



Summary

Most biology textbooks claim we evolved from fish, and they routinely present the fossil species which is called *Tiktaalik* as conclusive proof of this. They do not generally show the actual fossil evidence – instead they usually just show a cartoon version of the imagined “living creature”, as envisioned by an illustrator. These cartoons invariably show a creature emerging out of the water, crawling on enlarged front fins. Students are given the impression that *Tiktaalik* fossils provide a virtual snapshot of fish becoming land animals. This is extremely deceptive, and is not what the actual fossil evidence shows. The actual fossil evidence shows a flat-headed fish, as is typical of many types of bottom-dwelling fish alive today. The rear fins are not significantly enlarged, and are typical of various lobe-finned fish living today. Even the actual discoverer of *Tiktaalik* was cautious to suggest *Tiktaalik* was anatomically capable of dragging itself out of the water onto dry land. Instead, he emphasized that the fish might have been able to prop itself up on its front fins while partially submerged under water. This is not an impressive claim, and does not reflect any meaningful adaptation to land. This type of fish grows up to 9 feet long – perhaps weighing 600 pounds. Examination of the fossil makes it obvious that its small fins are much too short to lift a 600 pound fish off the ground on dry land. The primary evidence claimed to show that *Tiktaalik* is not an ordinary bottom dwelling lobe-finned fish involves those bones to which the rear fin bones are attached. Using prejudicial terminology to convey a series of assumptions, these bones are called “shoulder” and “pelvic bones.” Similarly, bones within the fin are designated “elbows”, “wrists”, and “fingers”. But *Tiktaalik* has no genuine and operational hips, shoulders, elbows, wrists, or fingers. It is all a forced fit. *Tiktaalik* is indeed a strange fish – one of the countless strange creatures that once lived on earth and are now extinct. Although a few fossil details are helpful in telling a water-to-land story, *Tiktaalik* is clearly just another example of a large bottom-dwelling fish.

Finding the fish in you – “*Tiktaalik*” fossils prove we evolved from a fish?

Tetrapods (meaning “four feet” in Greek) are animals that walk on land, and include amphibians, reptiles, birds, and mammals. According to evolutionary theory, the first animals to walk on land evolved from fish with fins that developed into legs (as well as a host of other adaptations for surviving on land). It is worth mentioning that the supposed evolution from fish into tetrapods includes the ancestral lineage that eventually gave rise to humans. In other words, evolution teaches we all evolved from a primitive fish that lived during the Devonian Period about 375 million years ago. Standard biology textbooks such as McGraw-Hill’s, promote this fish-to-man evolution story as a certain fact. But in order for this to be even remotely possible, fish first have to somehow make their way onto land. As evidence for this, textbooks point to the boney features of lobe-finned fishes as evidence that their fins were “on their way” (note: evolution does not have foresight) to becoming fully-functional limbs and feet sufficient for supporting their bodyweight for locomotion on land. The authors write,

“Lobe-finned fishes evolved 390 MYA, shortly after the first bony fishes appeared... Although rare today, lobe-finned fishes played an important part in the evolutionary story of vertebrates. Amphibians almost certainly evolved from the lobe-finned fishes.”¹

Notice they say amphibians “almost certainly” evolved from lobe-finned fishes, but just how certain is “almost”? The late evolutionist, Carl Sagan, popularized the saying, “Extraordinary claims require extraordinary evidence.” So what evidence is presented to support such an extraordinary claim? Textbooks insist they have extraordinary evidence, but let’s not blindly accept this assertion without first carefully examining their best evidence to see if this is true.

Tiktaalik roseae

The famous *Tiktaalik* fossil is believed to be the “closest known relative of the four-legged vertebrates that went to colonize land.”² In textbooks, *Tiktaalik* is shown to exhibit key intermediate features between lobe-finned fish and the first tetrapod amphibians (Figure 1). To understand their line of reasoning, it is important to distinguish between ray-finned fish, the common fish like gold fish, trout, salmon, bass, etc., and lobe-finned fish, the less common type represented today only by lungfish and coelacanth. A ray fin consists of thin parallel bones called rays that spread and stiffen the fin. The ray-fin is attached to the shoulder girdle bone and is moved by muscles

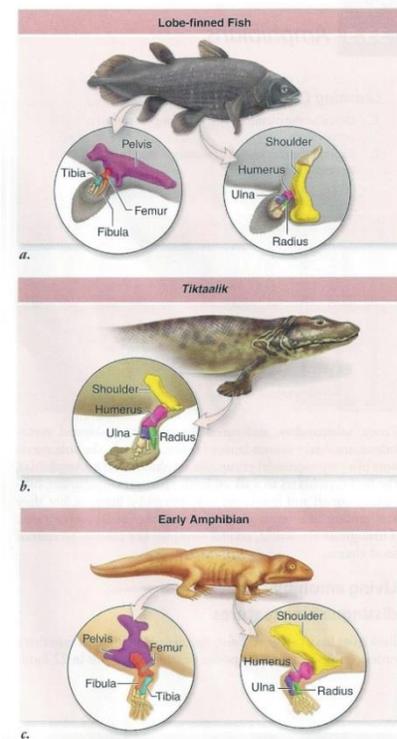


Figure 1: A figure from McGraw-Hill’s 9th edition *Biology* textbook showing the alleged evolution of lobe fins into the legs and feet of the earliest tetrapod amphibians. *Tiktaalik* is misrepresented in the center cartoon as being an obvious transitional form.

