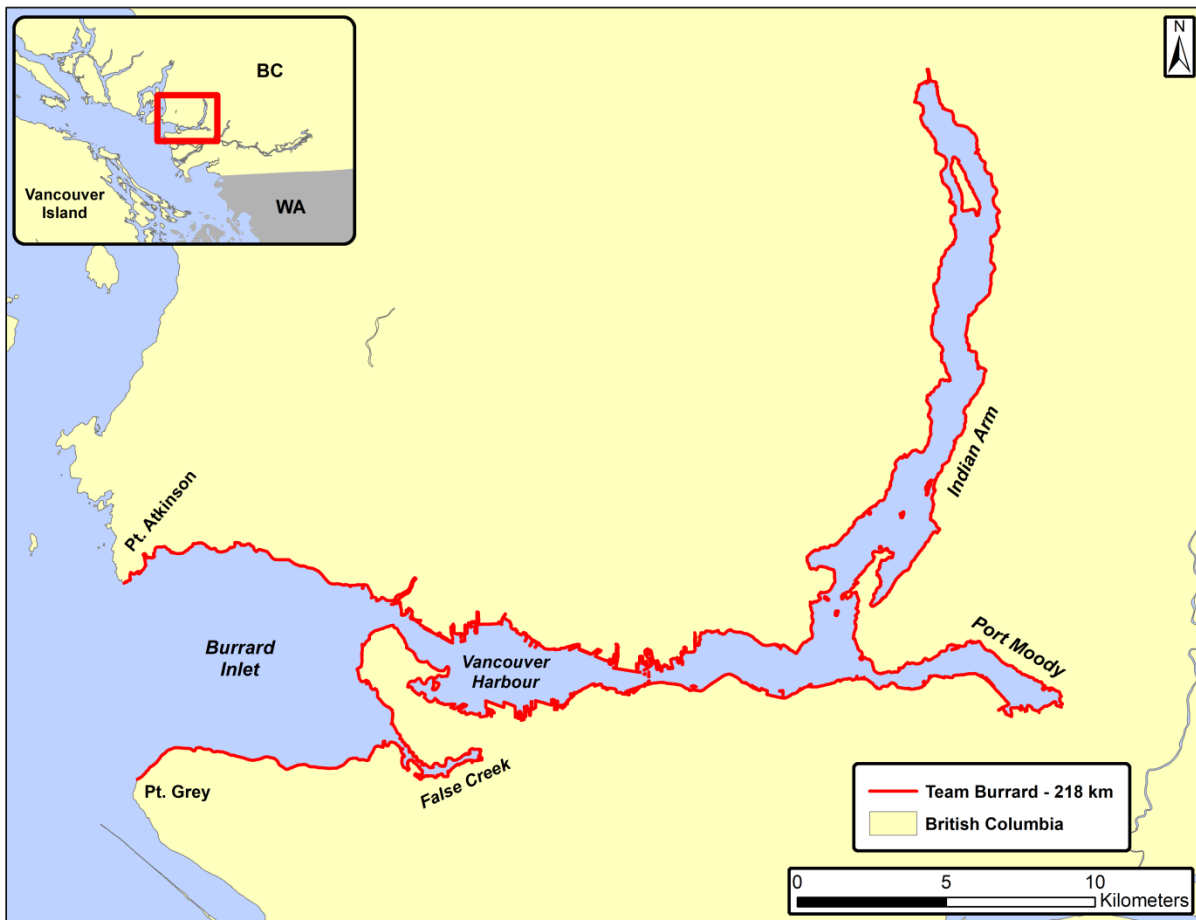


FLIGHT REPORT
ShoreZone Aerial Video Imaging (AVI) Survey
Team Burrard (BR)
July 23, 2017



Prepared for:
Tsleil-Waututh Nation

Prepared by:
Coastal and Ocean Resources
759A Vanalman Ave., Victoria, BC, V8Z 3B8
(250) 659-4050

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This flight report summarizes the field activities of the ShoreZone aerial video imaging survey conducted around Burrard Inlet, British Columbia on July 23, 2017. The survey was conducted by Coastal and Ocean Resources for the Tsleil-Waututh Nation. Table 1 provides a summary of field crew affiliations and responsibilities.

