



THE GREAT GREY

Human Impact on the Migration
Patterns of the Great Grey
Whale

BACKGROUND

Mara Talan is an avid environmentalist and spends much of her free time in open water.

Mara plans to work in the analytics & reporting space having previously served as a sales manager for custody reporting for large financial institutions where she focused on risk management, governance, and regulatory response solutions for government, central banks and other financial services organizations.

Mara received a Bachelor of Science in communications from the University of Texas at Austin

THE THREAD TO THE THREAT

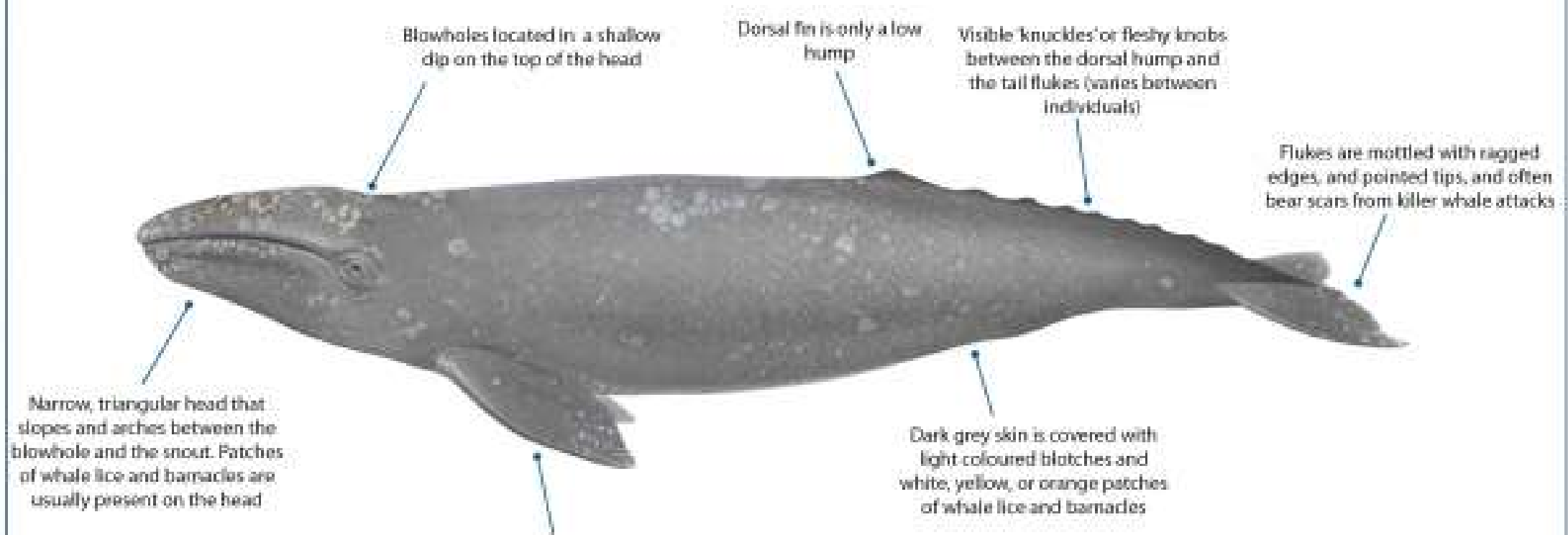
Original premise: How do variations in the population of grey whales correlate to changes in legislation?
Can the change of approach in how whales are treated in one country impact levels of a species globally?

Variables observed:

- 1) When and where are the most whales observed?
- 2) During which months are juveniles observed?
- 3) How have numbers changed over the observation period?
- 4) Do the timeframes correlate to the changes in legislation?