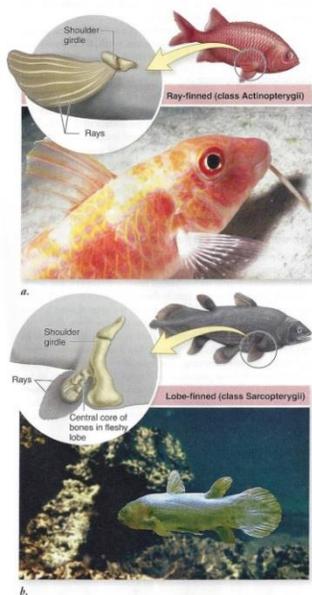
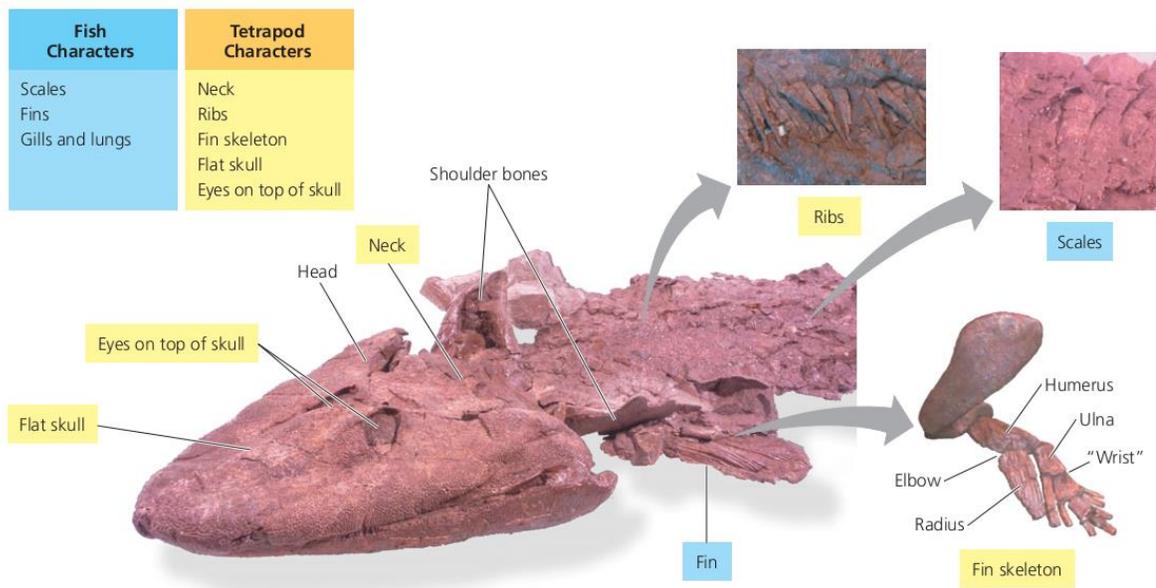


Figure 2: Comparison between the fins of lobe-finned fish and ray-finned fish.

inside the fish's body— there are no bones or muscles within the fin itself.³ Similar to ray-fins, the paired fins of lobe-finned fish have rays, but they consist of a central core of bones that form fully articulated joints attached to the shoulder girdle. Unlike ray-fins, the muscles that move the lobe fins are not inside the body but within the lobe itself (Figure 2). This allows the paired fins to move independent of one another, an ability that is unique to lobe-finned fish.

To make it appear as though *Tiktaalik* is intermediate between lobe-finned fishes and land dwelling tetrapod amphibians, textbooks describe the lobe-fin bones in *Tiktaalik* as precursors to fully functional limbs and feet – a highly speculative inference that will be addressed momentarily. Other intermediate features of *Tiktaalik* are emphasized as well. For instance, Campbell's 10th edition biology textbook shows a figure highlighting the fish and *perceived* tetrapod-like characters of *Tiktaalik* (Figure 3).⁴



▲ Standard textbooks claim *Tiktaalik* had tetrapod traits.

Figure 3: A figure from Campbell's 10th edition *Biology* textbook showing *Tiktaalik*'s supposed transitional features.

Below is a more complete list of the supposed transitional features of *Tiktaalik* as described by Neil Shubin of the University of Chicago (the paleontologist who discovered the fossil), in the journal of *Nature* 2006, the more recent findings published in *Proceedings of the National Academy of Science* 2013, as well the official *Tiktaalik* website (Table 1).^{5,6}

Table 1

Fish Features	Reputed Tetrapod Features
Paired fins (pectoral and pelvic)	Front fins able to support its bodyweight
Scales	Robust “pelvic” bone
Lungs	Arm, wrist, and “finger-like” bones
Gills	Flattened skull with eyes on top of head
	Neck unattached to shoulder (mobile neck)
	Large overlapping ribs— “thoracolumbar rigidity”

For the sake of brevity, the first four reputed tetrapod features will be addressed in this section (the remaining traits will be published in a supplementary resource that is currently in press). The fish features do not need to be addressed (except for the lungs) since we would agree *Tiktaalik* had clear fish traits. This makes sense if *Tiktaalik* is an ordinary lobe-finned fish, but what evidence is there to suggest lungs? Though certain varieties of fish have lung systems, there is no way of knowing if *Tiktaalik* had lungs based on the fossil evidence. Shubin admits this and explains it was only an inference— an inference that was arguably made out of necessity. After all, without lungs *Tiktaalik* would not be a good candidate as a transitional form to land animals. There *was*, on the other hand, evidence for gills shown by the presence of “rod-like bones which help pump water over gills.”⁷ Again, this is consistent with *Tiktaalik* being an ordinary fish. The problem is, in most artist reconstructions and museum displays, *Tiktaalik* renditions do not clearly show any gills – what is rendered looks more like skin folds associated with a highly flexible neck region - typical of reptiles (Figure 4). This is very deceptive because gills are one of the most obvious characteristics of fish. Consistently, the gill feature is hidden and made to look like more like these skin folds – enhancing the appearance of a very distinct and highly flexible neck – which is not suggested by the fossil evidence. The gills are either deemphasized or not shown at all; giving the impression *Tiktaalik* was already losing its fish traits and was evolving into an air-breathing land animal. All we know it that *Tiktaalik* had gills, and that there is no evidence for lungs.



Figure 4: A typical artist reconstruction of *Tikaalik* where skin folds as shown above as opposed to clearly visible gills. (Image credit: Nobu Tamura, Wikipedia.org)

In describing the significance of his findings, Shubin describes *Tiktaalik* as a near perfect transitional form and claims, “There is nothing else like it.”⁷ What Shubin is really insisting is that the reputed tetrapod-like features are not found in any other known fish species and therefore qualifies *Tiktaalik* as the ancestor to all modern tetrapods. But what if the supposed tetrapod-like traits are not unique to *Tiktaalik*, but are found in numerous other living and extinct fish species that are clearly non-transitional? On what basis then, could it be considered a transitional form?

