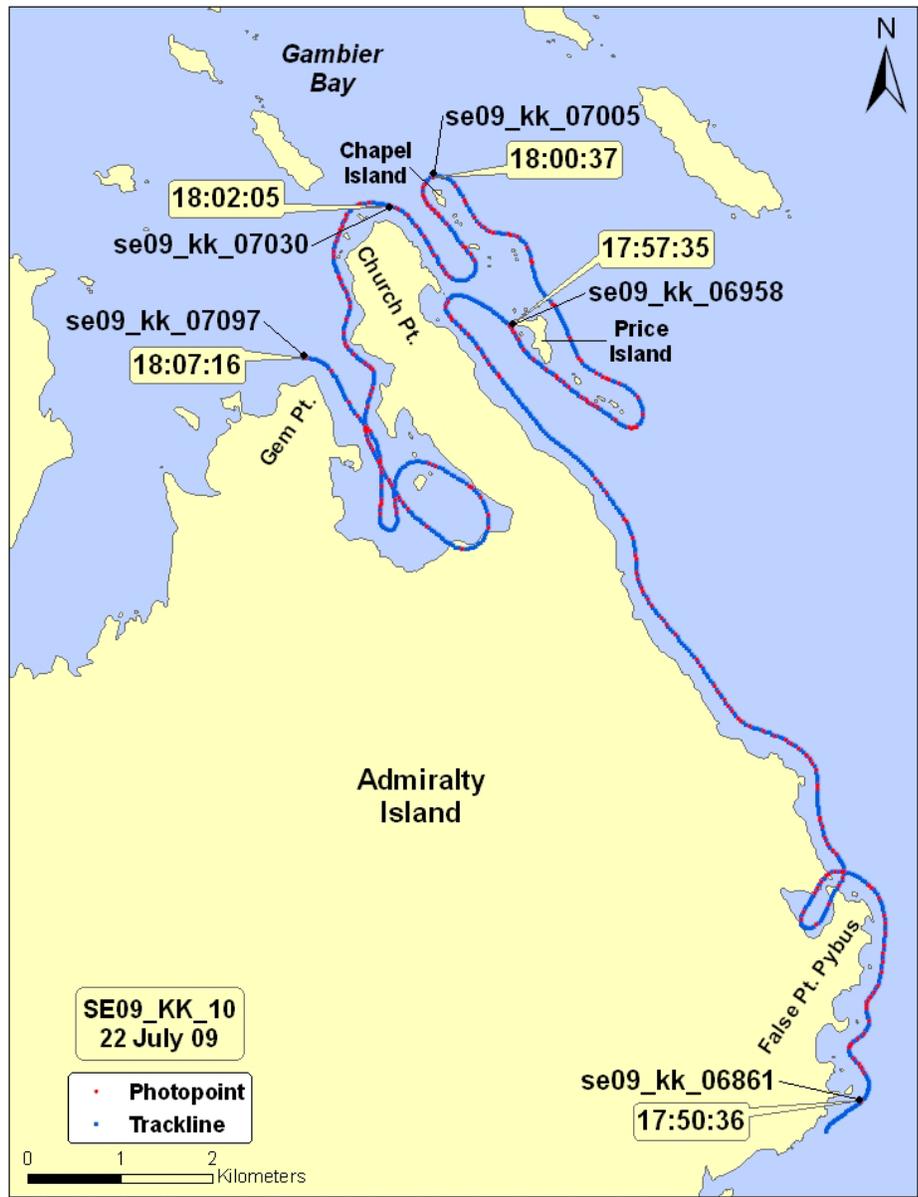
Tape: SE09_KK_09 **Date:** 22 July 09

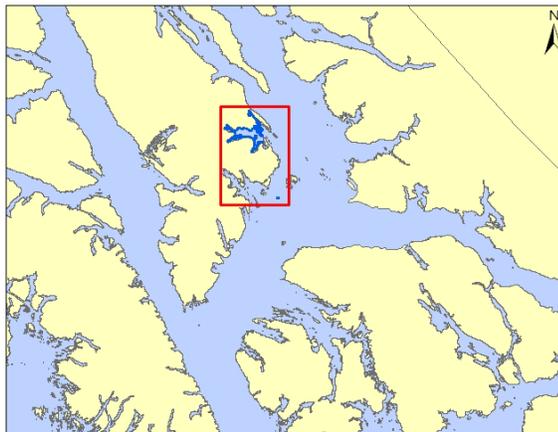
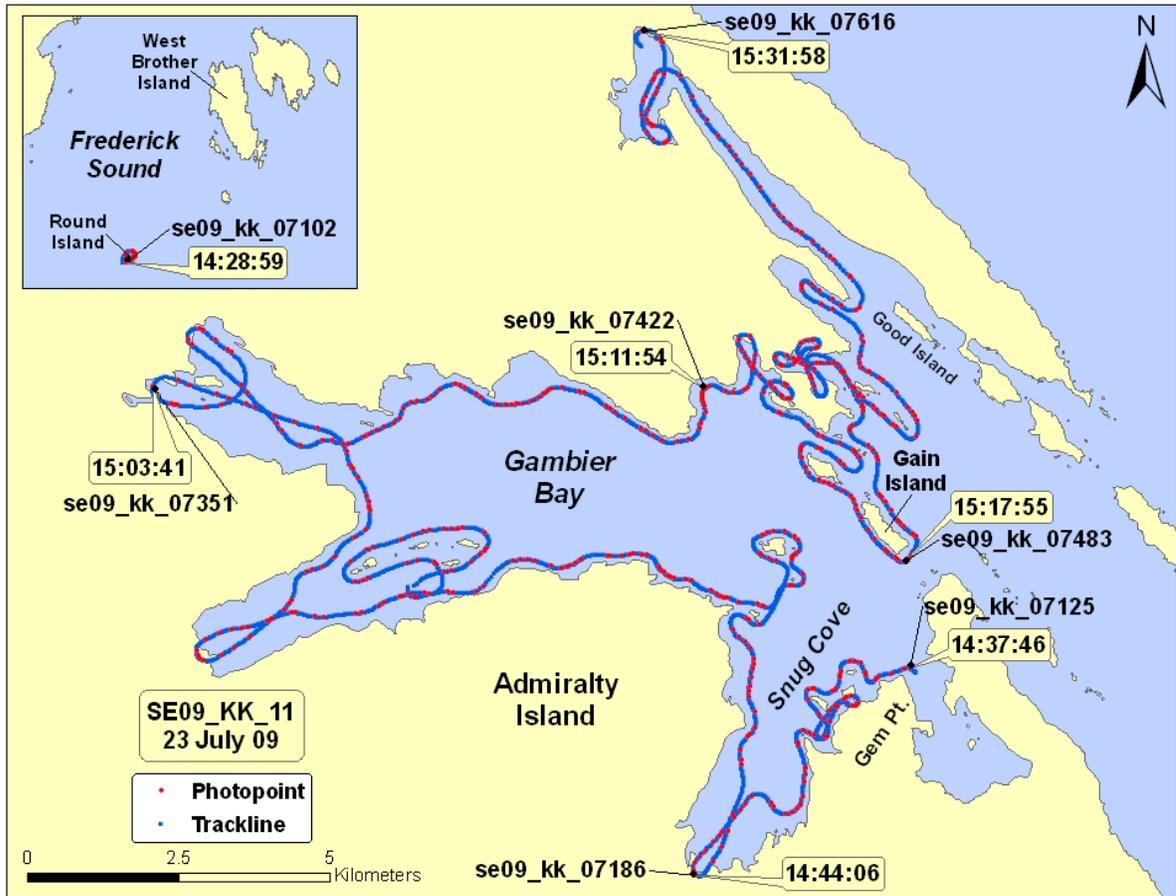
General Location: Pybus Bay, SE Admiralty Island