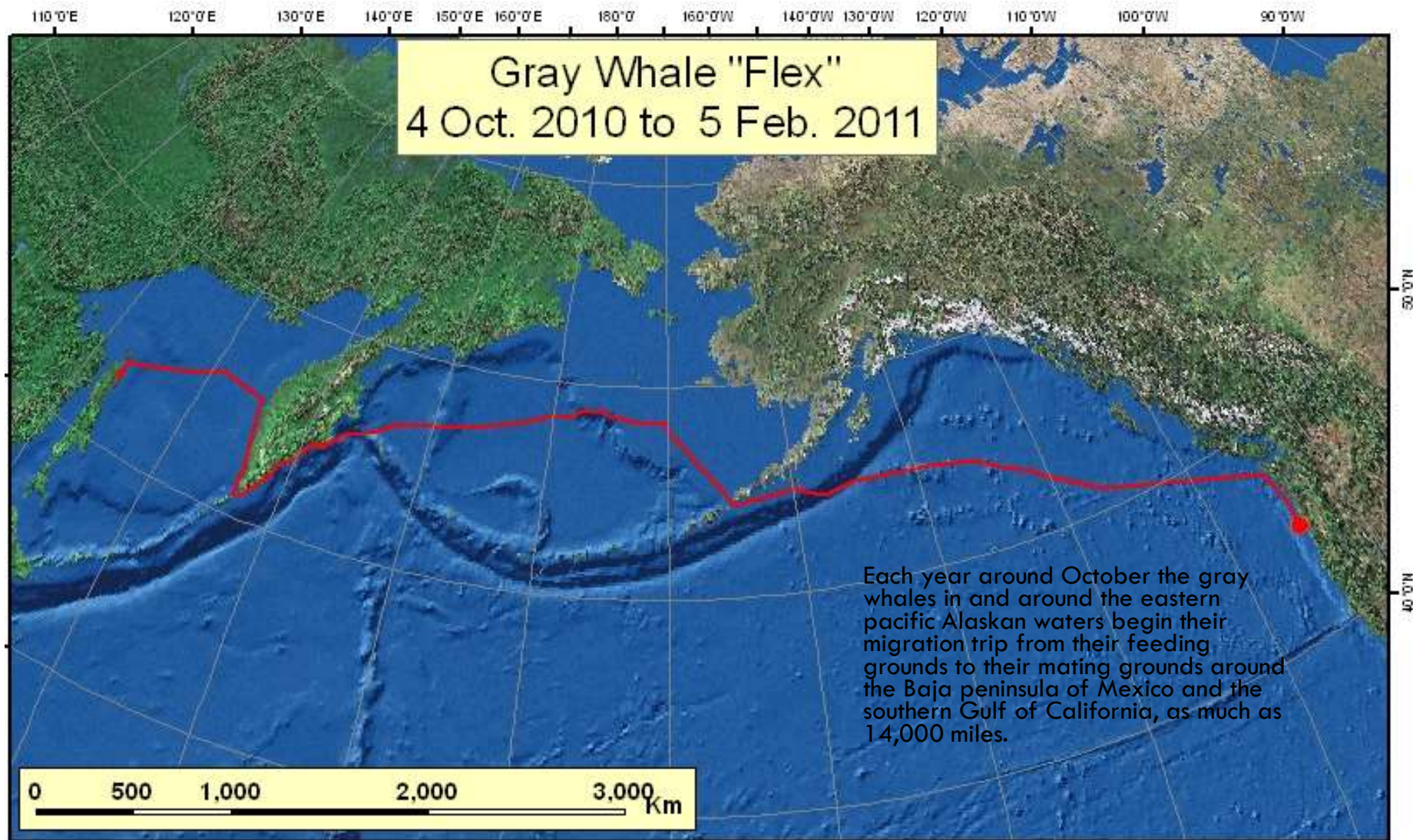
Sources: North American Fisheries (NOAA), Steven Swartz San Ignacio Ecosystem Science Program, www.vanqua.org, Western Gray Whale Map Period 10-04-2010 to 02-05-2011, www.acs-la.org

WHAT DOES A GREY WHALE LOOK LIKE?