Before going further, it is important to realize that Shubin and colleagues were given a grant for the sole purpose of traveling to the Canadian Arctic to find water-to-land transitional forms, as might be found in a river. In other words, the evolution of fish into four-legged land creatures was already assumed to be true before they even found *Tiktaalik*. The researchers were ideologically committed to accepting the extraordinary fish-to-man evolution story as an unquestionable fact. It was with this mindset that they went to the Canadian Arctic, and so, it would be naive to assume they were unbiased in their interpretation of the fossil remains. This is not accusatory – it is just good to be aware of the speculative nature of interpreting fossil remains. As J. Shreeve, the executive editor for *Science* at *National Geographic* writes, “Everybody knows fossils are fickle; bones will sing any song you want to hear.” After careful examination, this certainly seems to be the case with *Tiktaalik*, where sweeping conclusions are inferred based upon very minor skeletal anomalies.

Fins able to support *Tiktaalik's* body weight?

Standard biology textbooks claim, “Although it’s unlikely that *Tiktaalik* could walk on land, its front fin skeleton suggests that it could prop itself up in water on its fins.”⁸ Shubin acknowledges this as well, that *Tiktaalik* was capable of doing “push-ups.” In the 2013 *Proceedings of the National Academy of Science (PNAS)* article, Shubin offered similar abilities with respect to *Tiktaalik's* hind fins— “paddling, station holding, and walking” *underwater* along the river bed.⁶ Realize that all these capabilities are typical of modern bottom-dwelling fish. The use of fins to paddle along the bottom of aquatic mediums or station hold against a current is not extraordinary. Nevertheless, to promote *Tiktaalik* as a transitional form, museum displays show *Tiktaalik* propping itself up out of the water – which would not be an extraordinary feat, but for which there is no evidence (Figure 5). The actual fossil evidence shows that *Tiktaalik* had very ordinary lobe fins and had typical lobe fin bones compared to living lobe-finned fish today. In fact compared to lobe-finned fish such as *Coelacanth*, *Tiktaalik* has relatively small lobe fins (Figure 5). The fossil reality and the hype are fundamentally divergent. Compare the actual skeleton and its small ordinary fins to the textbook fabrication (Figure 1).

The greatest deceit, however, is when *Tiktaalik* is assigned abilities that it clearly could not have had. For instance, Raven’s *Biology* textbook makes a far more extraordinary claim— that *Tiktaalik* was “...capable of hauling itself out onto land to capture food or escape predators.”⁹ Though more cautious, Shubin suggests this as well in the *PNAS* 2012 paper. He explains the use of “appendage based support” for “locomotion” would have been advantageous to *Tiktaalik* in its shallow water, mudflat habit.⁶ This is all purely speculation, and when we

examine the actual fossil and its tiny fins, and consider its huge body weight, this speculation is laughable (Figure 5). The real motivation is to promote *Tiktaalik* as a legitimate missing link, but the actual fossil evidence suggests otherwise. *Tiktaalik* obviously could not have used its fins for locomotion on land. Just consider *Tiktaalik's* fin-to-body size proportions.



Figure 5: The Harvard Museum of Natural History showcases *Tiktaalik* propping itself up with its so-called “arm-like” fin. Notice how small the pectoral fin is compared to the rest of the body in the fossil, yet, the reconstruction of *Tiktaalik* next to it greatly exaggerates the length and the jointed nature of the lobe-fin to give it an ability it didn’t have.

By looking at these images, you would never guess *Tiktaalik* can grow up to 9 feet long (an estimate based on a large pelvic bone that was recovered).⁶ At that size, a lobe-finned fish would easily weigh many hundreds of pounds. Considering the proportionately small pectoral and pelvic fins, it’s inconceivable that these could have been used to support such a huge body without the help of water buoyancy. This is especially problematic since the bones of the shoulder girdle and hips, to which the fins are attached, are unanchored to the backbone – a necessary feature that enables true land-dwelling tetrapods to support their weight under gravity. Yet, textbooks and museum displays all represent *Tiktaalik* as having this ability. While it is an effective way to sell *Tikaalik* as an intermediate form, the fossil evidence and body proportions quite obviously indicate the opposite. Carl Zimmer, an award winning science writer, highlights this point when commenting on *Tiktaalik's* “free floating hips” in a National Geographic article,

“Our own hips are tightly fused to our spine. It would be catastrophic for them to be floating free in our bodies, because we wouldn’t be able to hold up our torsos against the force of gravity, nor could we transmit much of the force generated by our legs to the rest of our body. That is true of most other tetrapods, all of which are adapted for moving on dry land rather than being supported by water.... But their forerunner *Tiktaalik* still had free-floating hips.”¹⁰

In Shubin’s lecture series, another tactic is used to portray the idea that *Tiktaalik* was capable of “hauling itself on land.”⁹ In one of his lecture slides, he shows a picture of the pectoral fin with the bones arranged into a bent-elbow position— a representation that far goes beyond what can actually be known based on the fossil evidence.⁷ The actual fossil in no way supports a flexible elbow – the fin bones are very similar to *Coelacanth*, which does not have jointed fins and uses its fins exclusively for swimming. This represents invention on the part of the *Tiktaalik* advocates. The apparent “feet” and greatly enlarged appendages shown in all the cartoons (Figures 1 & 5), are gross misrepresentations and are discordant with the fossil evidence. The actual fossil evidence shows typical lobe fins – as are typically used for swimming by lobe-finned fish today. If there is anything that distinguishes *Tiktaalik* fins, it is that they appear to be proportionally smaller than other lobe-finned fish and are also smaller than most other bottom-dwelling fish in general.

Ironically, this same false inference was used to fit the *Coelacanth* fossil into the role of missing link. For decades, *Coelacanth* was promoted as the missing link leading to tetrapods, because it had lobe-fins just like *Tiktaalik*, which were supposedly “limb-like” enough to allow it to push itself along the bottom of the sea before evolving into a land animal. Since *Coelacanth* was thought to be extinct for 65 million years, the evidence to support this claim was based on only speculative interpretations of fossil remains. However, this idea was dramatically overturned with the discovery of a living lobe-finned *Coelacanth* fish in 1938. Scientists realized that *Coelacanth* was nothing close to an intermediate form, did not use its lobe fins for walking in water or on land, and was an ordinary lobe-finned fish living in deep water. Everything about its anatomy is perfectly fish-like. Its pectoral and pelvic fins are used exclusively for swimming and could not have functioned as proto-limbs as evolutionists had insisted for years. While the fossil remains invited all sorts’ of imaginative inferences, the actual living creature made it abundantly clear that scientists were interpreting the evidence according to what they wanted to see rather than what could actually be known. Surely, “bones will sing any song you want to hear”— we should have learned this lesson from the *Coelacanth* “living fossil” discovery, but it seems that history must repeat itself with another lobe-finned fish – *Tiktaalik*.

