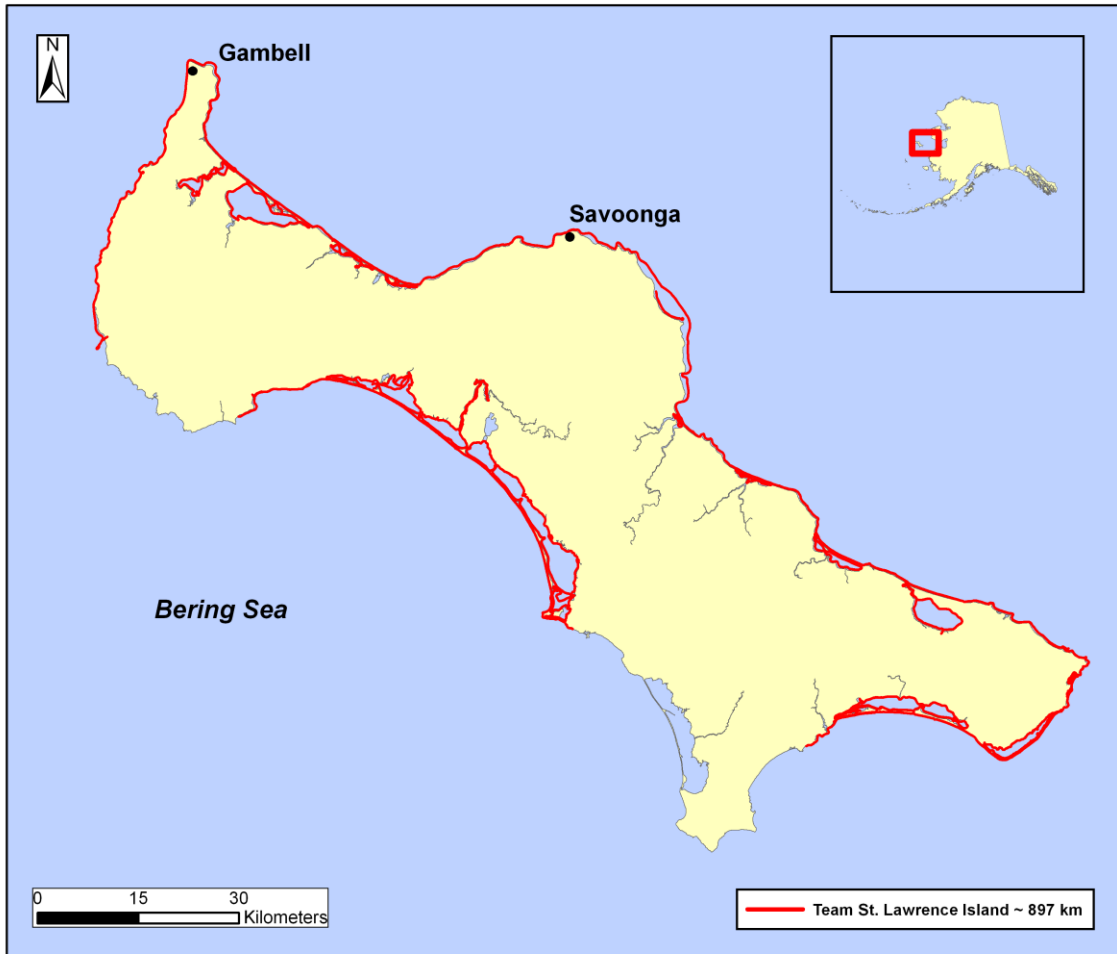


**FLIGHT REPORT**  
**ShoreZone Aerial Video Imaging (AVI) Survey**  
**Bering Sea**  
**July 20-27, 2013**  
**Team St. Lawrence Island (SLI)**