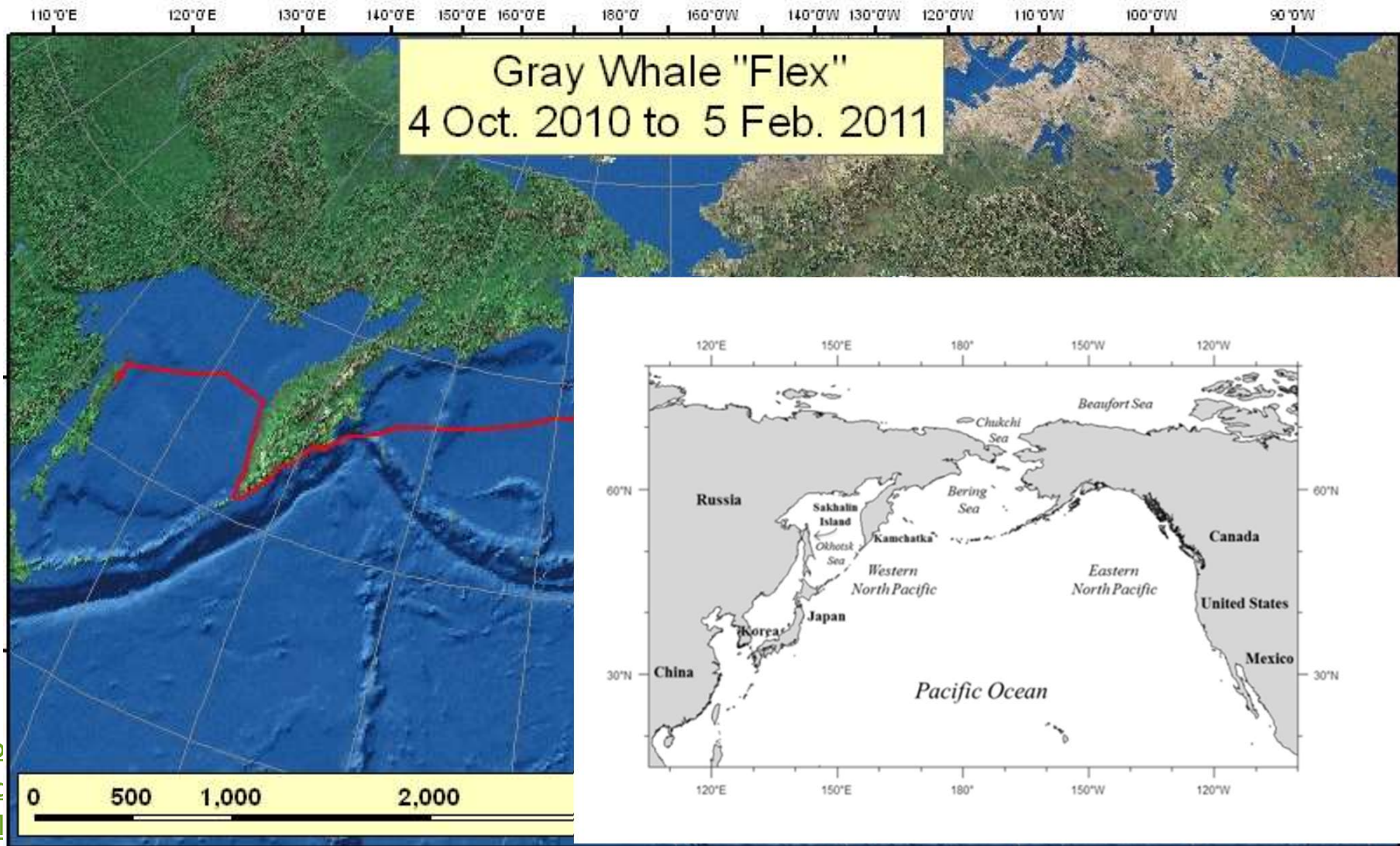


MIGRATORY PATTERN





Gray Whale "Flex"
4 Oct. 2010 to 5 Feb. 2011



<http://whc.2011>

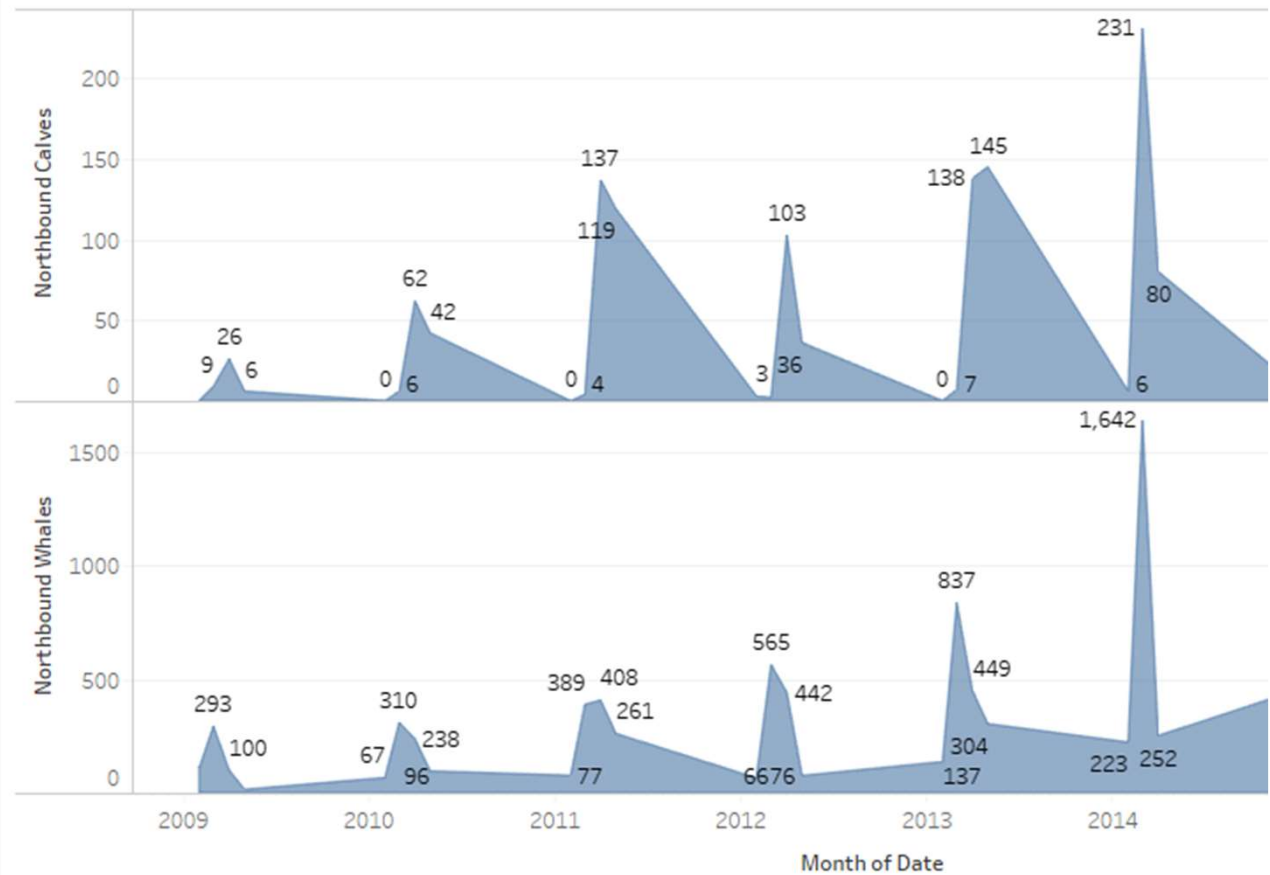
WHERE DOES THE MIGRATORY PATH END?

Grey whales give birth in the Sea of Cortez, so counting whales and calves in the peninsula is of prime importance to the health of the grey whale population.

