

# The Rise of Mammals



"Louie and Wendell the Whales"

25 Million years old

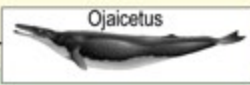


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Whales are believed to be about 50 million years old. The toothed baleen whale was thought to be extinct in the Oligocene Epoch and believed to be living in the Miocene Epoch, the time period that came after the Oligocene period. The whales discovered by Mr. Plunkett at Lake Casitas swam through the "tail" end of the Oligocene Epoch, (25 to 23 million years ago), and continued swimming into the Miocene Epoch, (23 to 5 million years ago). These whales lived in overlapping epochs of time and underwent very specific evolutionary changes, such as the process of losing their teeth and acquiring baleens. This reveals important and crucial information about tracing the evolutionary rise of mammals and whales on earth.

These particular whales represent a rare evolutionary link between whales, as we know them, with their brushy, plankton-catching plates known as baleens, which suck in small fish, (represented on front and opposite page of fold out, Cetotheriidae, 17 million years old), and their ancient toothy ancestors, (represented above, Ojaicetus, 25 million years old). An Aetiocetus is being used here for representational purposes as it is the closest representation we have to that of a Ojaicetus monotype. Scientists believe that Ojaicetus is probably the last derivation of toothed baleen whale to ever exist.

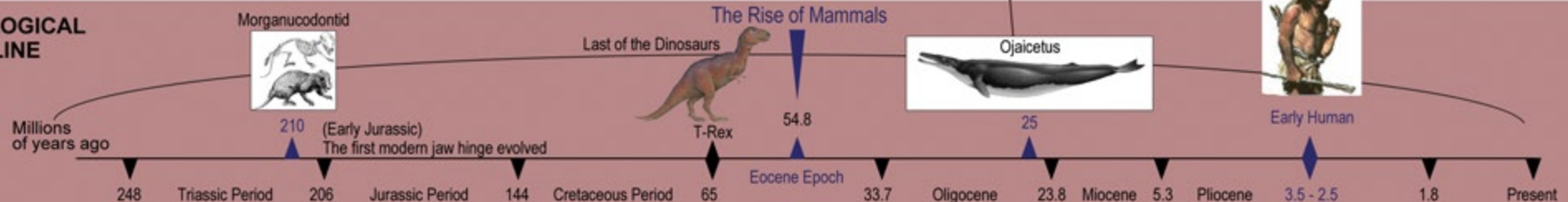
## GEOLOGICAL TIME (Millions of years ago=mya)

Cenozoic Era (65 mya to present)	
Holocene (10,000 years to present)	
Pleistocene (1.8 mya to 10,000 yrs)	
Pliocene (5.3 to 1.8 mya)	
Miocene (23.8 to 5.3 mya)	
Oligocene (33.7 to 23.8 mya)	
Mesozoic Era (248 to 65 mya)	
Cretaceous (144 to 65 mya)	
Jurassic (206 to 144 mya)	
Triassic (248 to 206 mya)	
Paleozoic Era (543 to 248 mya)	
Permian (290 to 248 mya)	
Carboniferous (354 to 290 mya)	
Pennsylvanian (323 to 290 mya)	
Mississippian (354 to 323 mya)	
Devonian (417 to 354 mya)	
Silurian (443 to 417 mya)	
Ordovician (490 to 443 mya)	
Cambrian (543 to 490 mya)	
Proterozoic Era (2500 to 543 mya)	
Neoproterozoic (900 to 543 mya)	
Mesoproterozoic (1600 to 900 mya)	
Paleoproterozoic (2500 to 1600 mya)	

The paleontological significances of this discovery are threefold:

- 1) These are the first toothed baleen whales ever discovered in California.
- 2) One of the teeth found from these whales differs from teeth of other prehistoric baleen whales of the same era.
- 3) This suggests that these whales are most likely the last toothed baleen whales to ever live, and subsequently and categorically, are a new species, genus or Family - Ojaicetidae, *Ojaicetus plunkettidensis*.

## GEOLOGICAL TIMELINE



Above is a combined timeline and brief family tree of the Rise of Mammals. From scratching around in the dirt to deciphering DNA (genes) - how did we get from there to here? Deep in their bones and in their genes (DNA), all mammals are related. The earliest known mammals were the Morganuodontids, and they were one of several different mammalian lineages that emerged around 210 million years ago. They were tiny-shrew size creatures,

(about the size of a tablespoon), that lived in the shadows of the dinosaurs. All living mammals today, including us, are descendants from the one line of morganuodontids that survived. During the next 145 million years of evolution the dominance of dinosaurs ensured that our distant mammalian ancestors remained no larger than a cat. Then, a catastrophic event took place on planet Earth, one that scientists continue to debate as to what was the underlying cause that finished off

dinosaurs 65 million years ago, and also allowed mammals to get the most important evolutionary opportunity they would ever have. With dinosaurs gone, mammals were able to utilize the planets resources for themselves, and within the next few million years, after that catastrophic event, an explosion of mammalian diversity was able to evolve.