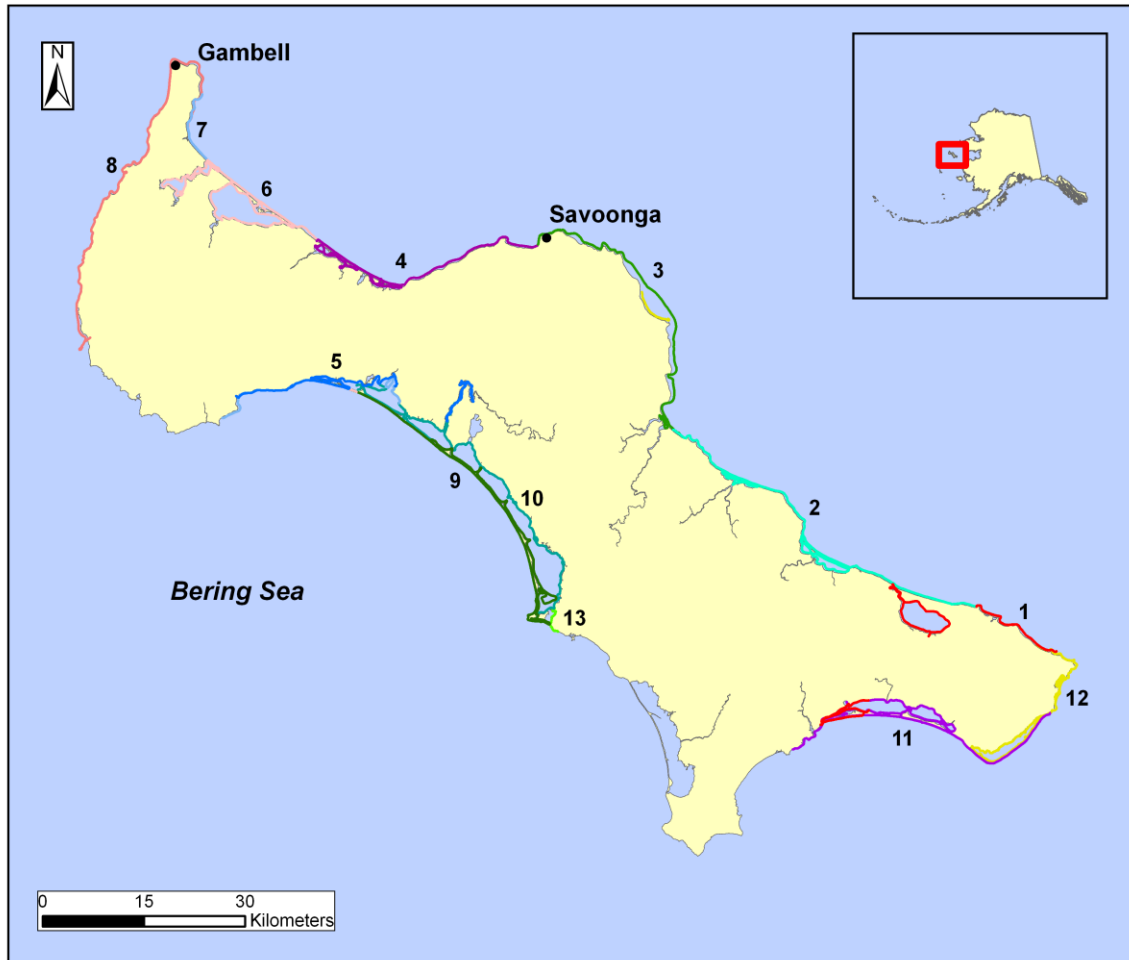


prepared for:

**Oil Spill Recovery Institute**  
Cordova, Alaska



prepared by  
**Coastal & Ocean Resources**  
Victoria, BC



Flight trackline map showing the location and extent of DVDs for the July 20-27, 2013 Team St. Lawrence Island survey in Northwest Alaska

The purpose of this flight report is to summarize the field activities of the ShoreZone aerial video imaging (AVI) survey conducted out of St. Lawrence Island during July 20-27, 2013. The survey was conducted by Coastal & Ocean Resources (CORI), under contract with the Oil Spill Recovery Institute (OSRI). A coastal ecologist from Archipelago Marine Research Ltd (AMRL) provided biological observations during the flights. Table 1 provides a summary of crew affiliations and responsibilities.

The tables and figures on the following pages summarize the extent and location of the 897 km (\*based on the digital Alaska Coastline 1:63,360) of aerial video imagery (AVI) collected by the team. The teams utilized a Robinson R-44 helicopter chartered from Bering Air in Nome, Alaska. Imagery was collected looking at the shoreline from the left side of the aircraft with the doors removed. A total of 13 HD master tapes were collected during the survey and recorded to DVDs (Table 2). 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 (hh:mm:ss UTC; 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.

All photos are supplied on hard drive, organized by tape number for each team, consistent with the ShoreZone image library. A total of 11,026 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. 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/shorezone/default.htm>

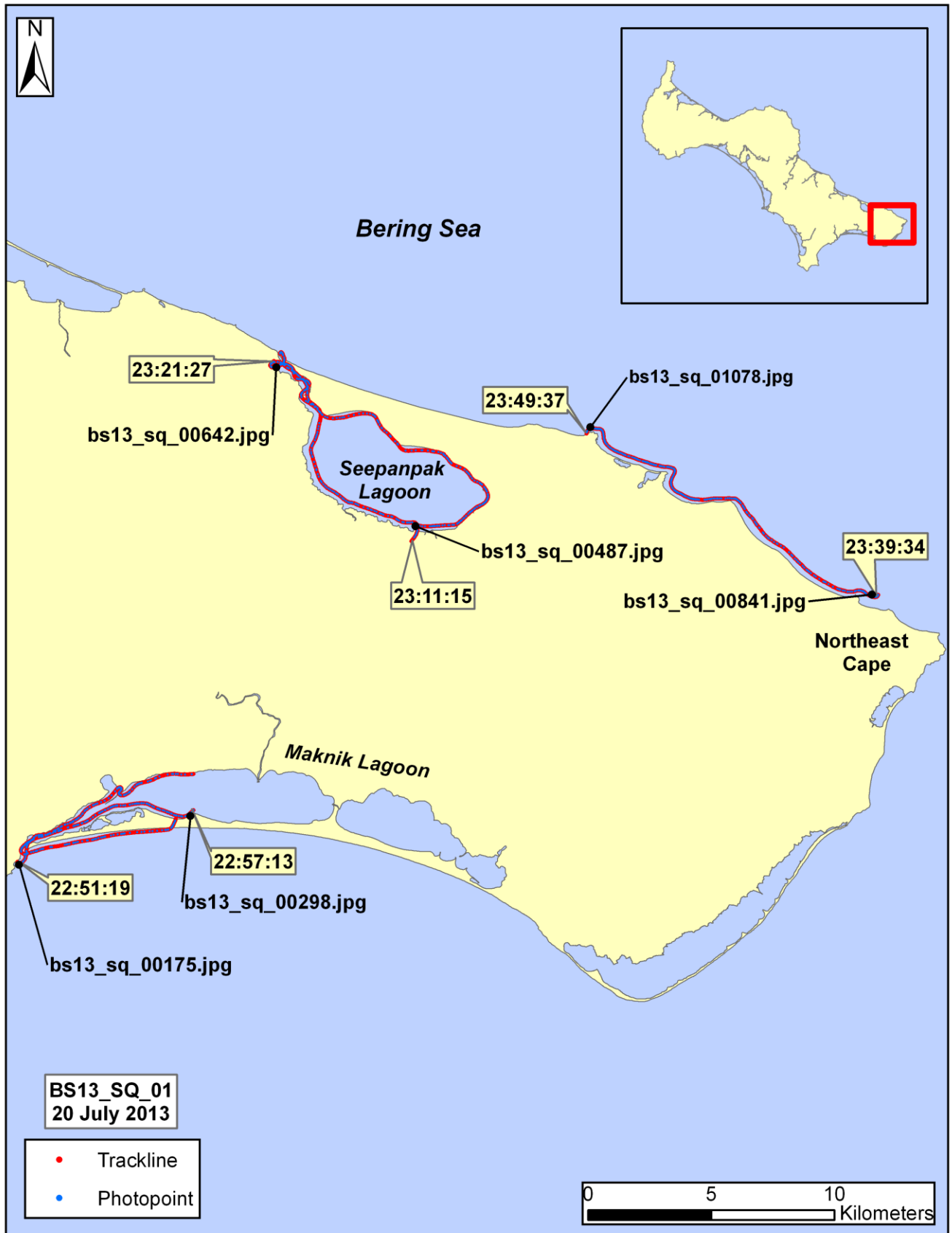


**Table 1. Flight Personnel and Responsibilities: Team St. Lawrence Is. (SLI)**

<b>Crew Member</b>	<b>Individual/ Affiliation</b>	<b>Responsibilities</b>
<i>Geomorphologist</i>	John Harper CORI, Victoria, BC	Videography, geomorphic commentary, in-flight navigation, survey coordination, post-flight data processing
<i>Coastal Ecologist</i>	Mary Morris AMR, Victoria, BC	Digital photography, biologic commentary
<i>Pilot</i>	Cory Konik Bering Air, Nome, Alaska	

