

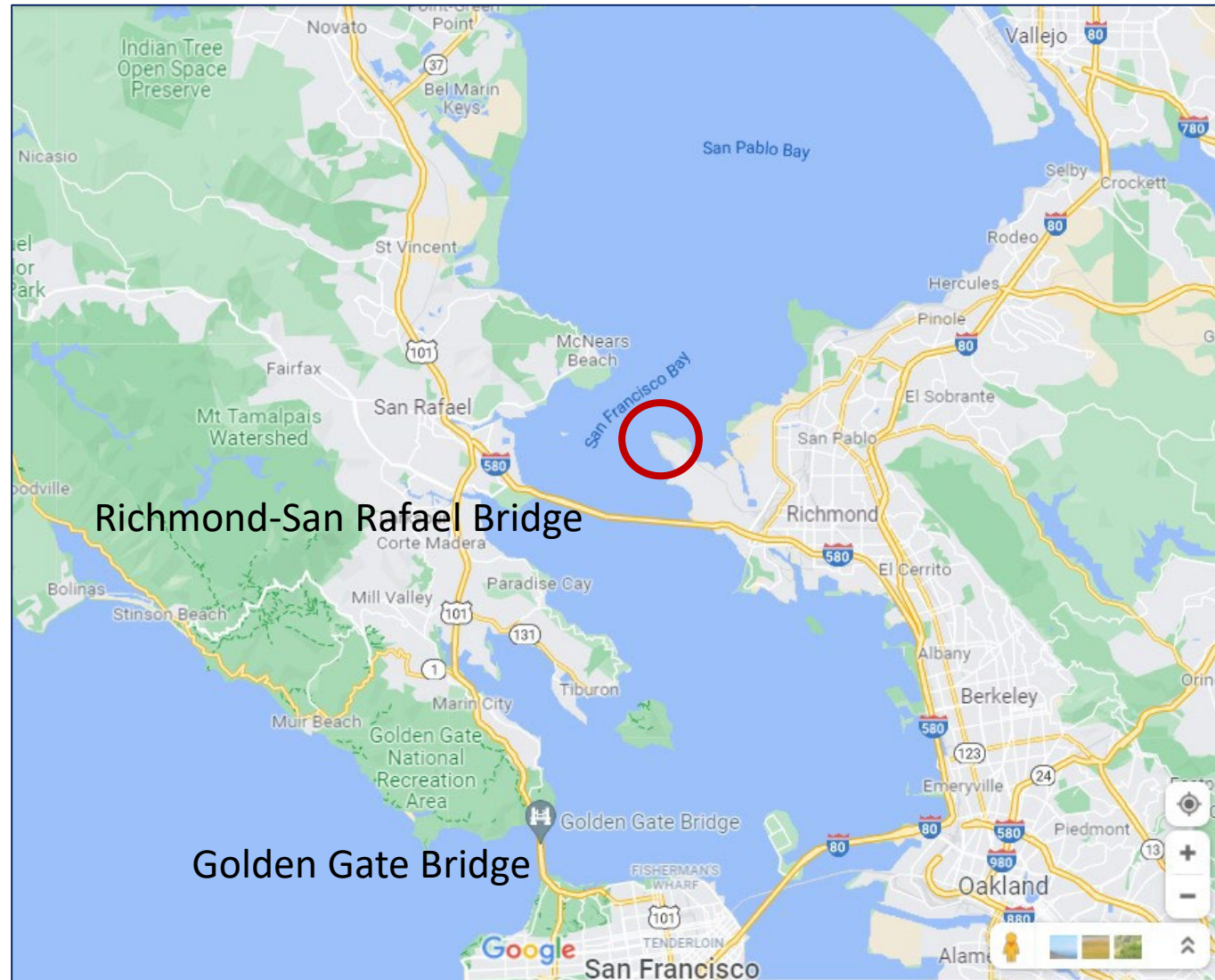
Sperm whales of the Golden Gate



A brief history of the Richmond whaling stations, sperm whale catches, and what might be learned about their life history and ecology, then and now

