Range Contraction in Cook Inlet

Rugh, D.J., K.E.W. Shelden, and R.C. Hobbs. 2010.
Range contraction in a beluga whale population.
***Endangered Species Research* 12:69-75 (doi: 10.3354/esr00293).**

Focus of this study

- To compare the summer distribution of beluga whales over 3 time periods:

1978 – 1979

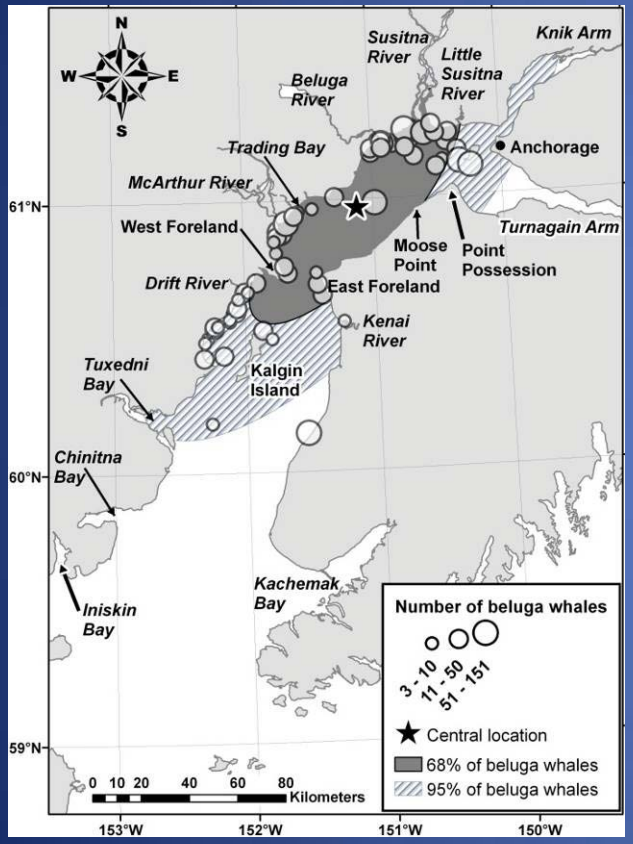
1993 – 1997

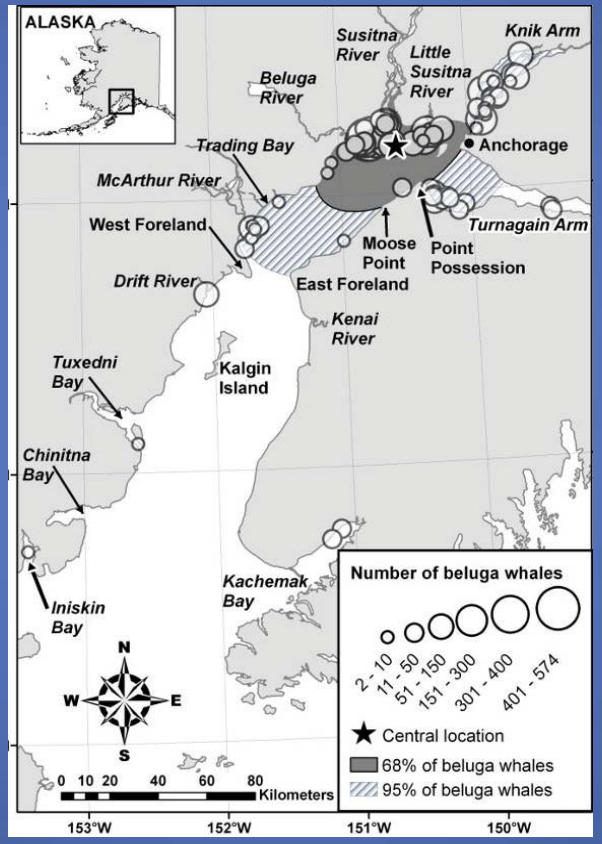
1998 – 2008

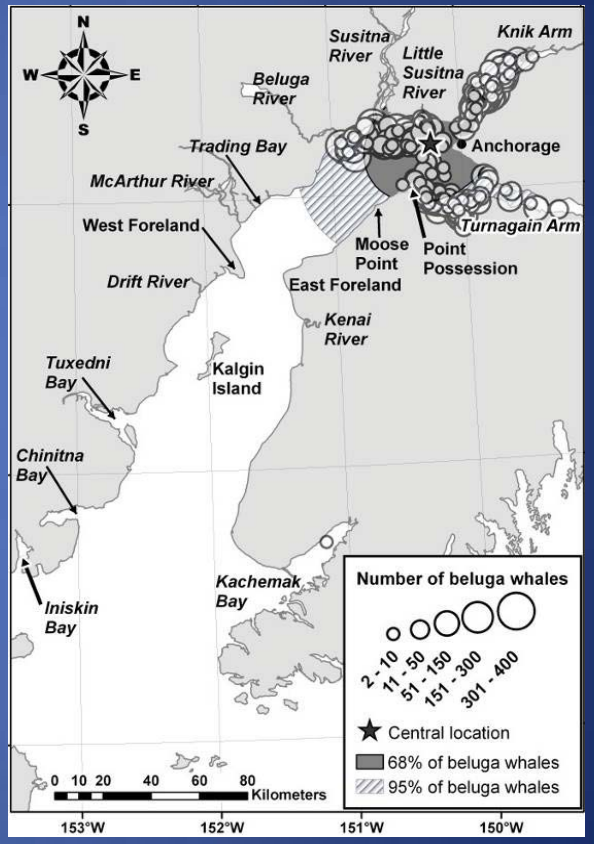
Methods

- Aerial surveys
- June and July counts
- Corrected for animals missed

Changes in Distribution over Time

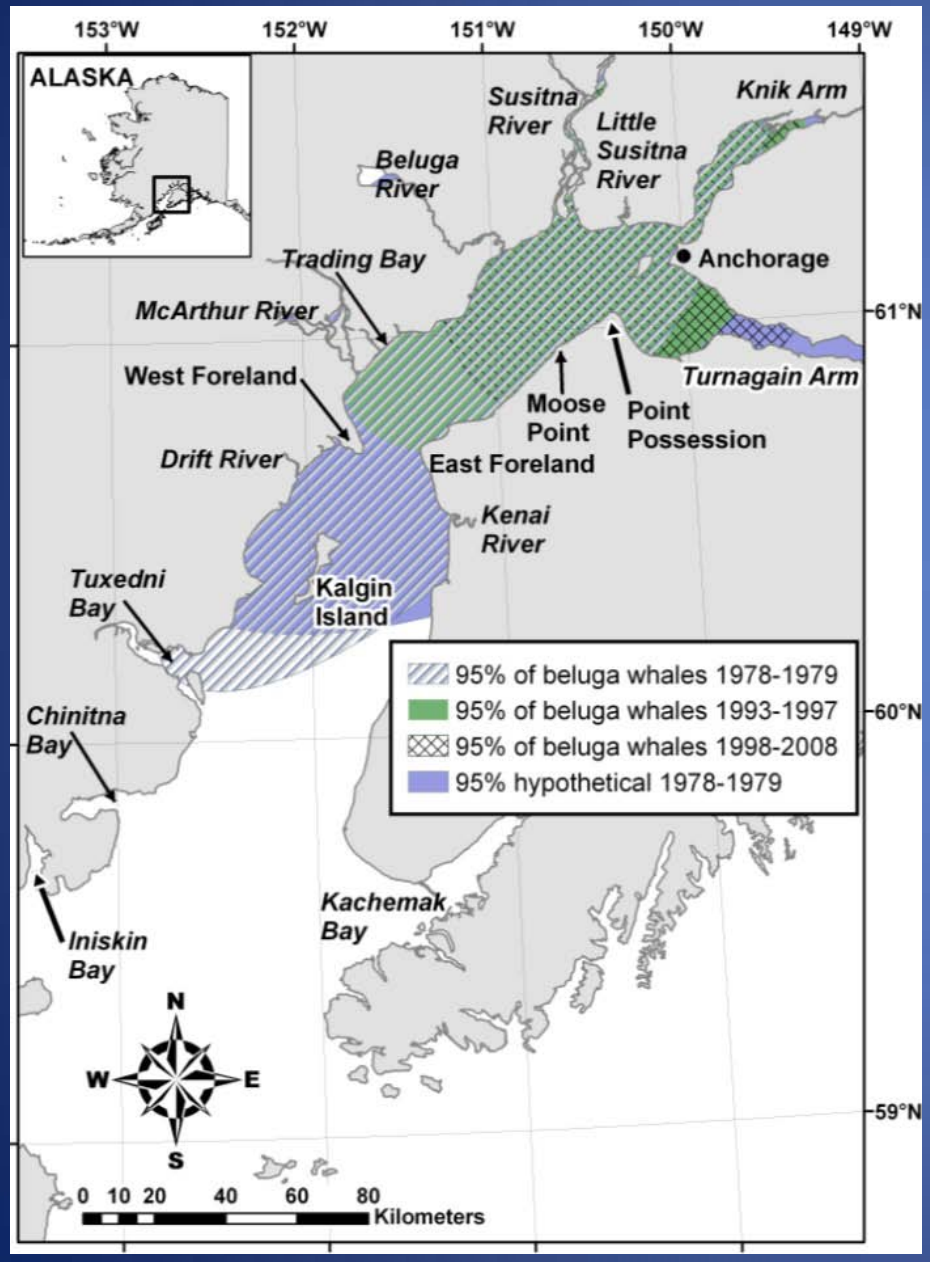