An AS350 B2 helicopter chartered from Talon Helicopters in Richmond, BC was utilized by the team. Imagery was collected looking at the shoreline from the left side of the aircraft with front and rear doors removed. A total of 4 HD video segments were collected during the survey and recorded to MP4 format (Table 2). This report contains a summary table and map for each video segment, illustrating its location, length, and key geographic points. Maps for each video segment are annotated with representative geographic names, flight trackline times (hh:mm:ss UTC which is 7 hours ahead of Pacific Daylight Time) and photo numbers.

The tables and figures on the following pages summarize the extent and location of the 218 km of shoreline imagery delivered to the Tsleil-Waututh Nation and posted to the [Coastal and Ocean Resources online ArcGIS site](#). All video segments and photos supplied on the hard drive accompanying this report are organized by video number and named according to the ShoreZone image library data schema. A total of 3,446 photos were collected by the team. The GIS data that accompanies this report illustrate the flight trackline positions at 1-second intervals. Data and imagery are linked by a date time code (yyyymmddhhmmss).

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Team Burrard Survey Data

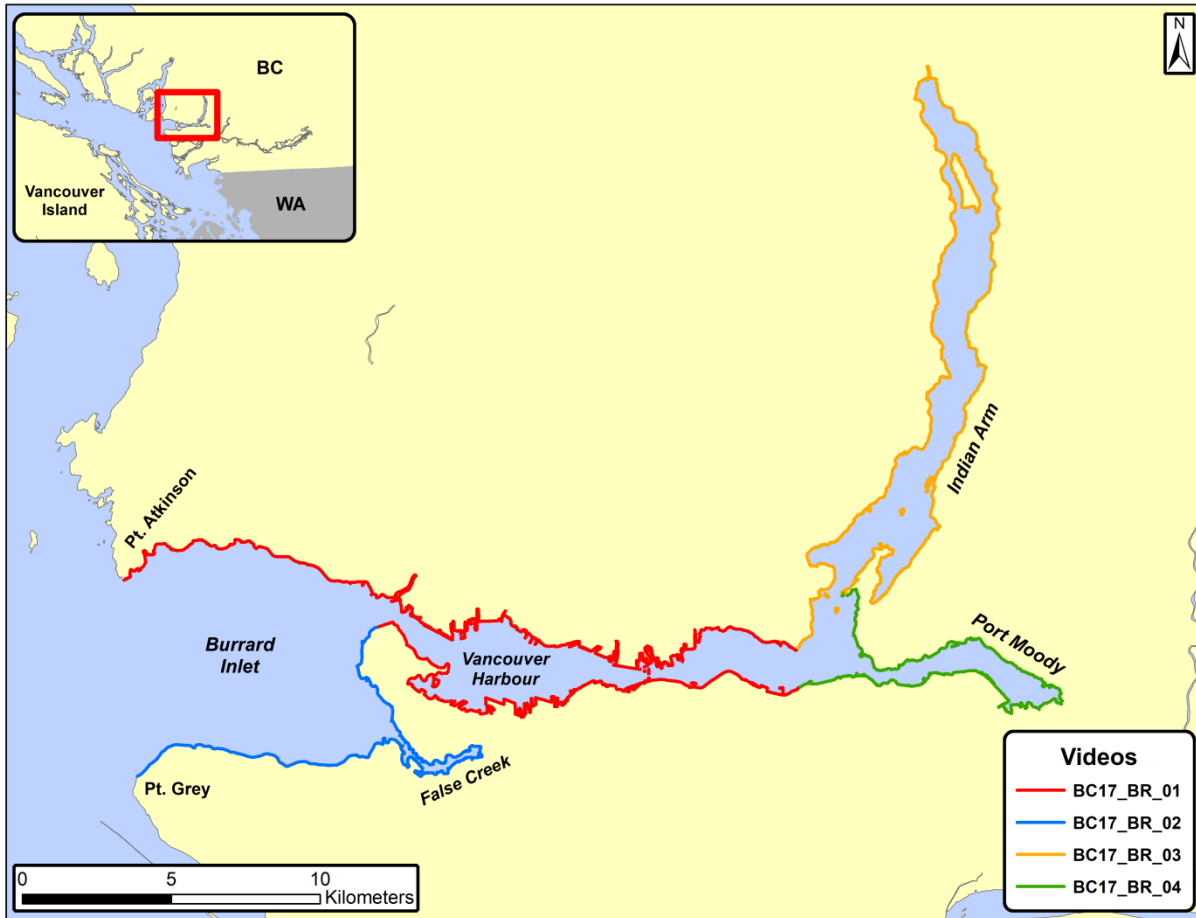
Table 1. Flight personnel and responsibilities for Team Burrard (BR) survey.

