

# Humpback whale distribution patterns off California relative to fixed gear



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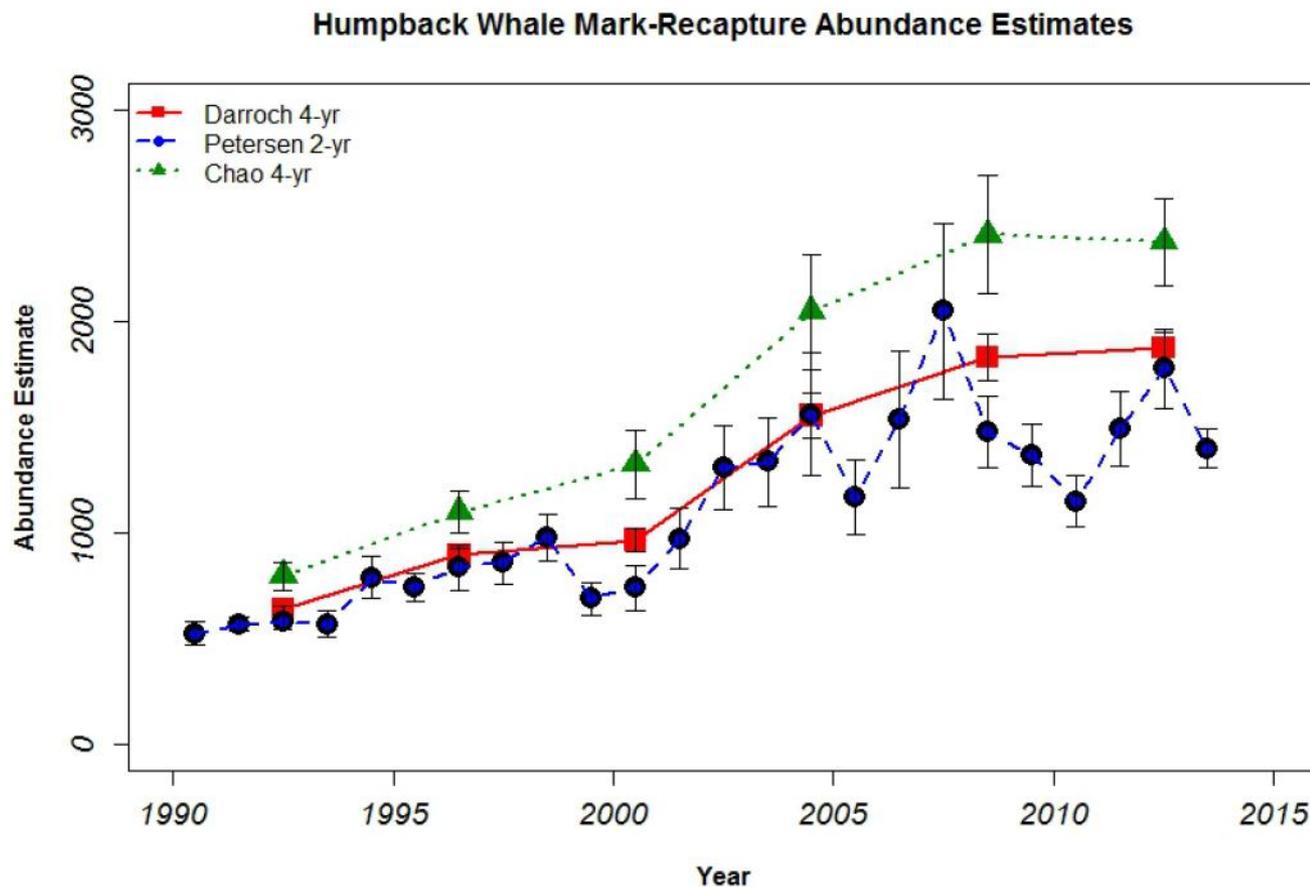
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# CA/OR Humpback whale trends

