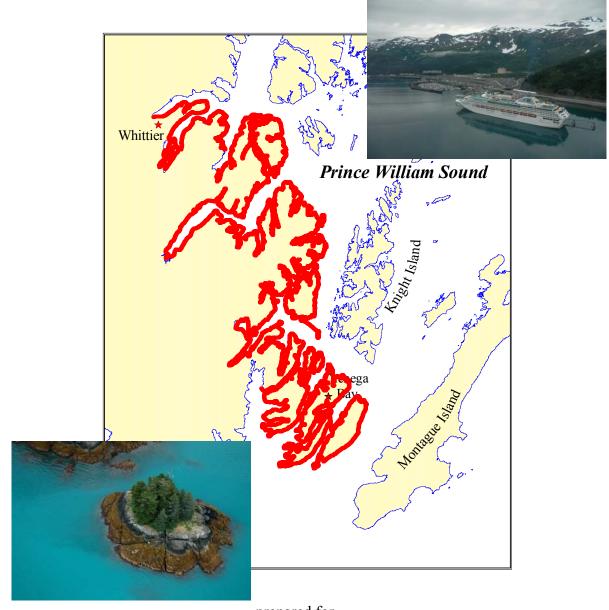
CORI Project: 04-22 19 July 2004

2004 Aertal Video Imaging Survey, Western Prince William Sound, Alaska (1 -6 July 2004)

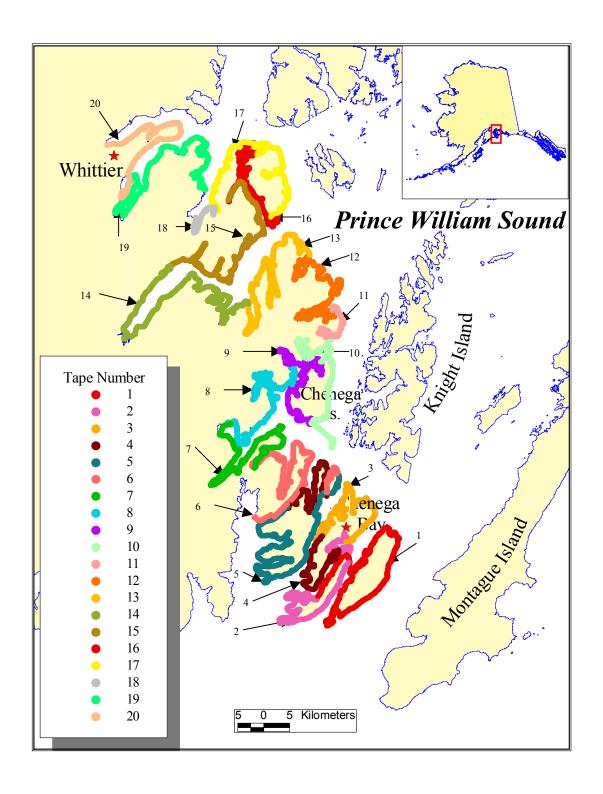


prepared for
Prince William Sound
Regional Citizen's Advisory Council
(PWSRCAC)

COASTAL & OCEAN RESOURCES INC.

214-9865 W. Saanich Rd., Sidney, BC V8L 5Y8 www.coastalandoceans.com





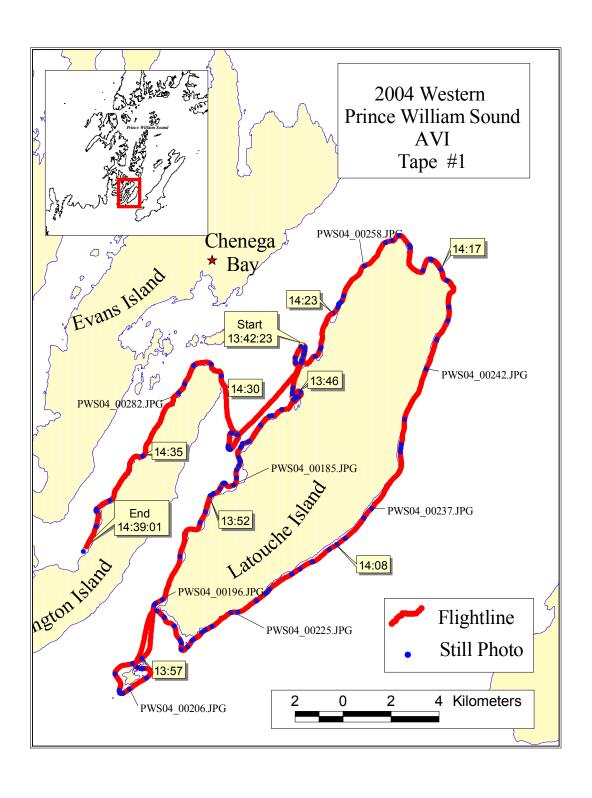
This survey combines the use of digital video camera technology with real-time GPS mapping to image the shoreline of western Prince William Sound from Latouche Island to Whittier, at low tide. The unusual features of the survey are: (a) the survey was conducted during the lowest tides of the year so the entire intertidal zone is imaged; (b) the technique is not weather dependent so imagery can be collected in any conditions under which aircraft can fly and; (c) both a coastal ecologist and coastal geomorphologist were in the aircraft providing real-time commentary on intertidal features that may not be visible on the imagery.

The survey was conducted by Coastal & Ocean Resources, Inc. (CORI), of Sidney, BC under contract to the Prince William Sound Regional Citizen's Advisory Council (PWSRCAC).

Figure 1 shows the overall flight coverage by tape number. The flight crew names and responsibilities are summarized in Table 1.

Table 1 Southeast Alaska AVI Flight Personnel and Responsibilities,

Function	Individual/ Affiliation	Responsibilities
geomorphologist project leader	John Harper, CORI	co-ordination of survey, video imaging, geomorphology commentary, project reporting
coastal ecologist	Mandy Lindeberg, Auke Bay Marine Lab Susan Saupe, Cook Inlet RCAC	biology commentary, digital photographs
navigator	Neil Borecky, CORI Carl Schoch, Prince William sound Science Centre	in flight navigation & recording, post-flight track plotting, survey coordination
pilot	Joe Trudeau, Maritime Helicopters	



Tape Number: PWS_04-01

General Location: Latouche Is, NW Elrington Is.

