National Marine Mammal Laboratory 2000 Beluga Tagging Study

On 13 September 2000, two beluga whales were captured, tagged, and released in the Knik Arm of Cook Inlet, Alaska, by NMML scientists. The first beluga (referred to as Paul) was a 268 cm (8’ 11”) juvenile female; the second (referred to as Ringo) was a 413 cm (13’ 7”) adult male. Satellite tags, which provide location and dive data, were attached to the dorsal ridge of each whale (Figure 1: See below). The tags communicated with an ARGOS satellite when the antenna was exposed above the surface of the water, such as when the whale surfaced to breathe. In addition to the satellite tag, a time depth recorder (TDR) was attached to Paul via a suction cup (Figure 2: See below). The TDR recorded information on diving behavior every second for 55 hours. This instrument, however, remained on the whale for more than 90 hours.

The satellite tag on Ringo transmitted data for approximately 113 days (the last position was received 3 January 2001), while the satellite tag deployed on Paul transmitted for 115 days (until 18 January 2001). Between mid-September and mid-January, the two whales remained in upper Cook Inlet, although not together. Ringo spent most of his time in Chickaloon Bay, with a few excursions to Knik Arm and the Susitna River. Paul, however, traveled widely in the upper inlet spending most of her time in the Susitna River delta and Knik Arm, going as far south as Redoubt Bay. Based on these preliminary results, it appears that at least some belugas stay in Cook Inlet through early winter and move about freely in areas that sometimes include heavy ice cover.

What we learn from these two whales will help the National Marine Fisheries Service and several Alaska native organizations in the Cook Inlet region understand the movement patterns of these animals, as well as their surfacing and diving behavior. These data are important to estimating the stock size of this distinct population of belugas and to identifying the critical habitat areas that they depend on.

The following figures show the satellite determined positions of the tagged whales.

9/15/00 to 9/30/00
Argos Hit Quality 1-3

Knik Arm

Eagle R.

