

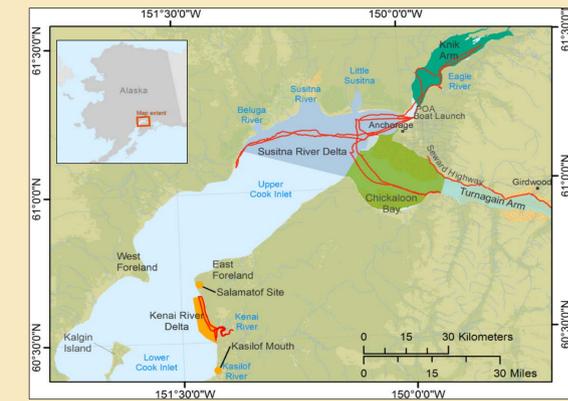
# The Susitna River Delta as a calving ground: Evidence from observation of a Cook Inlet beluga birth and the 2005-2015 seasonal and geographic patterns of neonate occurrence in Upper Cook Inlet.

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## Background

The scientific literature has not identified if distinct calving grounds and calving seasons exist for endangered Cook Inlet beluga whales (CIBW), as they do with other beluga populations. Specific calving grounds or seasonal calving periods for CIBW have not been designated because births in the wild have not been previously documented.



## Methods

Cook Inlet Beluga Whale Photo-Identification Project

- Upper Cook Inlet 2005-2015
- Kenai River Delta 2011-2013
- ~250 boat- and land-based photo-id surveys
- Conducted under NMFS permit #18016
- Ice-free season.
- Note group size, location, behavior, and color/ age-class

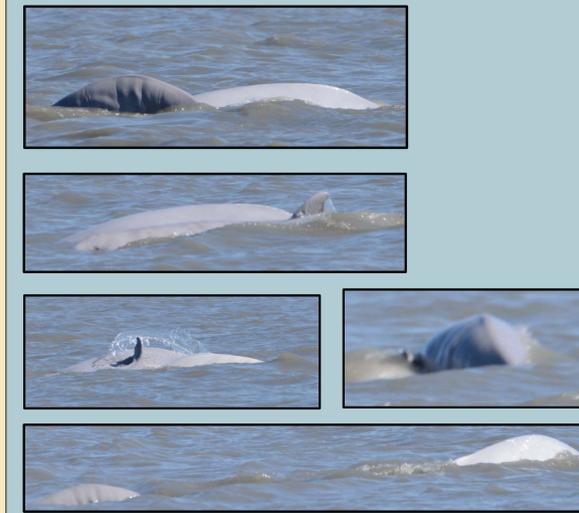
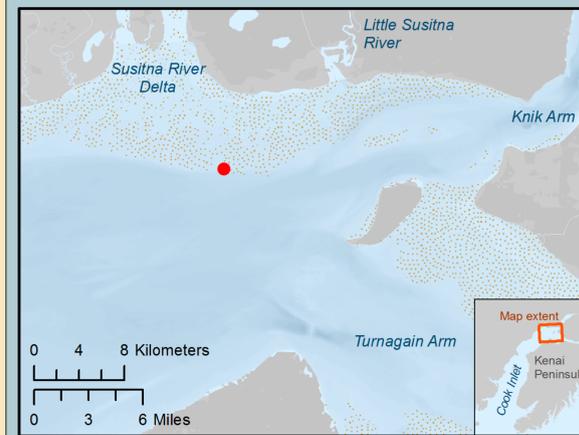
*Neonates (newborns, hours to days old) are distinguished from calves by their smaller size, darker color, sunken head, fetal folds, and uncoordinated "corky" surfacing/swimming behavior.*



## Birth Observed

We observed a CIBW birth on July 20, 2015 in the Susitna River Delta, Upper Cook Inlet Alaska.