 Date:
 July 1, 2004

 Time Start:
 13:42:23

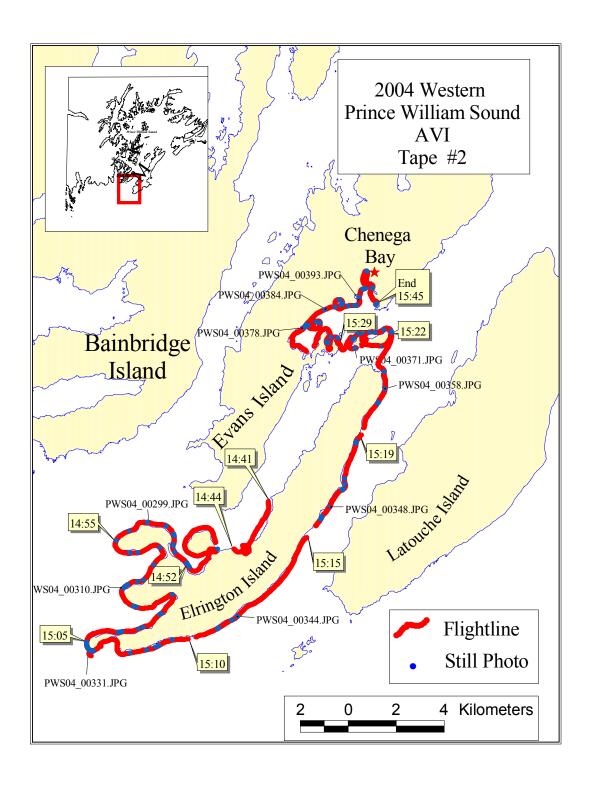
 Time Stop:
 14:39:01

 Tape Length:
 59:56

Weather: low ceiling, patchy fog, light rain

Electronic File: 01Jul04Tape2.txt

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
13:42:28	Start on Chicken Is off	PWS04_00153.JPG	16701	72
	Latouche			
13:46:39	Horseshoe Bay	PWS04_00167.JPG	11	"
13:51:59	Montgomery Bay	PWS04_00192.JPG	"	"
13:57:05	Danger Is	PWS04_00199.JPG	11	"
14:07:59	E of Latouche Peak	PWS04_00234.JPG	11	"
14:17:12	Sleepy Bay	PWS04_00247.JPG	11	"
14:23:16	Latouche (ruins)	PWS04_00265.JPG	11	"
14:25:40	Transit to Elrington Is.		11	"
14:30:46	N. tip of Elrington Is	PWS04_00278.JPG	11	"
14:39:07	End of Tape 1 near Fox Farm	PWS04_00288.JPG	"	"
	Bay	_		



Tape Number: PWS 04-02

General Location: Elrington Is, Evans Is

 Date:
 July 1, 2004

 Time Start:
 14:41:15

 Time Stop:
 15:45:22

 Tape Length:
 56:52

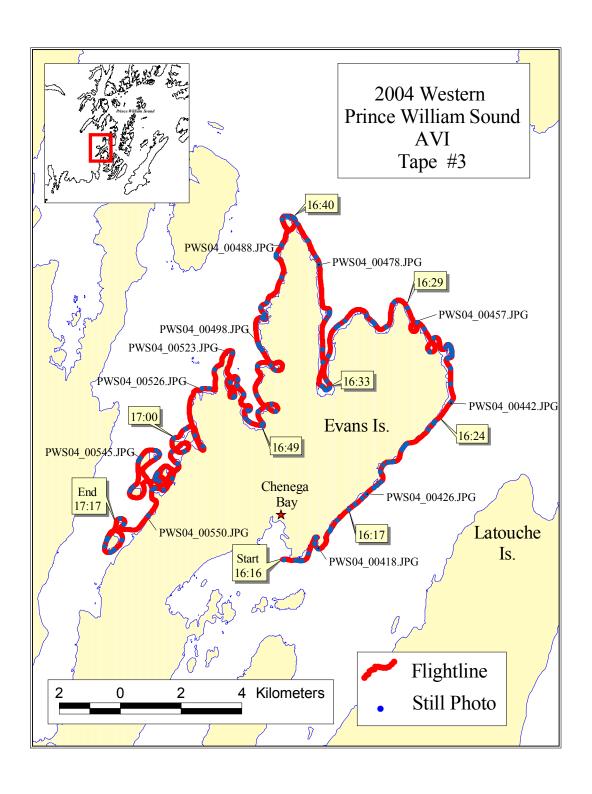
Weather: low ceiling, patchy fog, light rain

Electronic File: 01Jul04Tape2.txt

Time (UTC)	Location	Digital Image No.	Chart	Gazette Page
14:41:15	Start near Fox Farm Bay		16701	72
14:46:26	Island in Fox Farm Bay		"	65
14:55:24	Mouth North Twin Bay	PWS04_00301.JPG	"	"
15:01:39	South Twin Bay	PWS04_00315.JPG	"	"
15:05:18	Pt. Elrington; SW tip	PWS04_00323.JPG	"	"
	Elrington	_		
15:16:43	Cuspate Point, E. Elrington	PWS04_00348.JPG	"	"
15:22:51	Bettles Is	PWS04_00360.JPG	"	72
15:30:26	S. Entrance to Sawmill Bay	PWS04_00373.JPG	"	"
15:44:55	N. Entrance Sawmill Bay	PWS04_00406.JPG	"	"

Note: intermittent power problem caused about a dozen breaks in recording and GPS

Start Break	End Break
14:44:05	14:45:06
14:47:24	14:47:36
14:47:42	14:50:30
15:05:39	15:05:54
15:05:56	15:06:31
15:10:27	15:10:42
15:15:26	15:15:56
15:19:28	15:19:40
15:25:26	15:25:57
15:28:22	15:29:17
15:29:24	15:29:36
15:34:04	15:34:29

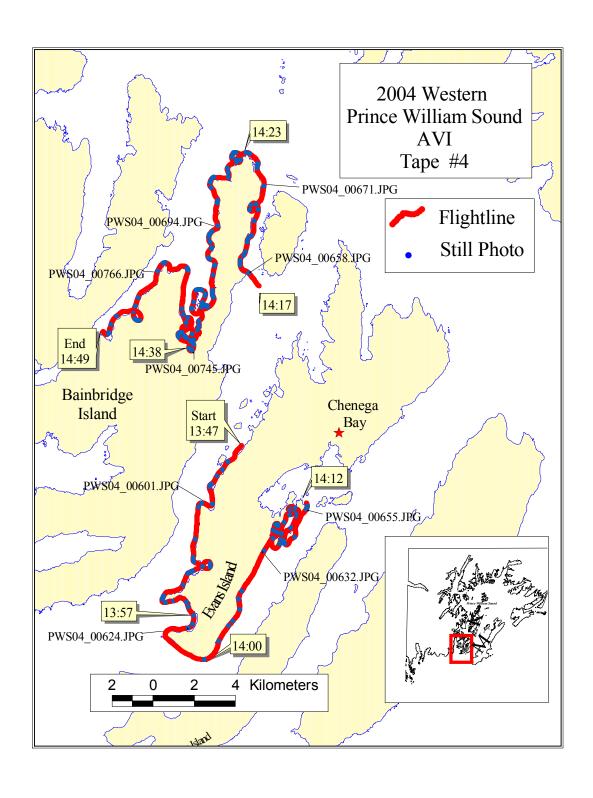


Tape Number:PWS_04-03General Location:Evans IsDate:July 1, 2004Time Start:16:16:41Time Stop:17:17:22Tape Length:59:50