Anchorage

Turnagain Arm

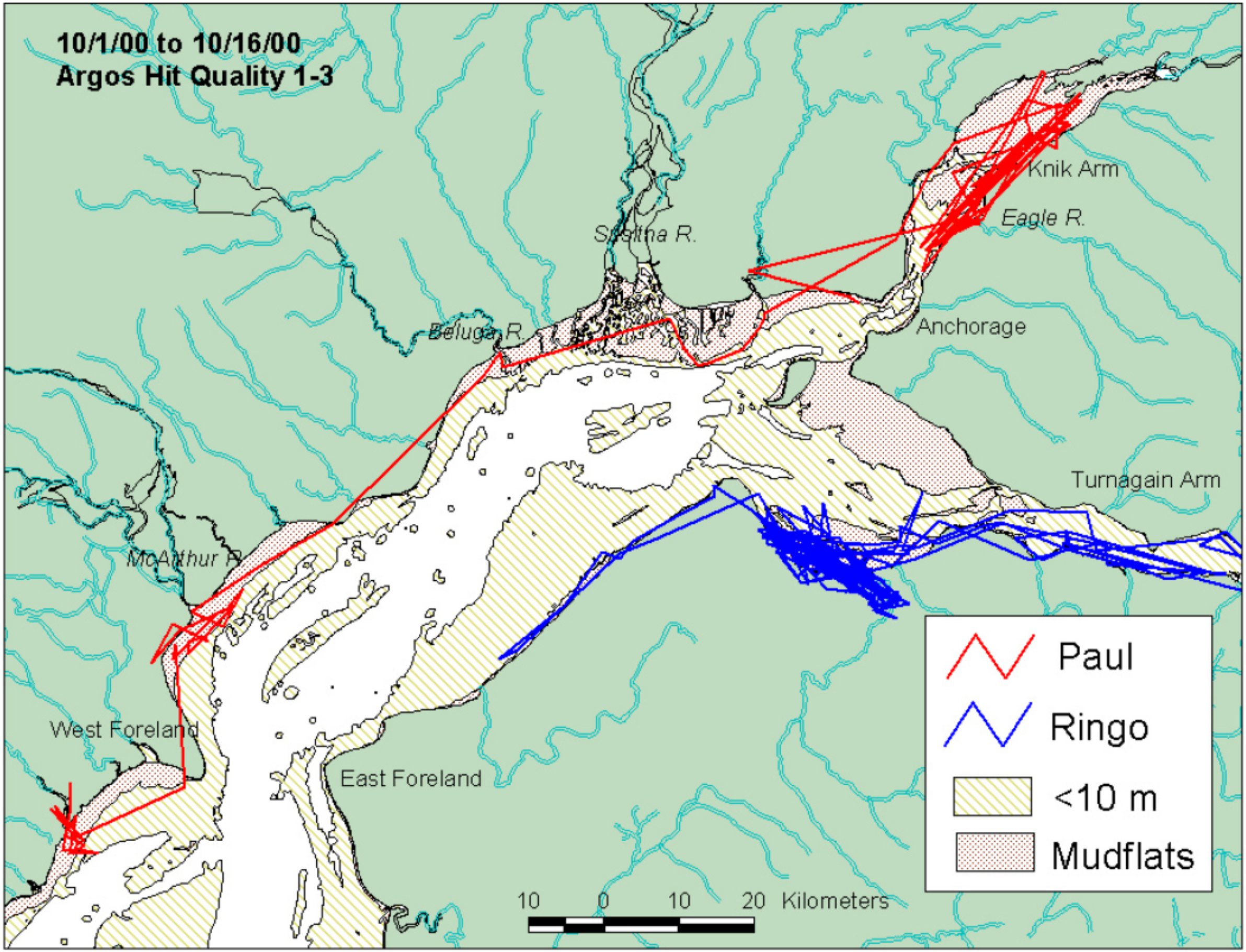
Paul

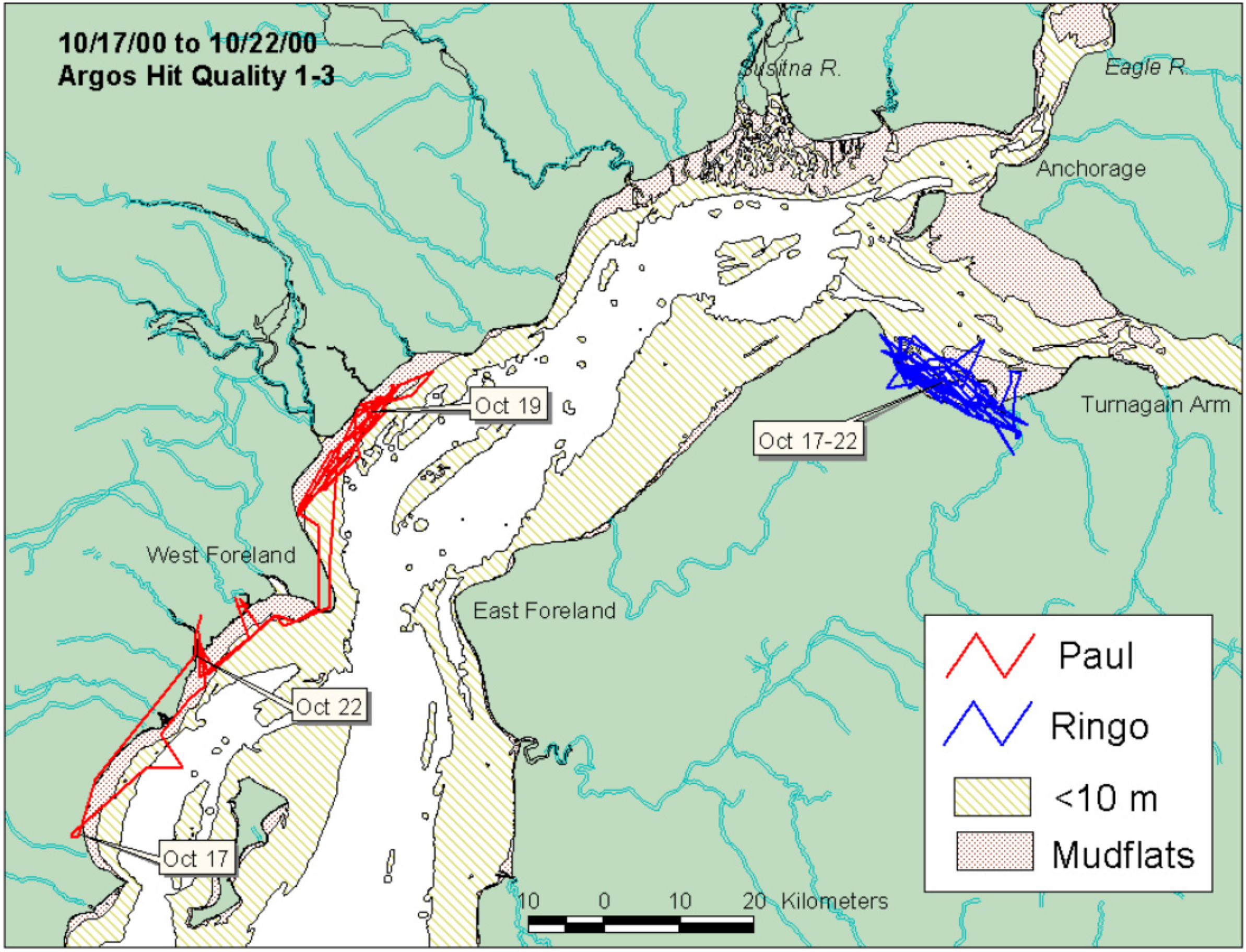
Ringo

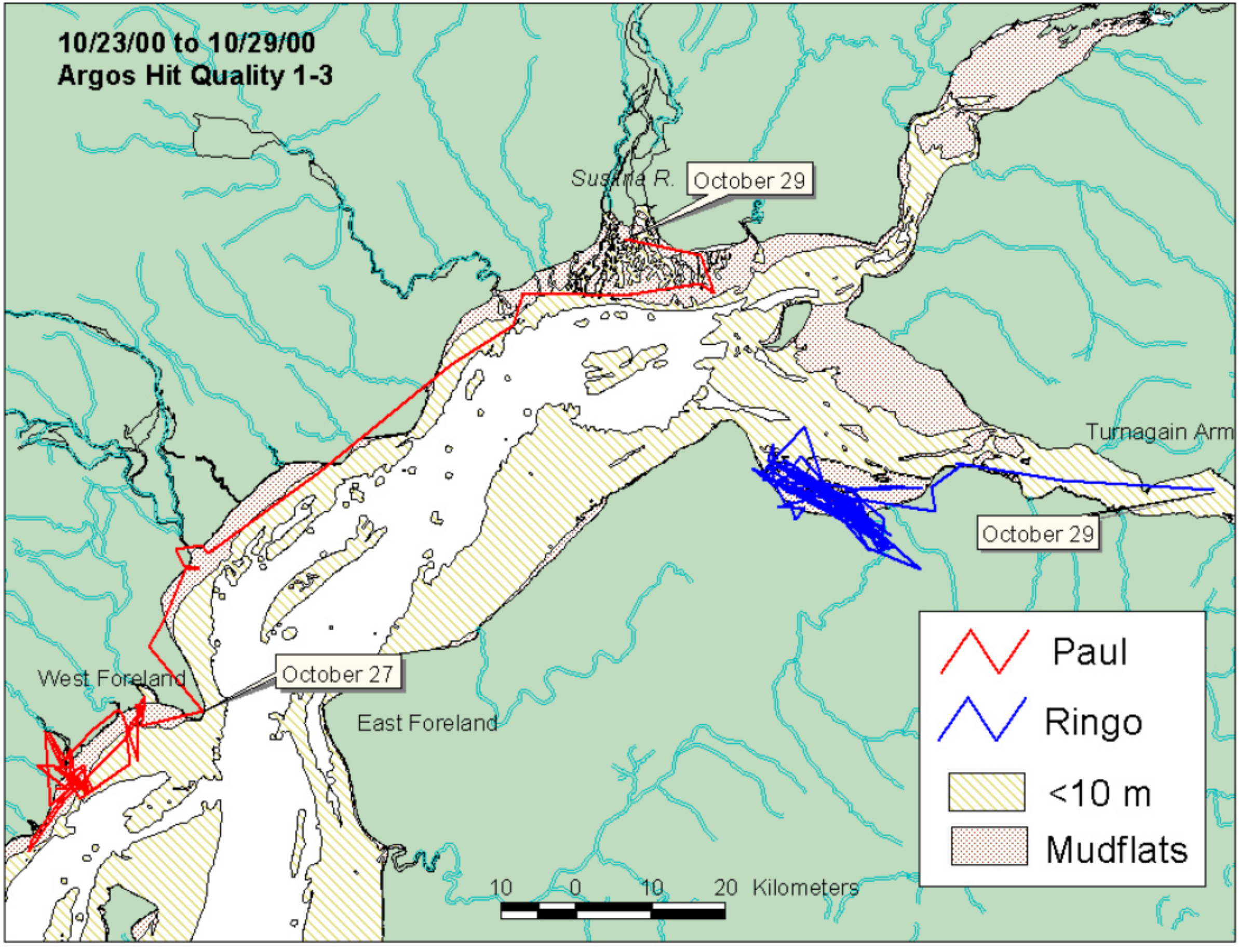
<10 m

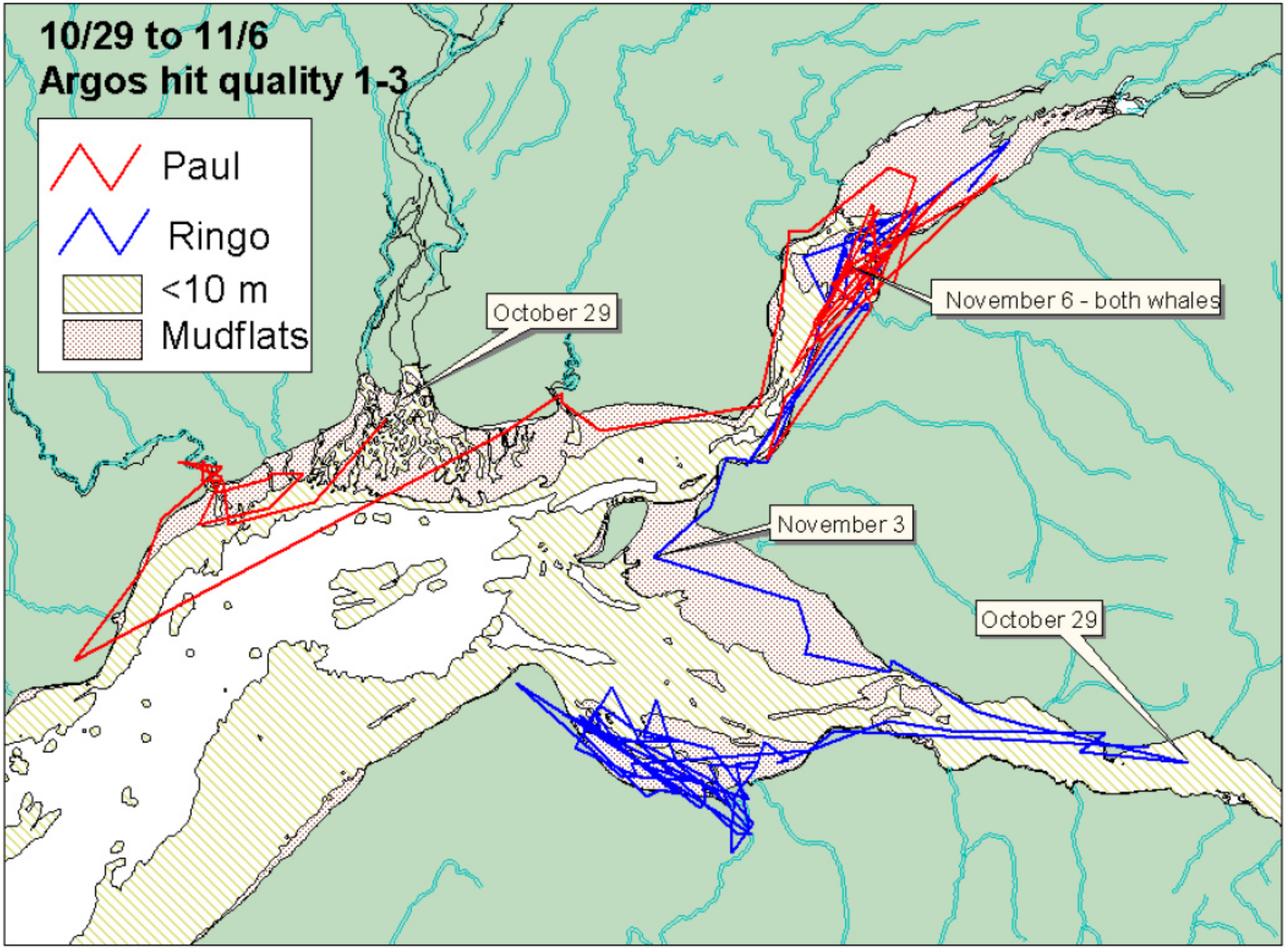
Mudflats

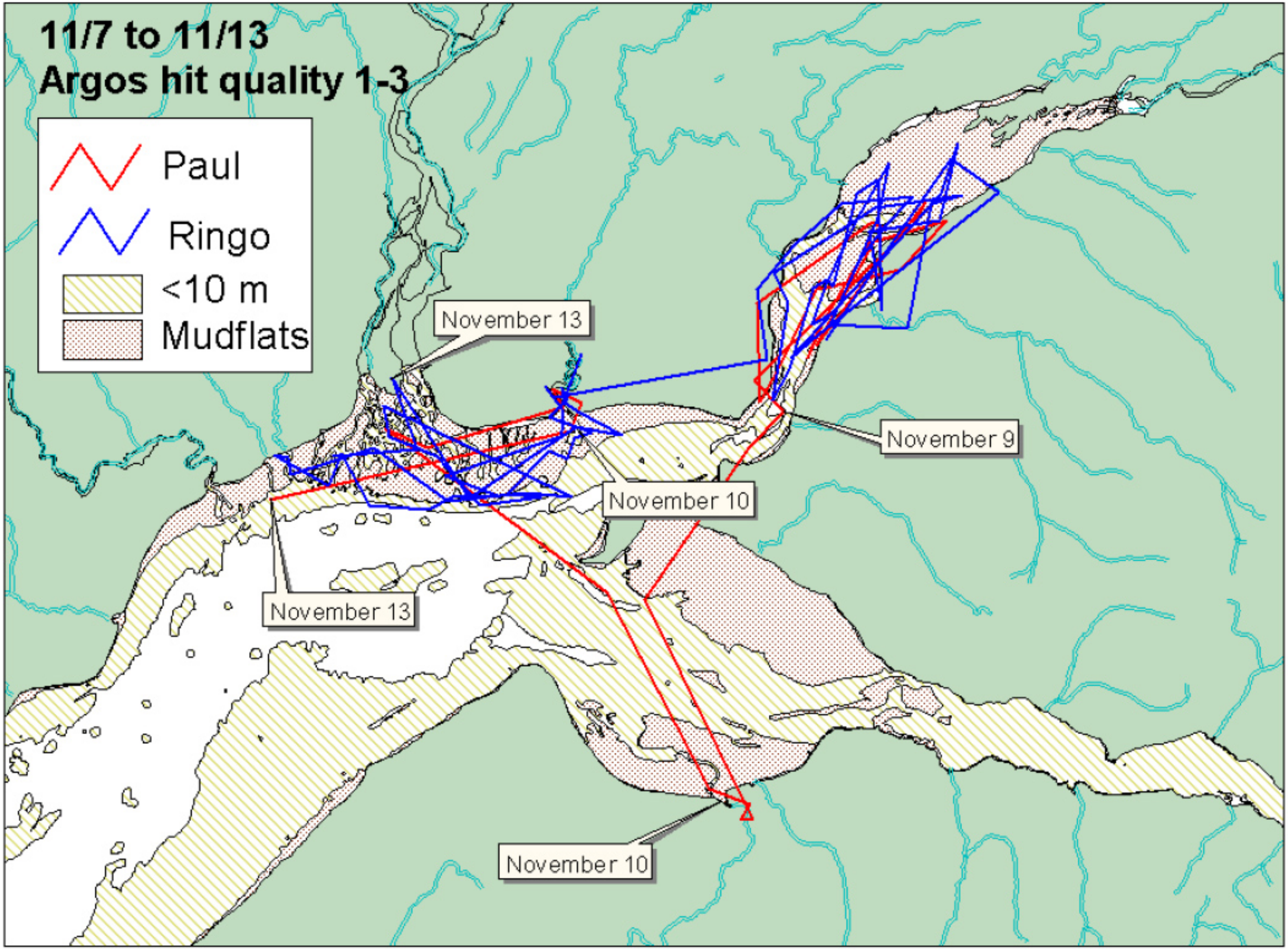
8000 0 8000 16000 Meters


10/1/00 to 10/16/00