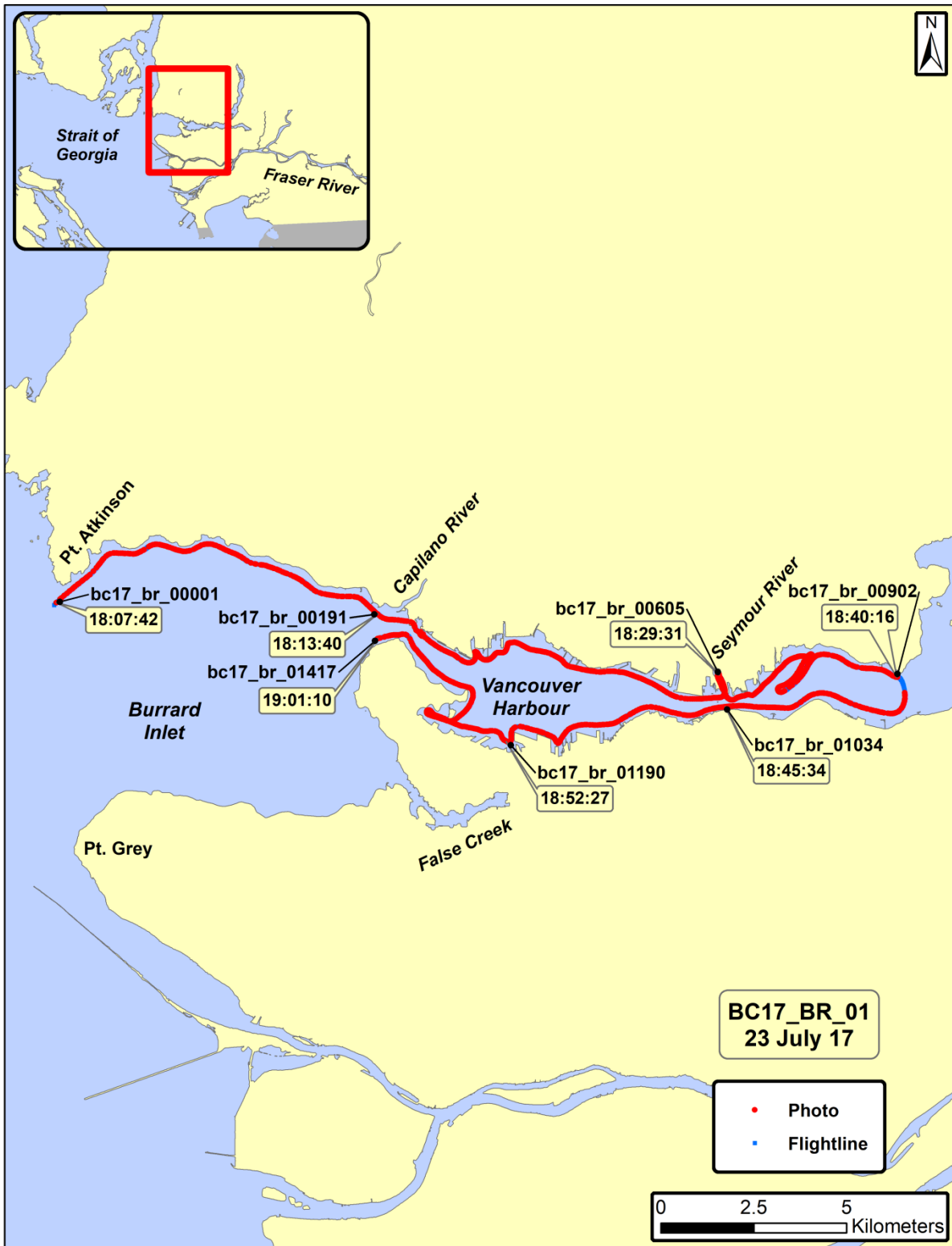
Crew Member	Individual / Affiliation	Responsibilities
<i>Geomorphologist</i>	Kalen Morrow Coastal and Ocean Resources, Victoria, BC	Videography, geomorphic commentary, survey planning, post- flight data processing
<i>Coastal Ecologist</i>	Mary Morris Archipelago Marine Research , Victoria, BC	Digital photography, biologic commentary, post-flight data processing
<i>In-Flight Navigator</i>	Lee Britton Coastal and Ocean Resources, Victoria, BC	In-flight navigation, GPS data collection
<i>Pilot</i>	Jim Stibbard Talon Helicopters, Richmond, BC	AS350 B2 aircraft operation