Weather: low ceiling, patchy fog, light rain

Electronic File: 01Jul04Tape3.txt

Time (UTC)	Location	Digital Image No.	Chart	Gazette Page
16:16:41	N. Entrance to Sawmill Bay	PWS04_00408.JPG	16701	72
16:23:54	Bishop Rock	PWS04_00441.JPG	"	**
16:29:31	Evans Pt.	PWS04_00458.JPG	"	**
16:33:35	Shelter Bay	PWS04_00469.JPG	"	"
16:40:15	N. tip Evans Is	PWS04_00484.JPG	"	"
16:49:25	Head of Bay to the E. Iktua	PWS04 00510.JPG	"	"
	Rock	_		
17:14:14	Islet in Prince of Whales	PWS04_00559.JPG	"	"
	Passage, end of tape			



Tape Number: PWS 04-04

General Location: Evans Is, Bainbridge Island

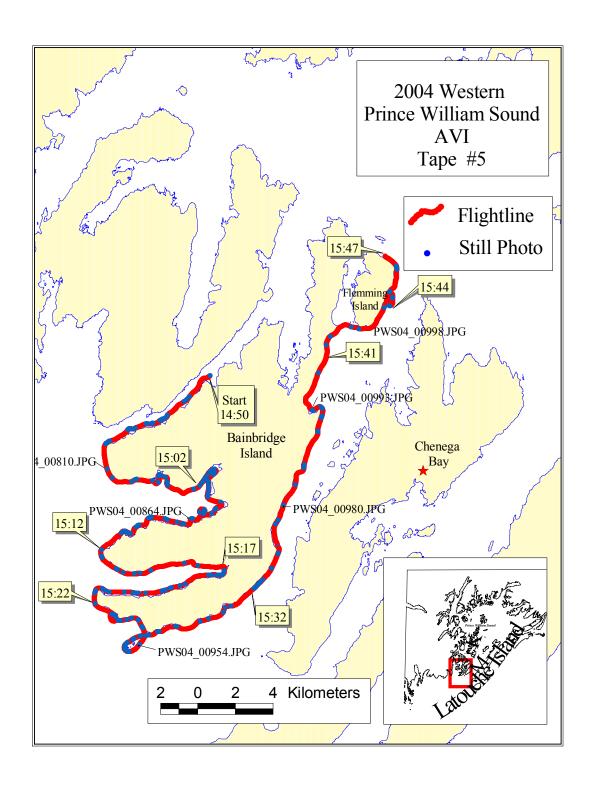
Date:July 2, 2004Time Start:13:47:00Time Stop:14::49:46

Break: 14:12:20 to 14:17:33

Tape Length: 1:00:11

Weather: low ceiling, calm

Time (UTC)	Location	Digital Image No.	Chart	Gazette Page
13:48:18	Evans Island, Prince of	PWS04 00596.JPG	16702	72
13.10.10	Whales Passage	1 11 50 1_000 0.01 0	10702	, 2
13:57:46	Mouth of Squirrel Bay	PWS04 00624.JPG	"	"
14:12:12	Chenega Bay (break off)	PWS04 00656.JPG	"	"
14:12:20	Break (transit Chenega to	_	"	"
	Panhat point			
14:17:31	Panhat Point, Bainbridge	PWS04 00658.JPG	"	"
	Island (resume)	_		
14:23:39	North Tip Bainbridge Island	PWS04_00675.JPG	"	"
14:38:33	Eelgrass Bay	PWS04 00745.JPG	"	"
14:49:46	End Tape Bainbridge Passage	PWS04 00776.JPG	"	"



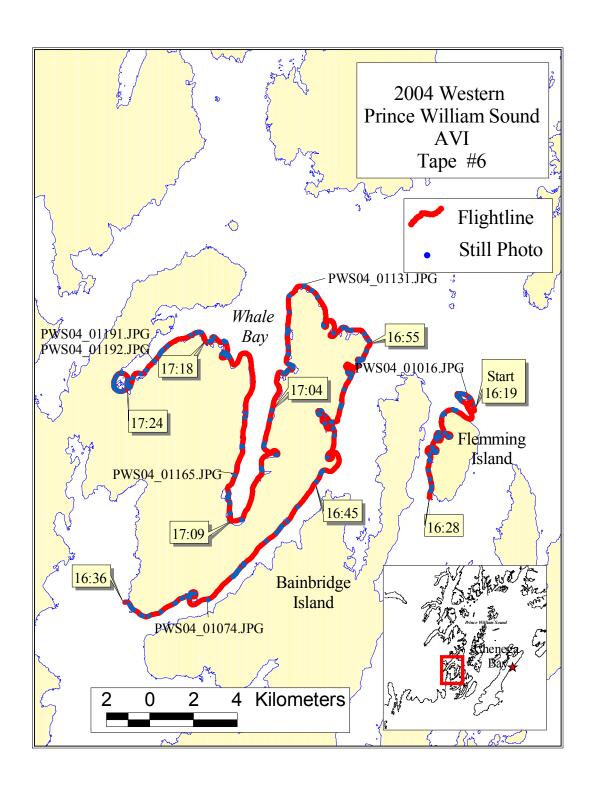
Tape Number: PWS_04-05

General Location: Bainbridge Island, Flemming Island

Date:July 2, 2004Time Start:14:50:46Time Stop:15:47:48Tape Length:59:12

Weather: low ceiling, calm

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
14:50:46	Bainbridge Passage	PWS04_00780.JPG	16702	72
15:02:51	N.Arm head of Hogg Bay	PWS04_00838.JPG	11	"
15:17:23	Head of Squirrel Bay	PWS04_00897.JPG	11	"
15:33:26	Amerk Point	PWS04_00976.JPG	11	"
15:41:59	Panhat Point	PWS04_00996.JPG	11	"
15:44:47	Ship Island (adjacent to	PWS04_01001.JPG	"	"
	Flemming			
15:47:48	End on Flemming Island	PWS04_01008.JPG	11	"
	(Break for Fuel)			