*(Calambokidis et al. 2017)*

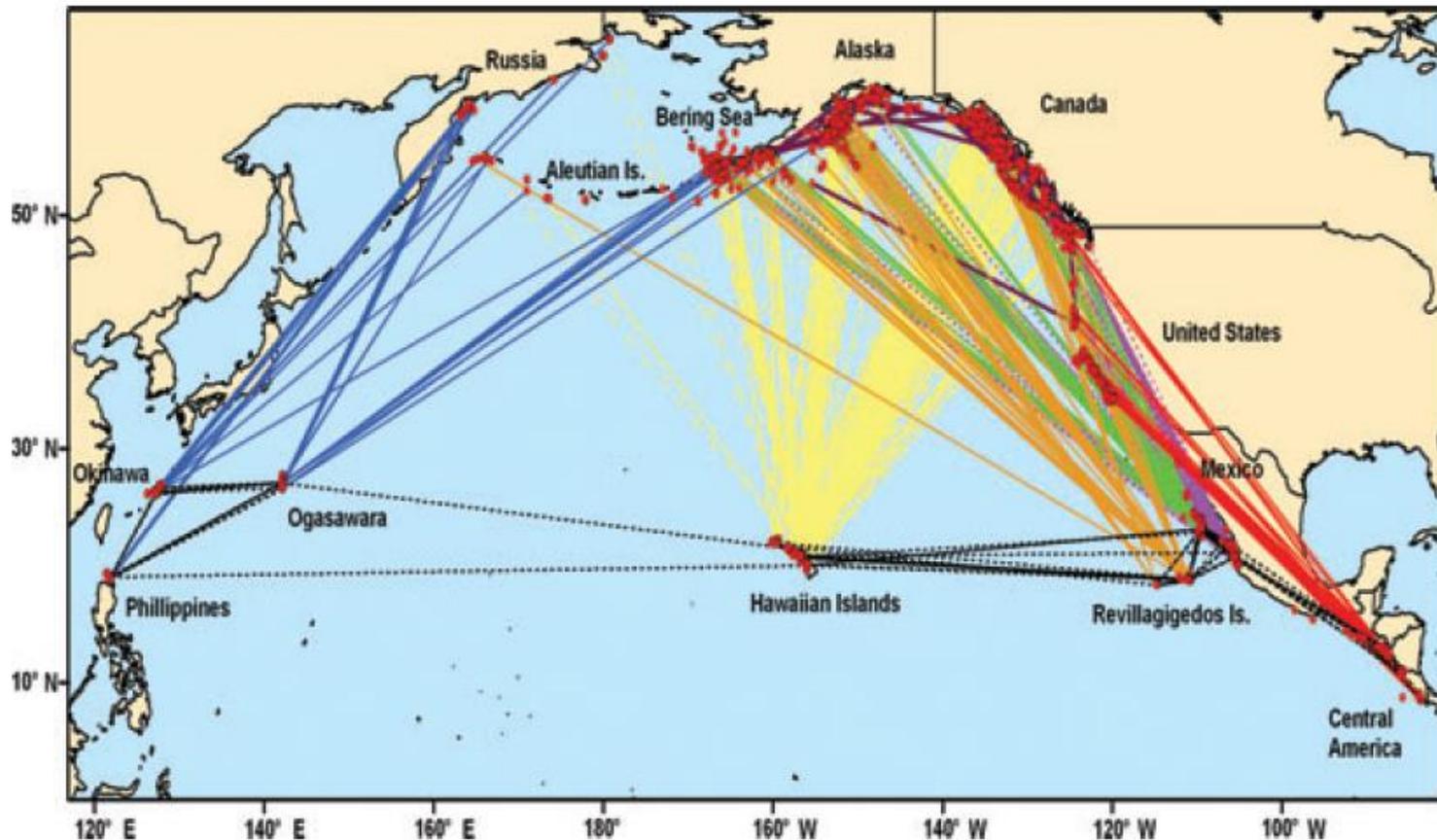
- Populations have been recovering from past whaling
- Increased from about 600 animals in 1990 to about 2500 in recent years
- This includes whales Central American and Mexican breeding areas