**Table 2. Survey Tapes: Team St. Lawrence Island (SLI)**

<b>Tape Number</b>	<b>Location</b>
BS13_SQ_01	Maknik Lagoon, Seepanpak Lagoon
BS13_SQ_02	Northwest Cape to Fossil River
BS13_SQ_03	Fossil River to Savoonga
BS13_SQ_04	Savoonga, Northern St. Lawrence Island
BS13_SQ_05	Koozata Lagoon, Southern St. Lawrence Island
BS13_SQ_06	Niyrakpak, Aghnaghak & Koozata Lagoon
BS13_SQ_07	Koozata Lagoon, Powooiliak Camp, Gambell
BS13_SQ_08	Gambell, Western St. Lawrence Island
BS13_SQ_09	Koozata Lagoon
BS13_SQ_10	Koozata Lagoon
BS13_SQ_11	Maknik Lagoon, Apavawook Cape
BS13_SQ_12	Apavawook Cape, Northeast Cape
BS13_SQ_13	Siknik Cape, Southern St. Lawrence Island



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_01

**Date:** 20 July 2013

**General Location:** Maknik Lagoon, Seepanpak Lagoon

**Time Start (UTC):** 22:51:19

**Geo:** Harper

**Fuel Break:** End of tape

**Bio:** Morris

**Time End (UTC):** 23:49:37

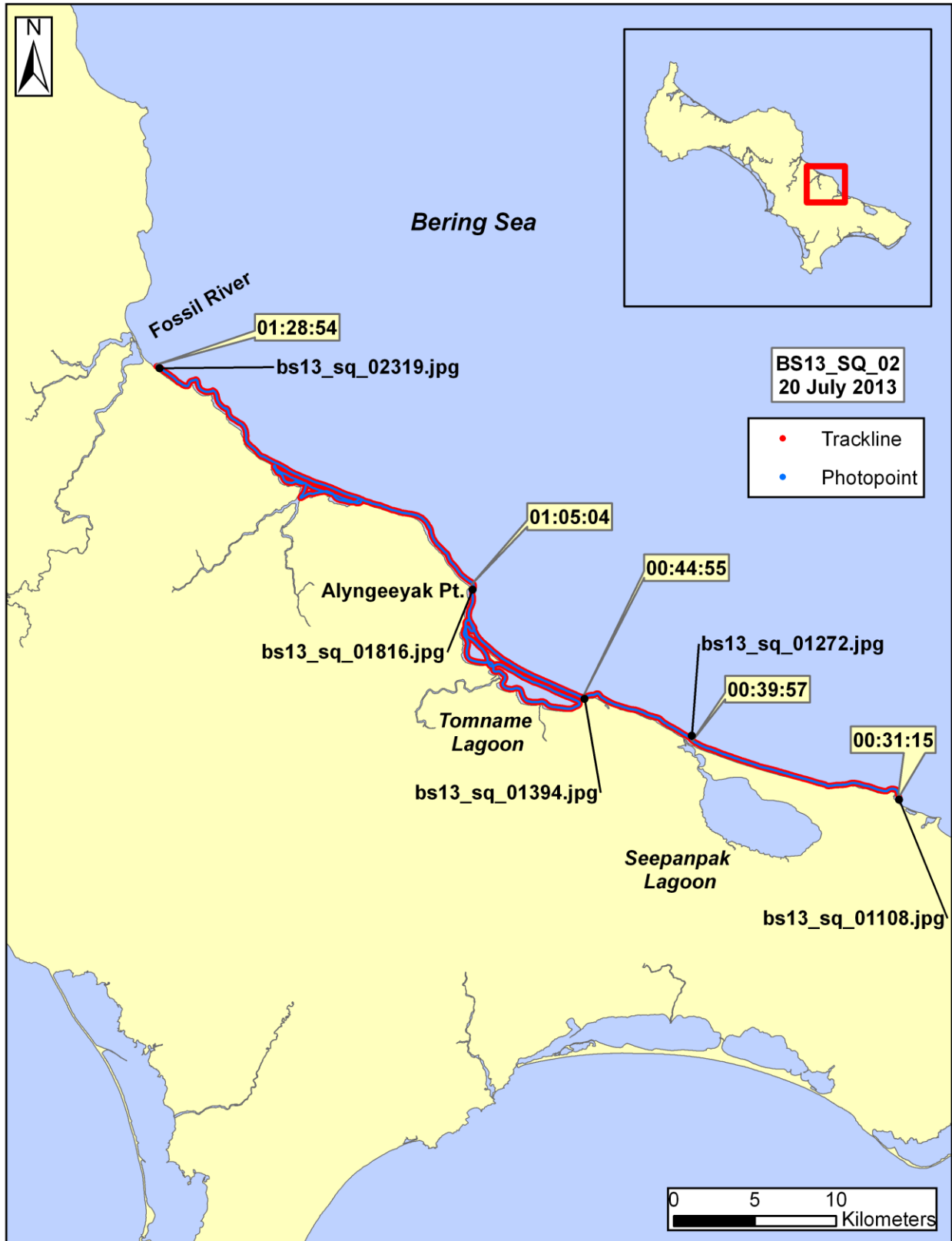
**Pilot:** Konik

**Tape Length:** 45 min

**Weather:** Fog, partly sunny, winds SW 30 knots

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
22:51:19	West Maknik Lagoon, outer shoreline of barrier island	Bs13_sq_00175.jpg
	Transit 22:55:58 to 22:57:12	
22:57:13	Maknik Lagoon, inside barrier island	Bs13_sq_00298.jpg
	Fog Break and Transit 23:05:05 to 23:11:14	
23:11:15	Seepanpak Lagoon, south shore	Bs13_sq_00487.jpg
	Transit 23:18:33 to 23:21:26	
23:21:27	Seepanpak Lagoon, north shore	Bs13_sq_00642.jpg
	Transit 23:31:07 to 23:39:33	
23:39:34	Northeast Cape	Bs13_sq_00841.jpg
23:49:37	North of Northeast Cape	Bs13_sq_01078.jpg