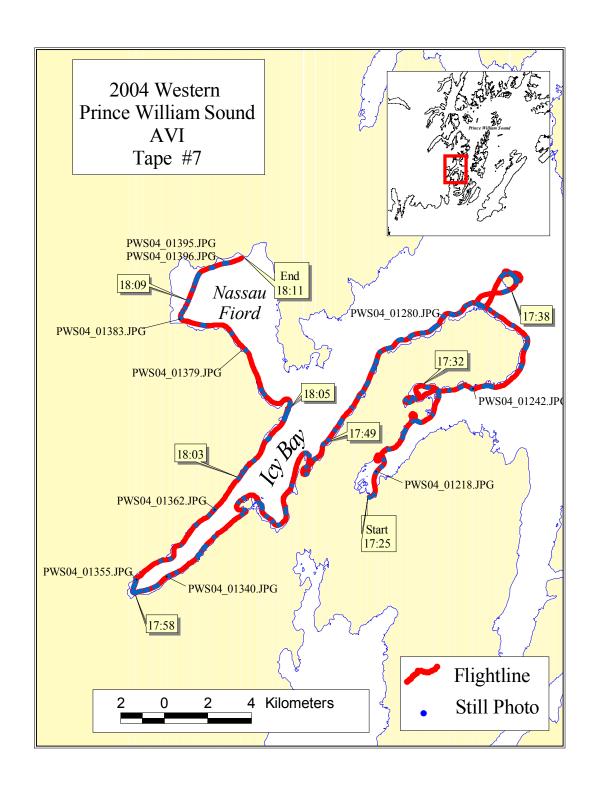
Tape Number: PWS 04-06

General Location: Flemming Is, Bainbridge Passage, Whale Bay

Date:July 2, 2004Time Start:16:19:50Time Stop:17:24:45Tape Length:1:00:23

Break: 16:28:44 to 16:36:16 Weather: low ceiling, calm

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
16:19:49	Start Flemming Island	PWS04_01013.JPG	16702	72
16:28:44	End Flemming Island (break)	n/a	"	=
16:28:44	Transit to Pt. Waters			
16:36:16	(resume) Pt. Waters,	PWS04_01054.JPG	"	"
	Bainbridge Passage			
16:45:31	N. entrance Bainbridge	PWS04_01092.JPG	"	"
	Passage			
16:55:29	Point Countess	PWS04_01121.JPG	"	"
17:09:10	Head of Whale Bay (S. Arm)	PWS04_01159.JPG	"	"
17:24:45	End Head of Whale Bay	PWS04_01213.JPG	"	"
	(N.W. Arm)	_		



Tape Number: PWS_04-07

General Location: Whale Bay, Icy Bay

 Date:
 July 2, 2004

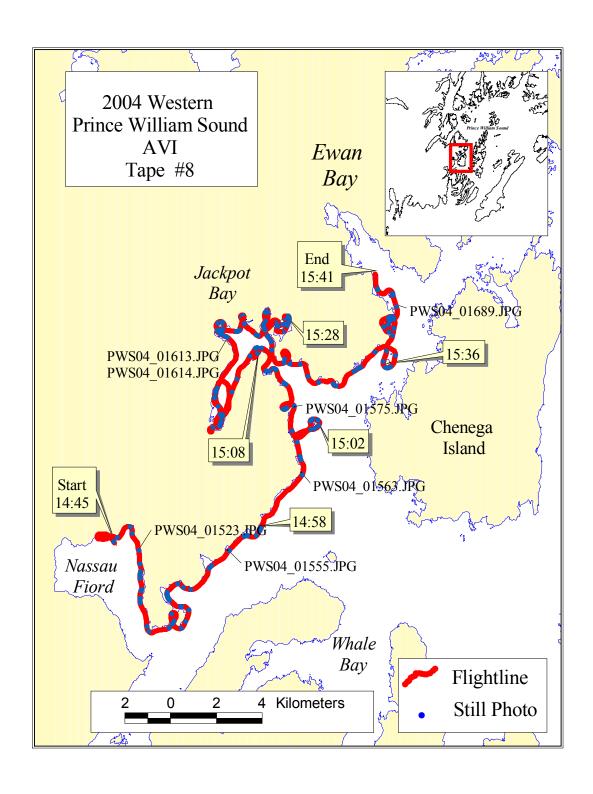
 Time Start:
 17:25:34

 Time Stop:
 18:11:18

 Tape Length:
 47:49

Weather: low ceiling, calm

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
17:25:34	Start Whale Bay (N.W. Arm)	PWS04_01218.JPG	16702	72
17:38:36	Verdant Island	PWS04_01262.JPG	16701	"
17:49:19	Mid-point Icy Bay	PWS04_01311.JPG	11	"
17:58:53	Tiger Glacier	PWS04_01349.JPG	11	"
18:05:19	Mouth Nassau Fiord	PWS04_01376.JPG	11	"
18:09:33	Chenega Glacier	PWS04_01386.JPG	11	"
18:11:18	End Nassau Fiord Head	PWS04_01396.JPG	11	"
	(Princeton Glacier)			



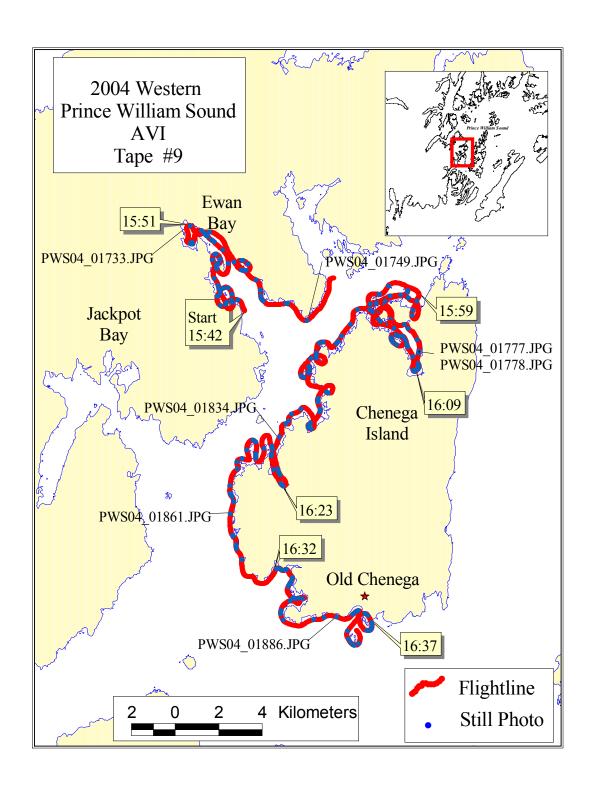
Tape Number: PWS 04-08

General Location: Nassau Fiord, Icy Strait, Jackpot Bay, Dangerous Passage

Date:July 3, 2004Time Start:14:45:27Time Stop:15:41:58Tape Length:59:12

Weather: low ceiling, calm

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
14:45:11	Nassau Fiord	PWS04_01520.JPG	16701	72
14:58:18	Mouth of Icy Bay	PWS04_01561.JPG	"	11
15:02:11	Jackpot Island	PWS04_01570.JPG	"	"
15:08:27	Mouth of Jackpot Bay	PWS04_01590.JPG	"	11
15:28:04	Em'urluq Bay	PWS04_01650.JPG	"	"
15:36:38	Delenia Island	PWS04_01675.JPG	"	"
15:41:26	Mouth of Ewan Bay	PWS04_01692.JPG	"	"



