# Eastern and Western North Pacific Gray Whales

NOAA FISHERIES
Southwest Fisheries Science Center

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## Background

The gray whale became extinct in the Atlantic by the early 1700s.

Gray whales are now only found in the North Pacific where there are two extant populations. Genetic studies indicate that these two stocks, called the "*Eastern*" (ENP) and "*Western*" (WNP) North Pacific populations, are discrete.

The ENP stock numbers about 20,000 (Laake et al. 2012; Punt and Wade 2012; Durban et al. 2013) and in 1994 was removed from the U.S. List of Endangered and Threatened Wildlife.

The WNP stock numbers about 150 (Cooke et al. 2013) and is listed by the IUCN as *Critically Endangered.*

## Observations of Gray Whales in China (are exceptionally rare)

Only 24 records of gray whales off China exist since 1933 (Wang, 1984; Zhu, 2002), including observations of two mother-calf pairs.

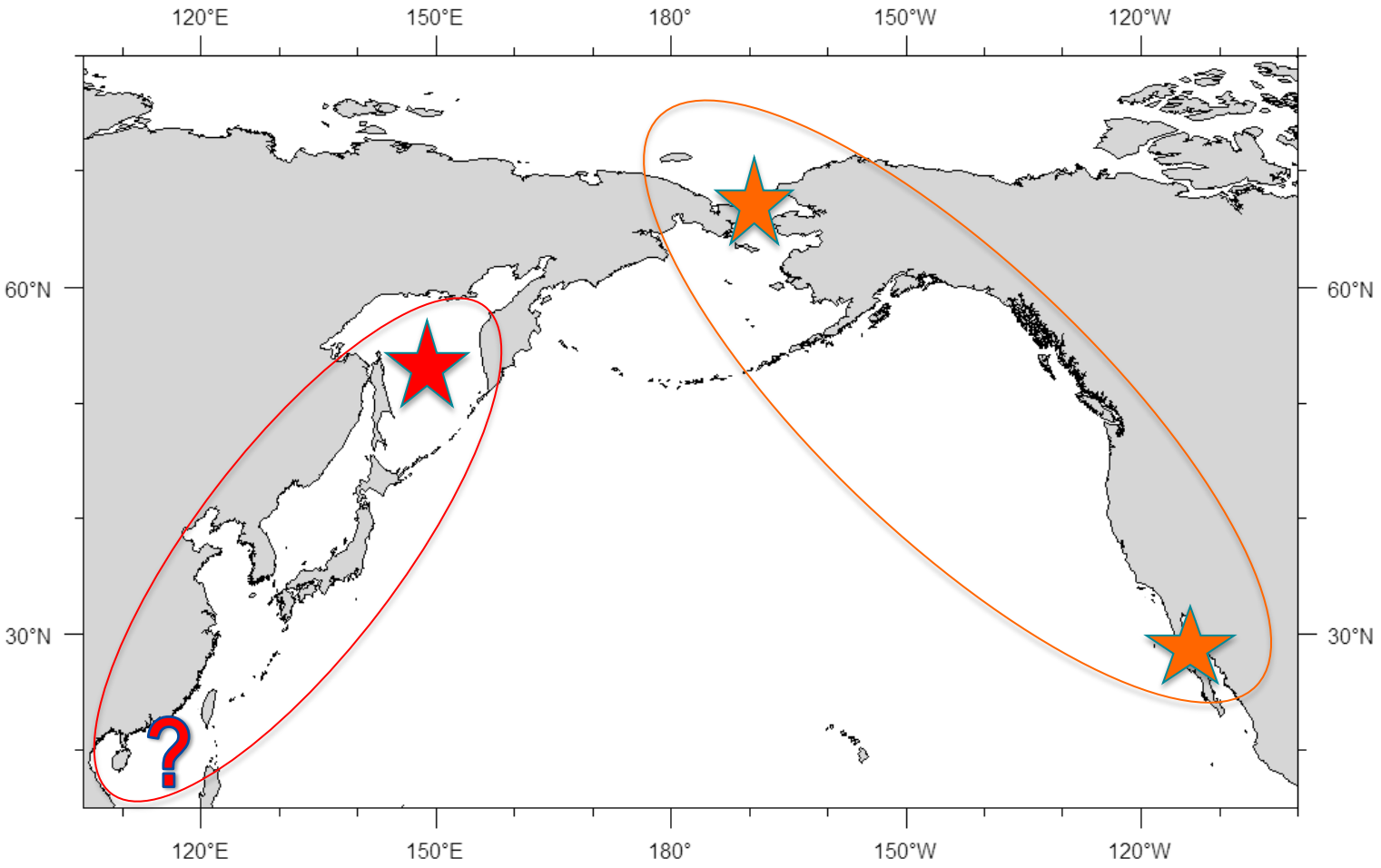
Recently, an 11.5 m female stranded live at Zhuanghe (Bohai Sea ca. 39˚N) in December 1996 (Zhao, 1997) and a 13 m female gray whale was entangled in fishing gear offshore of Baiqingxiang (Pingtan County) in November 2011 (Zhu, 2012).