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Richmond whaling stations



Located at Point San Pablo,
just north of the Richmond-
San Rafael Bridge

Richmond whaling stations (1956 – 1971)



c. 1988

c. 1948

Operations at Sea



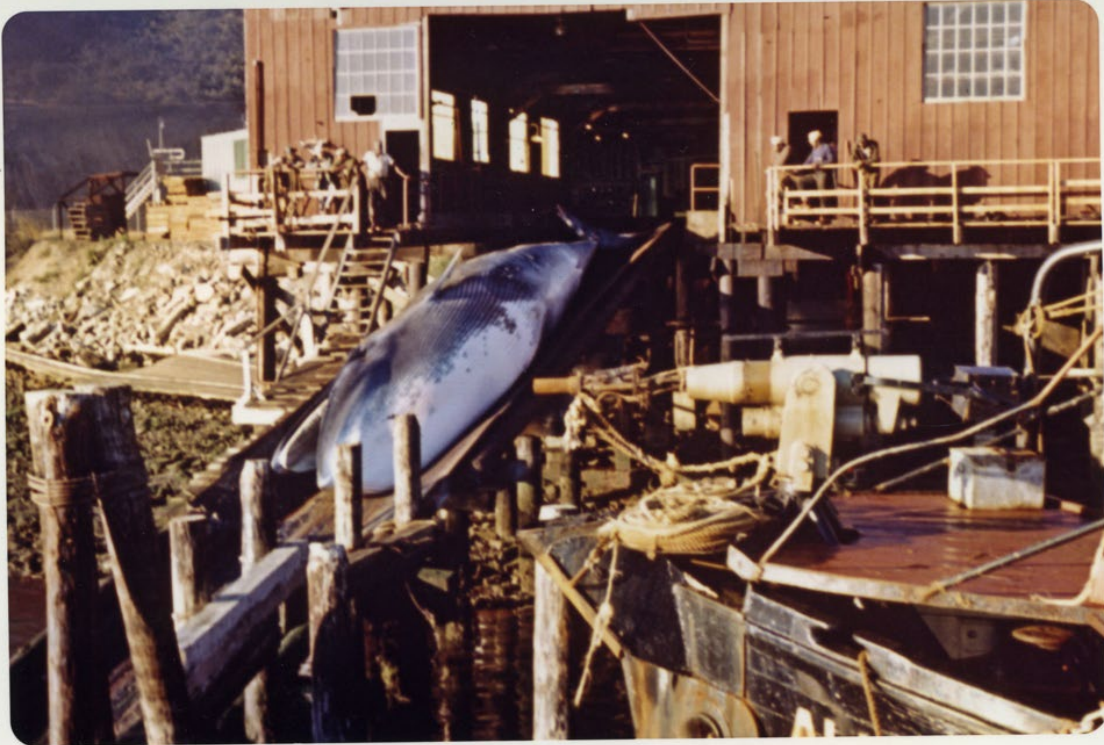
Harpoon gun with exploding tip



- **Catcher vessels with 5 person crews:**
 - Golden Gate Fishing Co: *Lynnann, Sioux City*
 - Del Monte Fishing Co: *Dennis Gayle, Donna Mae, Allen Cody*
- **Range:** 125 miles
- **Seasons:**
 - Baleen whales - 1 May to 30 Oct
 - Sperm whales - 1 April to 30 Nov