Tape Number: PWS 04-09

General Location: Ewan Bay, Chenega Island

 Date:
 July 3, 2004

 Time Start:
 15:43:14

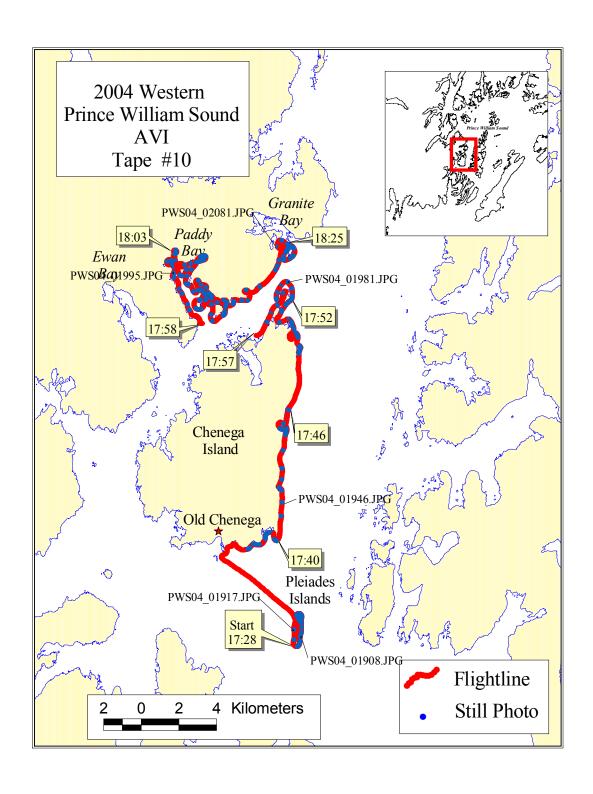
 Time Stop:
 16:39:51

TapeBreak: 15:57:47 to 15:59:13

Tape Length: 58:29

Weather: low ceiling, calm

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
15:42:11	Mouth of Ewan Bay	PWS04_01694.JPG	16701	72
15:51:08	Lagoon at head of Ewan Bay	PWS04_01733.JPG	"	"
15:57:47	Transit to Chenega Island			
15:59:46	Chenega I (resume)	PWS04_01750.JPG	"	"
16:09:21	Head of Masked Bay	PWS04_01783.JPG	"	"
16:23:56	Large bay east side Chenega	PWS04_01839.JPG	"	"
	I.			
16:32:20	Large bay south side Chenega	PWS04_01867.JPG	"	"
16:37:07	Old Chenega Village site	PWS04 01888.JPG	"	11



Tape Number: PWS_04-10

General Location: Plieades Islands, Chenega Island

 Date:
 July 3, 2004

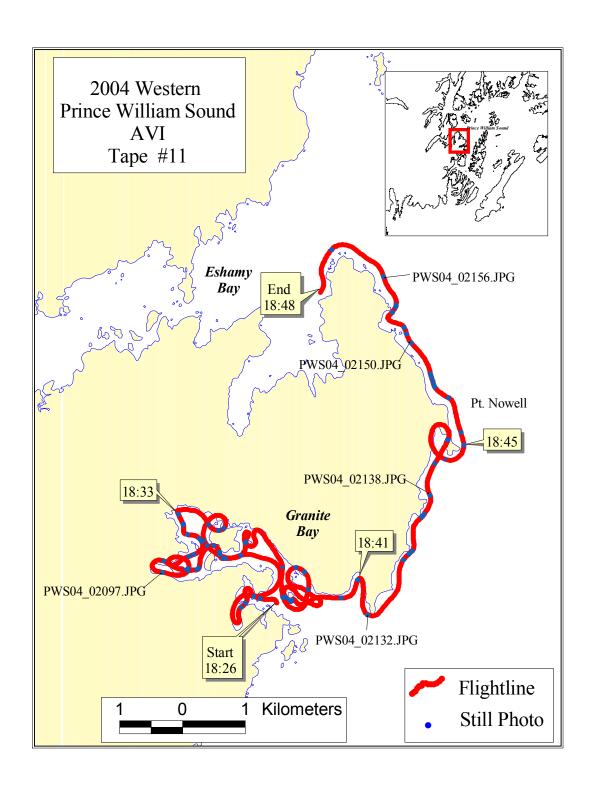
 Time Start:
 17:28:41

 Time Stop:
 18:25:31

 Tape Length:
 58:52

Weather: low ceiling, calm

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
17:28:43	Pleiades Islands	PWS04_01904.JPG	16701	72
17:40:38	Chenega Point	PWS04_01943.JPG	"	"
17:52:30	Junction Island, top Chenega I	PWS04_01976.JPG	"	"
17:57:05	Chenega I. (break)		"	"
17:58:47	(resume) Paddy Bay		"	"
18:03:33	Head of Paddy Bay	PWS04_02003.JPG	"	"
18:25:11	Mouth of Granite Bay	PWS04 02081.JPG	"	"



Tape Number: PWS 04-11

General Location: Granite Bay, Pt. Nowell, Eshamy Bay

 Date:
 July 3, 2004

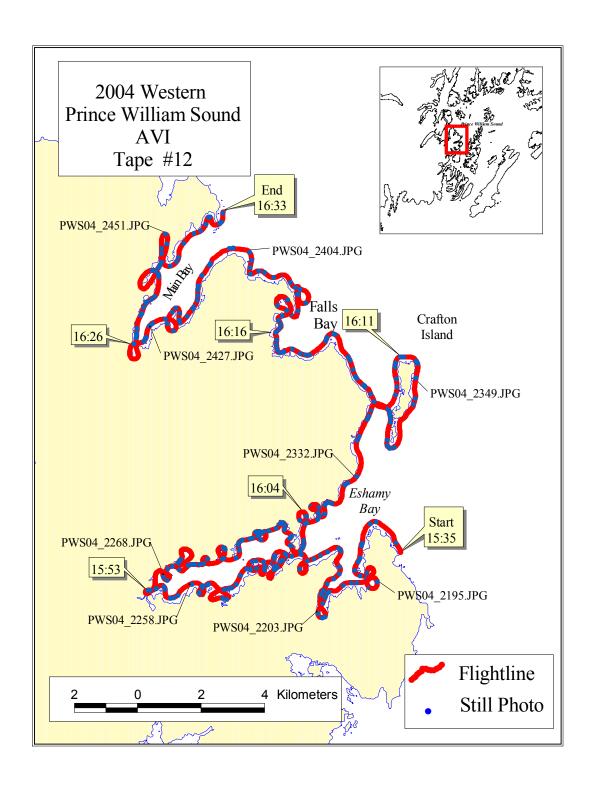
 Time Start:
 18:26:24

 Time Stop:
 18:48:56

 Tape Length:
 24:43

Weather: low ceiling, calm

Time (UTC)	Location	Digital Image No.	Chart	Gazette Page
18:24:47	South side mouth of Granite Bay	PWS04_02080.JPG	16701	72
18:33:16	Head of Granite Bay	PWS04_02107.JPG	11	"
18:41:34	North side mouth of Granite Bay	PWS04_02132.JPG	"	"
18:45:08	Pt. Nowell	PWS04_02142.JPG	11	"
18:48:23	Mouth of Eshamy Bay	PWS04_02157.JPG	11	"