Time Start (UTC): 16:43:51 **Geo:** Morrow
Fuel Break: None **Bio:** Morris
Time End (UTC): 17:48:20 **Nav:** Harper
Tape Length: 57 min 18 sec **Pilot:** Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
16:43:51	Islands in middle of Pybus Bay	se09_kk_06103
16:52:54	NE head of Pybus Bay	se09_kk_06220
17:05:58	Pt. Pybus	se09_kk_06424
17:13:14	South of False Pt. Pybus	se09_kk_06546
	Transit to The Brothers 17:13:34 to 17:17:06	
17:32:02	SE corner, West Brother Island	se09_kk_06793
	Rescue break 17:32:07 to 17:43:00	
17:48:20	Northern tip of East Brother Island	se09_kk_06860





**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

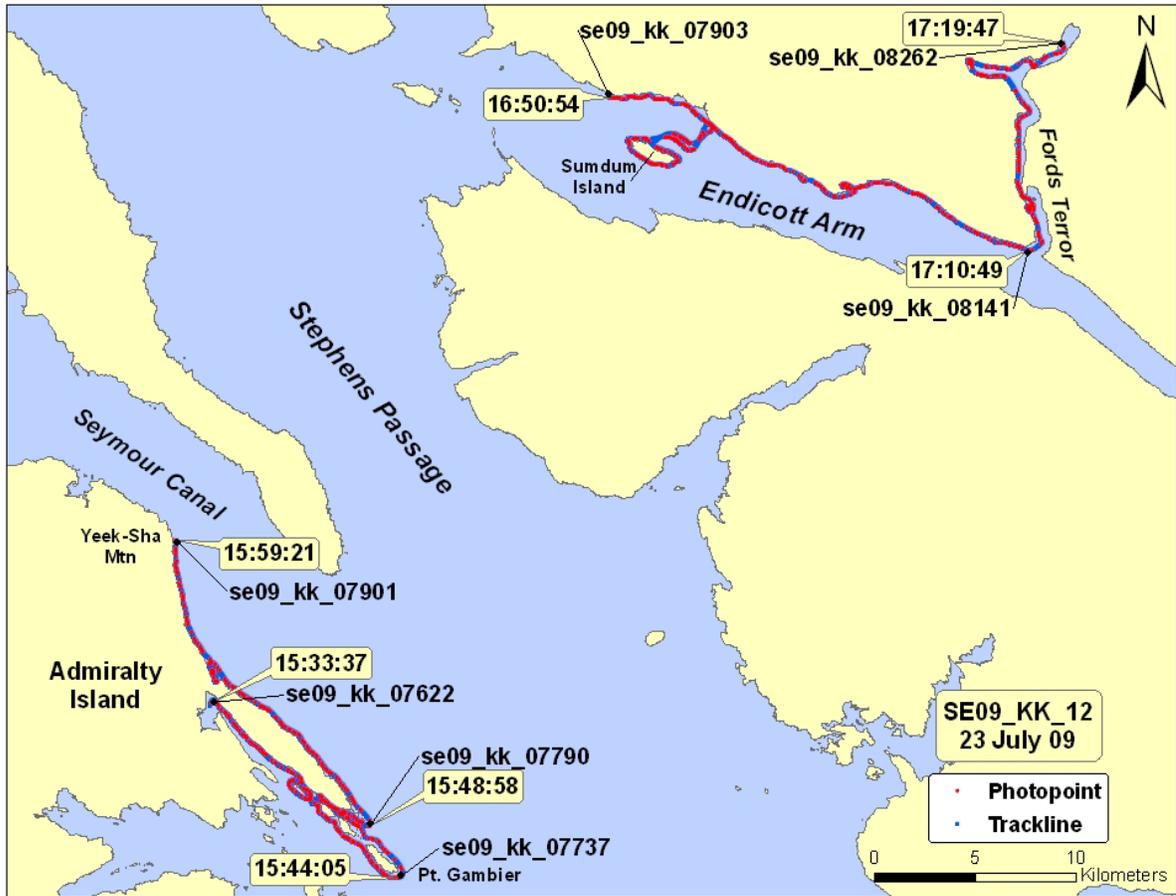
Tape: SE09_KK_11 **Date:** 23 July 09

General Location: Gambier Bay, SE Admiralty Island

Time Start (UTC): 14:28:59 **Geo:** Morrow
Fuel Break: None **Bio:** Morris
Time End (UTC): 15:32:11 **Nav:** Harper
Tape Length: 58 min 57 sec **Pilot:** Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
14:28:59	Round Island, Frederick Sound	se09_kk_07102
	Transit to Gambier Bay 14:29:45 to 14:37:39	
14:37:46	Gem Pt., Gambier Bay	se09_kk_07125
14:44:06	Head of Snug Cove, Gambier Bay	se09_kk_07186
15:03:41	Head of estuary in NW Gambier Bay	se09_kk_07351
15:11:54	Old Cannery site, Gambier Bay	se09_kk_07422
15:17:55	South tip Gain Island, Gambier Bay	se09_kk_07483
15:31:58	Head of bay north of Good Island	se09_kk_07616



