

Pelagornithidae (Taxon, Cenozoic)

GEOL 204 The Fossil Record

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When did Pelagornithidae live?

The fossils record of Pelagornithidae shows that it lived for a range that spans for over 55 million years from the late Paleocene epoch through the middle Pliocene epoch (1) as shown in Figure A. This means the geologic range of Pelagornithidae spans from approximately 60 million years ago to 3 million years ago (2). Considering that the Cenozoic era ranges from 66Ma to present (2), Pelagornithidae lived for the vast majority of the Cenozoic era (and lived only in the Cenozoic). More specifically, Pelagornithidae lived through part of the Paleocene epoch, all of the Eocene, Oligocene, and Miocene epochs, and part of the Pliocene epoch.

Where did Pelagornithidae live?

Geologists have found fossils that illustrate Pelagornithidae lived over the Pacific and the Atlantic Ocean throughout its time on Earth. The youngest fossils found from the Atlantic Ocean basin are from the Pliocene of Morocco and the youngest Pacific Ocean basin fossil was found in Northern California(6). Fossils of the bird were also found from the middle Thanetian of Templeuve which is in Modern France and from the middle Eocene of Ukraine(7) as well as a very well preserved fossil Bahia Inglesa Formation in Northern Chile(9). Clearly Pelagornithidae was able to live in a wide range of places.

What were the habits, habitat and ecology of Pelagornithidae?

The bony-toothed birds fed on soft-bodied marine invertebrates, such as squid. Since the birds captured prey by skimming the surface, the pseudoteeth may have functioned as a prey trap rather than grasping devices (3). The adults provided for the young until the teeth and rhamphotheca (keratin layer of the beak) developed and the young could feed on their own (4). The birds lived above and around oceans worldwide, likely nesting on the high grounds of islands and coasts where they were away from the brooding grounds of pinnipeds, and also up high to enable them to take off with their large wings (5). As they fed by skimming the water, their largest predators were sharks that hunted near the surface of the oceans (3).

Distinctive Features of Pelagornithidae

- Pelagornithidae are referred to as bony-toothed birds
- They have a beak with bony projections
- These birds are some of the largest volant birds with a wingspan is over 5 meters (8)
 - You can see how large the wingspan of the Pelagornithidae is in Figure B. in comparison to a California condor *Gymnogyps californianus* which is on the right and a Wandering albatross *Diomedea exulans* on the left
- Pelagornithidae skull morphology differs from other neornithine birds (3)

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