Tape Number: PWS 04-12

General Location: Eshamy Bay, Crafton Island, Falls Bay, Main Bay

 Date:
 July 4, 2004

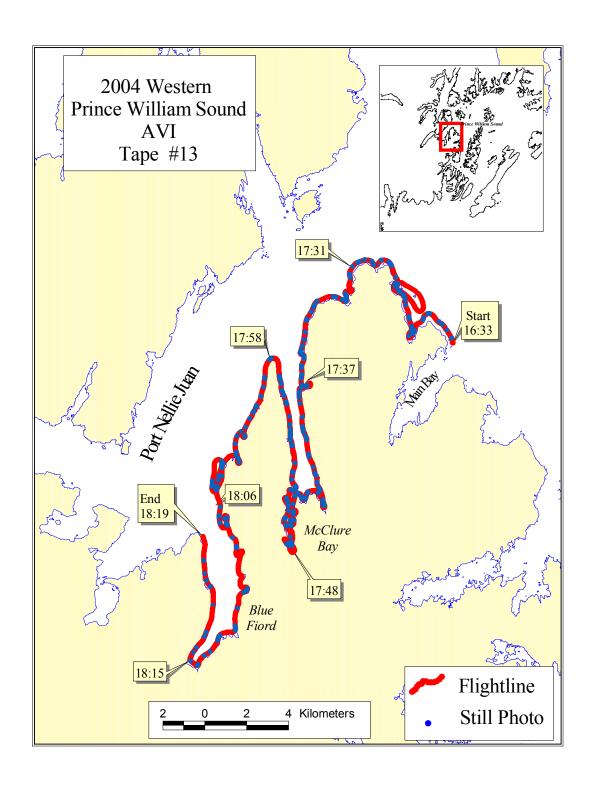
 Time Start:
 15:35:41

 Time Stop:
 16:33:33

 Tape Length:
 1:00:01

Weather: low ceiling, windy, rainy, poor visibility

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
15:36:47	S. side mouth of Eshamy Bay	PWS04_2184.JPG	16700	72
15:53:22	Head Eshamy Bay	PWS04_2267.JPG	"	"
16:04:04	N.side mouth Eshamy Bay	PWS04_2320.JPG	"	"
16:11:11	Crafton Island	PWS04_2349.JPG	"	"
16:16:36	Head Falls Bay	PWS04_2380.JPG	"	"
16:26:35	Head Main Bay	PWS04_2431.JPG	"	"
16:33:31	Mouth Main bay (n.side)	PWS04_2466.JPG	"	"



Tape Number: PWS 04-13

General Location: Port Nellie Juan, McClure Bay, Blue Fiord

Date:July 4, 2004Time Start:16:35:06Fuel Start:16:41:48Fuel End:17:29:13Time Stop:18:19:56

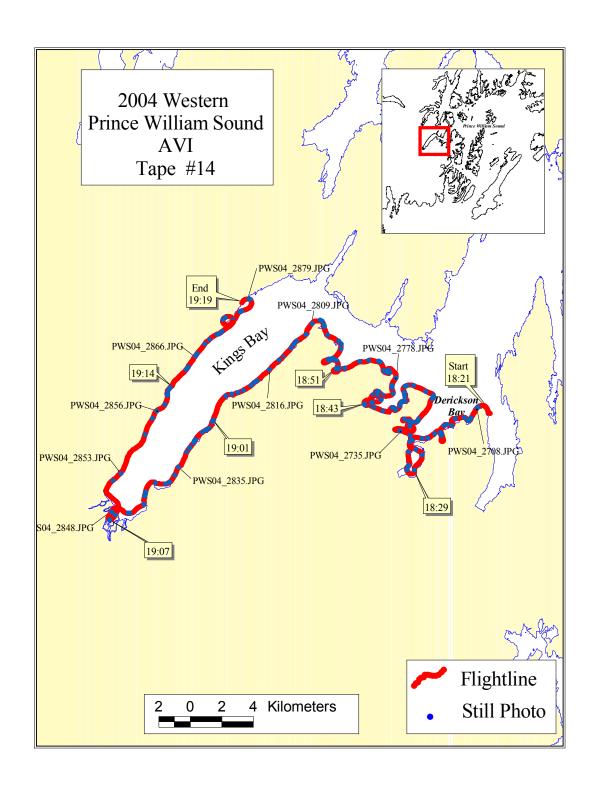
Weather: low ceiling, windy, rainy, poor visibility

57:47

Electronic File: 04Jul04.txt

Tape Length:

Time (UTC)	Location	Digital Image No.	Chart	Gazette Page
16:35:31	Mouth Eshamy Bay (n. side)	PWS04 2469.JPG	16700	72
16:41:48	Fuel Break Start	_	"	"
17:29:13	Fuel Break End		"	"
17:31:25	Tip Port Nellie Juan	PWS04 2506.JPG	"	"
17:37:28	West Gable Cannery	PWS04 2541.JPG	"	"
17:48:32	Head McClure Bay	PWS04 2591.JPG	"	"
17:58:05	Mouth McClure Bay (w. side)	PWS04_2632.JPG	"	"
18:06:25	Mouth Blue Fiord (e.side)	PWS04_2671.JPG	"	"
18:15:44	Head Blue Fiord	PWS04 2697.JPG	"	"



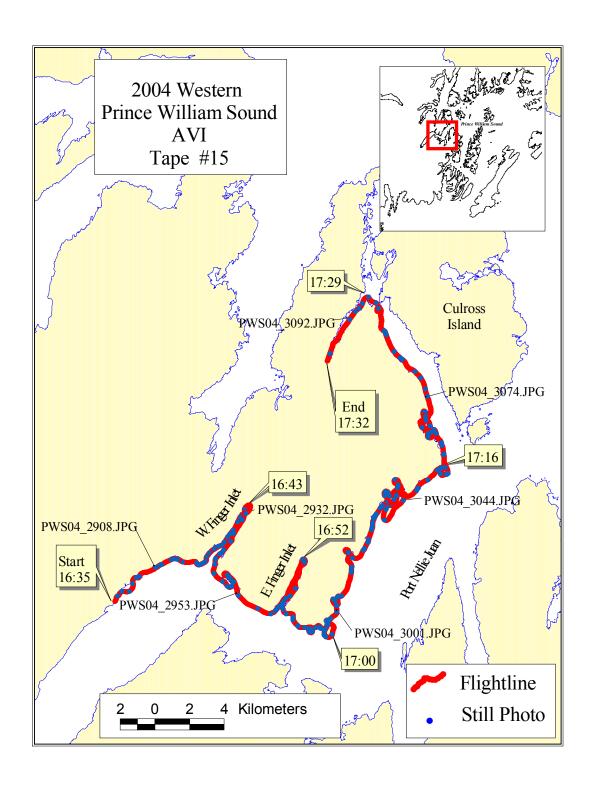
Tape Number: PWS 04-14

General Location: Port Nellie Juan, Kings Bay

Date:July 4, 2004Time Start:18:21:47Time Stop:19:19:51Tape Length:1:00:09

Weather: low ceiling, windy, rainy, poor visibility

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
18:22:32	500 m. west of McClure Bay	PWS04_2707.JPG	16703	72
18:29:48	Head of Derickson Bay	PWS04_2728.JPG	"	"
18:43:11	Head of Deep Water Bay	PWS04_2765.JPG	"	11
18:51:20	Head of Greystone Bay	PWS04_2791.JPG	"	"
19:01:06	Falling Glacier	PWS04_2825.JPG	"	71
19:07:42	Head of Kings Bay	PWS04_2849.JPG	"	"
19:19:35	Mouth of Kings Bay	PWS04_2879.JPG	"	11