Table 2. Summary of survey video segments for Team Burrard (BR).

Tape Number	Location
BC17_BR_01	Burrard Inlet, Vancouver Harbour
BC17_BR_02	Burrard Inlet, False Creek
BC17_BR_03	Indian Arm
BC17_BR_04	Port Moody, Burrard Inlet

ShoreZone Aerial Video Imaging (AVI) Survey
Team Burrard (BR) July 23, 2017
Survey Maps and Video Logs
Videos: BC17_BR_01 to BC17_BR_04





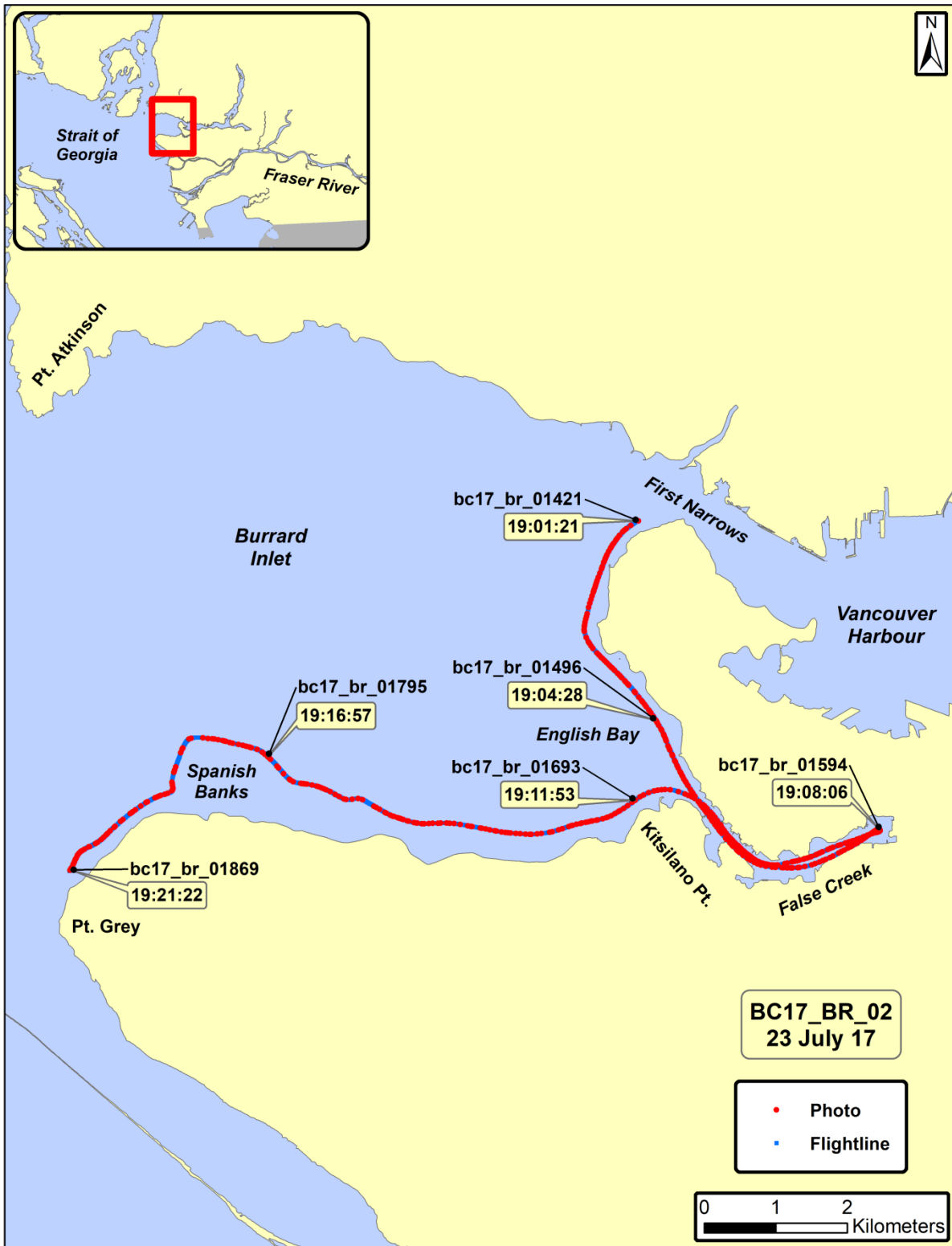
**2017 Burrard Inlet Aerial Video Imaging Survey
Team Burrard (BR)**

Video: BC17_BR_01

Date: 23 July 2017

General Location: Burrard Inlet, Vancouver Harbour
Time Start (UTC): 18:07:40 **Geo:** Morrow
Time End (UTC): 19:01:10 **Bio:** Morris
Video Length: 53 min 30 sec **Nav:** Britton
Weather: Partly Cloudy, Windy **Pilot:** Stibbard

Time (UTC)	Location	Photo
18:07:40	Pt. Atkinson	bc17_br_00001
18:13:40	Capilano River	bc17_br_00191
18:29:31	Seymour River	bc17_br_00605
18:40:16	Roche Pt.	bc17_br_00902
18:45:34	South shore Second Narrows	bc17_br_01034
18:52:27	South shore Vancouver Harbour	bc17_br_01190
19:01:10	South shore First Narrows	bc17_br_01417