Argos Hit Quality 1-3
Knik Arm
Eagle R.
Susitna R.
Beluga R.
Anchorage
Turnagain Arm
McArthur R.
West Foreland
East Foreland
Paul
Ringo
<10 m
Mudflats
10 0 10 20 Kilometers


10/17/00 to 10/22/00
Argos Hit Quality 1-3
Susitna R.
Eagle R.
Anchorage
Turnagain Arm
Oct 19
Oct 17-22
West Foreland
East Foreland
Oct 22
Oct 17
Paul
Ringo
<10 m
Mudflats
10 0 10 20 Kilometers


10/23/00 to 10/29/00
Argos Hit Quality 1-3
Susitna R.
October 29
Turnagain Arm
October 29
West Foreland
October 27
East Foreland
Paul
Ringo
<10 m
Mudflats
10 0 10 20 Kilometers


10/29 to 11/6
Argos hit quality 1-3
Paul
Ringo
<10 m
Mudflats
October 29
November 6 - both whales
November 3
October 29


11/7 to 11/13
Argos hit quality 1-3
Paul
Ringo
<10 m
Mudflats
November 13
November 9
November 10
November 13
November 10

11/14 to 11/20
Argos hit quality 1-3

Paul
Ringo
<10 m
Mudflats

November 14
November 17
November 20
November 21

11/21/00 to 11/27/00
Argos Hit Quality 1-3

Susitna R.