Robust pelvic bone – a transitional feature?

A similar problem exists with respect to *Tiktaalik*’s pelvic bones. The 2013 PNAS article describes a number of pelvic bones that were retrieved from the fossil dig site, particularly a large right pelvic girdle. The bone was analyzed and described as being in a “transitional stage in the origin of the pelvic girdle...” due to its “enhanced size and robusticity much like tetrapods.”⁷ In emphasizing this point, Shubin writes,

“To give you a sense of how giant it is, the pelvis of this animal is the same size as the shoulder, so it's very clear from understanding these bones that the hind appendage was already being emphasized in the transition to creatures with limbs.”¹¹

Let's examine this claim more carefully. It is a well-known fact that all lobe-finned fishes have pelvic bones (though, it is misleading to call it a pelvic bone because they are attached to neither spine nor true leg). So if a lobe-finned fish is found with a large pelvic bone, does that prove it's evolving into a tetrapod? More reasonably, shouldn't a large pelvic bone simply suggest it was a large lobe-finned fish? After all, it should be of no surprise that larger fish have larger bones. And the fact that the pelvis was about the same size as the shoulder girdle does not automatically make *Tiktaalik's* hind fins transitional. Once again, there is a more reasonable interpretation— if the shoulder bone is the same size as the pelvic bone it simply suggests that the front and hind limbs were equal in size, as is commonly found in modern lobe-finned fishes. Consistent with this, the researchers acknowledge that the pelvic girdle looked and functioned just like that of an ordinary lobe-finned fish. In the PNAS paper, they explain that the pelvic bones would not have been able to support *Tiktaalik's* bodyweight under gravity. Shubin and colleagues state this clearly,

“...the pelvic fin was not capable of bearing stresses and strains as significant as those of *Acanthostega* and *Ichthyostega* [which are believed to be true tetrapods], nor was the musculature as well-developed for appendage retraction.”⁶ (Note: supplementary information added to this quote by these authors).

This makes sense. Just like *Tiktaalik's* shoulder girdle, the pelvic girdle is unanchored to the vertebral column (whereas in tetrapods the bones are fused to the backbone). It is also hard to imagine how *Tiktaalik* would be able to haul itself onto mudflats to “escape predators” without the necessary musculature for “appendage retraction.” All things considered, there is no reason to believe the pelvic bone is a transitional feature. The researchers even describe the bone as “retaining primitive skeletal architecture” which is just another way of saying it looks like an ordinary fish pelvis.⁶ This should be incredibly obvious since the pelvic bone was found associated with FINS not feet! Interpreting them as anything beyond ordinary lobe-fins is pure conjecture – not authoritative fact as presented in textbooks.

Arm, wrist, & “finger-like” bones?

As mentioned earlier, lobe-finned fish have a boney central core within the fin itself that attaches to the shoulder girdle. In noticing this feature in *Tiktaalik*, specifically the front fin, Shubin writes, “*Tiktaalik* has a shoulder, elbow, and wrist composed of the same bones as an upper arm, and wrist in a human.”¹² What is interesting about this claim is that the actual shoulder, elbow and wrist cannot be deciphered by looking at the fossil specimen itself. Aware of this, the official *Tiktaalik* website shows a separate blow-up picture of the fin bones.⁷ The problem is, the bones were formed by a sculptor and so the question remains as to which fossil parts were found and what parts were imagined and added on by the artist? The best available representation of *Tiktaalik's* fin bones is a drawing that can be found in Shubin's book and lecture series (and less accessible from the journal of Nature, 2006) (Figure 6).^{7,12} In the figure

6A you will notice six hypothetical bones were added in which Shubin describes as “finger-like” structures, and below the drawing is a misleading caption that says, “— a fish with a wrist.” But what evidence is there to suggest it’s a wrist with finger bones like a tetrapods, or is this just another case of unwarranted speculation?

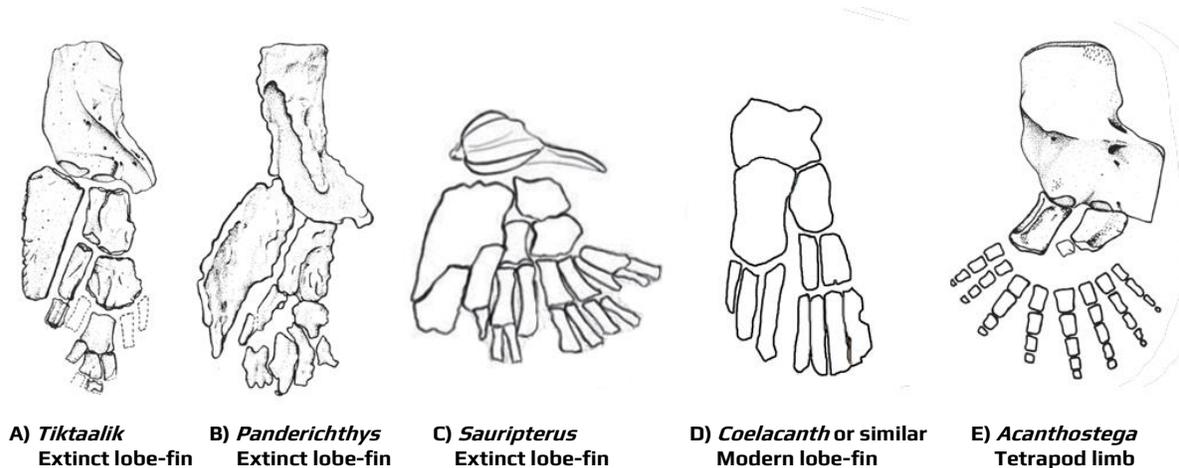


Figure 6: Image (A) is an artist reconstruction of *Tiktaalik*'s lobe-fin bones with the stippled parts inferred. Images (A), (B), (C), and (D) are the bones of lobe-finned fish and show a natural variation. It is hard to imagine how one looks anymore “finger-like” or “wrist-like” than the other. Image (E) is a tetrapod limb with digits.¹⁸ (Images A-D from *Nature* 2006 & 2008, image D adapted from Raven's *Biology*).