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

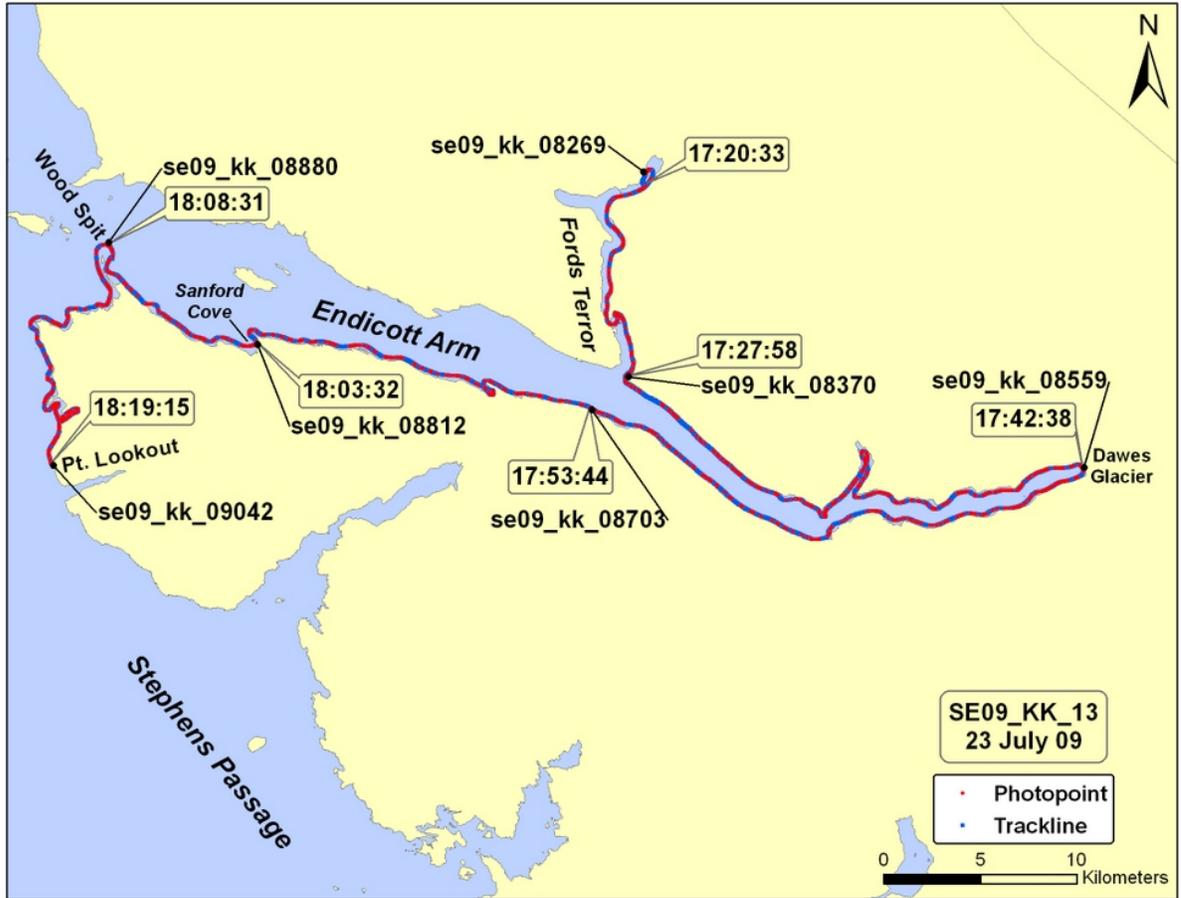
Tape: SE09_KK_12 **Date:** 23 July 09

General Location: SE Admiralty Island and Endicott Arm

Time Start (UTC): 15:33:32 **Geo:** Harper
Fuel Break: 15:59:22 to 16:50:53 **Bio:** Morris
Time End (UTC): 17:19:47 **Nav:** Morrow
Tape Length: 58 min 53 sec **Pilot:** Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
15:33:37	Head of bay north of Good Island, Gambier Bay	se09_kk_07622
15:44:05	Pt. Gambier, Gambier Island	se09_kk_07737
15:48:58	South point of Last Chance Harbor, Gambier Bay	se09_kk_07790
15:59:21	South of Yeek Sha Mtn., Seymour Canal	se09_kk_07901
	Fuel Break 15:59:22 to 16:50:53	
16:50:54	Endicott Arm North of Sumdum Island	se09_kk_07903
17:10:49	Entrance to Fords Terror	se09_kk_08141
17:19:47	NE head of Fords Terror	se09_kk_08262



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

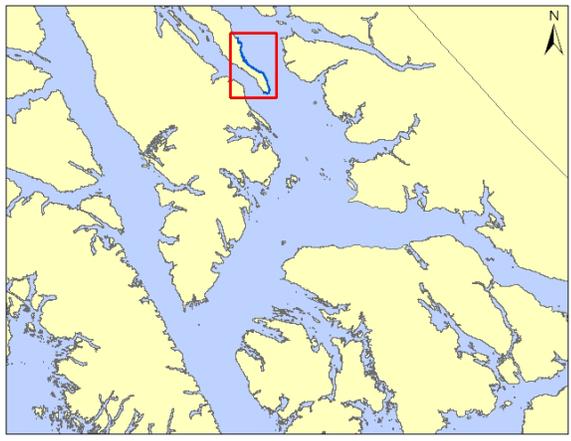
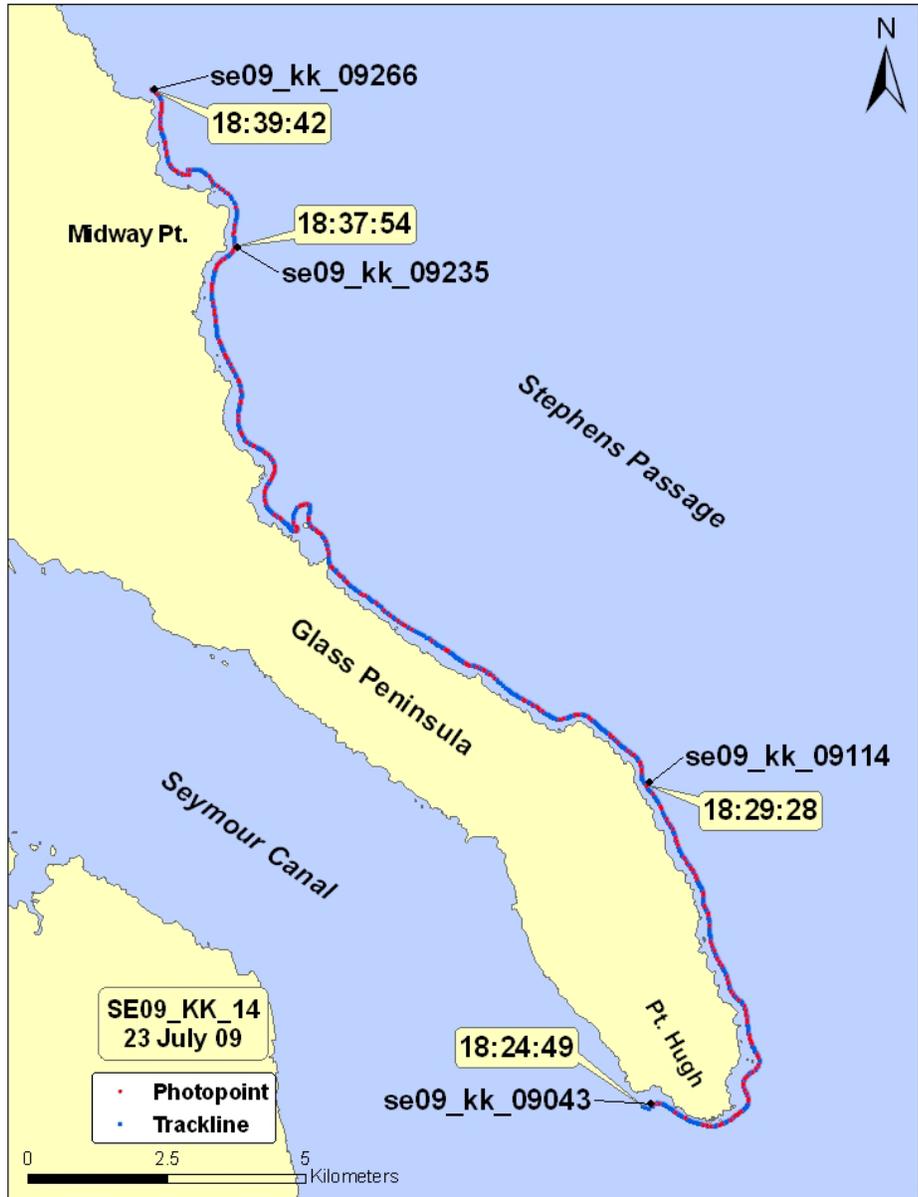
Tape: SE09_KK_13 **Date:** 23 July 09

General Location: Endicott Arm

Time Start (UTC): 17:20:33	Geo: Harper
Fuel Break: None	Bio: Morris
Time End (UTC): 18:19:20	Nav: Morrow
Tape Length: 1 hr 0 min 47 sec	Pilot: Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
17:20:33	NE head of Fords Terror	se09_kk_08269
17:27:58	East entrance to Fords Terror, Endicott Arm	se09_kk_08370
17:42:38	Head of Endicott Arm, Dawes Glacier	se09_kk_08559
17:53:44	South shore Endicott Arm, opposite Fords Terror	se09_kk_08703
18:03:32	Sanford Cove, Endicott Arm	se09_kk_08812
18:08:31	Tip of Wood Spit	se09_kk_08880
18:19:15	Pt. Lookout, Stephens Passage	se09_kk_09042