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# Historical Background

# OVWS

## Help protect the fossil environment & cultural wealth of the Ojai Valley.

Yes, I want to contribute to the Ojai Valley Whale Society.  
Here is my tax-deductible donation of:

\$25  \$50  \$100  \$250  \$500  Other \_\_\_\_\_

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Donations are tax deductible to the extent allowed by law. A complimentary gift of a hand silk-screened OVWS fossil T-shirt will be included for each donation of \$100.00.

## Support OVWS - T-Shirt

High quality, 100% pre-shrunk white cotton T-shirts available in all sizes (kids too). Elegantly screened whale images on front and back. US \$20.00 plus shipping.



Qty: \_\_\_\_\_  
Circle your size: XXLarge XLarge Large Medium Small  
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- All Domestic T-shirt orders are shipped UPS ground, International orders call or email for shipping cost.

Please make checks in U.S. currency, payable to Ojai Valley Whale Society, and mail this completed form along with your donation and/or T-shirt order to:

OJAI VALLEY WHALE SOCIETY - Box 282, Ojai, CA 93024

For more information on our research, education and conservation, please visit our web site at [www.ojavalleywhalesociety.org](http://www.ojavalleywhalesociety.org) or call (818) 569-5465

California's first fossilized 25,000,000 year-old toothed baleen whales were discovered at Lake Casitas on January 19, 2000 by Ojai resident Aaron Plunkett. Dr. Lawrence Barnes, chief paleontologist of the Marine Mammal Lab at the Los Angeles Natural History Museum, confirmed authenticity of the specimens brought to him by Mr. Plunkett. Dr. Barnes examined a lumbar vertebrae and two congruent right mandible jawbones deducing that two prehistoric whales exist.

**Ojai Valley News** 7/14/2000 - Howell Thomas, Senior Paleontologist Preparator for Los Angeles Museum of Natural History.

"The whale Aaron found is a toothed baleen whale. We have the ear bone that tells us it's a baleen and the jaw which is toothed. This is probably the last toothed baleen whale that ever lived," said Thomas. He based his comment on the fact that the whale's existence 25 million years ago was at the earliest part of the Miocene Period. The toothed baleen whale was thought to be extinct in the Oligocene Period, the period before the Miocene Period. "It is also extremely significant that it is the only toothed baleen ever to be found in California. They have been found in Washington and Oregon and on the Baja, but nobody's seen one in California before this,"

**Los Angeles Times** 10/27/2000 - "He has, in fact, found a very important specimen," Larry Barnes, Curator of Vertebrate Paleontology at the Los Angeles Museum of Natural History.

**Ventura County Star** 10/28/2000 - "The tooth from the fossilized whale Plunkett found is different from other teeth of ancient baleen whales from the time period, Thomas said, leading to the possibility that the Lake Casitas whale fossil represents a newly discovered species, genus or family. The whale skeleton Plunkett found is likely a representative of whales from the time, which were in the process of losing their teeth," Howell Thomas, Senior Paleontologist Preparator for Los Angeles Museum of Natural History.

Aaron Plunkett nick-named the whales **Louie** and **Wendell** after his two grandpas, Louie Elas and Wendell Plunkett, because their knowledge directly influenced his ability to make this discovery.

## OVWS Mission Statement

Our desire is threefold:

- 1) To facilitate the exhumation of the whale fossils and prevent loss from erosion.
- 2) To prepare and install the fossilized skeleton into a multi-dimensional learning center embracing facilities for instruction, public performance, music, and history through story-telling.
- 3) To promote the paleontological, anthropological, sociological and cultural wealth of the Ojai Valley and its Native Peoples.

For more information on our research, education and conservation, please visit our web site at [www.ojavalleywhalesociety.org](http://www.ojavalleywhalesociety.org) or call: (818) 569-5465

The Ojai Valley Whale Society is a C3 non-profit organization that needs your support and contributions to help realize our vision. Donations, contacts, ideas and suggestions are all welcome to assist us in our efforts.



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WHALE SOCIETY**  
welcomes you aboard.  
Come along on a fossil discovery.