Station operations

Workers could render a humpback in less than two hours



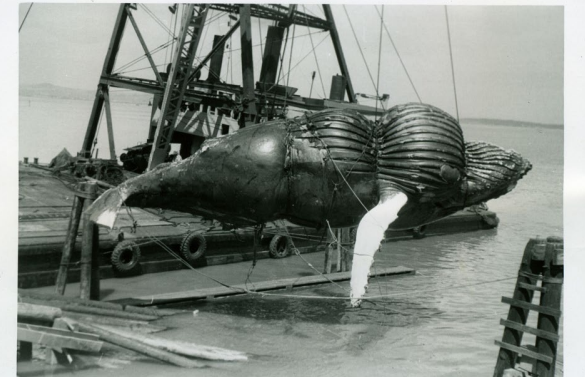
Sei whale, minimum length: 10.7m



Fin whale, minimum length 15.2 m



Blue whale, minimum length 19.8 m

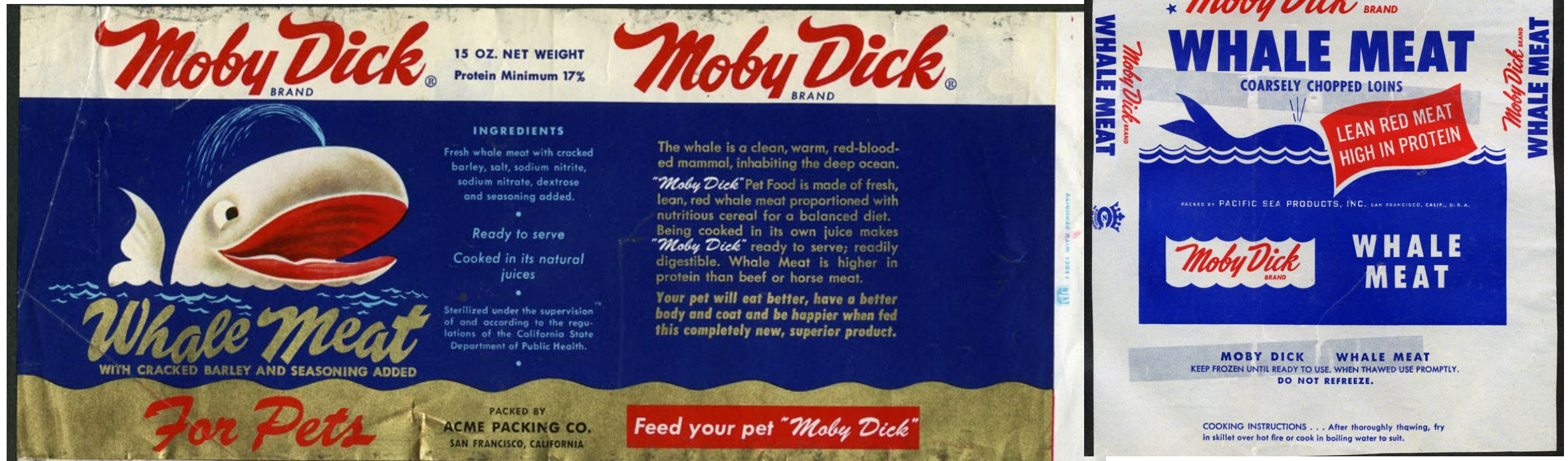


Humpback, minimum length 10.7

Also taken: Sperm whales (10.7 m) and v. few Baird's beaked whales and killer whales

Not allowed: Gray and right whales, or females with calves

Products



Uses of whale from Richmond:

- **Meat:** pet food and livestock feed
- **Oil:** cattle feed; industrial hydraulics and steel tempering
- **Spermaceti:** industrial oil for machinery, nuclear, and military applications
- **Bones:** poultry feed

Timeline

- **Golden Gate Fishing Company operated 1958-1965**
- **Del Monte Fishing Company operated 1956-1971**

- **Del Monte was allowed to take up to 169 whales for 1971**

- During the time that the Richmond whaling stations were in operation, other west coast shore stations had closed but **pelagic whaling by Russia and Japan (sometimes close to the U.S. west coast) was ongoing**