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

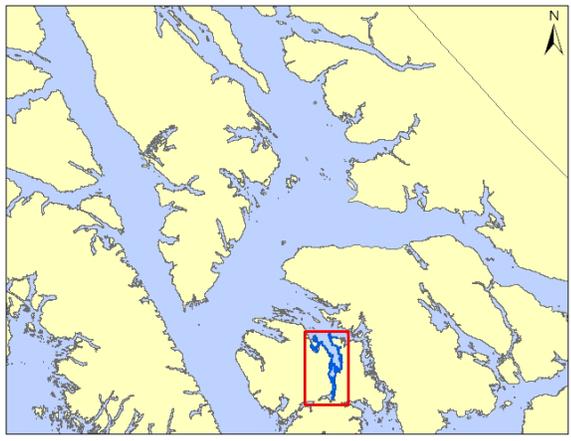
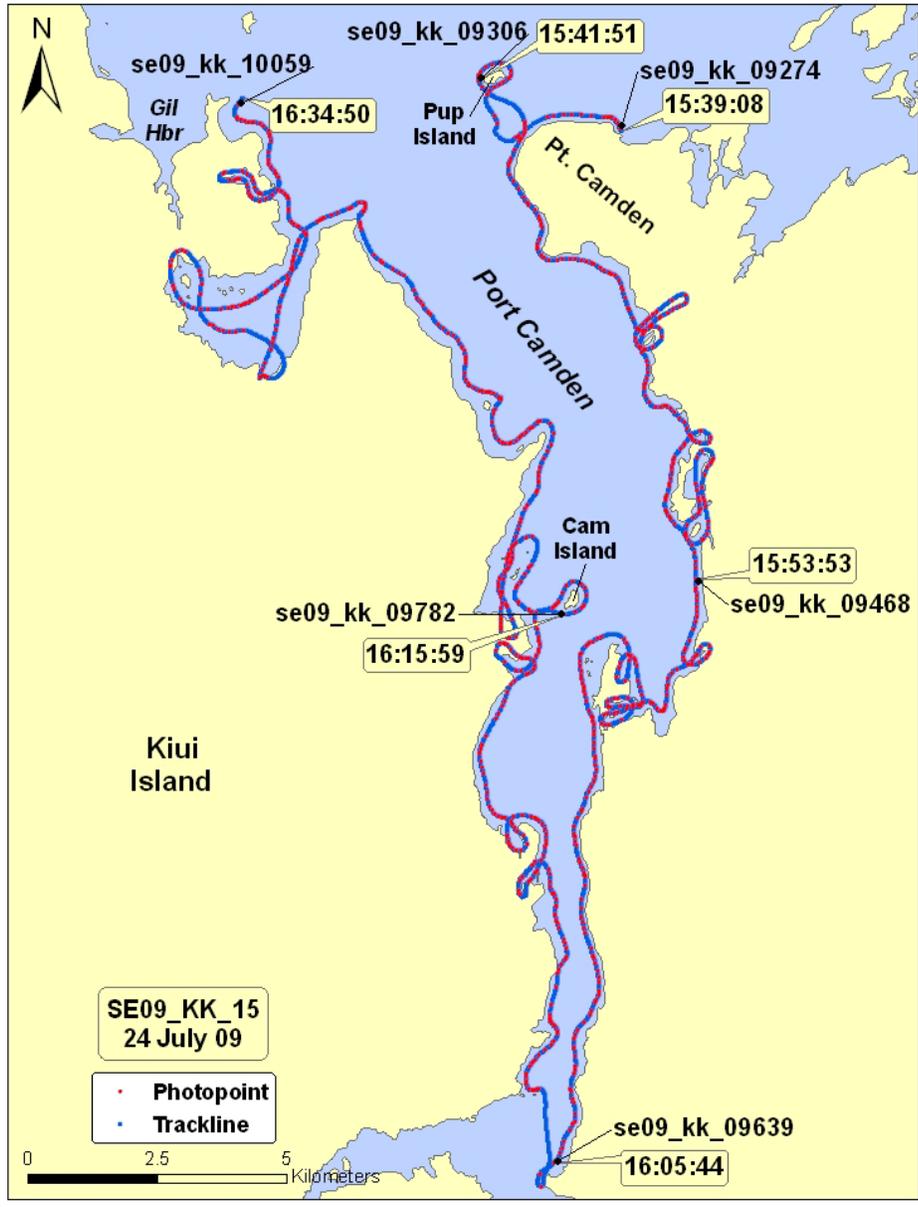
Tape: SE09_KK_14 **Date:** 23 July 09

General Location: Southern tip of the Glass Peninsula, Admiralty Island

Time Start (UTC):	18:24:49	Geo:	Harper
Fuel Break:	None	Bio:	Morris
Time End (UTC):	18:39:42	Nav:	Morrow
Tape Length:	17 min 48 sec	Pilot:	Wilson

Weather: Overcast, windy, rain

Time (UTC)	Location	Photo
18:24:49	Hugh Pt., Glass Peninsula, Admiralty Island	se09_kk_09043
18:29:28	Navigation marker, Glass Peninsula	se09_kk_09114
18:37:54	Midway Pt., Glass Peninsula	se09_kk_09235
18:39:42	North of Midway Pt., Glass Peninsula	se09_kk_09266



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

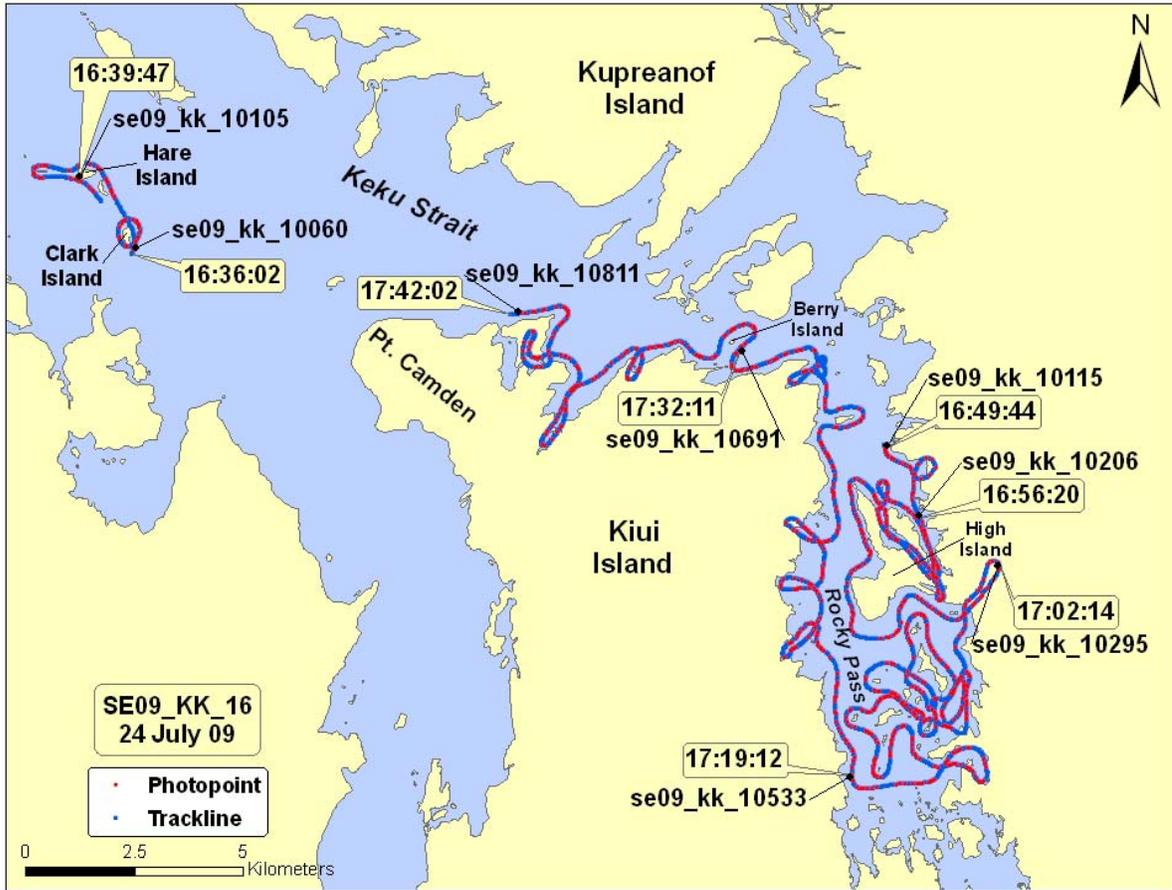
Tape: SE09_KK_15 **Date:** 24 July 09

General Location: Port Camden, Kuiu Island

Time Start (UTC): 15:39:08	Geo: Morrow
Fuel Break: None	Bio: Morris
Time End (UTC): 16:34:50	Nav: Shanley
Tape Length: 55 min 42 sec	Pilot: Wilson