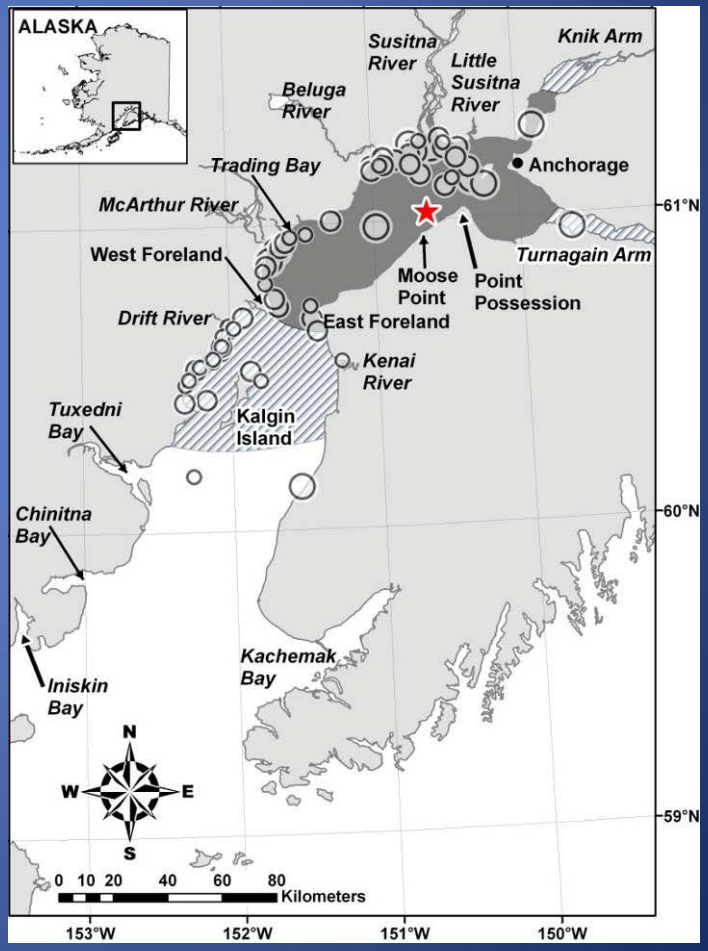


1978 – 1979 **1993 – 1997** **1998 – 2008**

Range Contraction

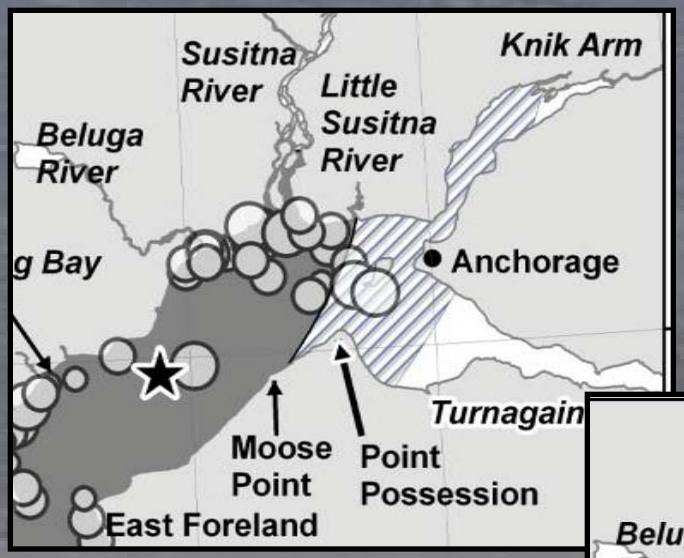


Sample periods	95 % of beluga range (km^2)		Area used relative to 1978–1979 range (%)	
1978–1979	7226	6442	100	58
1993–1997	3715		~~51~~	
1998–2008	2806		~~39~~	44