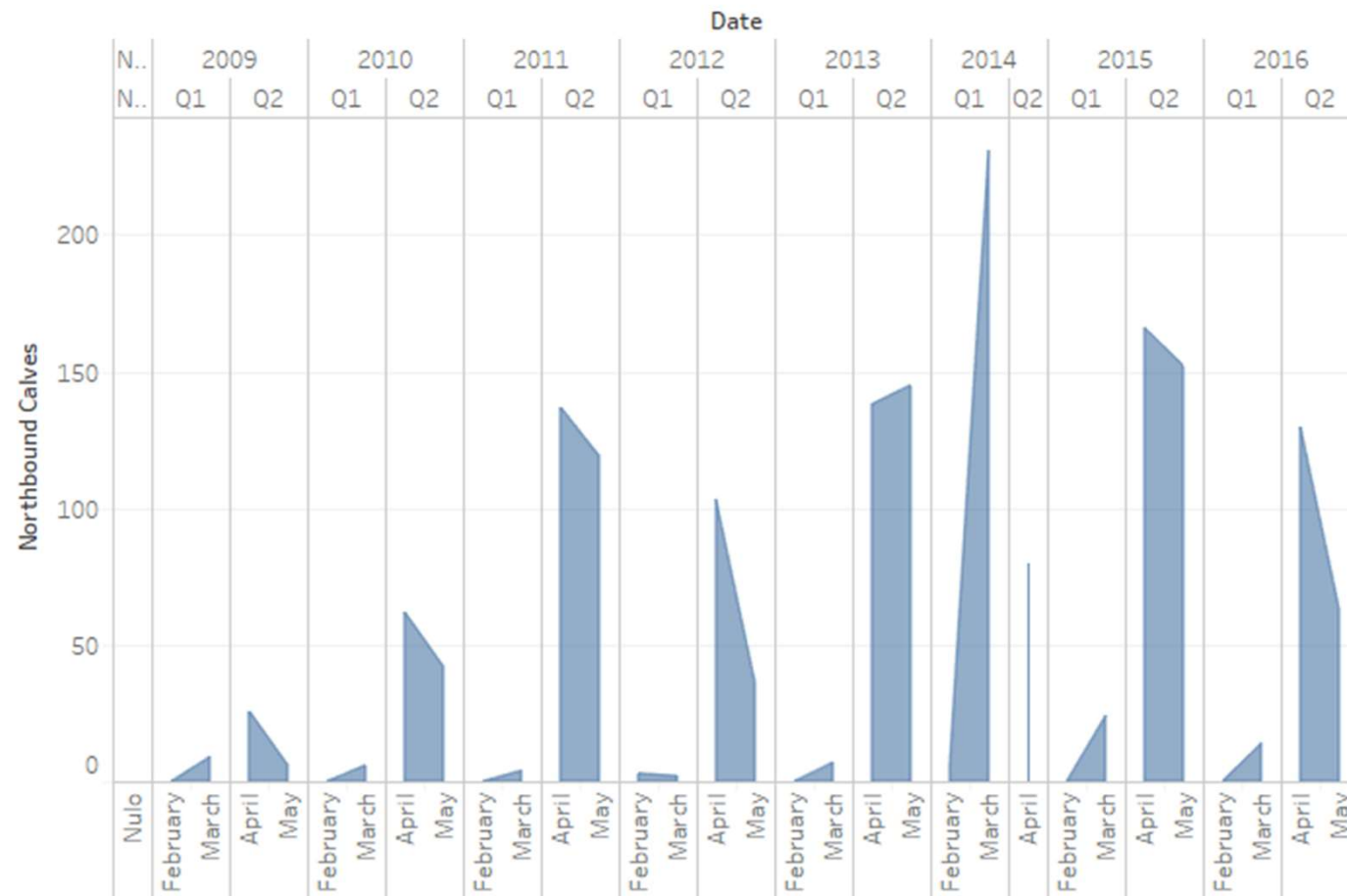
- 1) We will compare data highlighting periods of landmark legislation for impact on the migration of the grey whale.
- 2) The pregnant females are often the first whales to arrive at the mating grounds
- 3) Non pregnant but fertile females may also be found arriving early to look for an eager mating partner
- 4) By mid February to March, most of the population can be seen mating, socializing and giving birth at the mating grounds.
- 5) Throughout March gray whales that have finished mating may begin traveling back towards their feeding grounds in the eastern pacific with pregnant mothers and females that have just given birth staying behind until mid April to May before leaving.
- 6) Focus of the data: Adult greys and juveniles for the periods: February through May 2010-2016