Weather: Overcast, foggy

Time (UTC)	Location	Photo
15:39:08	Point Camden, Kuiu Island	se09_kk_09274
15:41:51	Pup Island	se09_kk_09306
15:53:53	East side of Port Camden	se09_kk_09468
16:05:44	Near head of Port Camden, East side	se09_kk_09639
16:15:59	Cam Island, Port Camden	se09_kk_09782
16:34:50	South Point of Gil Harbor, Kuiu Island	se09_kk_10059



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

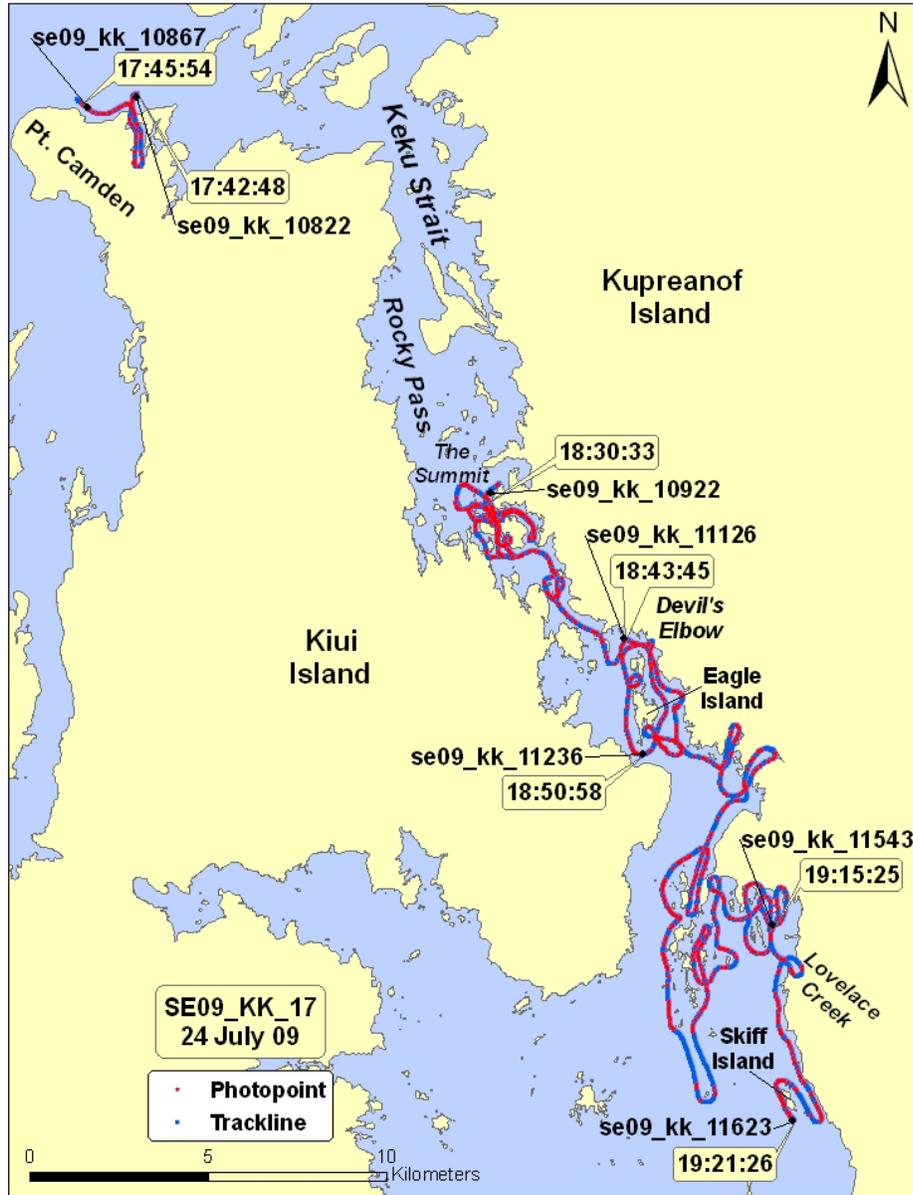
Tape: SE09_KK_16 **Date:** 24 July 09

General Location: Rocky Pass, Keku Strait

Time Start (UTC): 16:36:02 **Geo:** Morrow
Fuel Break: None **Bio:** Morris
Time End (UTC): 17:42:02 **Nav:** Shanley
Tape Length: 56 min 28 sec **Pilot:** Wilson

Weather: Overcast, foggy

Time (UTC)	Location	Photo
16:36:02	Clark Island, Keku Strait	se09_kk_10060
16:39:47	Hare Island, Keku Strait	se09_kk_10105
	Transit to Rocky Pass 16:40:09 to 16:49:39	
16:49:44	North of High Island, East Rocky Pass	se09_kk_10115
16:56:20	High Island, Rocky Pass	se09_kk_10206
17:02:14	Irish Creek, Rocky Pass	se09_kk_10295
17:19:12	Mud Bay, Rocky Pass	se09_kk_10533
17:32:11	Berry Island, Keku Strait	se09_kk_10691
17:42:02	South of Point Camden, Keku Strait	se09_kk_10811



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

Tape: SE09_KK_17 **Date:** 24 July 09

General Location: Keku Strait, West Kupreanof Island

Time Start (UTC): 17:42:48 **Geo:** Morrow
Fuel Break: 17:46:01 to 18:30:06 **Bio:** Morris
Time End (UTC): 19:21:26 **Nav:** Shanley
Tape Length: 54 min 31 sec **Pilot:** Wilson

Weather: Overcast, foggy

Time (UTC)	Location	Photo
17:42:48	South of Point Camden, Keku Strait	se09_kk_10822
17:45:54	South of Point Camden, Keku Strait	se09_kk_10867
	Fuel Break 17:46:01 to 18:30:06	
18:30:33	The Summit, Rocky Pass	se09_kk_10922
18:43:45	Devil's Elbow, Keku Strait	se09_kk_11126
18:50:58	Eagle Island, Keku Strait	se09_kk_11236
19:15:25	Lovelace Creek	se09_kk_11543
19:21:26	Skiff Island, Keku Strait	se09_kk_11623