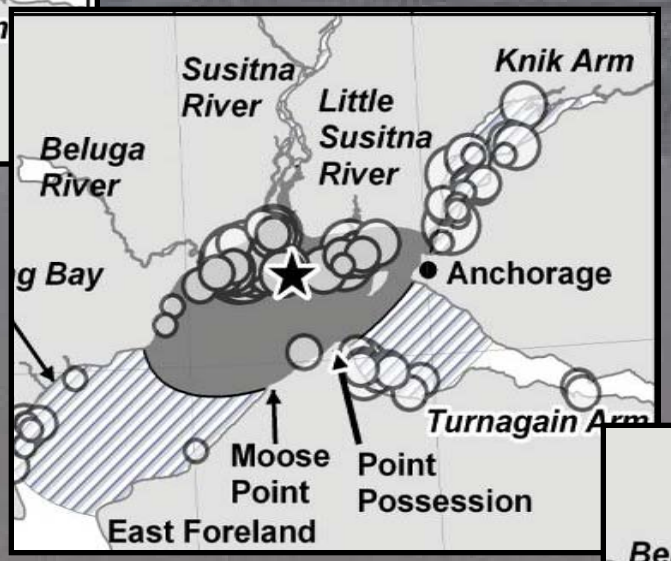


Susitna Mudflats

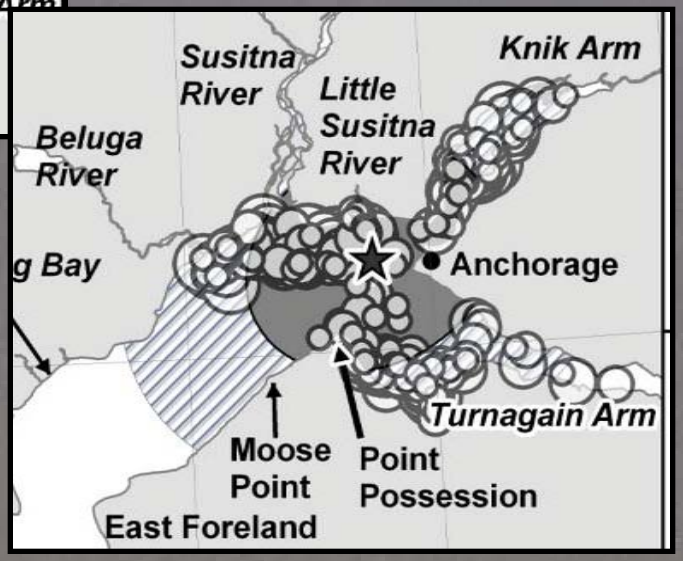
1978 – 1979



1993 – 1997

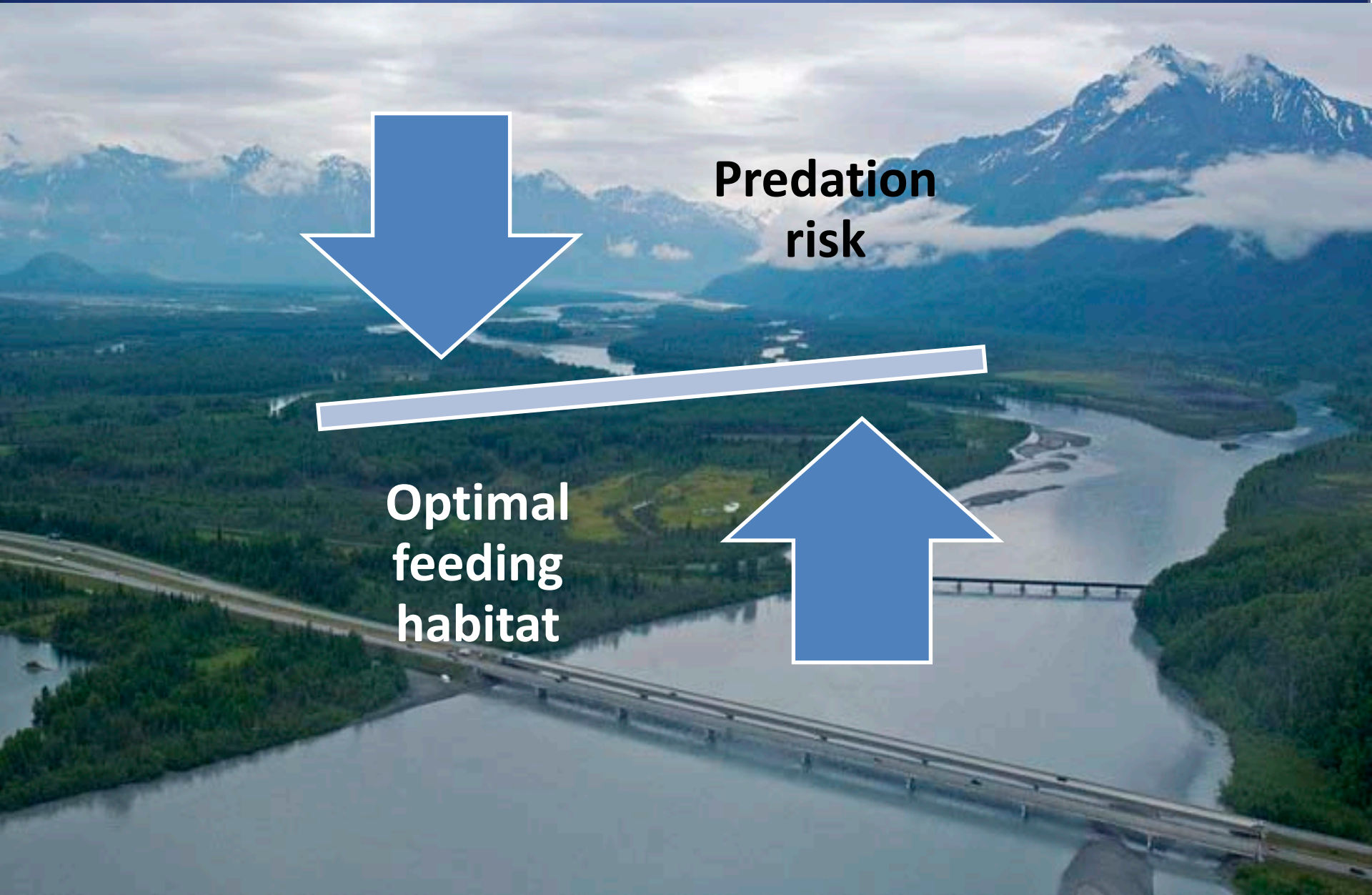


1998 – 2008



	p values 1993–1997	p values 1998–2008	Belugas in the Susitna area n	Belugas in the Susitna area %
1978–1979	0.19	0.35	251	43
1993–1997	–	0.23	337	58
1998–2008	–	–	172	50

Why has the range contracted?

- Habitat change
- Avoidance of killer whales
- Remnant population still in optimal habitat

Conclusions