Logbooks from 1869 of New Bedford whaleships on the “Chinese whale grounds” (Henderson 1990; Reeves et al., 2008) reported gray whales in February at nearly an identical location (Pingtan County) as the November 2011 Baiqingxiang specimen.

Whalers also recorded gray whales arriving to waters south of Hailing Island (near Yangjang, Guangdong Province) in January and February (Henderson 1990). Wang (1984) reported fishermen noting a small number of gray whale sightings in June and July.

Based on the varied timing of these observations, Henderson (1990) hypothesized that some gray whales may remain in Chinese waters all year and that the southern most whales occurred as far south as Hainan Island (between 18°30’N and 20° N).

# Distribution and Range

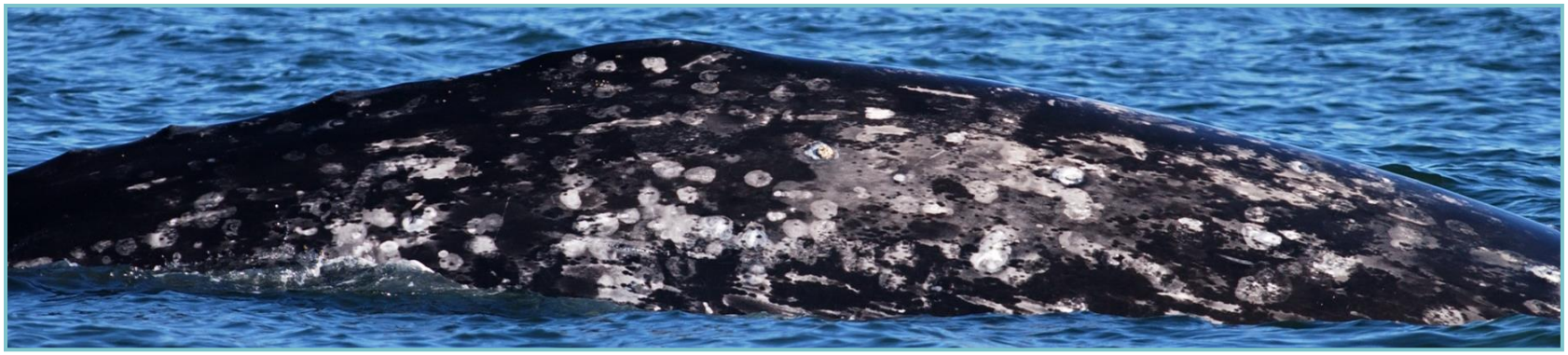




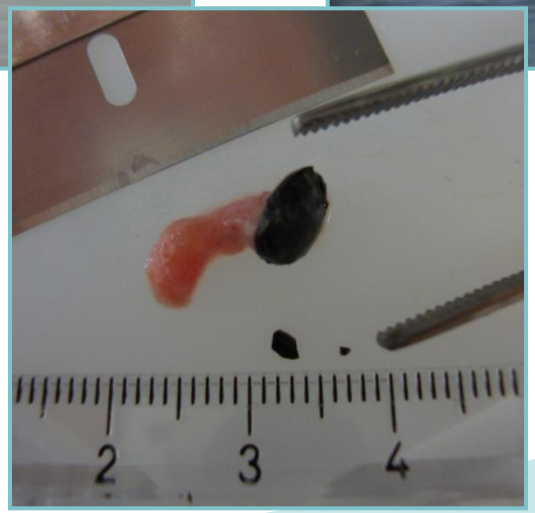


**Russia-U.S. Research Program 1994-2013**
**Sakhalin Island, Russia**
**Okhotsk Sea**

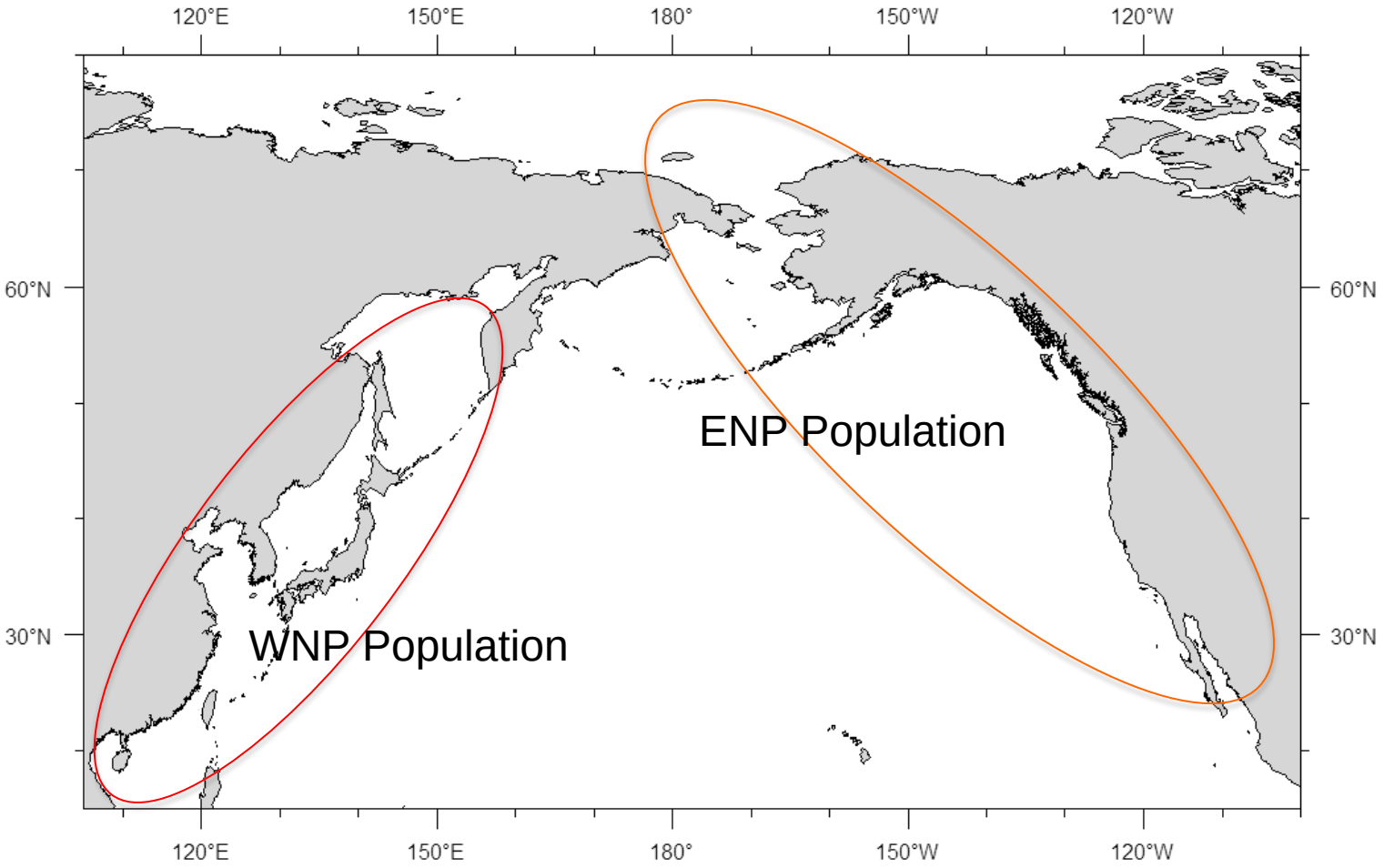