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

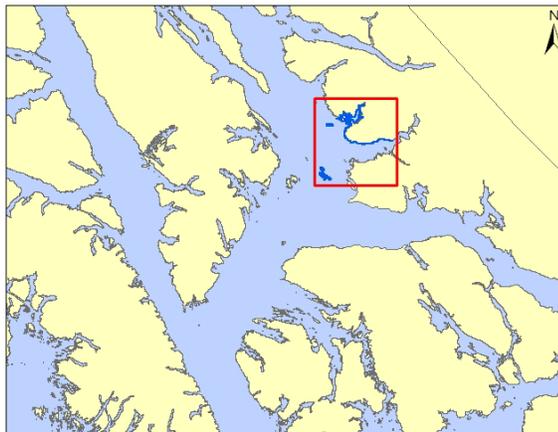
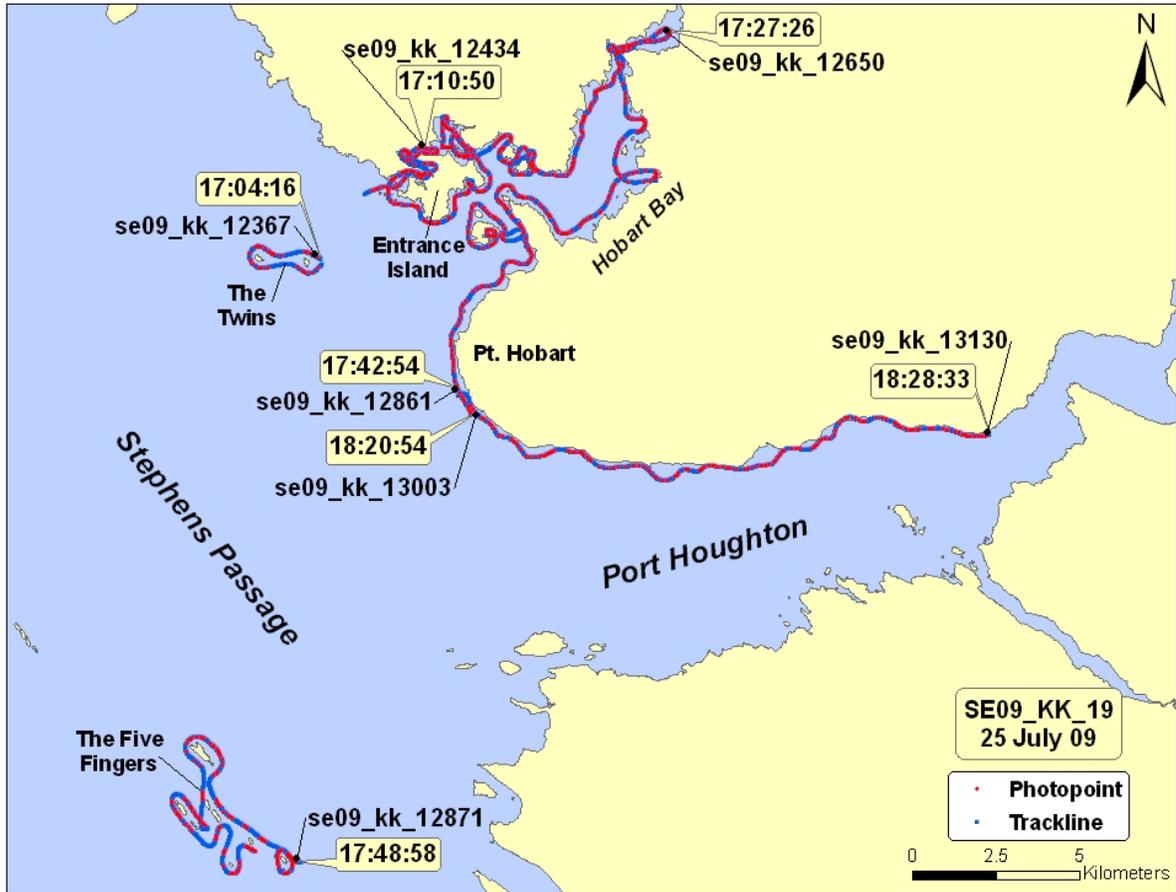
Tape: SE09_KK_18 **Date:** 25 July 09

General Location: Windham Bay, Stephens Passage

Time Start (UTC): 15:51:16	Geo: Harper
Fuel Break: None	Bio: Morris
Time End (UTC): 17:02:44	Nav: Shanley
Tape Length: 49 min 25 sec	Pilot: Wilson

Weather: Sunny

Time (UTC)	Location	Photo
15:51:16	Sail Island, Stephens Passage	se09_kk_11638
	Transit to Sunset Island 15:54:17 to 16:02:01	
16:03:28	Sunset Island, Stephens Passage	se09_kk_11710
	Transit to Pt. Lookout 16:04:01 to 16:11:55	
16:12:05	Pt. Lookout, Stephens Passage	se09_kk_11727
16:21:21	Pt. Windham	se09_kk_11863
	Fog gap 16:27:39 to 16:30:35	
16:34:52	Head of Windham Bay	se09_kk_12008
	Fog gap 16:41:56 to 16:45:18	
16:59:05	Sunset Cove, Stephens Passage	se09_kk_12309
17:02:40	Entrance Island, Hobart Bay	se09_kk_12366



**2009 Southeast Alaska Aerial Video Imaging Survey
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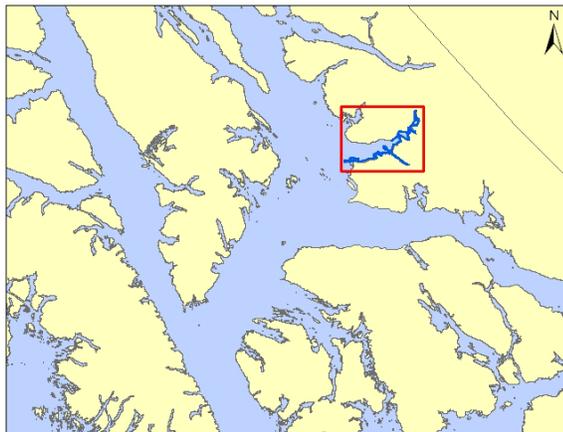
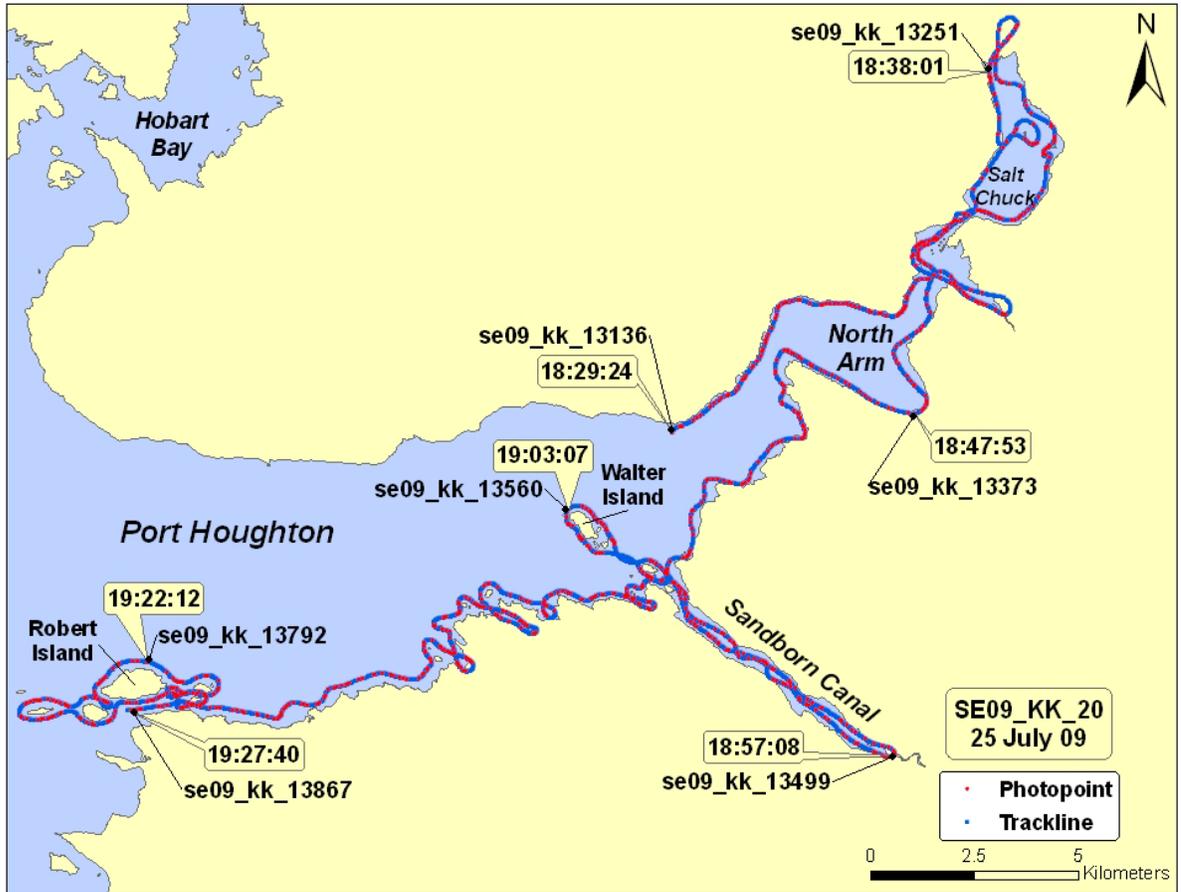
Tape: SE09_KK_19 **Date:** 25 July 09