Nov 27

Nov 23

Nov 21

Turnagain Arm

Nov 27

Nov 21

East Foreland

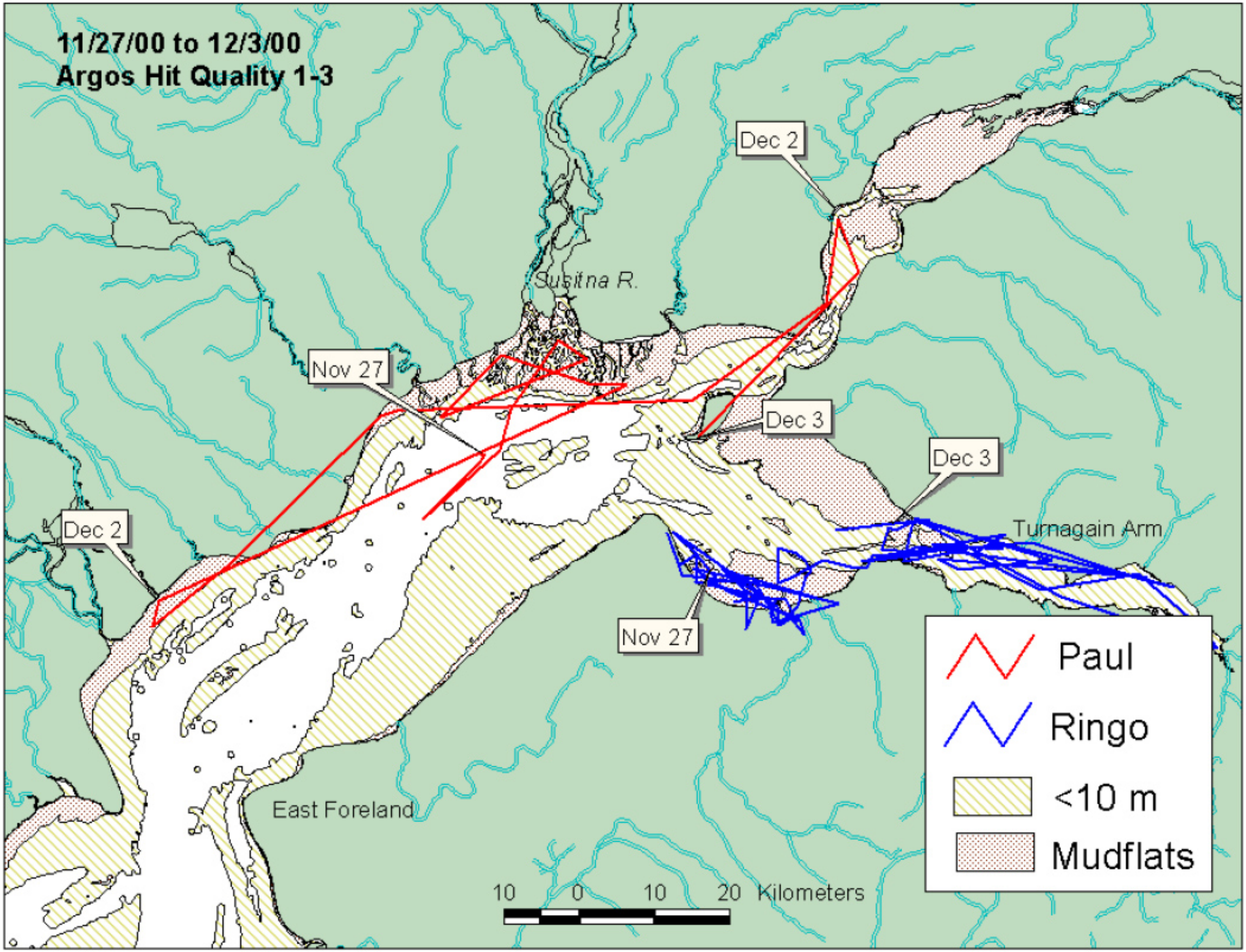
10 0 10 20 Kilometers

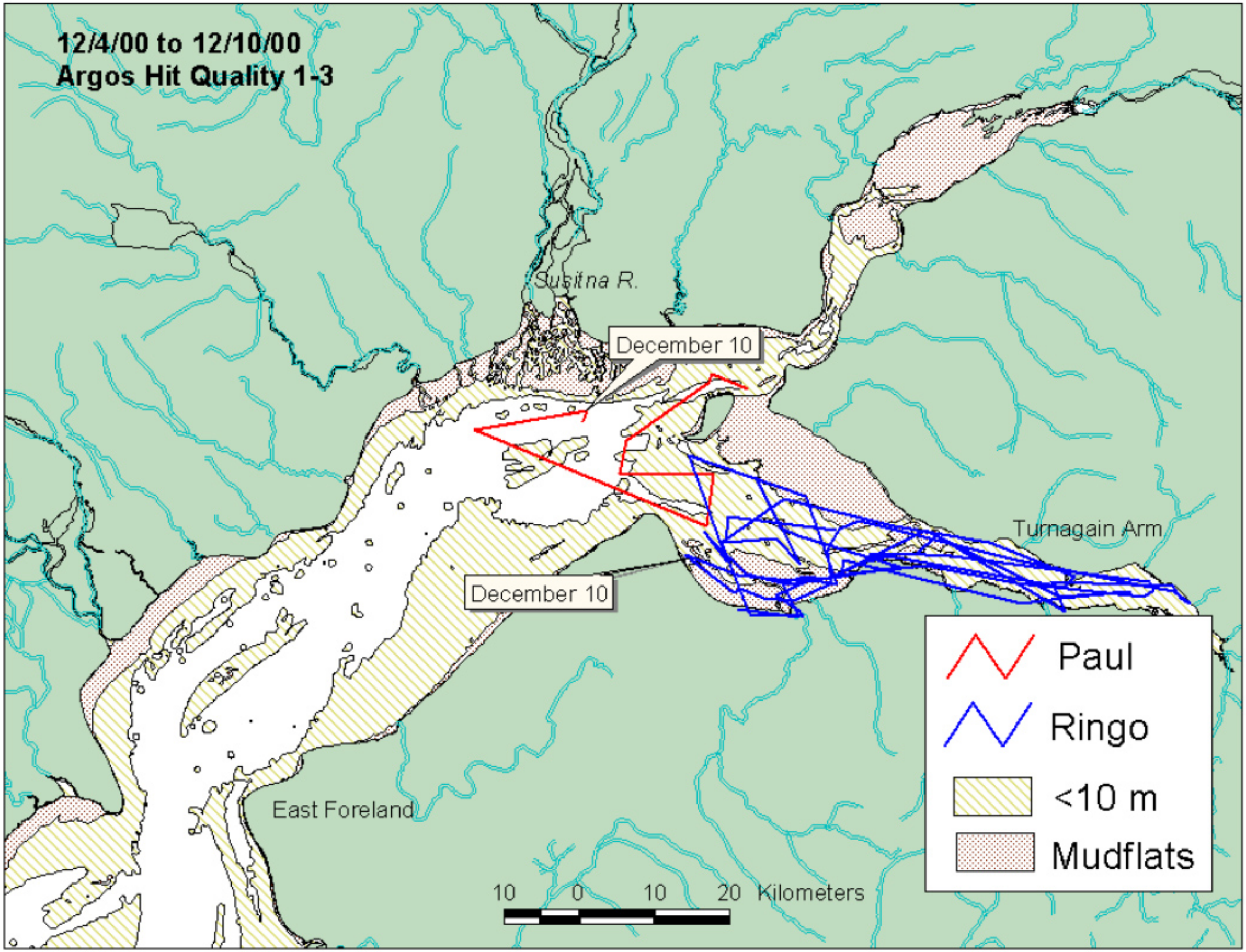
Paul

Ringo

<10 m

Mudflats


11/27/00 to 12/3/00
Argos Hit Quality 1-3
Susitna R.
Dec 2
Nov 27
Dec 3
Dec 3
Dec 2
Turnagain Arm
Nov 27
East Foreland
Paul
Ringo
<10 m
Mudflats
10 0 10 20 Kilometers


12/4/00 to 12/10/00
Argos Hit Quality 1-3
Susitna R.
December 10
December 10
Turnagain Arm
East Foreland
Paul
Ringo
<10 m
Mudflats
10 0 10 20 Kilometers

12/11/00 to 12/17/00
Argos Hit Quality 1-3

Susitna R.

December 18

December 17

December 12

December 11

Turnagain Arm

East Foreland

10 0 10 20 Kilometers

Paul

Ringo

<10 m

Mudflats

12/18/00 to 12/25/00
Argos Hit Quality 1-3

Susitna R.

December 25

December 25

December 18

December 21

December 21

Turnagain Arm

East Foreland

10 0 10 20 Kilometers

Paul

Ringo

<10 m

Mudflats

12/26/00 to 1/1/01
Argos Hit Quality 1-3

Susitna R.

