

# Desmostylia: Marine Mammals of the Northern Pacific

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## Introduction:

Desmostylia is an extinct mammal that has a temporal range spanning from the late Oligocene to the Miocene (30.8 to 7.2 Ma).[2]

Many of the remains are found on the Pacific coasts. It has been argued that Desmostylians were either semi-aquatic or fully aquatic animals, but recent evidence has confirmed that they were fully aquatic.[3]

## Location and Geological

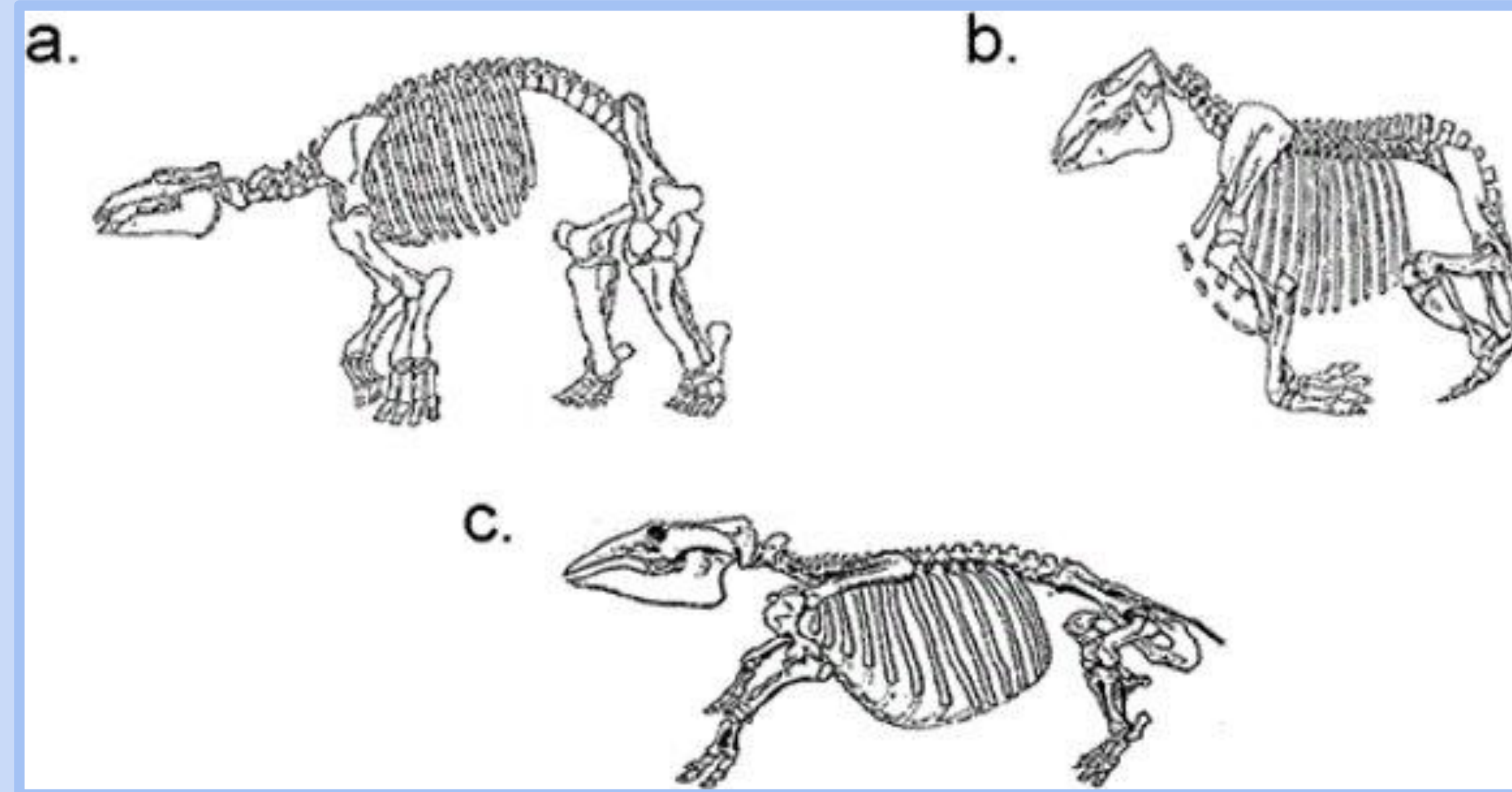
### Duration:

All Desmostylia species combined lived for approximately 23 million years from 33 Ma to 10 Ma.

Desmostylian fossils are found in the North Pacific in areas such as Japan and the West Coast of the United States from Northern California up to Washington.[8]

BASIC CHRONOLOGY	EAST PACIFIC CHRONOLOGIES				WEST PACIFIC CHRONOLOGIES			
	EUROPEAN STAGES	ARBITRARY DIVISIONS	PACIFIC COAST NORTH AMERICAN WIDEFORMAL STAGES	PACIFIC COAST NORTH AMERICAN HOMOCLINIC AGES*	WEST PACIFIC STAGES	WEST PACIFIC STAGES	WEST PACIFIC STAGES	WEST PACIFIC STAGES
ASTIAN		MIHELLERIAN	SAN JOAQUIN	BLANCKAN (in part)				
PLAISANCIAN		VENTURIAN	ZICHESSEAN	NEPHELIAN				
PORTIAN		REPETIAN	JACALITOS					
SARNIAN		DELONIAN	MEROLY	CLARNDONIAN				
TORTONIAN		MONIAN	CIERRO					
HELVETIAN		BRIONES	BARTONIAN					
EURIGALIAN		LUSIDIAN	TEMELON					
AQUITANIAN		RELIZIAN	REINQUONIAN					
CHATTIAN		SARCESIAN	VADEROS	ARIKAREAN				
		ZEMORIAN	BLAKELEY	WHITNEYAN				
		REFUGIAN						