# Photo-Identification



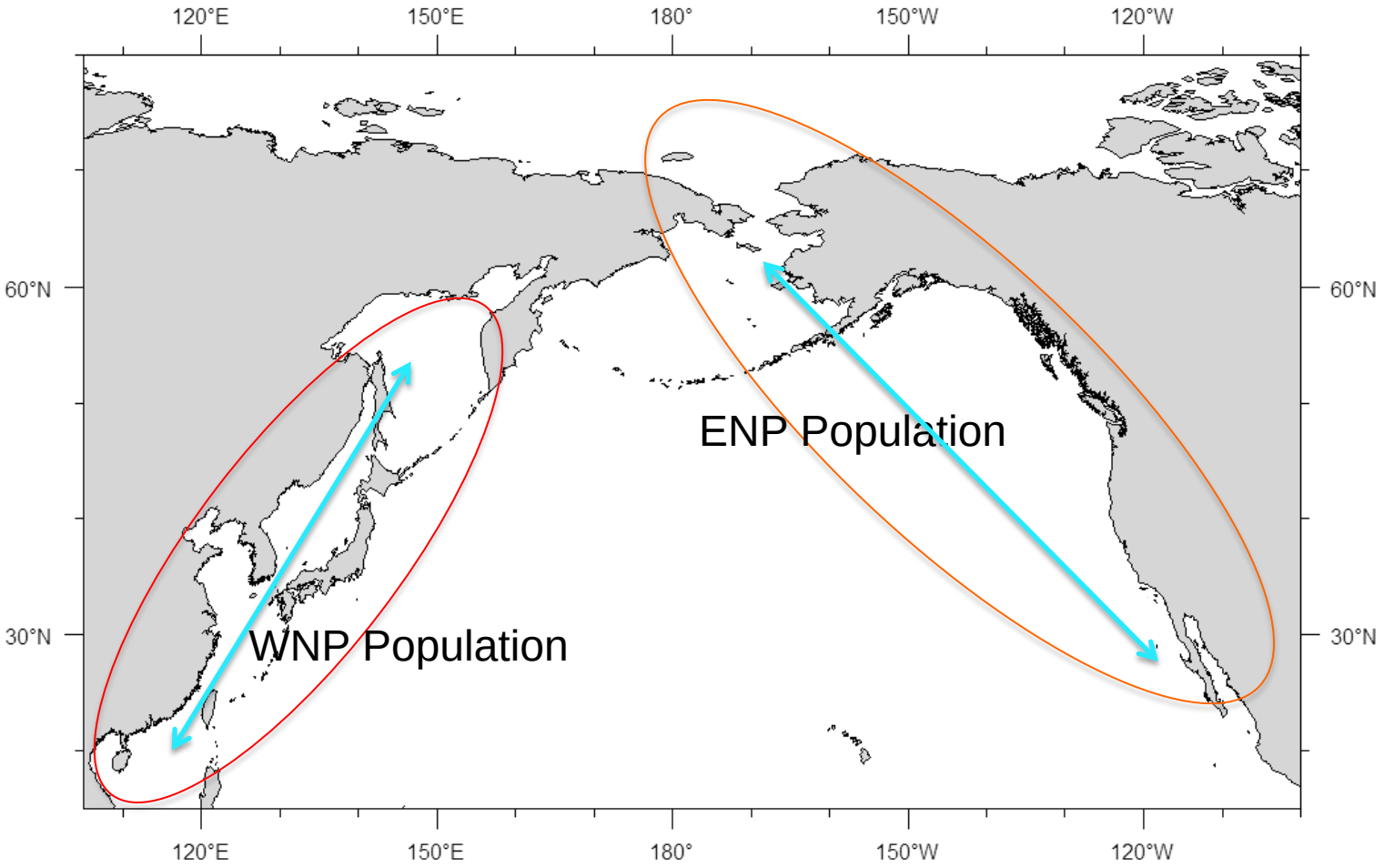
# Biopsy Sampling



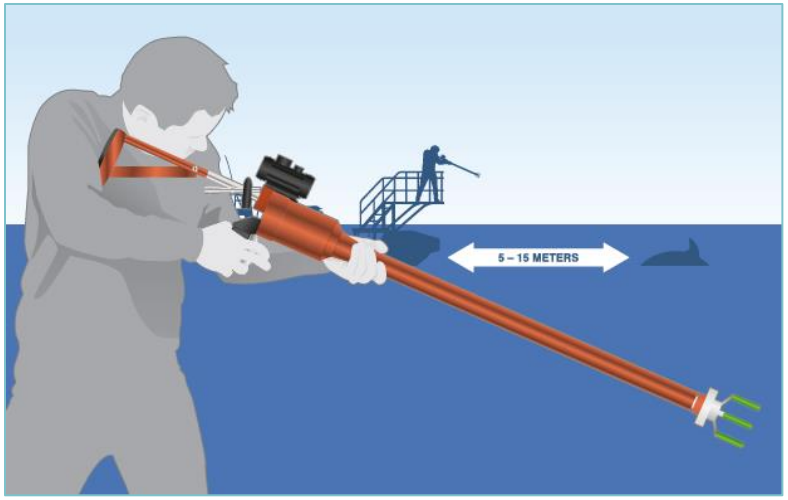
# Population Structure



# Migration


120°E
150°E
180°
150°W
120°W
60°N
30°N
ENP Population
WNP Population

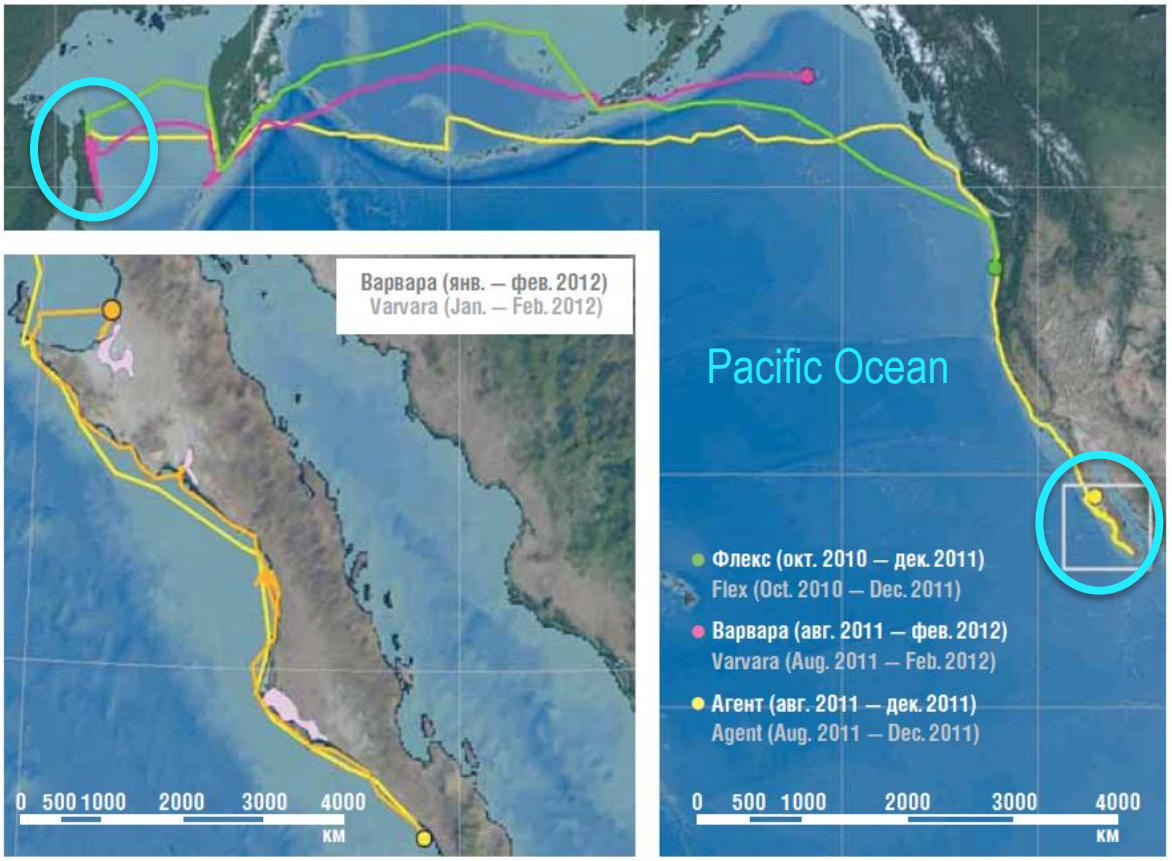
# Satellite Tagging - Russia-US Collaborative Study 2010-2011 *