Notes: local time (ADT) is UTC -8hr





**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_02

**Date:** 20 July 2013

**General Location:** Northeast Cape Site to Fossil River

**Time Start (UTC):** 00:31:15

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 01:28:54

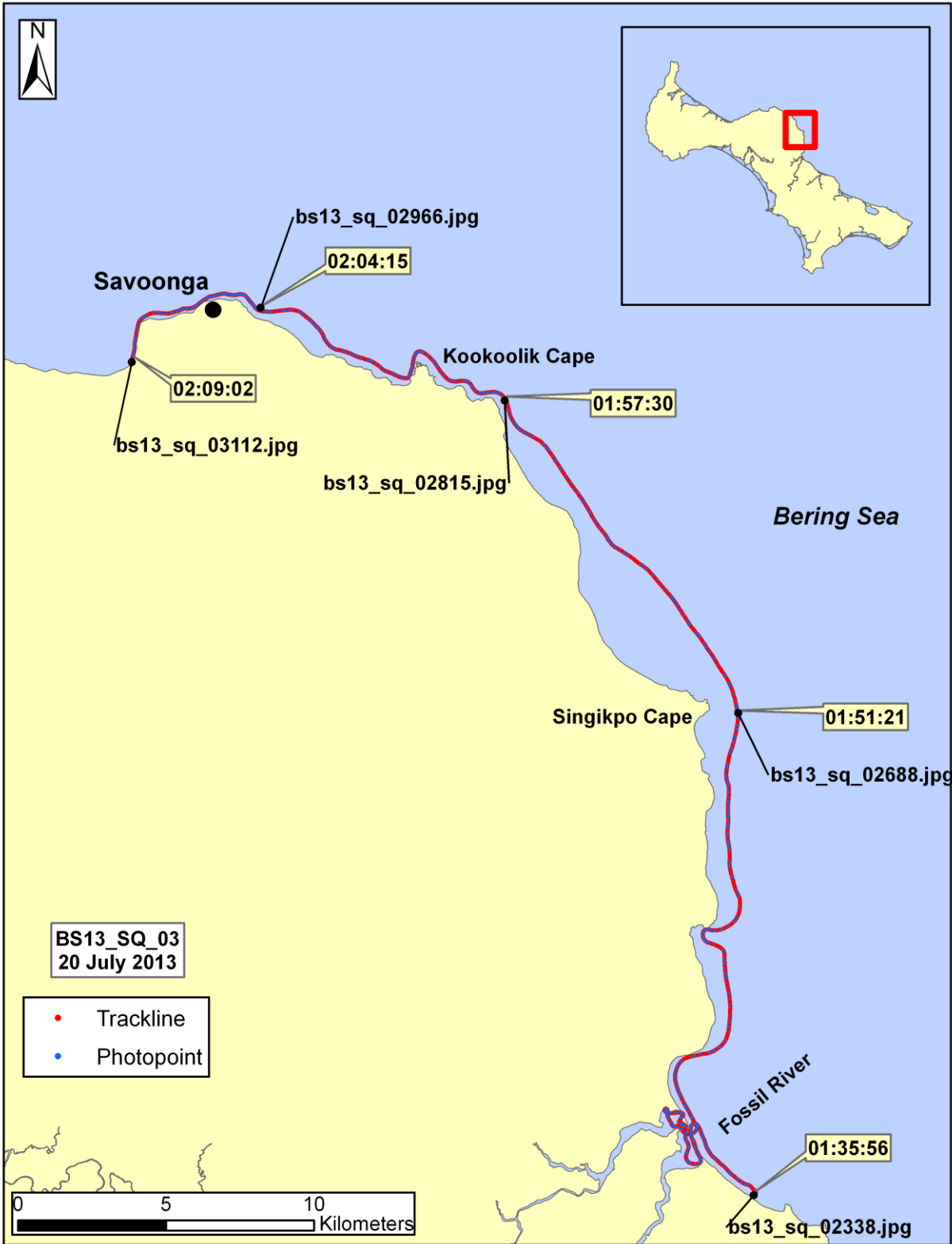
**Pilot:** Konik

**Tape Length:** 59 min

**Weather:** Fog, partly sunny, winds SW 30 knots

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
00:31:15	Northeast shore, near NE Cape	Bs13_sq_01108.jpg
00:39:57	Entrance to Seepanpak Lagoon	Bs13_sq_01272.jpg
00:44:55	East Tomname Lagoon	Bs13_sq_01394.jpg
01:05:04	Alyngeeyak Point	Bs13_sq_01816.jpg
01:28:54	Fossil River	Bs13_sq_02319.jpg

Notes: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_03

**Date:** 20 July 2013

**General Location:** Fossil River to Savoonga, Northern St. Lawrence Island

**Time Start (UTC):** 01:35:56

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 02:09:02

**Pilot:** Konik

**Tape Length:** 35 min

**Weather:** Fog, partly sunny, winds SW 30 knots

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
01:35:56	Fossil River	Bs13_sq_02338.jpg
01:51:21	Singikpo Cape	Bs13_sq_02688.jpg
	Track pushed far offshore due to severe turbulence	
01:57:30	Kookoolik Cape	Bs13_sq_02815.jpg
02:04:15	Savoonga	Bs13_sq_02966.jpg
02:09:02	Koomlangeelkuk Bay	Bs13_sq_03112.jpg
	Severe downdraft turbulence prevents continuation	