# North Pacific Humpback whale populations

*(Barlow et al. 2011, Marine Mammal Science)*

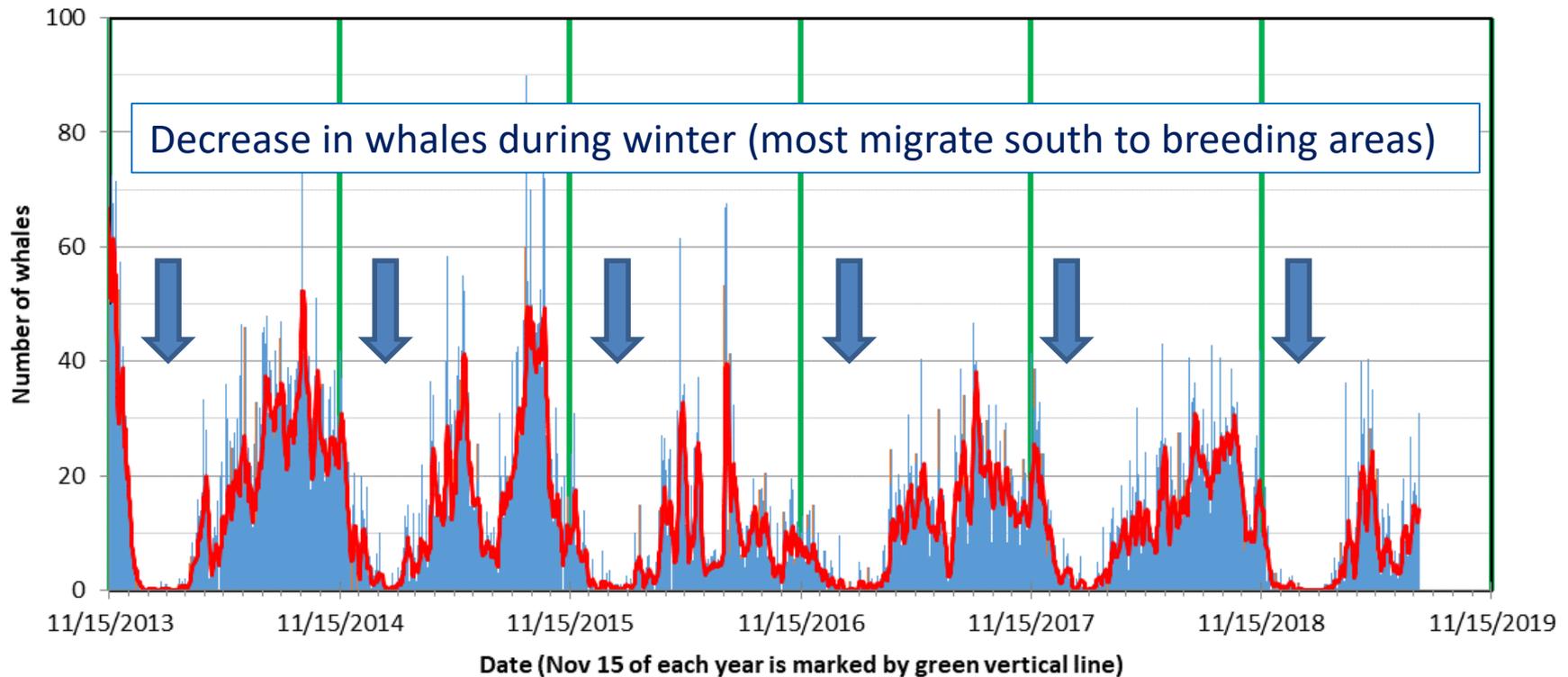
Whales that feed off California and Oregon (March-November) migrate to one of two breeding areas during winter:  
Central America (Endangered) or Mexico (Threatened)



# Seasonal Presence of Humpback Whales in Monterey Bay

(Monterey Bay Whale Watch, whales per ½ day trip,  
Courtesy of Nancy Black)

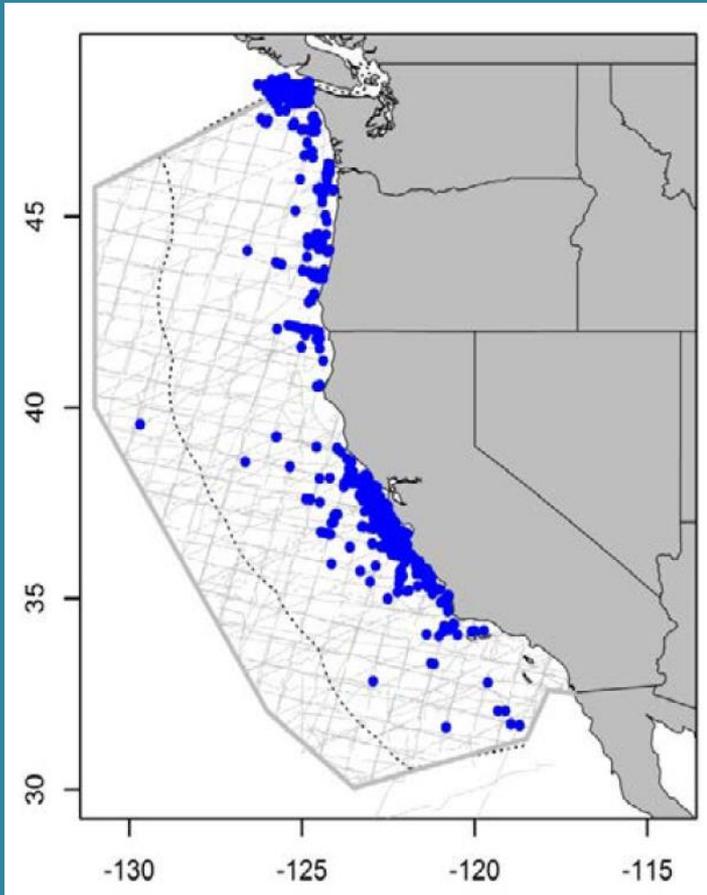
Monterey Bay Whale Watch: Humpback whales per 1/2-day trip  
(Nov 15, 2013 - July 22, 2019)