First, it is worth mentioning that even if *Tiktaalik*'s fin-bone structure looked exactly as drawn in figure 6A, its morphology is entirely consistent with that of modern lobe-fins. It is helpful to recognize that the fins of lobe-finned fish have a lot of variation in their bone structures (as shown in images 6A-D). Some have more boney parts and some have less and in varying arrangements that don't reveal any type of transition, and so *Tiktaalik*'s bone structure is not surprising or unusual. Although Shubin describes *Tiktaalik* as having a “wrist” and “finger-like” bones, it could just as easily be argued that the bones of a modern lobe-fin look more like a wrist with fingers than *Tiktaalik*'s. Others might say that 6C looks more like tetrapod digits than *Tiktaalik*'s – it's all very subjective. What Shubin describes as “finger-like” is really a misnomer and nothing close to tetrapod digits shown in image 6E (see reference 18 regarding *Acanthostega*). Instead, they make up the boney core of *Tiktaalik*'s ray-fin – the very same type of fin that lobe-finned fish have! On what grounds then, can Shubin insist that *Tiktaalik*'s fins are evolving into a tetrapod foot? Evolutionary paleontologist Jennifer Clack from the University of Cambridge affirms this point writing,

“There remains a large morphological ‘gap between them and digits as seen, for example, *Acanthostega* (a true tetrapod amphibian): if the digits evolved from these distal bones, the process must have involved considerable developmental repatterning...”¹³

Indeed, the morphological dissimilarities between *Tiktaalik*'s fin bones and the bones that form the digits of a true tetrapod are extensive – far from just a few mutational differences.

Flattened skull with eyes on top of head— unique to *Tiktaalik*?

The next reputed transitional feature is the flattened head, or as the 2006 *Nature* article puts it, “a shortened skull roof.” In both textbooks and scientific papers, the shortened skull roof is believed to be a distinguishing feature of tetrapods. In describing *Tiktaalik*'s skull, Shubin explains, “Now, like land-living animals, it has a few things that are quite different. A flat head with eyes on top. ...It is a fish with a head much like a crocodile.”⁷ In a lecture series, Shubin shows a slide image comparing the skull shape of a lobe-finned fish to that of *Tiktaalik*. In the figure caption he attempts to sell his prized fossil as a true missing link by saying, “This figure says it all. *Tiktaalik* is intermediate between fish and a primitive land-living animal.”⁷ The impression being given in the cartoon is that all fish have conical shaped skulls and all tetrapods have flattened skulls with eyes on the top. Therefore, since *Tiktaalik* has a flattened skull uncharacteristic of fish, it must be evolving into a tetrapod. This is simply not true and very misleading— it is a false dichotomy. The skull shape of both living and extinct lobe-finned fish as well as tetrapods is quite diverse! For instance, extinct lobe-finned fish such as *Panderichthys* and *Eplistoestege* (Figure 7) have flattened skulls similar to *Tiktaalik*; neither of which can be considered land-dwelling tetrapods or even transitional (especially in light of Poland's tetrapod trackway discovery discussed shortly).⁵ Furthermore, there are many examples of living fish species, such as bottom-feeders, that have flattened skulls with eyes positioned on the top of the head (Figure 8). Since this is a feature common to modern fish, and therefore, *non-transitional*, on what basis can *Tiktaalik*'s shortened skull roof be considered compelling evidence for a transitional form?

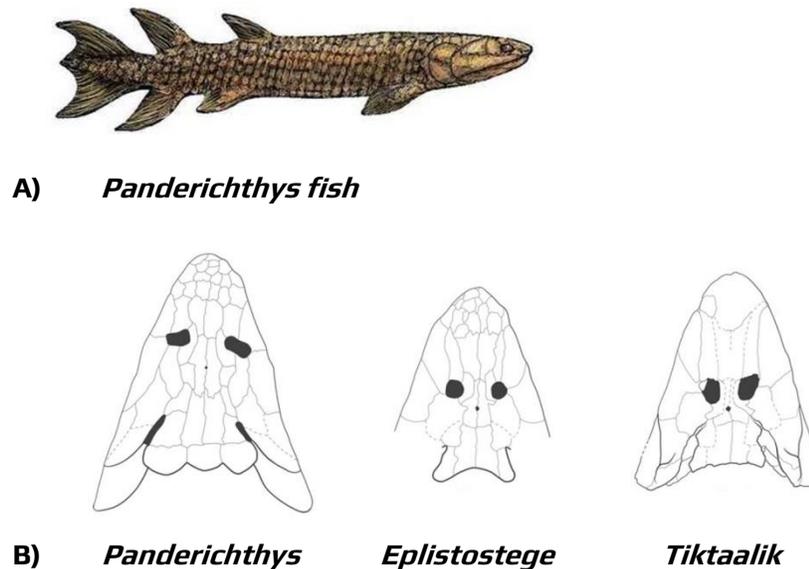


Figure 7: *Panderichthys* and *Elpistostege* are true lobe-finned fish and would have looked very much like the artist rendition of the *Panderichthys* fish in image (A). Image (B) compares the very similar skull shapes of two extinct lobe-finned fish to that of *Tiktaalik*'s. (Skull illustrations from *Nature*, 2006).