General Location: Hobart Bay, Port Houghton, Stephens Passage

Time Start (UTC): 17:04:16 **Geo:** Harper
Fuel Break: 17:57:51 to 18:20:32 **Bio:** Morris
Time End (UTC): 18:28:33 **Nav:** Shanley
Tape Length: 54 min 53 sec **Pilot:** Wilson

Weather: Sunny

Time (UTC)	Location	Photo
17:04:16	The Twins, Stephens Passage	se09_kk_12367
	Transit to Entrance Island 17:06:34 to 17:07:37	
17:10:50	Entrance Island, Hobart Bay	se09_kk_12434
17:27:26	Head of Hobart Bay	se09_kk_12650
17:42:54	South of Pt. Hobart, Stephens Passage	se09_kk_12861
	Transit to The Five Fingers 17:43:17 to 17:48:51	
17:48:58	The Five Fingers	se09_kk_12871
	Fuel Break 17:57:51 to 18:20:32	
18:20:54	South of Pt. Hobart, Stephens Passage	se09_kk_13003
18:28:33	North side of Port Houghton	se09_kk_13130



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

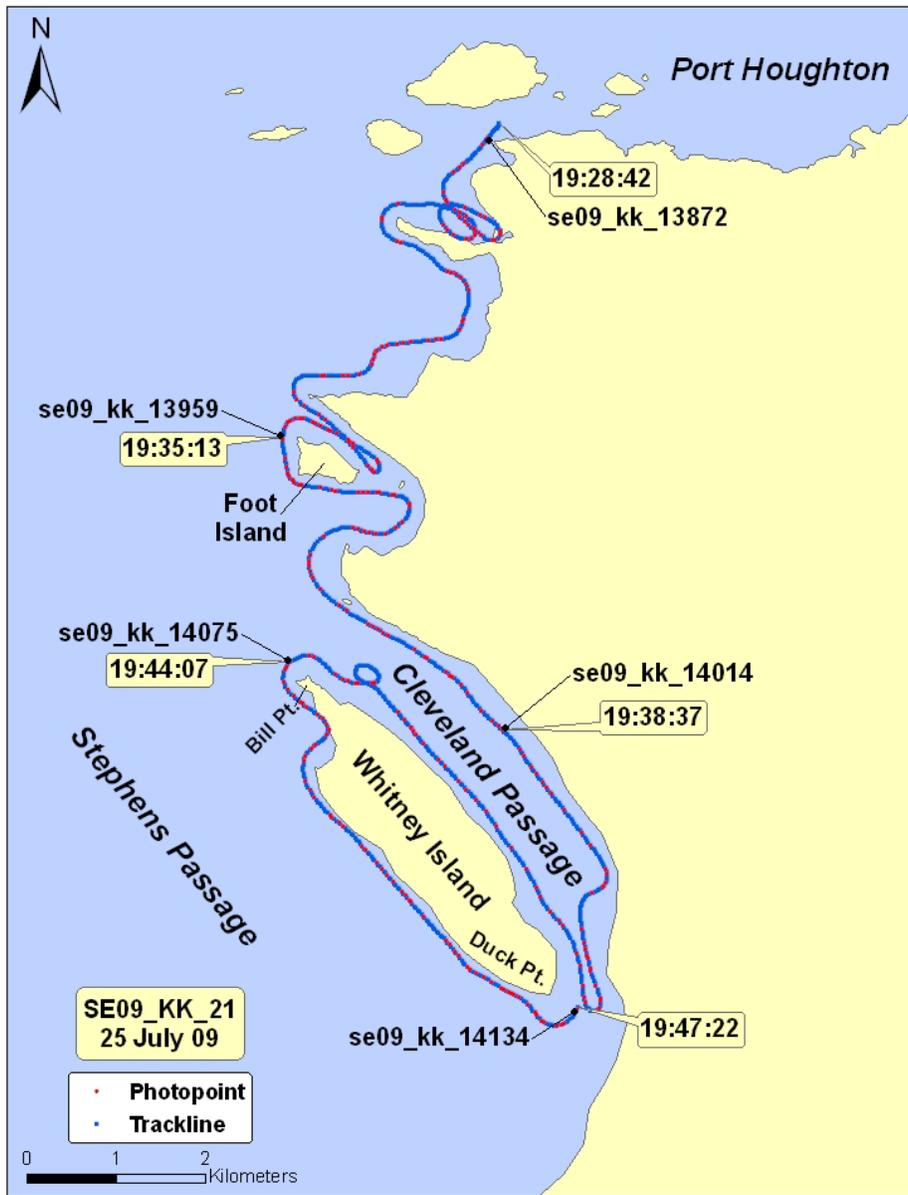
Tape: SE09_KK_20 **Date:** 25 July 09

General Location: Port Houghton

Time Start (UTC): 18:29:24 **Geo:** Harper
Fuel Break: None **Bio:** Morris
Time End (UTC): 19:27:40 **Nav:** Shanley
Tape Length: 58 min 16 sec **Pilot:** Wilson

Weather: Sunny

Time (UTC)	Location	Photo
18:29:24	North side of Port Houghton	se09_kk_13136
18:38:01	Salt Chuck, head of Port Houghton	se09_kk_13251
18:47:53	North Arm, Port Houghton	se09_kk_13373
18:57:08	Sandborn Canal, Port Houghton	se09_kk_13499
19:03:07	Walter Island, Port Houghton	se09_kk_13560
19:22:12	Robert Island, Port Houghton	se09_kk_13792
19:27:40	South entrance to Port Houghton	se09_kk_13867



**2009 Southeast Alaska Aerial Video Imaging Survey
Team Kake (KK)**

Tape: SE09_KK_21 **Date:** 25 July 09

General Location: Cleveland Passage, Whitney Island

Time Start (UTC): 19:28:42	Geo: Harper
Fuel Break: None	Bio: Morris
Time End (UTC): 19:47:22	Nav: Shanley
Tape Length: 18 min 40 sec	Pilot: Wilson

Weather: Sunny

Time (UTC)	Location	Photo
19:28:42	South entrance to Port Houghton	se09_kk_13872
19:35:13	Foot Island, Stephens Passage	se09_kk_13959
19:38:37	Cleveland Passage	se09_kk_14014
19:44:07	Bill Pt., Whitney Island	se09_kk_14075
19:47:22	Duck Pt., Whitney Island	se09_kk_14134

SE09 AVI Team Kake Example Photos, Survey Day 1

July 20, 2009

Southwest Admiralty Island, Village Point at north side of Chaik Bay to Point Gardiner and east to Point Brightman. Weather mostly misty, drizzly and low ceiling.

Dragon kelp dominates nearshore canopy kelp, with some Bull Kelp observed at higher exposures towards the south. Extensive salt marshes in heads of larger bays, with lush Dune Grass and often Sedge band observed. Diversity of bedrock types added to spatial heterogeneity. Areas of lush Soft Brown Kelps.

	
<p>Islet off Village Point, SW Admiralty Island. Wave shadow beach, semi-protected; se09_kk_00018.jpg</p>	<p>Upper Chaik Bay islet, southwest Admiralty Island. Nearshore eelgrass band at waterline; se09_kk_00164</p>
	
<p>Islet near Whitewater Bay, southwest Admiralty. Lush Soft Brown Kelps in nearshore; se09_kk_00249.jpg</p>	<p>Lush Dune Grasses and Sedge biobands in head of Chaik Bay; se09_kk_00197</p>
	
<p>Subtidal eelgrass beds, south shore of Whitewater Bay; se09_kk_00507</p>	<p>Blue mussels at delta in Wilson Cove; se09_kk_00685.jpg</p>
	
<p>Marble-like bedrock, north of Point Gardiner; se09_kk_00849.jpg</p>	<p>Steam engines in ruins at old site of Tyee; se09_kk_01274.jpg</p>

SE09 AVI Team Kake Example Photos, Survey Day 2

July 21, 2009

Southwest Admiralty Island, from Angoon to Hood Bay and then into the complex lagoons and tidal rapids of Mitchell Bay in Kootznahoo Inlet. Still waters and overcast skies make for soft lighting conditions.