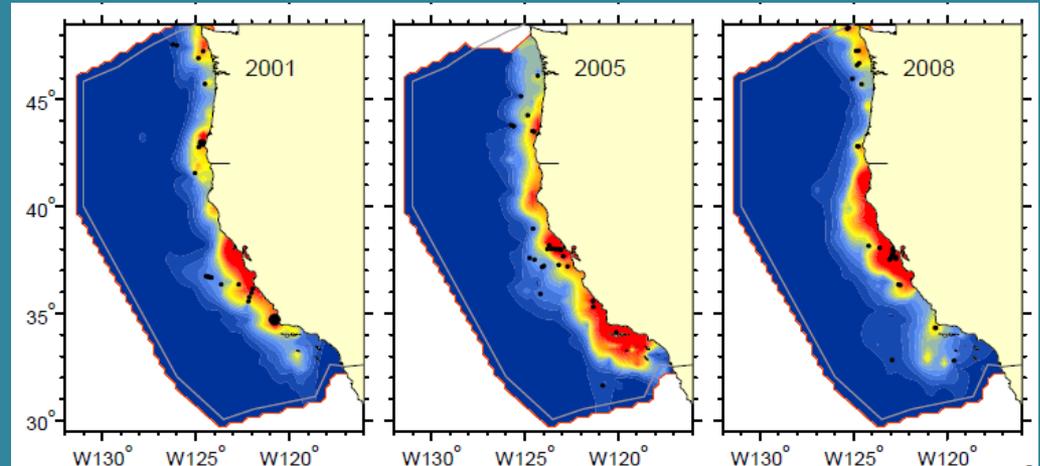


# Humpback whale distributions, Summer/Fall 1991-2014

(Barlow and Forney 2007, Becker et al. 2012, 2016, 2018)