Notes: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_04

**Date:** 22 July 2013

**General Location:** Savoonga, Northern St. Lawrence Island

**Time Start (UTC):** 23:05:39

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 23:47:02

**Pilot:** Konik

**Tape Length:** 43min

**Weather:** Fog, partly sunny, winds SW 20 knots

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
23:05:39	East Koomlangeelkuk Bay	bs13_sq_03186.jpg
23:09:40	Eevwak Pt.	bs13_sq_03247.jpg
23:22:06	Entrance to Ynveeghik River Lagoon	bs13_sq_03247.jpg
23:24:30	East Ynveeghik River Lagoon	bs13_sq_03589.jpg
23:27:24	West Ynveeghik River Lagoon	bs13_sq_03653.jpg
23:37:31	West Kookooliktook Lagoon	bs13_sq_03867.jpg
23:47:02	East of Taphook Pt, Taphook Mountain	bs13_sq_04085.jpg

Notes: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_05

**Date:** 22 July 2013

**General Location:** Koozata Lagoon, Southern St. Lawrence Island

**Time Start (UTC):** 00:02:26

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

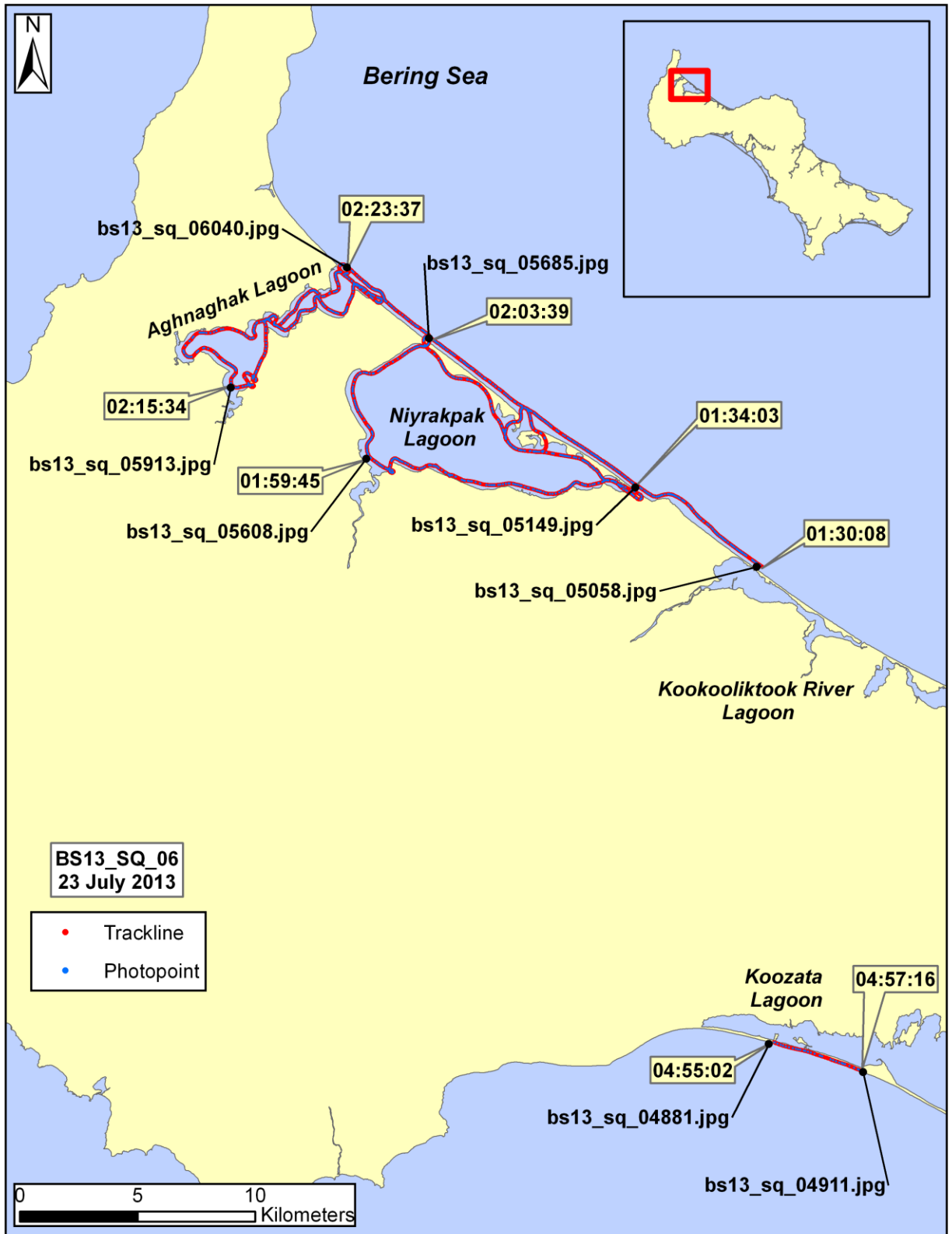
**Time End (UTC):** 00:50:11

**Pilot:** Konik

**Tape Length:** 44 min

**Weather:** Fog, partly sunny, winds SW 20 knots

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
	Transit 00:02:26 to 00:02:35	
00:02:36	Powooiliak Camp	Bs13_sq_04101.jpg
00:12:48	Koozata Lagoon, outer shoreline of barrier island	Bs13_sq_04303.jpg
00:17:07	East Koozata Lagoon, mainland shoreline	Bs13_sq_04390.jpg
	Fog Break and Transit 00:29:00 to 00:36:17	
00:36:18	Start of Koozata River estuary	Bs13_sq_04607.jpg
00:50:11	End of Koozata River estuary	Bs13_sq_04824.jpg