**2017 Burrard Inlet Aerial Video Imaging Survey
Team Burrard (BR)**

Video: BC17_BR_02

Date: 23 July 2017

General Location: Burrard Inlet, False Creek

Time Start (UTC): 19:01:20

Geo: Morrow

Time End (UTC): 19:21:26

Bio: Morris

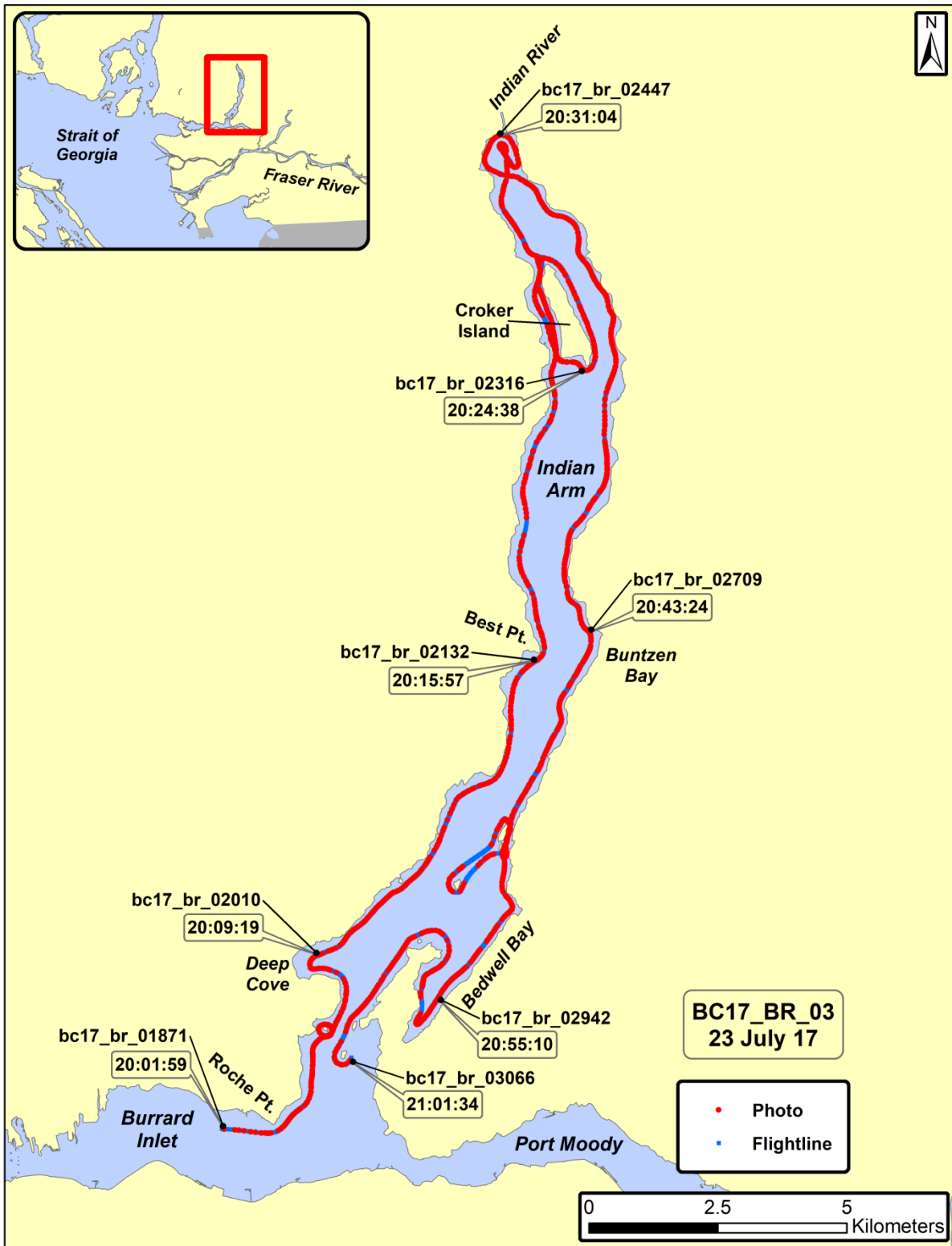
Video Length: 20 min 6 sec

Nav: Britton

Weather: Partly Cloudy, Windy

Pilot: Stibbard

Time (UTC)	Location	Photo
19:01:21	South shore First Narrows	bc17_br_01421
19:04:28	English Bay	bc17_br_01496
19:08:06	False Creek	bc17_br_01594
19:11:53	Kitsilano Pt.	bc17_br_01693
19:16:57	Spanish Banks, Burrard Inlet	bc17_br_01795
19:21:22	Pt. Grey	bc17_br_01869