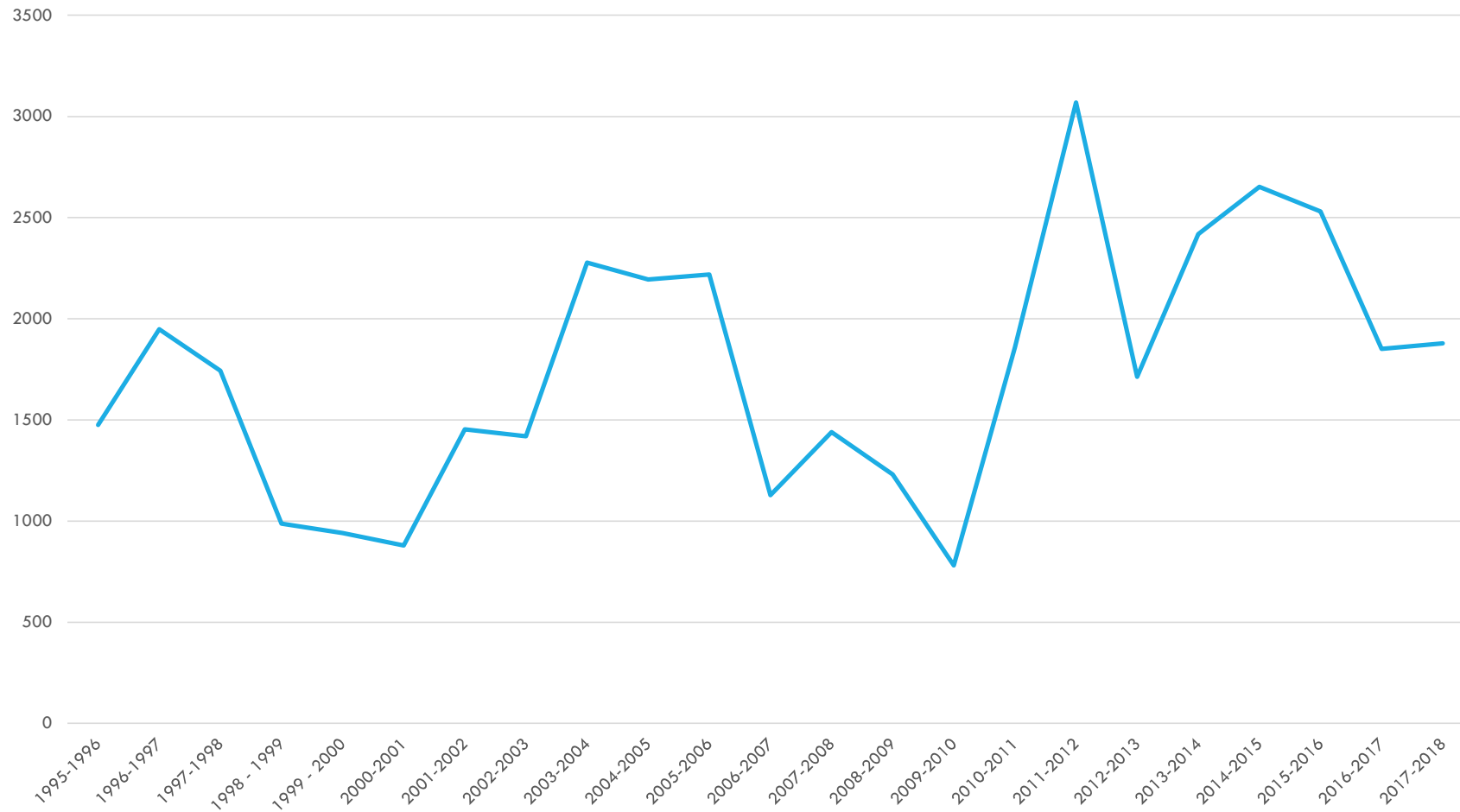
SIGHTINGS TRACKING YOY 2009-2014



https://journeynorth.org/gwhale/data_la.html

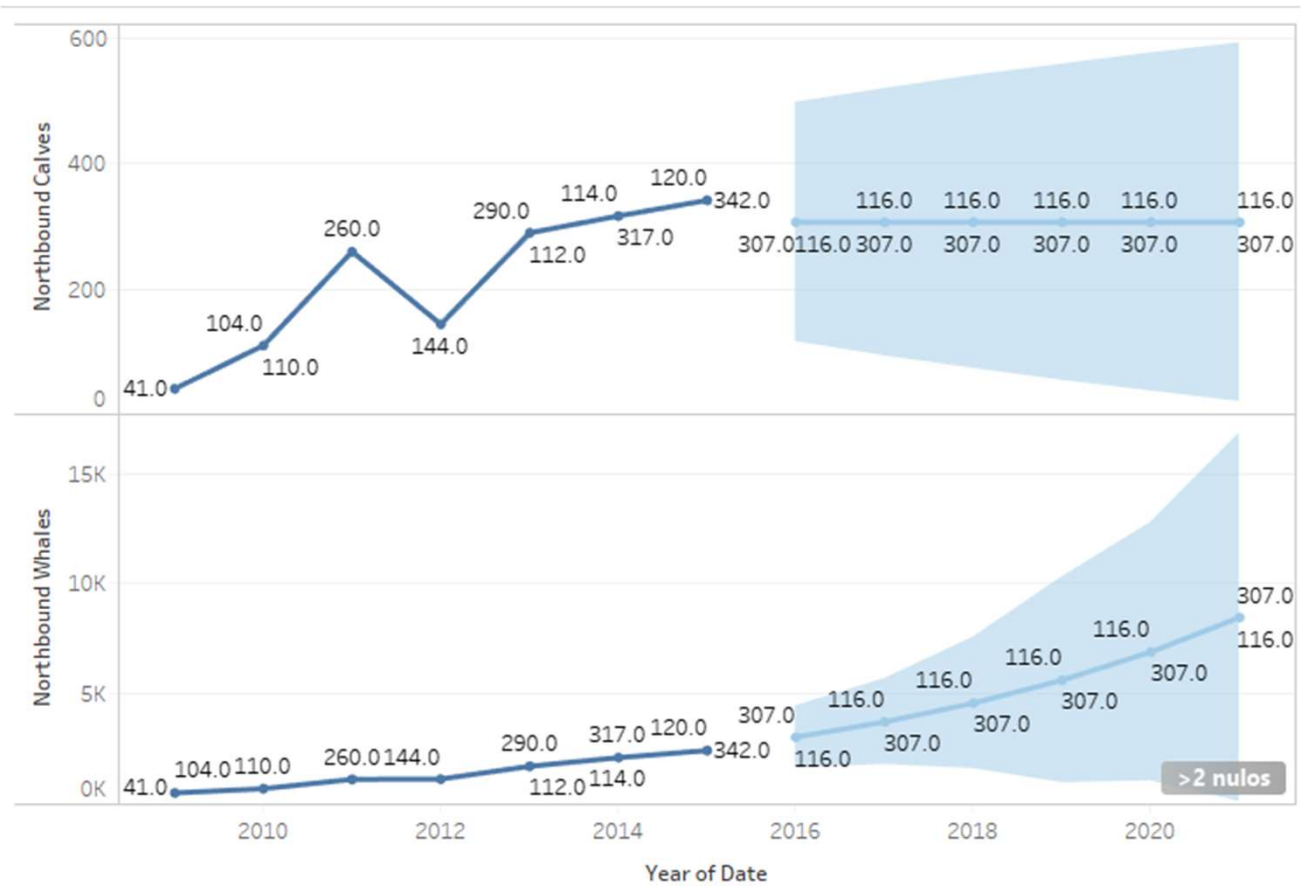


GREY WHALE ESTIMATED ANNUALIZED POPULATION



<https://www.sanignaciograywhales.org/>

FORECAST- TREND



LEGISLATION- THE CASE OF JAPAN

In practice

- Japan's Antarctic whaling program was declared illegal by the UN Court of Justice on 31st March 2014.
- Until its recent announcement Japan used the loophole of 'scientific whaling' to side step the IWC ban and the meat is sold on the open market.

Legislation

- On December 26th 2018, Japan announced it would resume commercial whaling in July 2019. On July 1st, whalers set sail to hunt 52 minke whales, 187 Bryde's whales and 25 sei whales.
- Figures from Japan's whaling expedition to Antarctica during 2017/18 reveal that 122 out of the 181 female minke whales killed were pregnant.

FISHERIES AND THE IWC

Congestión and Feeding Areas

- Near shore industrialization and shipping congestion
- Exposure to pollutants
- Ship strikes as well as a general degradation of the habitat
- Migratory routes of these whales at risk
- Operations of this nature have introduced new sources of underwater noise, including seismic surveys, increased shipping traffic, habitat modification, and risks associated with oil spills (Weller et al. 2002).

WNP and ENP

- The decline of gray whales in the WNP is attributable to commercial hunting off Korea and Japan between the 1890s and 1960s.
- The pre-exploitation abundance of WNP gray whales is unknown, but has been estimated to be between 1,500 and 10,000 individuals
- By 1910, it is estimated that only 1,000 to 1,500 gray whales remained in the WNP population (Berzin and Vladimirov 1981).
- Between 2005 and 2007, four female gray whales (including one mother-calf pair and one yearling) died in fishing nets on the Pacific coast of Japan.