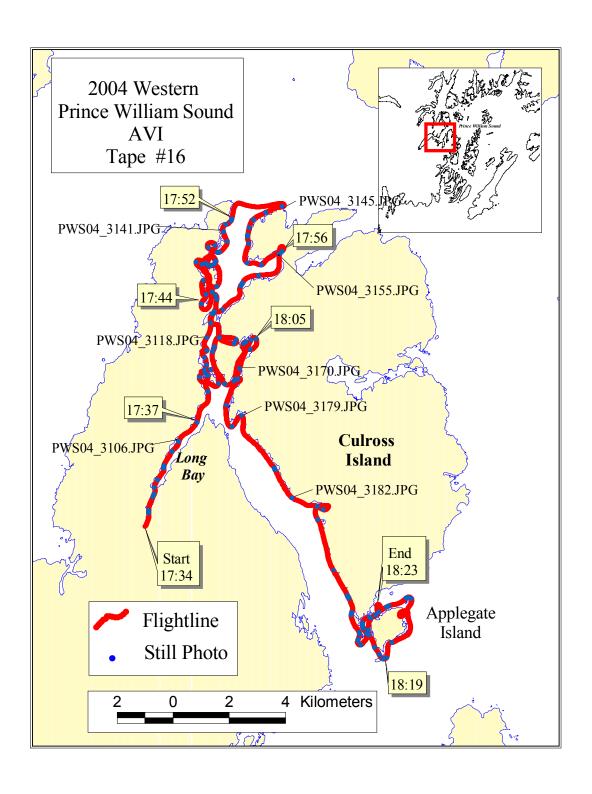
Tape Number: PWS 04-15

General Location: Port Nellie Juan, Culross Passage

Date:July 5, 2004Time Start:16:35:48Time Stop:17:32:59Tape Length:59:12

Weather: no rain, high overcast

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
16:36:07	N.side Kings Bay	PWS04_2902.JPG	16700	72
16:43:45	Head of West Finger Inlet	PWS04_2933.JPG	"	"
16:52:52	Head of East Finger Inlet	PWS04_2962.JPG	"	"
17:11:12	S. side Mink Island	PWS04_3043.JPG	"	"
17:16:41	S. entrance Culross Passage	PWS04_3054.JPG	"	"
17:29:50	Mouth of Long Bay	PWS04_3088.JPG	"	"
17:32:40	Head of Long Bay	PWS04_3093.JPG	"	"



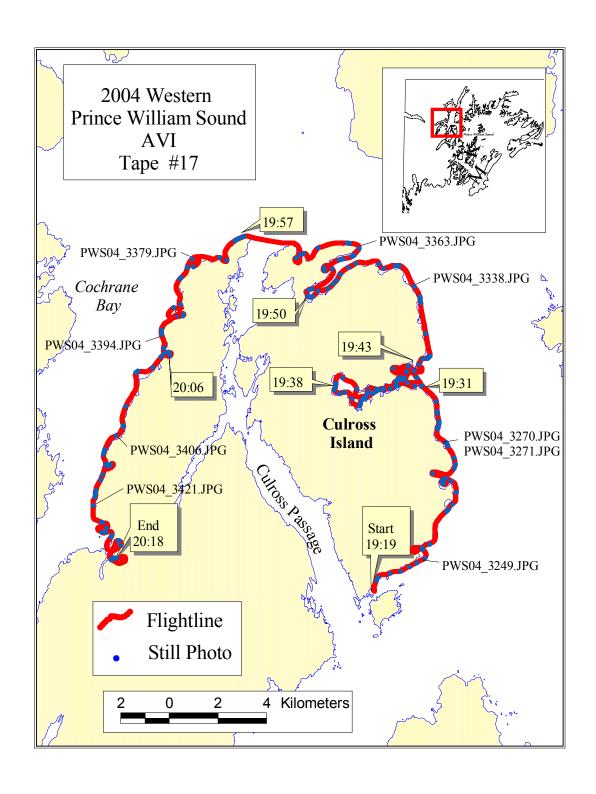
Tape Number: PWS 04-16

General Location: Culross Passage, Culross Island, Cochrane Bay

Date:July 5, 2004Time Start:17:34:38Time Stop:18:23:48Tape Length:51:22

Weather: no rain, high overcast

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
17:34:38	Head of Long Bay	PWS04_3097.JPG	16700	72
17:38:49	Mouth of Long Bay	PWS04_3097.JPG	"	"
17:52:03	N. entrance Culross Passage	PWS04_3144.JPG	"	"
18:05:12	Head Goose Bay	PWS04_3174.JPG	"	"
18:19:50	S. tip Applegate Island	PWS04_3212.JPG	"	"
18:23:32	N. side Applegate Island	PWS04_3218.JPG	"	"