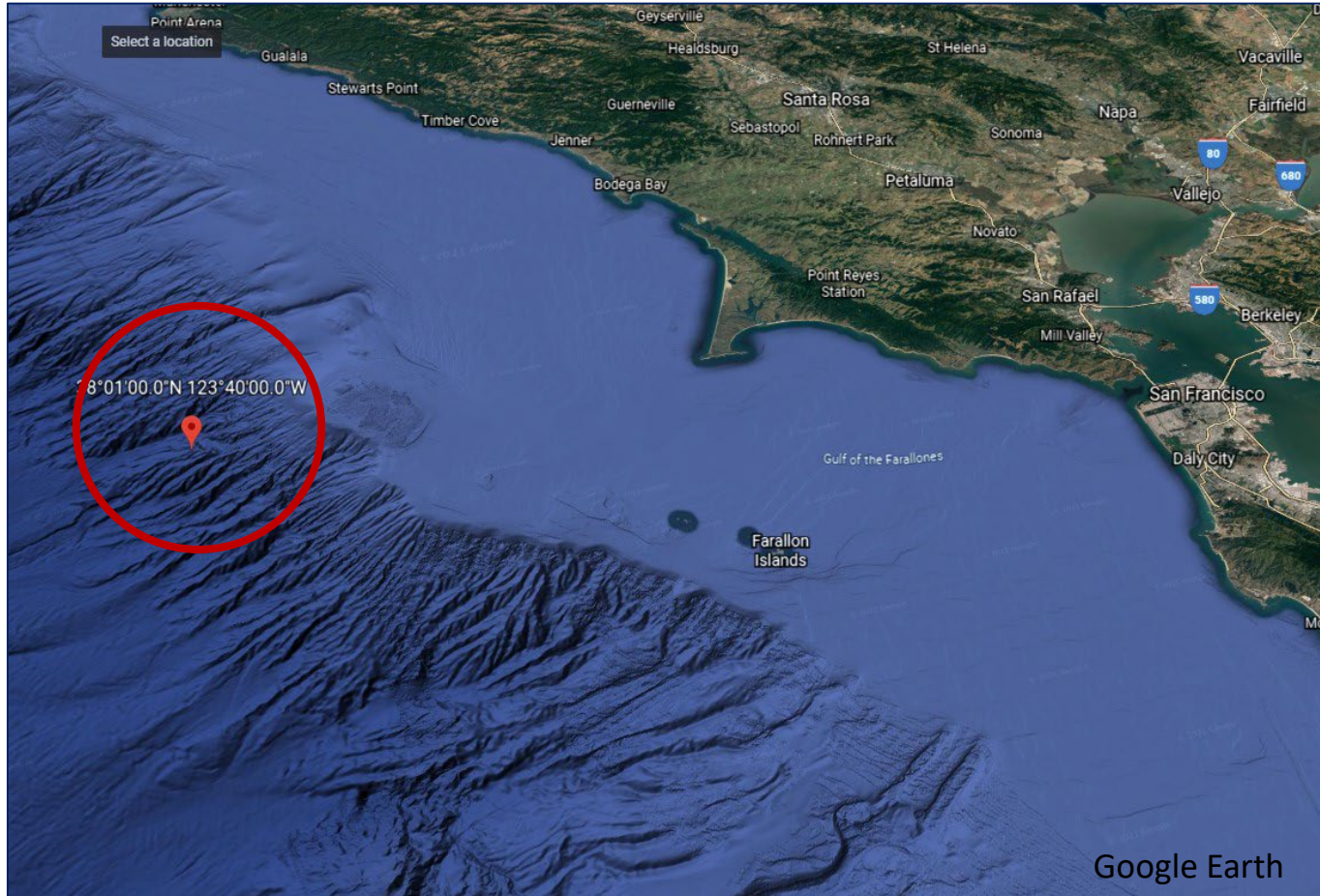
- **American whaling ended 31 Dec 1971** when U.S. Commerce Secretary Maurice Stans issued a ban aimed at preserving threatened species (under the Endangered Species Act)

- **Station burns 1989**; timbers removed in 2016

- Today: **Restoration of “Terminal 4”** as part of Bay Trail with historical markers



The last whale killed in commercial whaling in the U.S.



Subadult male sperm whale off Pt Reyes – 3 Nov 1971



Date	Species of whales	CATCHER	Length ¹⁾ (Ft.)	Contents of Stomach	Sex	Females ¹⁾			Position (Latitude & Longitude)
						Pregnant	Foetus		
							Length	Sex	
8-30	Sperm	DG	40	Squid	M				38°08'N - 123°50'W
30	"	DG	42	"	M				38°10' - 123°40'
30	"	DG	44	"	M				38°05' - 123°50'
9-1	"	DM	47	"	M				38°00' - 123°45'
11	"	DG	36	"	M				37°28' - 123°50'
11	"	DG	35	"	M				37°05' - 123°05'
17	"	DM	37	"	F				37°40' - 124°00'
17	"	DM	37	"	F				37°45' - 124°10'
17	"	DM	35	"	M				37°50' - 124°05'
18	"	DG	36	"	M				37°30' - 123°50'
18	"	DG	36	"	M				37°10' - 123°55'
21	Finback	DG	52	Krill	M				37°00' - 123°21'
23	Sperm	DM	35	Squid	F				37°05' - 123°22'
23	"	DM	37	"	F				37°05' - 123°30'
24	"	DG	35	"	F				37°45' - 124°10'
24	"	DG	35	"	M				37°30' - 123°55'
24	"	DG	35	"	F				37°30' - 123°45'
25	"	DM	37	"	F				38°10' - 123°30'
25	"	DM	35	"	F				38°05' - 123°38'
25	"	DG	36	"	F				38°12' - 123°25'
25	"	DG	35	"	F				38°15' - 123°40'
30	"	DG	37	"	M				38°05' - 123°50'
8-6	"	DG	35	"	M				38°10' - 123°55'
6	"	AC	35	"	F				38°08' - 123°50'
7	"	AC	35	"	M				38°15' - 123°40'
11-3	"	DM	39	"	M				38°08' - 123°45'
3	"	DM	39	"	M				38°10' - 123°40'