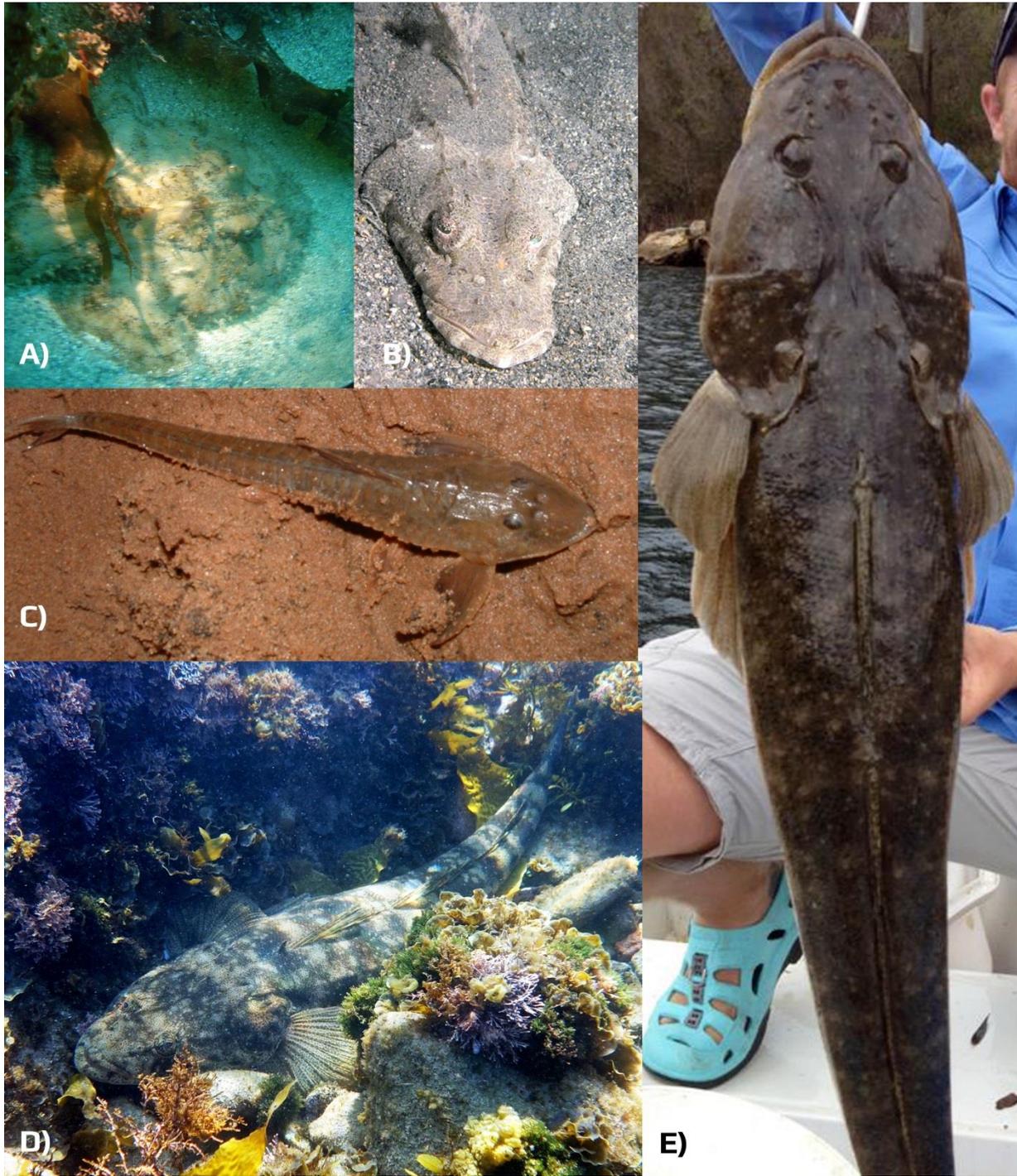


Figure 8: Modern living bottom dwelling fish with flattened skull roofs and ventrally positioned eyes similar to *Tiktaalik*. (A) Artist rendition of *Tiktaalik*'s skull as shown in *Nature*, 2006. (B) Fringe-lipped flathead, *Sunagocia otaitensis* (C) Dusky flathead, *Platycephalus fuscus* - notice the strikingly similar skull shape compared to *Tiktaalik*. (Image credit: A, *Nature* 2006; B, Clark Anderson/Aquaimages, Wikipedia.org; C, courtesy REEL IT IN)

Poland's tetrapod trackway blows Tiktaalik out of the water!

In 2010, the journal of *Nature* published findings from researchers Niedzwiedzki et al. who uncovered a trackway of a four-legged animal with digits that “date to a time well before tetrapods were thought to have existed.”^{14,15} Per Ahlberg, the evolutionary paleontologist credited with the discovery of the Poland trackway explains why his finding casts serious doubt on *Tiktaalik* as the earliest ancestor to tetrapods (Figure 10). In a *Nature* online video Ahlberg describes the footprints saying,

"Lobed-fin fishes do not have toes, they have fins with big round fin webs... Now this is the sort of track that a salamander would leave if it walks [pointing to the tetrapod footprints], in order to be able to make tracks that looks like that you need to have front legs and back legs that are about the same size in which you can swing freely back and forth along the sides of the body...not in a million years can you get a body form like this [referring to his illustration of *Tiktaalik* morphology] to make a track of little pairs of prints going up like this, you need quite a different body form for this. ...It had to be a primitive land vertebrate not a fish."¹⁶

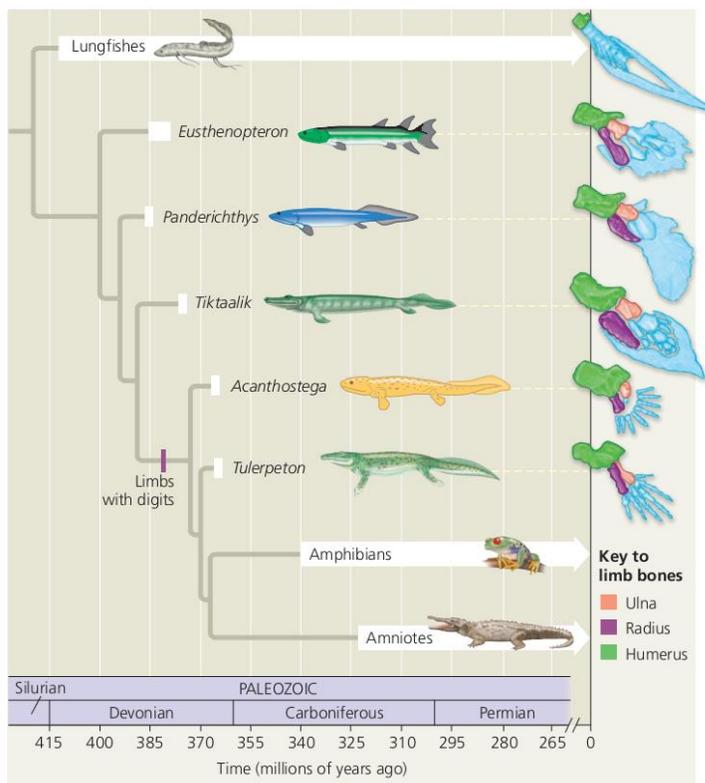


Figure 9: A typical textbook cladogram of the alleged ancestral lineage of the evolution of tetrapods. What was previously accepted as a series of unquestionable transitional forms is now under drastic revision in order for evolutionist's to make sense of conflicting data from a recent discovery in Zachelmie, Poland. The fossilized tetrapod footprints dated to the lowermost Eifelian at 397 million years ago.¹⁵