* Project PI - Dr. Bruce Mate, Oregon State University

# Tracking Results

Sakhalin Island, Russia



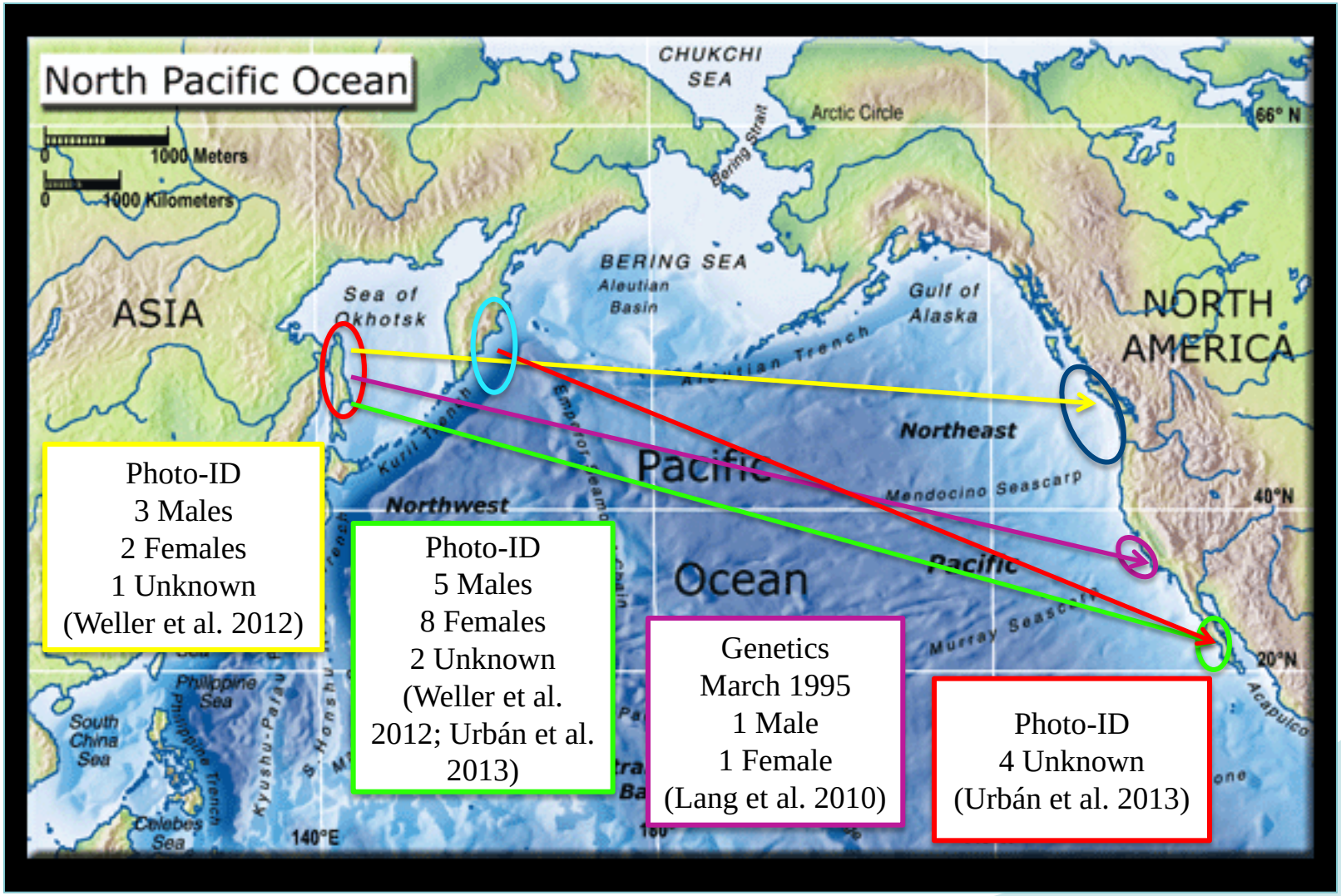

Baja, Mexico

**Пути миграции серых китов в 2010–2012 гг.**
**Gray whales migration routes 2010–2012**

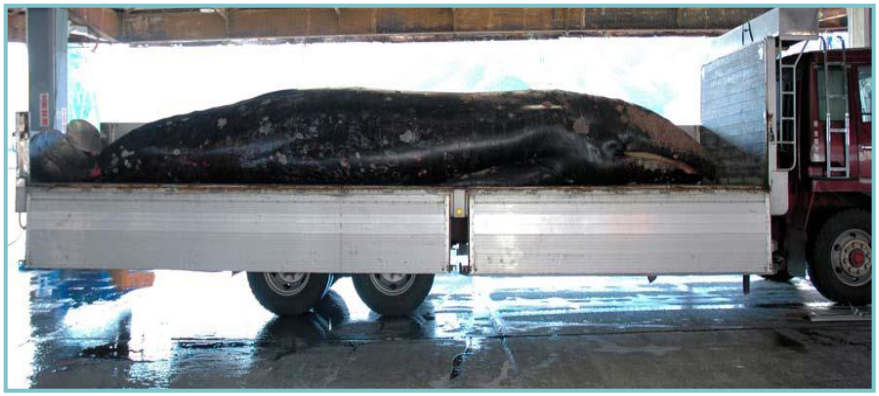
Vladimirov, A., Ilyashenko,, V., Oleinikova, E., Chernyakhovskiy, I.. 2012 Gray Whales. The Sakhalin Story. ISBN 978-5-9903899-1-5

This research was conducted by A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences (IEE RAS) and Oregon State University Marine Mammal Institute in collaboration with the U.S. National Marine Fisheries Service, Kronotsky State Nature Biosphere Reserve and the Kamchatka Branch of the Pacific Institute of Geography. The research was contracted through the International Whaling Commission (IWC) and International Union for Conservation of Nature (IUCN) with funding from Exxon Neftegas Ltd. and Sakhalin Energy Investment Company Ltd.

# Ocean Basin Movement Patterns (Photo-ID and Genetics)



# Mystery in the Western North Pacific



Pacific coast of Japan - January 2007

Photo-ID
January 2007
1 Female
Net Entrapped

Pacific coast of China - November 2011

No Photo Match
November 2011
1 Female
Fisheries Interaction

Of the 13 gray whale records from Japan since 1990, most have been reported during March-May (Kato et al. 2010). The most recent gray whale in China was reported from November (Zhu 2012).

## Conclusions

Although these cross basin matches provide new records of WNP to ENP movements, winter/spring observations of gray whales off Japan and other areas in the WNP suggest that not all gray whales identified off Sakhalin share a common wintering ground (Weller and Brownell 2012).

Despite this level of mixing, significant mtDNA and nuclear genetic differences between whales in the ENP and WNP exist and continue to support recognition of two distinct populations (Lang et al. 2011).

# Next Steps

***Critically Endangered Western Gray Whales in China: Searching for Evidence using Local Ecological Knowledge Surveys and Public Outreach***

Qian Zhu[1], David W. Weller[2], Robert L. Brownell, Jr.[2]

[1] Third Institute of Oceanography, State Oceanic Administration, Xiamen

[2] NOAA/NMFS/SWFSC

Collect information (including museum specimens) using local ecological knowledge surveys (Gilchrist et al. 2005) to obtain information on the occurrence, distribution, habitat use and numbers of western gray whales in the coastal waters of China.

Increase public awareness about gray whales in China and create a way for sighting information to be reported.

NOAA/IWC funding (15K) committed for US participants, 5K still needed for Chinese Scientist.