A graph showing when desmostylia lived relative to other marine mammals [5]



Three Proposed Models for Desmostylia posture [1]

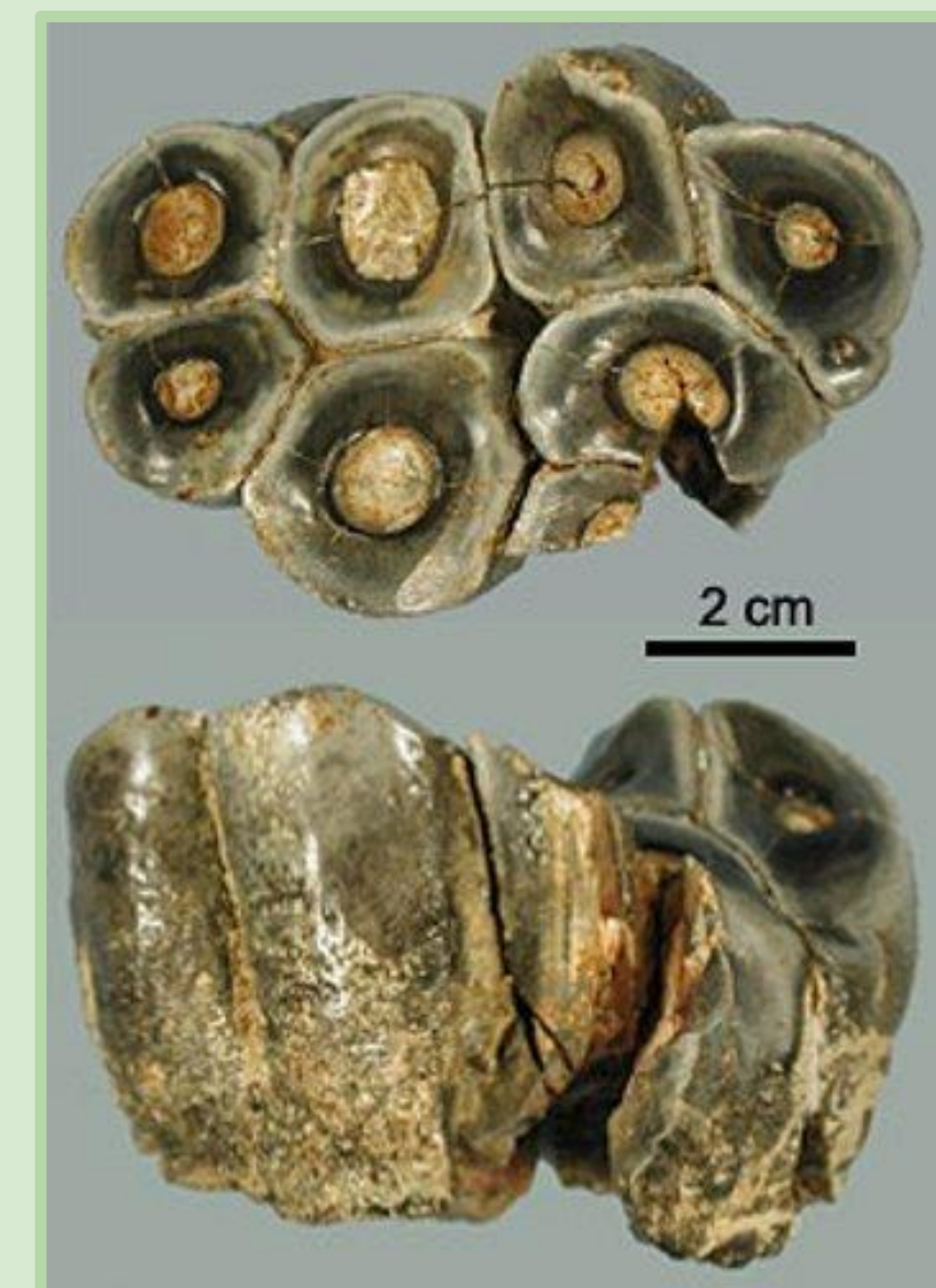
## Basic Ecology/Habits/Habitat:

Various proposals were made for Desmostylia posture. (b) assumes that they evolved flippers to swim fluidly. (a) assumes that they were raised in a way that helped them deal with high wave energy environments. (c), the accepted model, assumes they were hunched in a similar way to hippos, inhabiting the shallow coastlines.[1]

A diet consisting of coastal seagrass is supported by ridiculously high  $\delta^{13}C$  levels—levels that go beyond C4 photosynthesizers. It is likely then that Desmostylians were coastal grazers.[1]

## Distinctive Features:

- Desmostylians have often been compared to hippopotami because of their resemblances in size, build, and structure of the skull.[4]
- Desmostylia fossils have only ever been found in marine habitats, never freshwater or terrestrial.[4]
- The dental remains of Desmostylians suggest that they were herbivores that ate seagrass and kelp.[2]
- Desmostylians clench their teeth, root up plants with the help of tusks and powerful neck, and then suck in using throat muscles and the shape of the roof of the mouth.[8]



A top and side view of a tooth from Desmostylia [2]