In other words, the footprints could not have been created by a land-dwelling tetrapod, but this flies in the face of the supposed stepwise transformation of lobe-finned fishes into amphibians that are represented in textbooks and the media. In discussing the significance of Ahlberg's fossilized tetrapod footprints, *Nature News & Views* reports,

"The fish-tetrapod transition was thus seemingly well documented. There was a consensus that the divergence between some eplistostegalians (such as *Tiktaalik* or *Panderichthys*) and tetrapods might have occurred during the Givetian, 391-385 Myr ago.... Now, however, Niedzwiedzki et al. lob a grenade into that picture. They report the stunning discovery of tetrapod trackways with distinct digit imprints from Zachelmie Poland, that... predate the oldest

tetrapod skeletal remains by 18 Myr and, more surprisingly, the earliest elpistoegealian fishes by about 10 Myr. The implication is that both groups have a very long 'ghost range'— that is, a period of time during which members of the groups should have been present but for which no body fossils have yet been found.”¹⁵

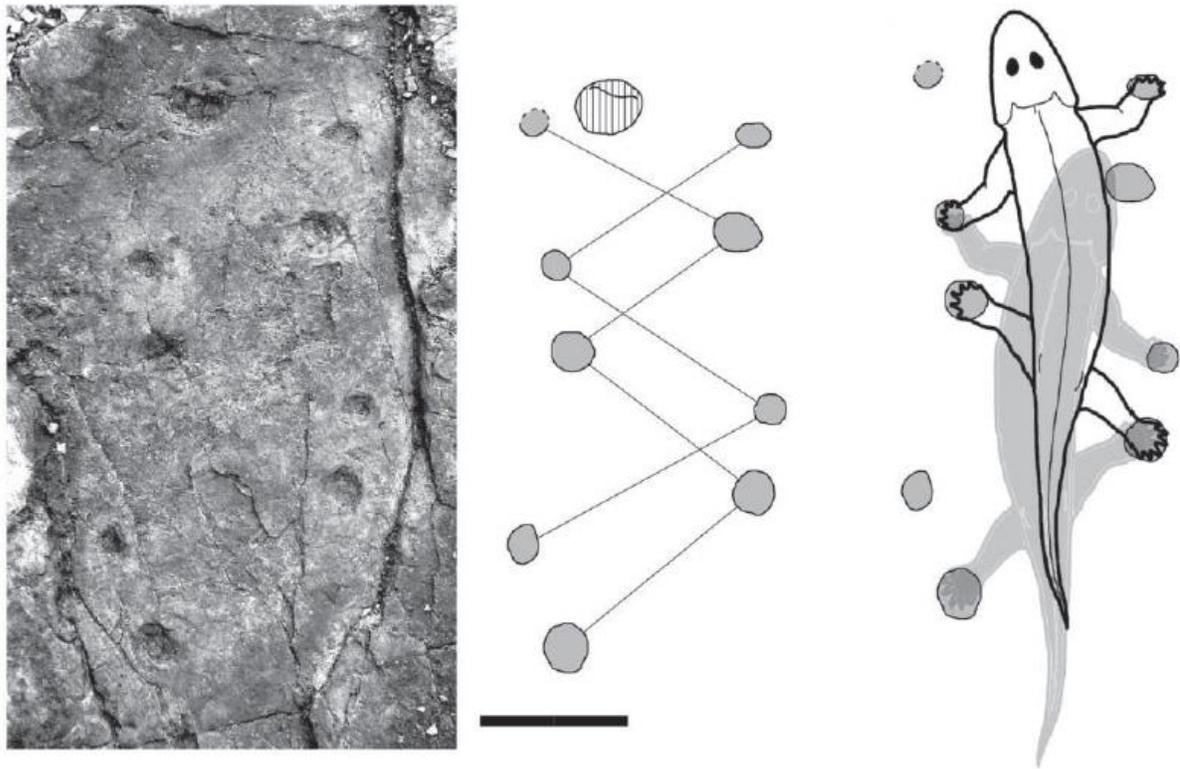


Figure 10: A segment from the fossilized footprints discovered in Zachelmie, Poland of a tetrapod that existed approximately 20 million years earlier than *Tiktaalik*, as published in 2010 in the journal of Nature. In light of these findings, *Tiktaalik* can no longer be considered a legitimate transitional form. (Image from *Nature*, 2010)

Think about the big picture of what has recently transpired. *Tiktaalik* has become one of the century's most famous icons of evolution, but with a single discovery, the evolutionary view of tetrapod origins is flipped completely upside down! *Tiktaalik* is currently showcased in nearly all biology textbooks as the perfect transitional form of all modern tetrapods. However, with the discovery of a trackway of what is clearly a land animal with legs and feet (as opposed to "proto-fins") that predates *Tiktaalik* by nearly 20 million years, the only thing we can really be confident of is that the evolution of lobe-finned fish into tetrapods is nothing more than a story. Not only does the Poland trackway pose a serious problem for *Tiktaalik*, it does just as much damage to the entire cladogram of transitional forms by pushing them all back 20 million years without any fossil evidence consistent with the new scenario. At best, all evolutionists have to support the fish-to-tetrapod story as just "ghost fossils" – a series of key missing fossils. As *Nature News & Views* accurately puts it, the picture of tetrapod evolution is quite "muddy" to say the least! (See reference 15, Muddy tetrapod origins).