¹⁾ The length shall be the length of a straight line from the tip of the snout to the notch between the flukes of the tail.

Del Monte Fishing Co. report to NMFS, 27 Jan 1972

Science at the stations

- In 1958 the Marine Mammal Biological Laboratory, then part of the U. S. Fish and Wildlife Service, initiated a research program on commercially exploited species of whales led by Ray Gilmore and Dale Rice
- The program included taking of gray whales under scientific permit, the tagging of sperm whales and other species with Discovery marks, and examination of whales at Richmond
- From 1959 through 1970, biologists were on duty at the Richmond stations throughout most of each whaling season
- Among other species, they examined 637 sperm whales - 392 males and 245 females - yet to be fully analyzed



Martin Prochazkacz/Shutterstock.com

Measurements:

- Size, sex, location
- Ectoparasites / epizoites
- Blubber
- Teeth
- Mammary glands
- Reproductive organs
- Stomach contents
- Endoparasites
- Earplugs
- Vertebral epiphyses

RECORD OF CETACEAN SPECIMEN NO. 1968-109

SPECIES: Sperm LENGTH: 35'11" ft 10.95 m SEX: ♂

LOCALITY: _____ Lat _____ Long _____

DATE: 23 Apr 1968 COMPANY: DM BOAT: Dennis Gagle

BLUBBER THICKNESS: (Mid-lateral, opposite dorsal fin): 9.5 cm

MAMMARY GLANDS: Condition _____; Thickness _____

ECTOPARASITES, ETC.:

Coronula none Lamprey scars few

Conchoderma _____ Diatoms none

Cyamids _____ Penella 1

Other _____

OVARIES: Weight - L _____ kg; R _____ kg; Total _____ kg

No. corp. alb. - L _____; R _____; Total _____

Corpus luteum - Ovary (L or R) _____; Wt _____ kg; Diam _____ cm

Diameter of largest follicles - L _____ mm; R _____ mm

UTERINE CORNUA: Diameter - L _____ cm; R _____ cm

TESTES: Length _____ m; Sex _____

TESTES: Weight - L 1.5 kg; R 1.0 kg; Total 2.5 kg

STOMACH CONTENTS: Quantity 3/4 full

Species Squid-incl Moroteuthis 2 spec

1 large teleost fish 1 scoll - (beaks in small bag; ^{1 large, several} ^{small squid} ^{large fish} ^{pres. separately})

ENDOPARASITES:

Blubber cysts few Acanthocephalans _____

Stomach worms _____ Cestodes _____

Liver flukes none Kidney worms none

Air-sinus flukes N.D. Lungworms none

Other _____

VERTEBRAL EPIPHYSES (Mid-thoracic): Degree of fusion open

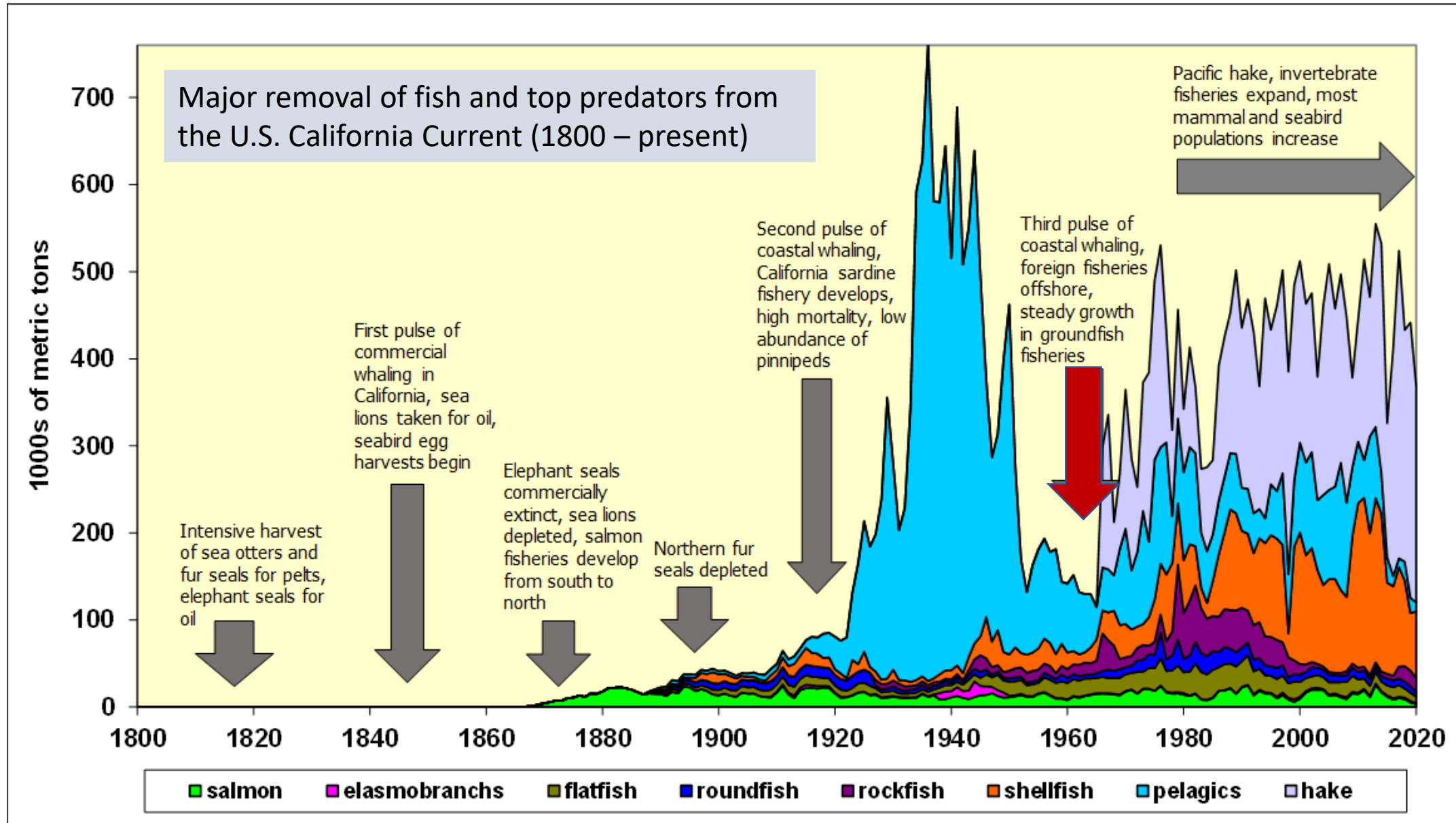
EAR PLUG/TOOTH: No. of laminations (1st pr. mandib. c. l.) 13 w

Heart wt - 100 1/2 lbs

By DWR / AAW
Bureau of Commercial Fisheries
Marine Mammal Biological Laboratory
Seattle, Washington

GPO 380-872

To understand the present we need to understand the past



Adapted from Field and Francis 2006

Contemporary questions about sperm whales using historical records

Historical records can tell us about the whales and changes in ocean ecosystems:

- **Distribution and abundance** - can inform us about environmental and climate impacts, e.g., on sperm whale demographics, reproduction, and social structure
- **Prey occurrence** - such as robust clubhook in sperm whale stomachs - can provide helpful context for understanding variability in historical ranges, and past and future range expansions, in the face of an increasingly variable and changing climate
- **Prey switching** - which can vary substantially on interannual to interdecadal times scales, is critical to understanding vulnerability to human interactions, e.g., with fisheries
- **Parasites** – diversity and relative abundance of ecto- and endoparasites

And ourselves:

- How whaling (pelagic, shore, nearshore) impacted SF Bay area **economies and communities**
- **The arc of a fishery**: ca. 300 years of American commercial whaling ended in the San Francisco Bay Area

How far we have come



Chronicle, 1957

Miss Seafood in San Francisco's Seafood Week parade with a humpback from Richmond.