**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape: BS13\_SQ\_06**

**Date: 22/23 July 2013**

**General Location:** Niyrakpak Lagoon, Aghnaghak Lagoon, Koozata Lagoon

**Time Start (UTC):** 04:55:02/01:30:08

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 04:57:16/02:23:37

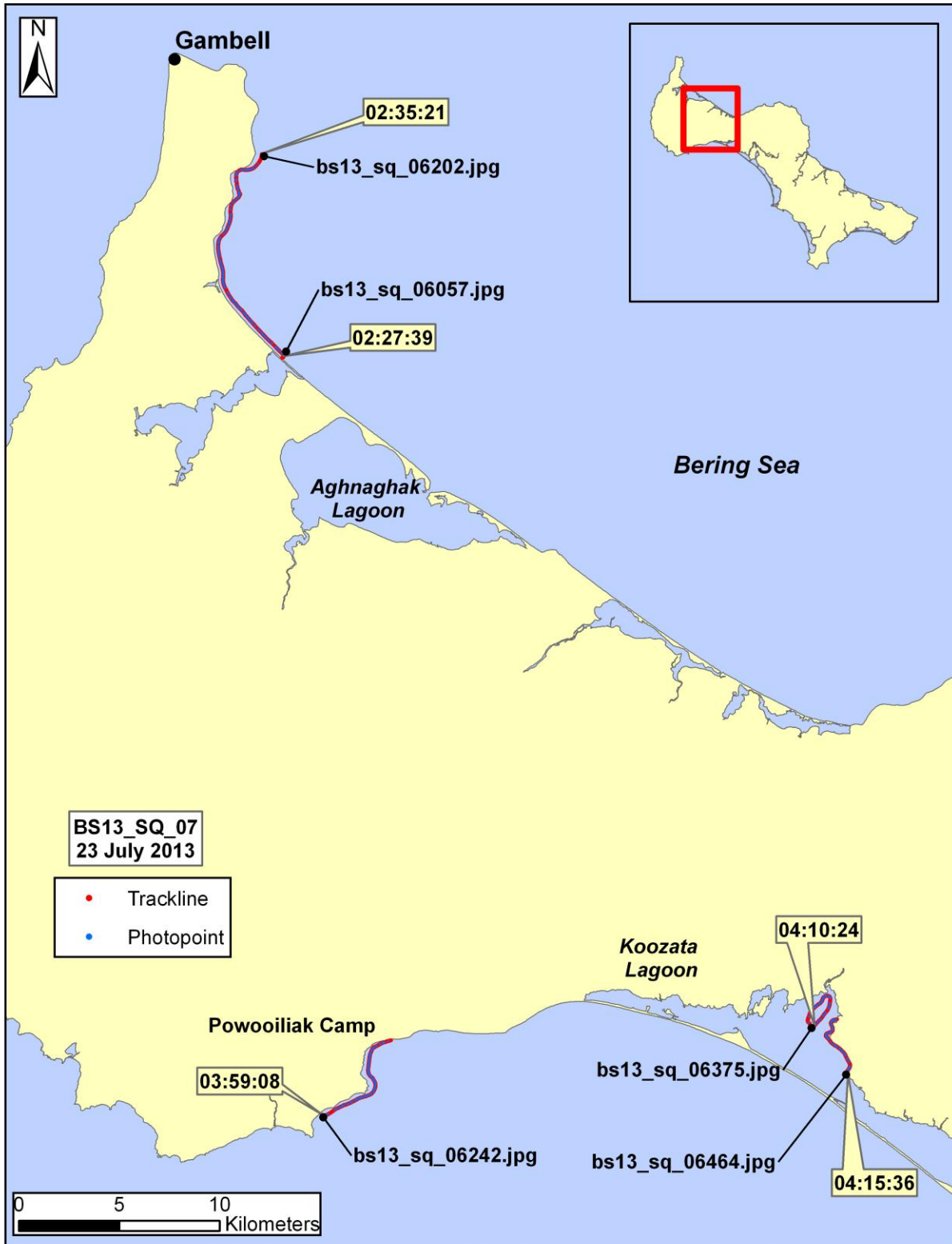
**Pilot:** Konik

**Tape Length:** 58 min

**Weather:** Fog, partly sunny, winds SW 10 knots

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
04:55:02	West Koozata Lagoon, outer shoreline	Bs13_sq_04881.jpg
04:57:16	Koozata Lagoon, outer shoreline	Bs13_sq_04911.jpg
	Break 04:57:17 to 01:30:07 (next day)	
01:30:08	West Kookooliktook River Lagoon	Bs13_sq_05058.jpg
01:34:03	East Niyrakpak Lagoon, outer shoreline	Bs13_sq_05149.jpg
01:59:45	Niyrakpak Lagoon, mainland shoreline	Bs13_sq_05608.jpg
02:03:39	West Niyrakpak Lagoon	Bs13_sq_05685.jpg
02:15:34	South extent of Aghnaghak Lagoon	Bs13_sq_05913.jpg
02:23:37	West Aghnakhak Lagoon	Bs13_sq_06040.jpg

Notes: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_07

**Date:** 23 July 2013

**General Location:** Koozata Lagoon, Powoiliak Camp, Gambell

**Time Start (UTC):** 02:27:39

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 04:15:36

**Pilot:** Konik

**Tape Length:** 19 min

**Weather:** Fog, partly sunny, winds SW 10 knots

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
02:27:39	Aghnaghak Lagoon, outer shoreline	Bs13_sq_06057.jpg
02:35:21	East of Gambell	Bs13_sq_06202.jpg
	Transit 02:35:22 to 03:59:07	
03:59:08	Powoiliak Camp	Bs13_sq_06242.jpg
	Transit 04:02:05 to 04:10:23	
04:10:24	West Koozata Lagoon, mainland shoreline	Bs13_sq_06375.jpg
	Transit 04:12:33 to 04:13:30	
04:15:36	Koozata Lagoon, mainland shoreline	Bs13_sq_06464.jpg

Notes: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_08

**Date:** 26 July 2013

**General Location:** Gambell, Western St. Lawrence Island

**Time Start (UTC):** 22:02:14

**Geo:** Harper

**Fuel Break:** 22:18 to 23:01

**Bio:** Morris

**Time End (UTC):** 23:25:48

**Pilot:** Konik

**Tape Length:** 41 min

**Weather:** Generally sunny but fog encountered towards SW Cape.

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
22:02:14	East of Gambell	Bs13_sq_06660.jpg
22:09:13	Gambell	Bs13_sq_06863.jpg
22:18:03	West of Gambell	Bs13_sq_07060.jpg
	Fuel Break 22:18:04 to 23:01:52	
23:12:14	Kitnepaluk	Bs13_sq_07414.jpg
23:24:58	North of Southwest Cape	Bs13_sq_07706.jpg
	Transit 23:24:59 to 23:25:24	
23:25:48	End tape	Bs13_sq_07721.jpg