Amazing lagoons, platforms, shallows and tidal rapids in Mitchell Bay and Kootznahoo Inlet. V-shaped stonewalled possible fish trap features at lower intertidal in several sites in Hood Bay. Dragon kelp along the Admiralty Island shoreline.

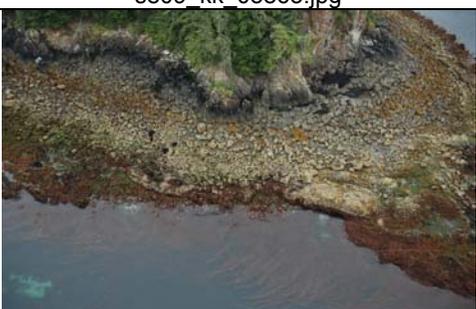
	
Sedge-dominated estuary in Favorite Bay; se09_kk_02225.jpg	Dragon Kelp in tidal current at Angoon; se09_kk_02350.jpg
	
Sand Island south of Angoon; se09_kk_02537.jpg	Complex of fish traps in Hood Bay; se09_kk_02598.jpg
	
Dune Grass in estuary, at North Arm Hood Bay; se09_kk_02768.jpg	Subtle banding on delta, Hood Bay; se09_kk_02917.jpg
	
Tidal channel in Kootznahoo Inlet; se09_kk_03280.jpg	Shallow platforms in Mitchell Bay; se09_kk_04263.jpg

SE09 AVI Team Kake Example Photos, Survey Day 3

July 22, 2009

South shore of Admiralty Island from Herring Bay and east through Pybus Bay into Gambier Bay. Included offshore islands: The Brothers.

Numerous large estuaries and many brown bears seen. Large group of sea lions on The Brothers. Dragon Kelp dominated nearshore canopy kelp, with extensive beds along the main Admiralty Island shoreline. At ground stop at Gambier Bay fuel, confirmed RED/ALA/SBR sequence of biobands in the lower intertidal.

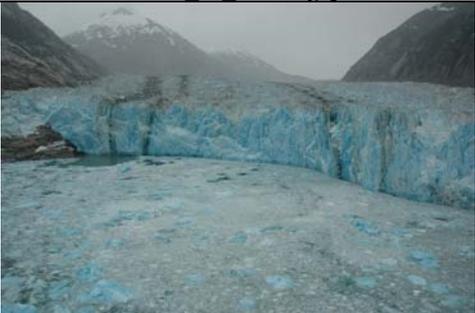
	
Islet in Little Pybus Bay; se09_kk_05108islet.jpg	Wave shadow beach and platform, islet in Pybus Bay; se09_kk_05244.jpg
	
Patterns in banding, Pybus Bay; se09_kk_05297.jpg	Delta with swash ridges, west Pybus Bay; se09_kk_05519.jpg
	
Double islets with Soft Brown Kelps band, Pybus Bay; se09_kk_05863.jpg	<i>Fucus</i> on delta, Pybus Bay; se09_kk_06209.jpg
	
Barnacle band on boulders, West Brother Island; se09_kk_06668.jpg	Blue Mussel patch, south side Gambier Bay; se09_kk_07060.jpg

SE09 AVI Team Kake Example Photos, Survey Day 4

July 23, 2009

Gambier Bay, Glass Peninsula to overlap last year's survey at Admiralty Island, cross Stephens Passage to Endicott Arm and Dawes Glacier on mainland coast.

Weather foggy and rainy with low ceiling. Luckily patchy enough to keep surveying. Old cannery site and big deltas in Gambier Bay. Endicott Arm fjord with vertical bedrock shorelines, tidewater glacier and lower intertidal encrusting coralline RED band.

	
Delta estuary, Gambier Bay; se09_kk_07313.jpg	Flood tide delta, Gambier Bay; se09_kk_07601.jpg
	
Anemones on encrusting coralline RED algae; se09_kk_07909.jpg	Grizzly bear mum and cub, standing in Ford's Terror; se09_kk_08231.jpg
	
Salt marsh, FordsTerror; se09_kk_08252.jpg	Dawes glacier in head of Endicott Arm; se09_kk_08555.jpg
	
Wood Spit, entrance to Endicott Arm; se09_kk_08882.jpg	Rock platform, southeast Glass Peninsula; se09_kk_09141.jpg

SE09 AVI Team Kake Example Photos, Survey Day 5

July 24, 2009

Foggy and zero visibility to the northeast so modify survey day plan to head southwest into Keku Strait, Port Camden and Rocky Pass.

Soft light and fog patches throughout. Amazing complexes of islets, platforms and current dominated tidal channels. Numerous fish traps and stone walls, with largest extent on mid-east section of Rocky Pass.

	
Mid-west shore, Camden Bay, Keku Strait; se09_kk_09828.jpg	North of High Island, Rocky Pass; se09_kk_10225.jpg
	
Wood stave fish traps, near The Summit, in Rocky Pass; se09_kk_10314.jpg	Near The Summit, in Rocky Pass; se09_kk_10444.jpg
	
Near Summit Island in Rocky Pass; se09_kk_10516.jpg	Near Summit Island, in Rocky Pass; se09_kk_11027.jpg
	
Wide platforms in south Keku Strait; se09_kk_11347.jpg	View across south Keku Strait; se09_kk_11628.jpg

SE09 AVI Team Kake Example Photos, Survey Day 6

July 25, 2009

Sail and Five Fingers islands. Mainland shore south from Windham Bay through Hobart Bay and Port Houghton and then ending at Storm Island near Cape Fanshaw.

Fog patches lifted to allow the day to complete Plan A: three refuels based at Five Finger Lighthouse. Salt marshes and interesting tidal channels in uppermost of Windham, Hobart Bays and Port Houghton. High energy rock platforms along mainland coast. Lush intertidal at Five Finger Lighthouse.

<p>Looking north in Stephens Passage, across to The Twins; se09_kk_11685.jpg</p>	<p>Estuary in upper Windham Bay tidal flats; se09_kk_12035.jpg</p>
<p>Fog in the Narrows, at Windham Bay; se09_kk_12115.jpg</p>	<p>North point at entrance to Hobart Bay; se09_kk_12461.jpg</p>
<p>Outflow of Salt Chuck, upper Port Houghton; se09_kk_13309.jpg</p>	<p>Double relict recurve spits, Port Houghton; se09_kk_13680.jpg</p>
<p>Lush Dragon Kelp, Steamboat Bay, near Cape Fanshaw; se09_kk_13965.jpg</p>	<p>Five Finger Lighthouse; se09_kk_14152.jpg</p>

References

Harney, J.N., Morris, M., and Harper, J.R. 2008. ShoreZone Coastal Habitat Mapping Protocol for the Gulf of Alaska. Report prepared for The Nature Conservancy, NOAA National Marine Fisheries Service, and the Alaska State Department of Natural Resources (Juneau, AK). 153 p.

Acknowledgments

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- Exxon Valdez Oil Spill Trustee Council
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We also thank the staff of Coastal and Ocean Resources Inc. and Archipelago Marine Research Ltd. for their efforts in the field and in the office.

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Protocols for data access and distribution are established by the program partner agencies. Please see www.coastalandoceans.com for a list of partner agencies and related web sites. Video imagery can be viewed and digital stills downloaded online at www.alaskafisheries.noaa.gov/maps/szintro.htm. Any hardcopies or published data sets utilizing ShoreZone products shall clearly indicate their source. To ensure distribution of the most current public information or for correct interpretation, contact the ShoreZone project manager at Coastal and Ocean Resources, Inc. At the time of publication, that person is Dr. John Harper.

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