Tape Number: PWS 04-17

General Location: Culross Passage, Culross Island, Cochrane Bay

 Date:
 July 5, 2004

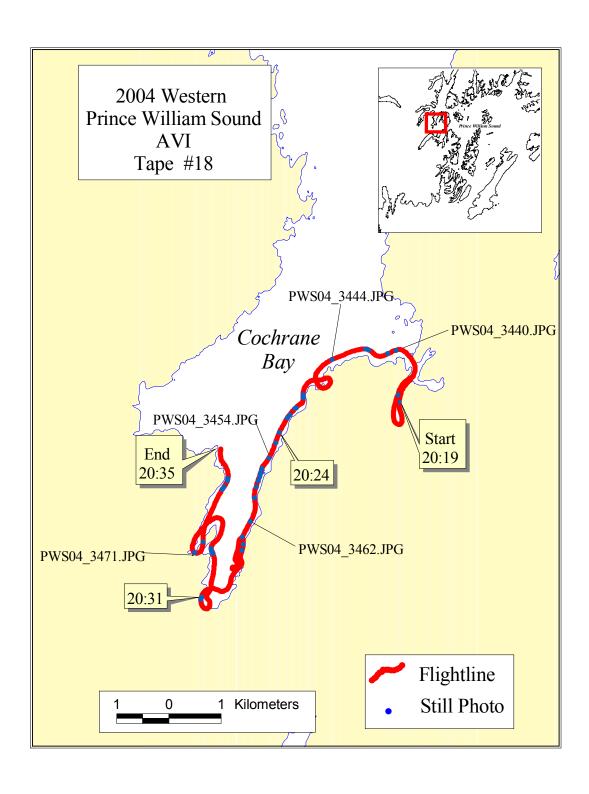
 Time Start:
 19:19:56

 Time Stop:
 20:18:04

 Tape Length:
 58:30

Weather: no rain, high overcast

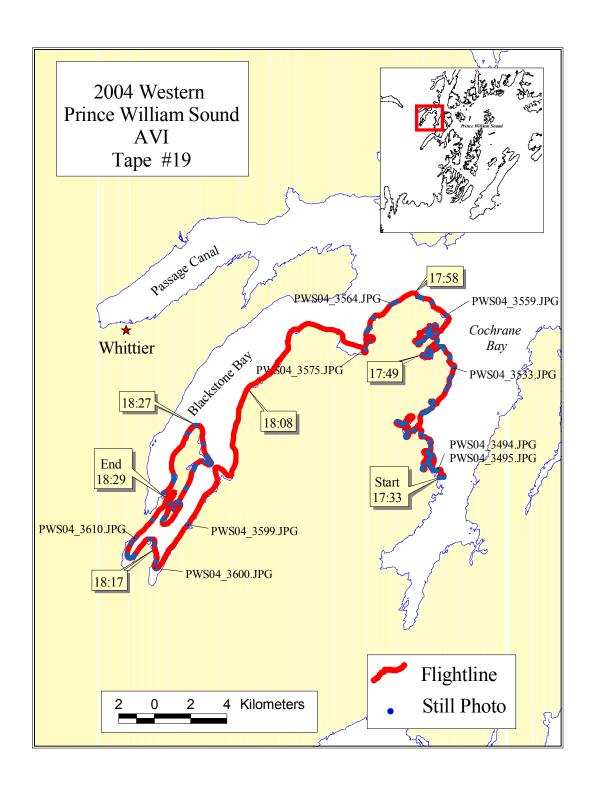
Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
19:20:21	S. side Culross Island	PWS04_3243.JPG	16700	72
19:31:07	Mouth of Hidden Bay (s. side)	PWS04_3280.JPG	11	"
19:38:53	Head of Hidden Bay	PWS04_3311.JPG	11	"
19:43:34	Mouth of Hidden Bay (n.	PWS04_3329.JPG	11	"
	side)			
19:50:10	Head Culross Bay	PWS04_3352.JPG	11	"
19:57:32	N.entrace Culross Passage	PWS04_3371.JPG	11	"
20:06:00	Mid-point Cochrane Bay	PWS04_3396.JPG	11	"
20:16:54	Head Cochrane Bay (e. arm)	PWS04_3432.JPG	"	"



Tape Number:PWS_04-18General Location:Cochrane BayDate:July 5, 2004Time Start:20:19:04Time Stop:20:35:18Tape Length:16:14

Weather: no rain, high overcast

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
20:20:27	Head Cochrane Bay (e. side)	PWS04_3439.JPG	16700	72
20:31:20	Head of Cochrane Bay (w. inlet)	PWS04_3466.JPG	"	"
20:34:52	Cochrane Bay (mouth of w. inlet)	PWS04_3476.JPG	"	"



Tape Number: PWS 04-19

General Location: Cochrane Bay, Blackstone Bay, Willard Island

 Date:
 July 6, 2004

 Time Start:
 17:33:30

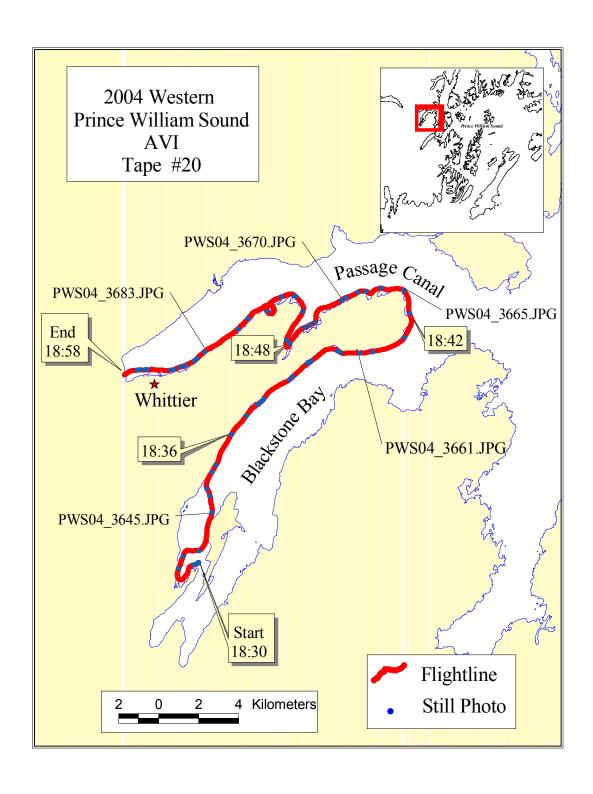
 Time Stop:
 18:29:54

 Tape Length:
 58:37

Weather: very windy, early fog, sunny

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
17:33:33	Mid-point Cochrane Bay (w.	PWS04_3492.JPG	16700	72
	side)			
17:49:35	Head Surprise Cove	PWS04_3541.JPG	11	"
17:58:13	Blackstone Point	PWS04_3562.JPG	11	"
18:08:00	Mid-point Blackstone Bay	N/A	11	71
17:17:09	Head of Blackstone Bay	PWS04_3601.JPG	11	"
18:27:40	N. tip of Willard I.	PWS04_3629.JPG	11	"
18:29:53	W. side Willard Island	PWS04_3634.JPG	11	"

^{*}Note we are missing overlap with Tape 18 due to fog. In addition, the images between 3575 and 3599 were lost for the east side of Blackstone Bay due to a camera malfunction.



Tape Number: PWS_04-20

General Location: Blackstone Bay, Passage Canal, Whittier

Date:July 6, 2004Time Start:18:30:44Time Stop:18:58:08Tape Length:29:40

Weather: very windy, sunny

Time				Gazette
(UTC)	Location	Digital Image No.	Chart	Page
18:30:44	Head Blackstone Bay	PWS04_3639.JPG	16700	71
18:42:18	Strong Point	PWS04_3664.JPG	11	72
18:47:58	Shotgun Cove	PWS04_3674.JPG	16705	71
18:49:41	Trinity Point	PWS04_3677.JPG	11	"
18:56:04	Whittier	PWS04_3689.JPG	11	"
18:57:24	Head of Passage Canal	PWS04_3693.JPG	11	"

^{*} end of survey due to high winds and turbulence.