Note: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_09

**Date:** 26 July 2013

**General Location:** Koozata Lagoon

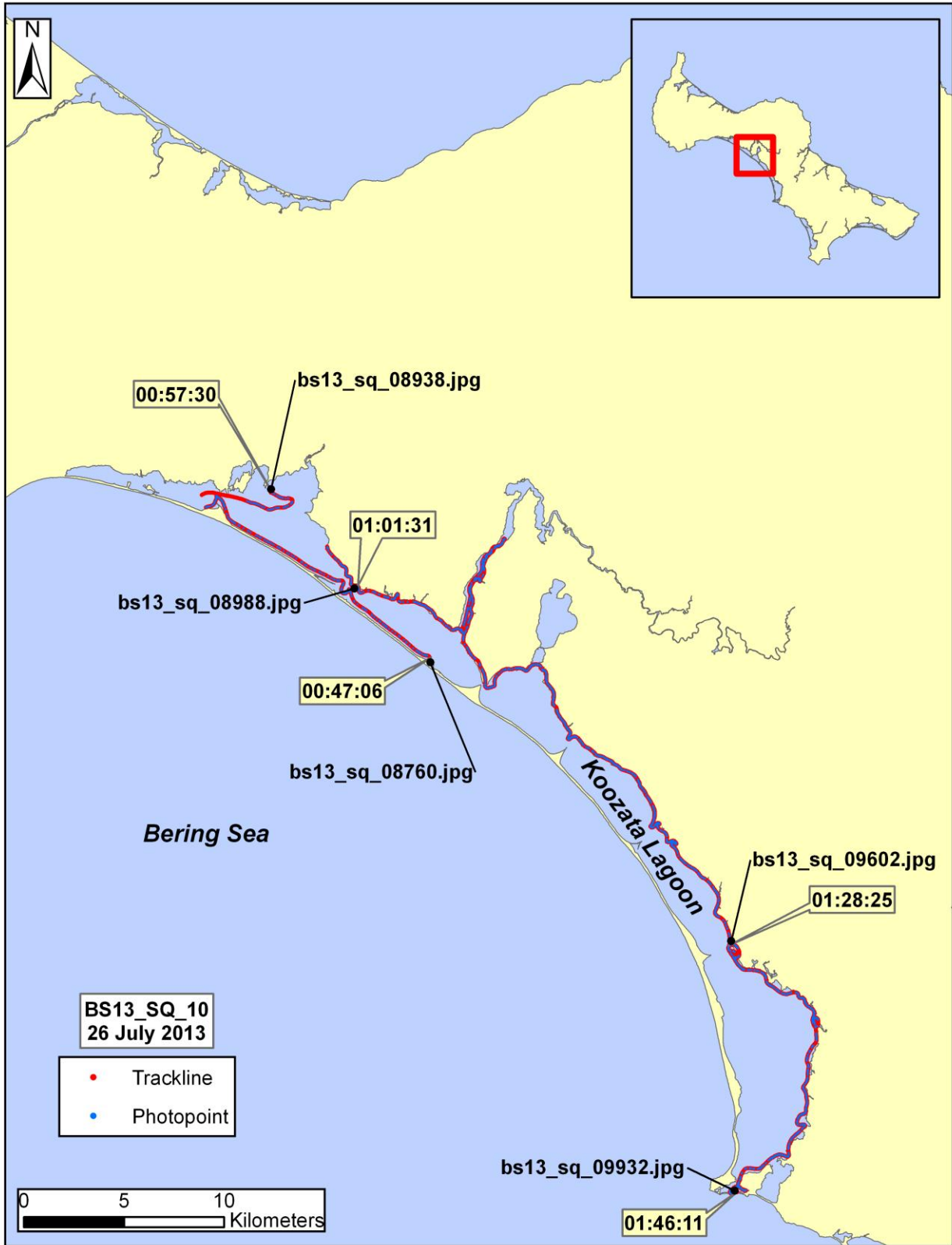
**Time Start (UTC):** 23:44:51  
**Fuel Break:** None  
**Time End (UTC):** 00:40:05  
**Tape Length:** 56 min

**Geo:** Harper  
**Bio:** Morris  
**Pilot:** Konik

**Weather:** sunny with fog patches

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
23:44:51	West Koozata Lagoon, outer shoreline	Bs13_sq_07747.jpg
23:59:59	Koozata Lagoon, outer shoreline	Bs13_sq_07971.jpg
00:14:52	East Koozata Lagoon, inside barrier island	Bs13_sq_08253.jpg
00:25:17	Koozata Lagoon, inside barrier island	Bs13_sq_08441.jpg
00:40:05	West Koozata Lagoon, inside barrier island	Bs13_sq_08719.jpg

Note: local time (ADT) is UTC -8hr





**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_10

**Date:** 26 July 2013

**General Location:** Koozata Lagoon

**Time Start (UTC):** 00:47:06

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 01:46:11

**Pilot:** Konik

**Tape Length:** 55 min

**Weather:** sunny with fog patches

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
00:47:06	West Koozata Lagoon, inside barrier island	Bs13_sq_08760.jpg
	Transit 00:54:22 to 00:55:47	
00:57:30	West Koozata Lagoon, mainland shoreline	Bs13_sq_08938.jpg
	Transit 00:57:31 to 00:59:57	
01:01:31	West Koozata Lagoon, mainland shoreline	Bs13_sq_08988.jpg
01:28:25	East Koozata Lagoon, mainland shoreline	Bs13_sq_09602.jpg
01:46:11	Siknik Cape	Bs13_sq_09932.jpg