- The birth took place during low tide, in shallow waters (~1.3m) along the exposed mudflats, 5-10 m from shore. This was a cove-like area where the current was reduced relative to nearby areas.
- The birth occurred in a larger group of 313 whales, with at least three other neonates seen in the group.
- Little of the birth event was visible at the surface and the turbid waters did not permit us to see underwater.
- An adult beluga was noted to be a few meters away from the main group. The group was traveling along the exposed edge of the mudflats, but the lone beluga was floating log-like at the surface. It was eventually joined by other belugas, and a neonate with deep fetal folds surfaced explosively from alongside the lone beluga.
- During the 37-minute observation period, the neonate was often seen listing to one side at the surface and appeared motionless, but then was pushed upright by other belugas. At times it would disappear from view, but then later was seen being pushed forcefully to the surface by a small group of attending whales.
- When last seen, the neonate appeared to be breathing and swimming on its own, but remained surrounded by a small group of belugas.



## Seasonal Patterns

Neonates were seen over a 5-12 week period every field season, usually beginning in mid-July.

Year	Field season	First neonate sighting	Last neonate sighting	# weeks from first to last neonate sightings of season	Location of first neonate sighting of season
2005*	April 14-Oct 21	July 6	n/a	n/a	Susitna River Delta
2006*	May 12-Oct 5	n/a	n/a	n/a	n/a
2007*	June 28-Oct 27	July 27	n/a	n/a	Susitna River Delta
2008	May 21-Oct 28	July 24	Sep 30	9	Susitna River Delta
2009	June 19-Oct 24	Aug 1	Oct 15	9	Susitna River Delta
2010	May 9-Oct 15	July 16	Oct 8	12	Susitna River Delta
2011	April 16-Oct 22	July 27	Sep 27	9	Susitna River Delta
2012	May 2-Oct 21	July 20	Oct 4	11	Susitna River Delta
2013	April 20-Sep 21	July 31	Sep 3	5	Susitna River Delta
2014	July 8-Oct 3	July 21	Oct 3	10.5**	Susitna River Delta
2015	May 28-Oct 1	July 19	Oct 1	10.5**	Susitna River Delta

\*neonates were not differentiated from calves during the 2005-2007 surveys, but neonates were noted if visible in photos

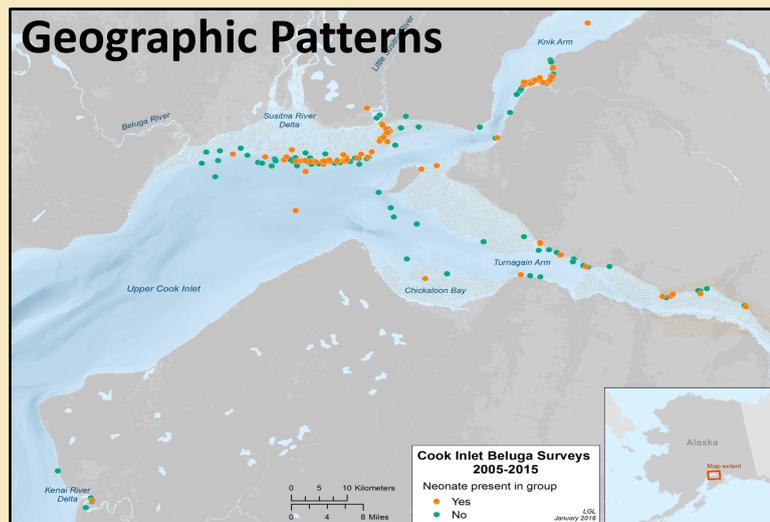
\*\* last day of field season

In all instances, the first neonates of the field season were seen in the waters of the Susitna River Delta (defined as between the Beluga River and Little Susitna River).

As each field season progressed, neonates were seen in all other survey areas where belugas were encountered (Susitna River Delta, Knik Arm, Turnagain Arm, Chickaloon Bay, and the Kenai River).



## Geographic Patterns



Locations of beluga groups seen with and without neonates, 2005-2015. Groups with belugas of unknown age-class (due to poor sighting conditions) are not shown.

## Conclusion

Keeping in mind the bounds of the study area and study period, these results provide evidence to support the designation of the Susitna River Delta as CIBW calving grounds, the nearshore areas of Upper Cook Inlet as nursery grounds, and mid-July through mid-October as the peak calving period in Upper Cook Inlet.

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