Humpback whale sightings,  
1991-2014



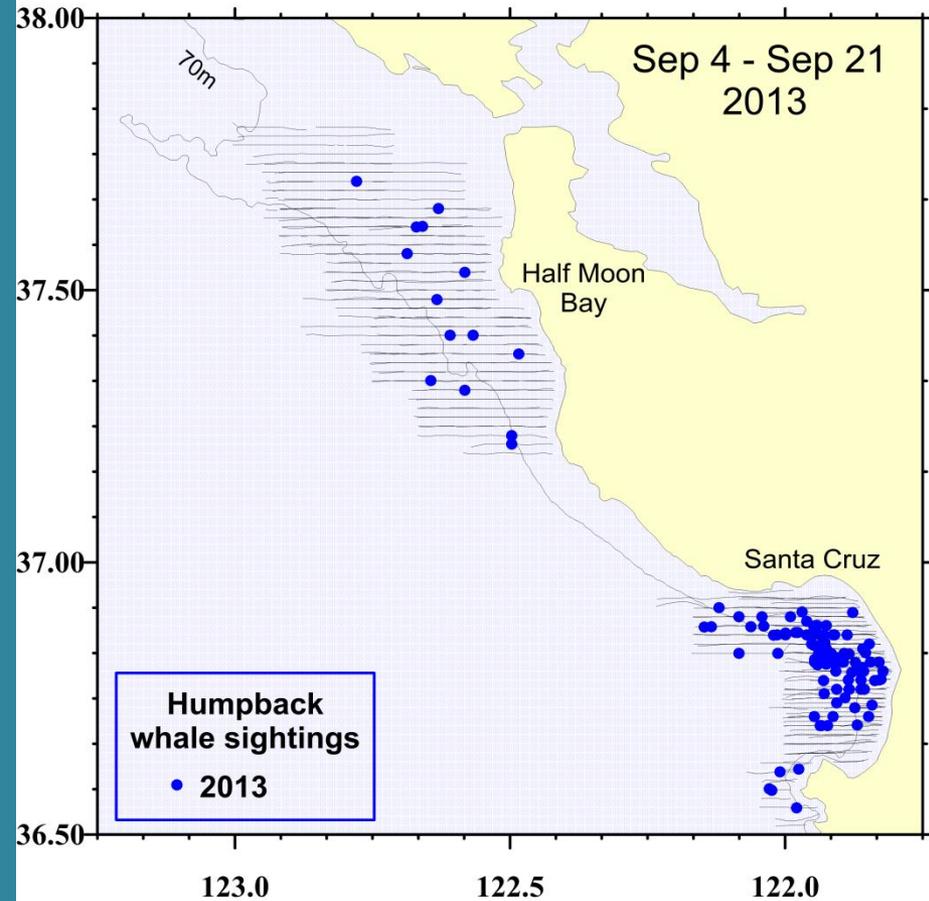
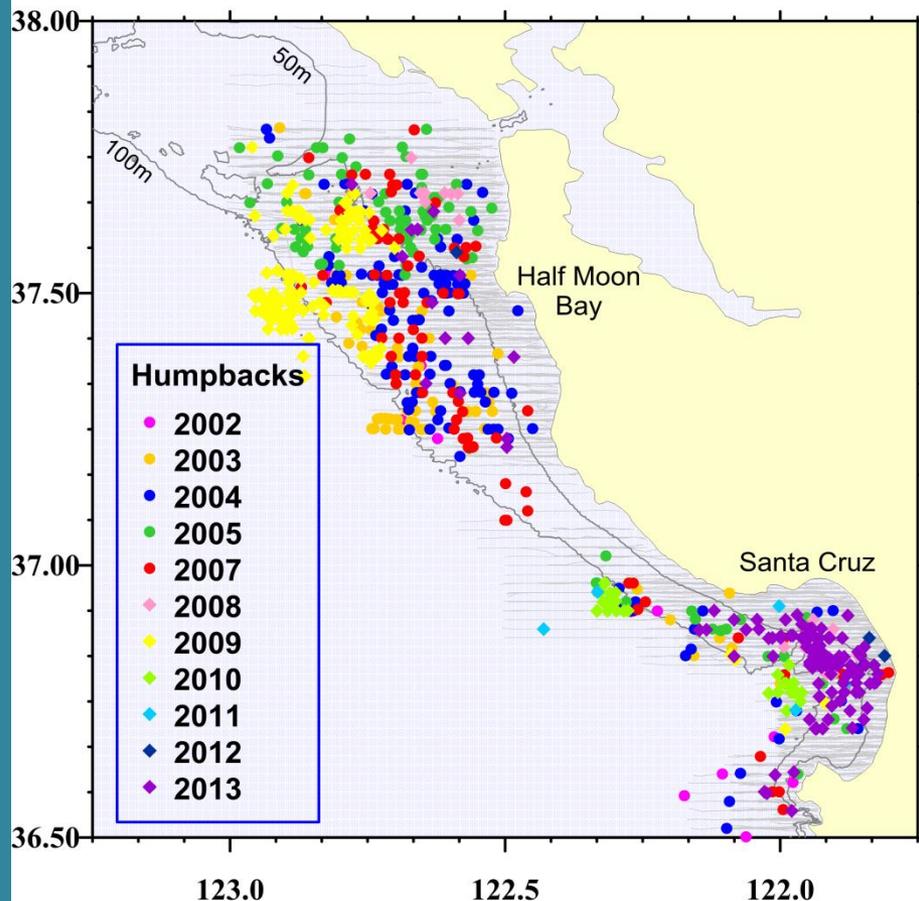
- Primarily shelf/slope associated
- Whales may feed on schooling fish (mostly nearshore) or krill (in slope-edge waters).
- Areas of concentration vary, but there are persistent 'hotspots' off CA, especially off central CA (Monterey Bay to Pt Arena) and in the Santa Barbara Channel

# Central California Humpback Whale Distribution

From 2002-2013 leatherback turtle aerial surveys  
(Scott Benson, NOAA/SWFSC)

Humpback whale sightings (on and off effort) during  
2001-2013 fine-scale leatherback aerial surveys

(Source: Scott Benson and Karin Forney, NOAA/SWFSC)



# Whales and Fish - August 15-16, 2019