**2017 Burrard Inlet Aerial Video Imaging Survey
Team Burrard (BR)**

Video: BC17_BR_03

Date: 23 July 2017

General Location: Indian Arm

Time Start (UTC): 20:01:58

Geo: Morrow

Time End (UTC): 21:01:37

Bio: Morris

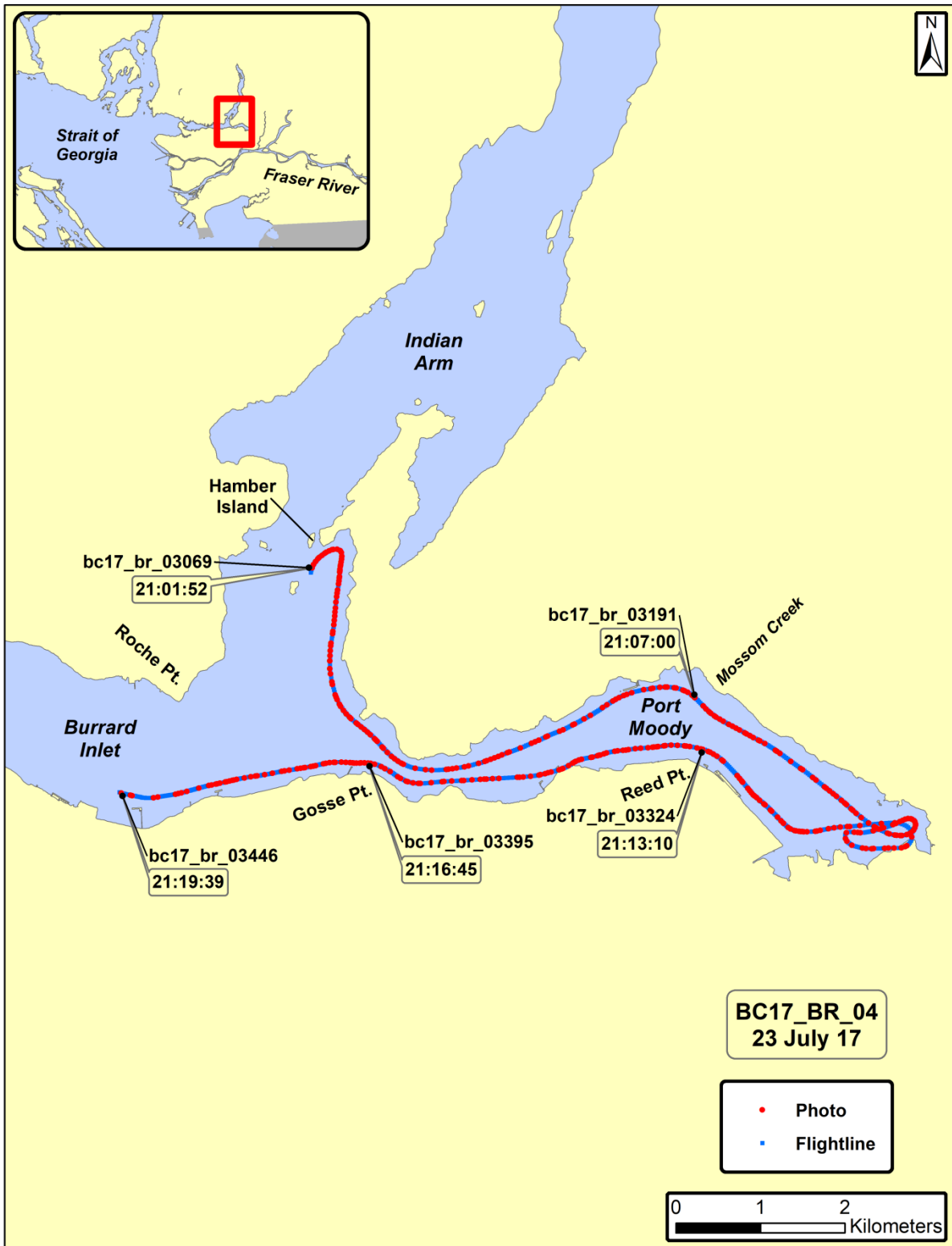
Video Length: 59 min 39 sec

Nav: Britton

Weather: Sunny, Windy

Pilot: Stibbard

Time (UTC)	Location	Photo
20:01:59	Roche Pt.	bc17_br_01871
20:09:19	Deep Cove	bc17_br_02010
20:15:57	Best Pt.	bc17_br_02132
20:24:38	Croker Island	bc17_br_02316
20:31:04	Indian River	bc17_br_02447
20:43:24	Buntzen Bay	bc17_br_02709
20:55:10	Bedwell Bay	bc17_br_02942
21:01:34	Boulder Island	bc17_br_03066