Note: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_11

**Date:** 26 July 2013

**General Location:** Maknik Lagoon, Apavawook Cape

**Time Start (UTC):** 03:38:12

**Geo:** Harper

**Fuel Break:** 04:20:15

**Bio:** Morris

**Time End (UTC):** 05:08:57

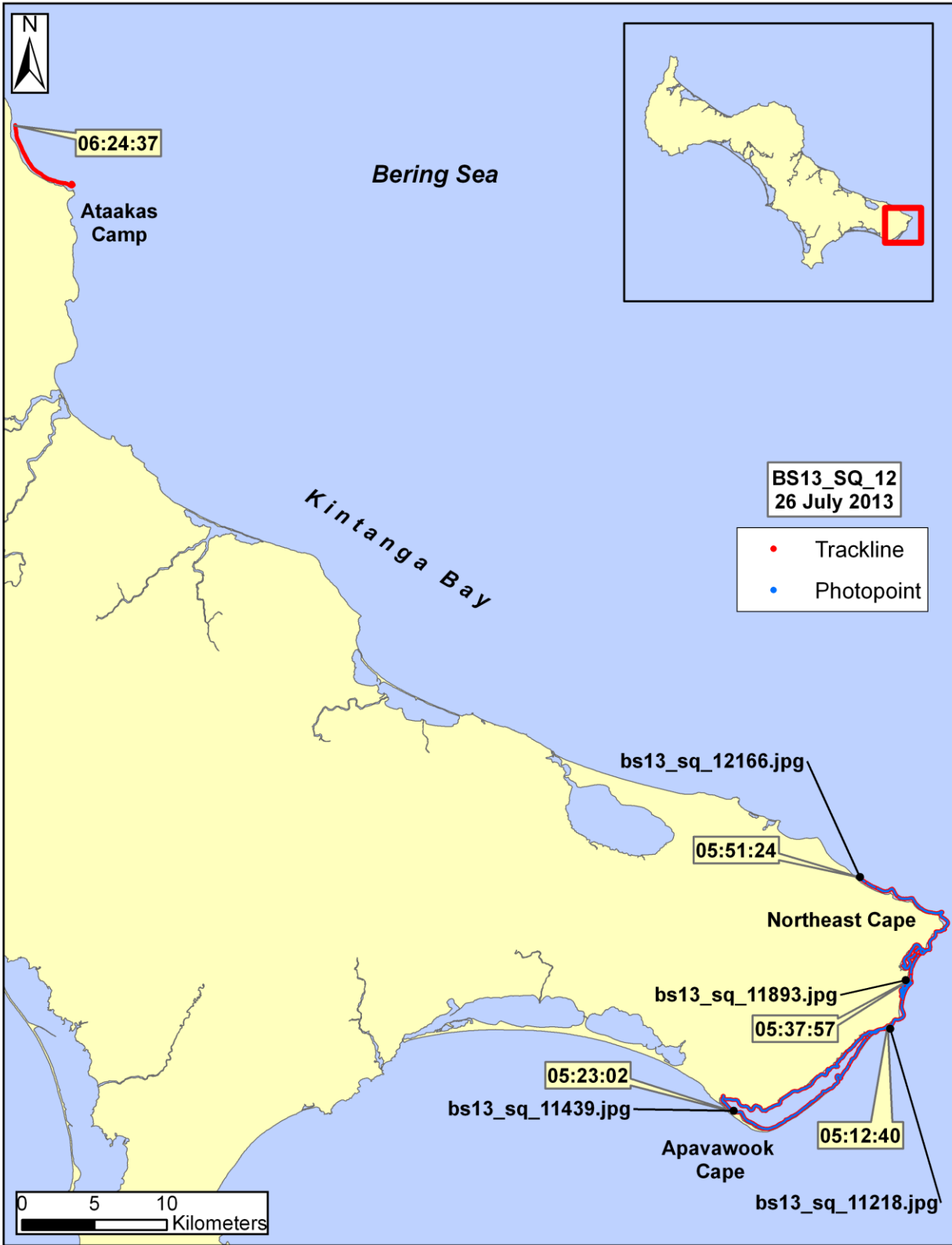
**Pilot:** Konik

**Tape Length:** 58 min

**Weather:** sunny with fog patches

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
	Transit: 03:28:11 to 03:38:11	
03:38:12	West entrance to Maknik Lagoon	Bs13_sq_10023.jpg
03:44:16	West Maknik Lagoon, outer shoreline	Bs13_sq_10171.jpg
03:53:17	West Maknik Lagoon, inside barrier island	Bs13_sq_10342.jpg
04:14:36	East Maknik Lagoon, mainland shoreline	Bs13_sq_10799.jpg
05:01:42	Apavawook Cape	Bs13_sq_11046.jpg
	Fuel break: 04:20:16 to 04:56:07	
05:08:56	Camp Kulowiye	Bs13_sq_11195.jpg

Note: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_12

**Date:** 26 July 2013

**General Location:** Apavawook Cape, Northeast Cape

**Time Start (UTC):** 05:12:40

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 06:24:37

**Pilot:** Konik

**Tape Length:** 45 min

**Weather:** clear with fog patches

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
05:12:40	North end of lagoon, outer shoreline	Bs13_sq_11218.jppg
05:23:02	Apavawook Cape	Bs13_sq_11439.jpg
05:37:57	Northeast Cape	Bs13_sq_11893.jpg
05:51:24	Northeast shore	Bs13_sq_12166.jpg
06:24:37	Ataakas Camp	N/A

Note: local time (ADT) is UTC -8hr



**2013 St. Lawrence Island Aerial Video Imaging Survey  
Team St. Lawrence Island**

**Tape:** BS13\_SQ\_13

**Date:** 27 July 2013

**General Location:** Siknik Cape, Southern St. Lawrence Island

**Time Start (UTC):** 02:33:35

**Geo:** Harper

**Fuel Break:** None

**Bio:** Morris

**Time End (UTC):** 02:38:56

**Pilot:** Konik

**Tape Length:** 5 min

**Weather:** low ceiling and fog

<b>Time (UTC)</b>	<b>Location</b>	<b>Photos</b>
02:33:35	East Koozata Lagoon, mainland shoreline	Bs13_sq_12499.jpg
02:38:55	Siknik Cape	Bs13_sq_12585.jpg

Note: local time (ADT) is UTC -8hr



Northeast Cape, St. Lawrence Island (photo by Tom Akeya)

