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From Feet to Flippers: The Evolution of Whales

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FROM FEET TO FLIPPERS: THE EVOLUTION OF WHALES

by

Tyler Stone

A thesis submitted in partial fulfillment of the requirements
for graduation with Honors in the Art, Studio

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Thesis Mentor

Spring 2019

All requirements for graduation with Honors in the
Art, Studio have been completed.

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Our image of extinct animals changes constantly as new fossils emerge. One of the best ways to communicate these discoveries is through paleoart, which combines scientific knowledge with fine art to reconstruct the prehistoric world. Unfortunately, bad paleoart frequently gives an inaccurate view of the past, depicting its subjects as monsters or failed versions of their modern descendants rather than real, living animals. For this project, I set out to combine my interests in paleontology and animation to accurately reconstruct the evolutionary history of one of my favorite groups of animals: the whales.

For information on both extinct and modern whales, I contacted Dr. Annalisa Berta, a marine mammal paleontologist at San Diego State University. Her expertise was invaluable; it gave me a clear picture of how whales changed over time and helped me choose ten species to represent key stages in said transformation. Using living animals as a guide, I sketched each whale, starting with a simplified skeleton, then adding muscle and external tissue. Color was difficult, as I had to use modern animal patterns as references without simply copying them. Once I had finalized the design of each whale, I redrew them in Procreate. These drawings would serve as the assets I would be animating, with each body part being on a separate layer so it could be moved independently. Additionally, I digitally painted multiple backgrounds and fishes that the whales would interact with. Once these were imported into After Effects and rigged, I could start animating. This step was the most technically challenging; while I had basic experience with After Effects, this project required me to learn many more advanced features. Luckily, once I sorted out the more challenging effects, I was able to keyframe the entire project very efficiently. The final step was creating two informational posters to display with the animation.

Although I'm happy with my project, I do think I needed a more efficient pipeline for creating my assets. However, the time and attention to detail I put into them means I can be confident in both their quality and accuracy, and ultimately, that was the point of this entire project. If I can bring these animals to life and communicate their story to viewers, then I will have succeeded in what I set out to do: use animation to teach about a subject I love.