**2017 Burrard Inlet Aerial Video Imaging Survey
Team Burrard (BR)**

Video: BC17_BR_04

Date: 23 July 2017

General Location: Port Moody, Burrard Inlet

Time Start (UTC): 21:01:49

Geo: Morrow

Time End (UTC): 21:19:40

Bio: Morris

Video Length: 17 min 51 sec

Nav: Britton

Weather: Sunny, Windy

Pilot: Stibbard

Time (UTC)	Location	Photo
21:01:52	Hamber Island	bc17_br_03069
21:07:00	Mossom Creek	bc17_br_03191
21:13:10	Reed Pt.	bc17_br_03324
21:16:45	Gosse Pt.	bc17_br_03395
21:19:39	South shore Burrard Inlet	bc17_br_03446

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Acknowledgments

The ShoreZone program is a partnership of scientists, non-profit organizations, First Nations and governmental agencies. We gratefully acknowledge the support of organizations working in partnership for the ShoreZone effort, including: GeoBC, BC Ministry of Environment, Prince Rupert Port Authority, Metlakatla First Nation, Gitga'at First Nation, Tsleil-Waututh Nation, Nisga'a Lisims Government, Alaska Department of Fish and Game, Alaska Department of Natural Resources, Archipelago Marine Research Ltd., Bureau of Ocean Energy Management, Cook Inlet Regional Citizens' Advisory Council, Exxon Valdez Oil Spill Trustee Council, National Park Service, NOAA National Marine Fisheries Service, Prince William Sound Regional Citizens' Advisory Council, The Nature Conservancy, US Fish and Wildlife Service and the US Forest Service.

Access and Use Constraints

Protocols for data access and distribution are established by the program partner agencies. Please see www.shorezone.org for a list of partner agencies and related web sites. Video imagery for British Columbia can be viewed and digital stills downloaded online through: <http://www.coastalandoceans.com/Core-Services/Imaging>

Video imagery for Alaska can be viewed and digital stills downloaded online through: <https://alaskafisheries.noaa.gov/habitat/shorezone>

To effectively and appropriately use ShoreZone data, the user shall refer to the most current ShoreZone Coastal Imaging and Habitat Mapping Protocol which is set to be published in Fall 2017 (Cook *et al.* In Press). To ensure distribution of the most current public information, for guidance in interpretation or to request a copy of the draft 2017 protocol, please contact Kalen Morrow (kalen@coastalandoceans.com) who is the ShoreZone project manager at Coastal and Ocean Resources.

Any published data sets utilizing ShoreZone products (printed, digital, or online) shall clearly indicate their source. If the user has modified the data in any way, the user is obligated to describe the types of modifications performed. The user specifically agrees not to misrepresent these data, nor to imply that changes made were approved by the ShoreZone program or its partners.

References

Cook et al. In Press 2017, ShoreZone Coastal Imaging and Habitat Mapping Protocol. Report prepared by Coastal and Ocean Resources of Victoria, B.C. for NOAA National Marine Fisheries Service, Alaska Region, Habitat Conservation Division, Juneau, AK, 88 p.

Harper, J.R. and M.C. Morris 2014. Alaska ShoreZone Coastal Habitat Mapping Protocol. Report prepared by Nuka Research and Planning LCC of Seldovia for the Bureau of Ocean Energy Management (BOEM), Anchorage, AK, 144 p.

<https://alaskafisheries.noaa.gov/sites/default/files/chmprotocol0114.pdf>



Point Atkinson Lighthouse – bc17_br_00002.jpg