December 29

December 29

January 1

January 1

Turnagain Arm

East Foreland

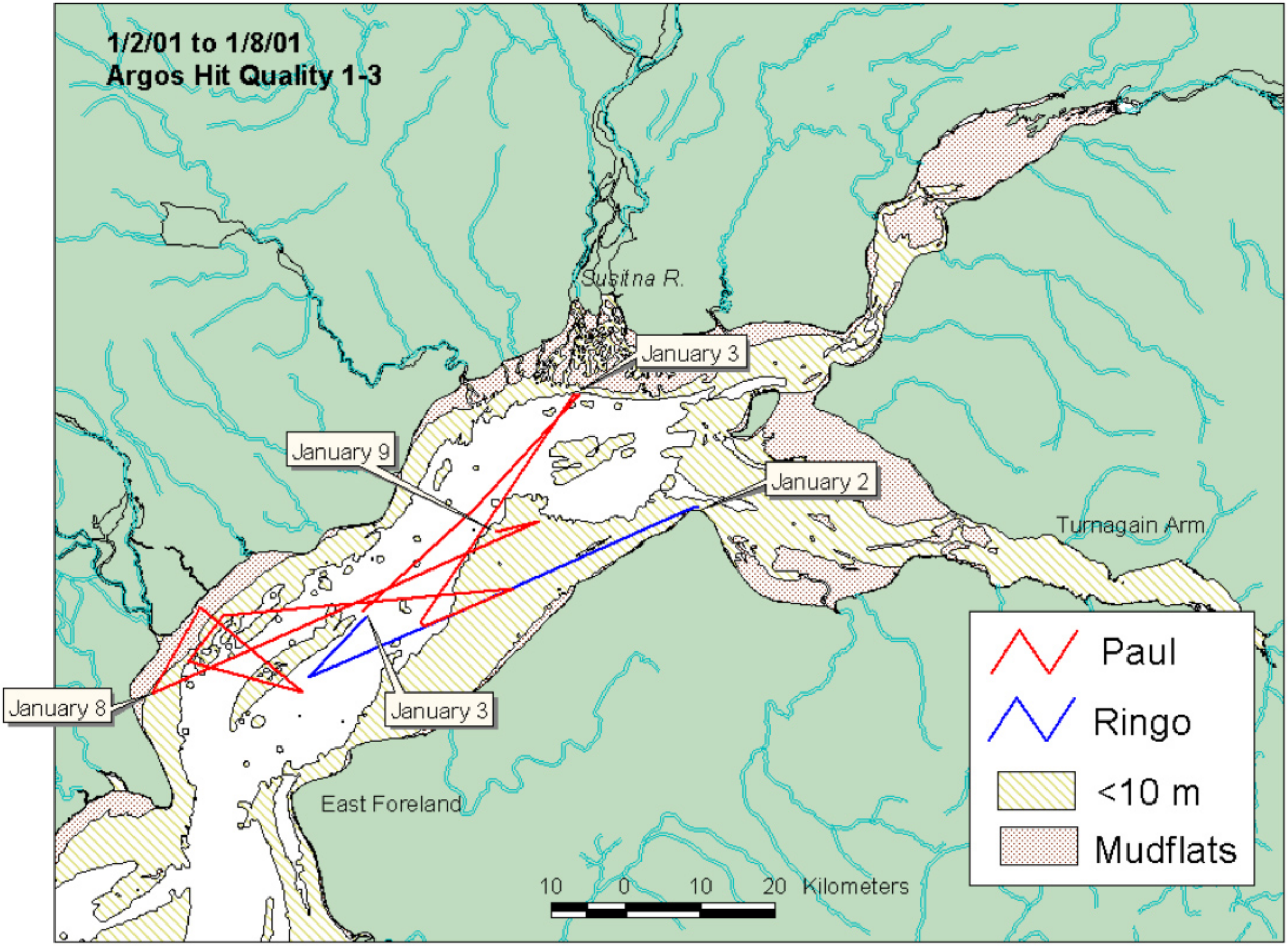
Paul

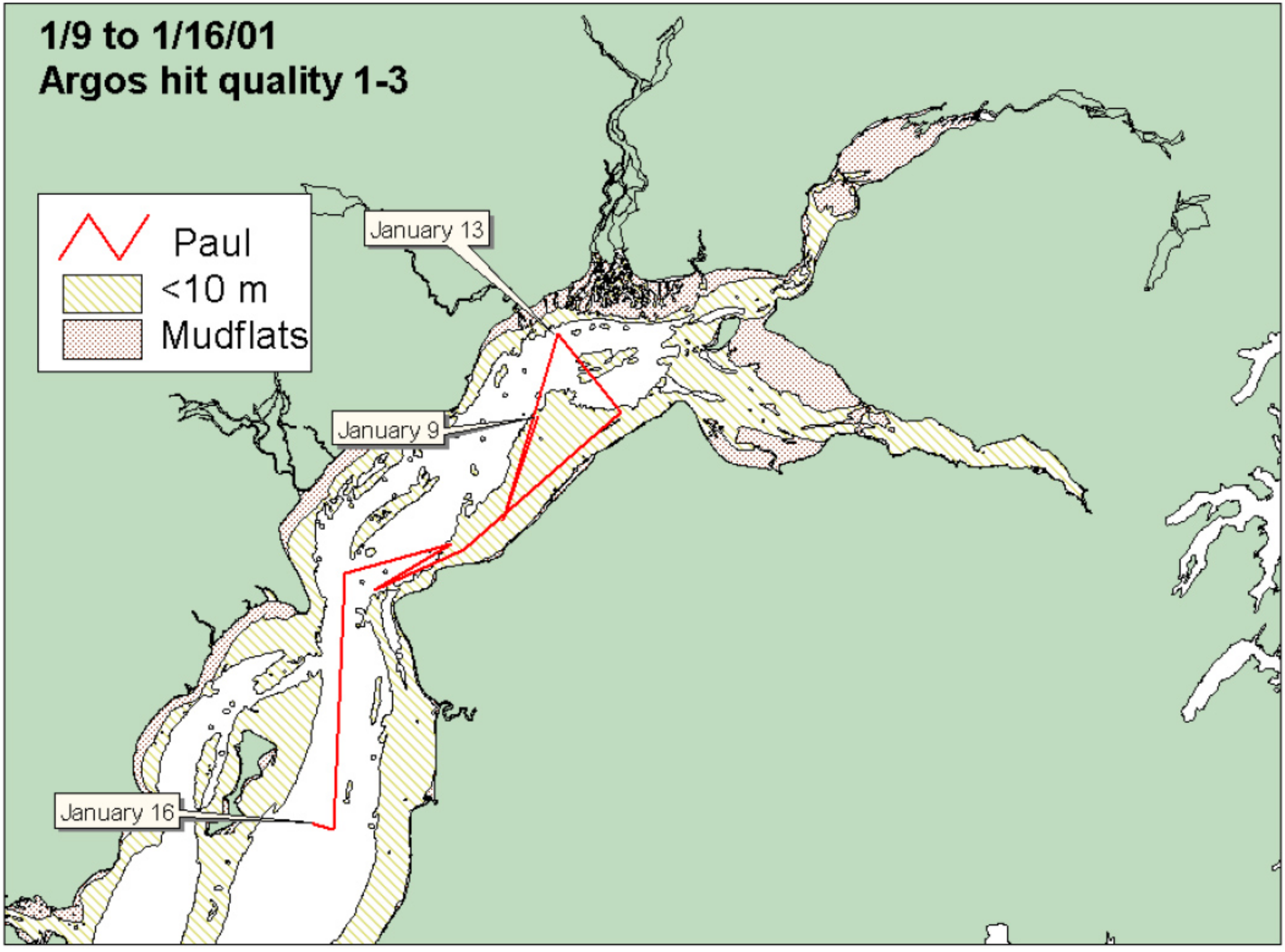
Ringo

<10 m

Mudflats

10 0 10 20 Kilometers


1/2/01 to 1/8/01
Argos Hit Quality 1-3
Susitna R.
January 3
January 9
January 2
Turnagain Arm
January 8
January 3
East Foreland
10 0 10 20 Kilometers
Paul
Ringo
<10 m
Mudflats


1/9 to 1/16/01
Argos hit quality 1-3
Paul
<10 m
Mudflats
January 13
January 9
January 16