CONCLUSIONS

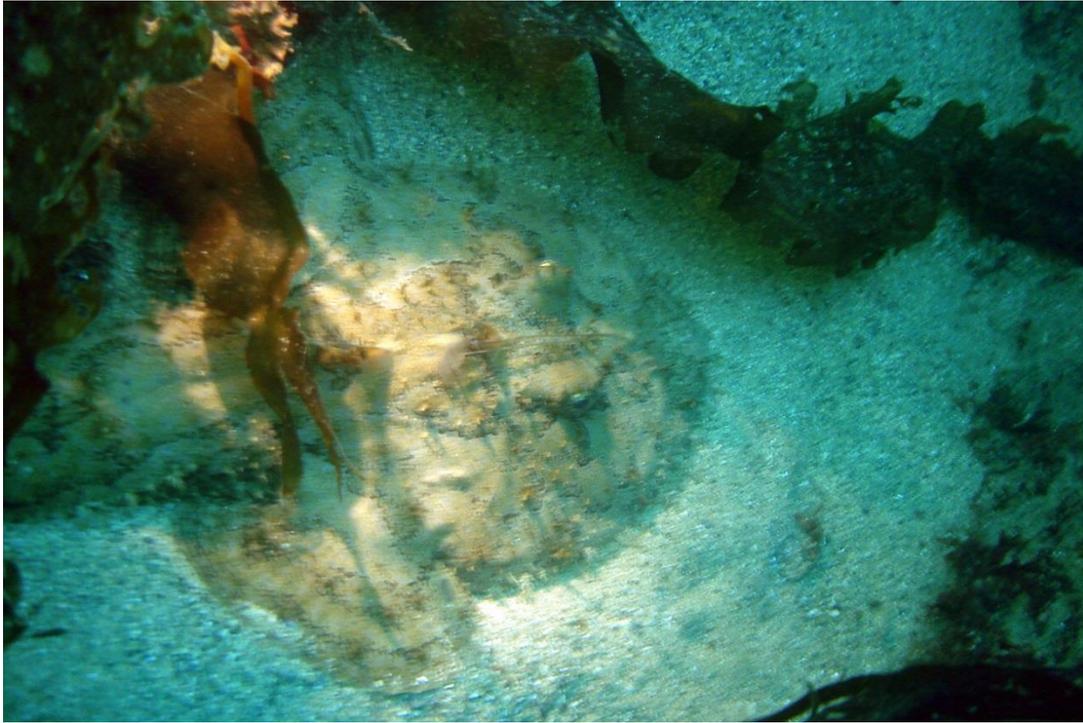
Textbooks, scientific journals, and the popular press have made extraordinary claims about *Tiktaalik* and have promoted it as a perfect transitional form filling the link between lobe-finned fishes and tetrapods. But where is the extraordinary evidence to back this claim? While Shubin claims *Tiktaalik* exhibited a host of unique features with “nothing else like it,” a closer look suggests otherwise.⁷ The claimed “tetrapod traits” are consistent with many living and extinct lobe-finned fish species! With the recent discovery of Poland’s tetrapod trackway that predates *Tiktaalik* by nearly 20 million years, the evidence couldn’t be any clearer – *Tiktaalik* is a bottom dwelling lobe-finned fish – it is not the missing link to land animals.¹⁴ The claim that *Tiktaalik* is a pivotal transitional form involves speculation, conjecture, and artistic misrepresentation.

Before leaving the Nunavut territory of the Canadian Arctic, Shubin and his team of researchers asked the council of elders from the region what they would name the fossil. The name they came up with was of course, “*Tiktaalik*,” which translates from their Inuktitut native language, “large freshwater fish.”⁷ It seems the Nunavut people could easily see what the fossil really was. It’s sad that textbooks have used *Tiktaalik* to convince millions of students that we evolved from this supposedly “perfect missing link.”¹⁷

ADDENDUM: The Anatomy of an Ecological Niche

A flattened skull roof with eyes positioned on the top of the head is not an uncommon feature among certain varieties of fish nicknamed “flatheads.” It’s an anatomy characteristic of a specific ecological niche that is occupied by bottom-dwelling fish. Below are a few additional pictures of fish that live at the bottom of lakes and seas (images courtesy Wikipedia.org). Often times, they burrow under a thin layer of sand to camouflage their bodies so that only their bulging eyes are exposed. It is fascinating to watch when an unsuspecting fish swims by and is suddenly ambushed by a low-lying flathead. *Tiktaalik* exhibits these same traits and very reasonably occupied the same ecological niche.

Monkfish, *Lophius americanus*:



Flounder, *Pseudopleuronectes americanus*:



Fringe-lipped flathead, *Sunagocia otaitensis*:



News Update, 04-23-2014: Addendum Regarding the Recent PBS Broadcast “Your Inner Fish”



Very shortly after we posted this article, PBS aired a new program (“Your Inner Fish”), featuring *Tiktaalik* as the perfect proof of macroevolution. This program featured Dr. Neil Shubin, the discoverer of *Tiktaalik*. Neil was the hero-host of the program. This program was designed to sell evolution, and has gone much further than the textbooks have, in misrepresenting the evidence. The most glaring deceptions involved the misrepresentation of the fish’s actual anatomy. The deceptions are easily seen, by comparing the actual fossil with its artistic representations, which involved sophisticated animations. The actual skeleton is clearly a bottom dwelling fish – like many fish today – it has a flattened head with eyes set on top of the skull— which clearly indicates it rested on the bottom and ambushed unwary prey, just like many fish today. It has normal gills, typical lobe fins (i.e., typical of any lobe-finned fish), and a flattened body. Nothing in the fossil suggests a transitional form leading to land animals.

The following three items are seriously misrepresented:

- 1) The *Tiktaalik* head is shown with a very distinct and highly-rotating “neck” (Figure A1). The head is shown as a distinctly separate appendage, very broad at its base, with a constricted “neck” connecting the head to the body. This makes the fish look extremely amphibian-like. The fossil itself does not suggest any type of neck constriction. Logically, muscle and other soft tissue would fill the space behind the skull, giving the fish an ordinary fish-shape, being streamlined like any other fish. There is no evidence of a highly rotatable neck. It is true that the bone anchoring the front fins is not fused to the skull – but this by itself does not constitute a functional neck. Furthermore, this

“shoulder bone” is not linked to the spine in any way – which is what a genuine shoulder bone should do. A distinct “neck” separating a distinctly mobile head from the rest of the body is a deliberate artistic misrepresentation.

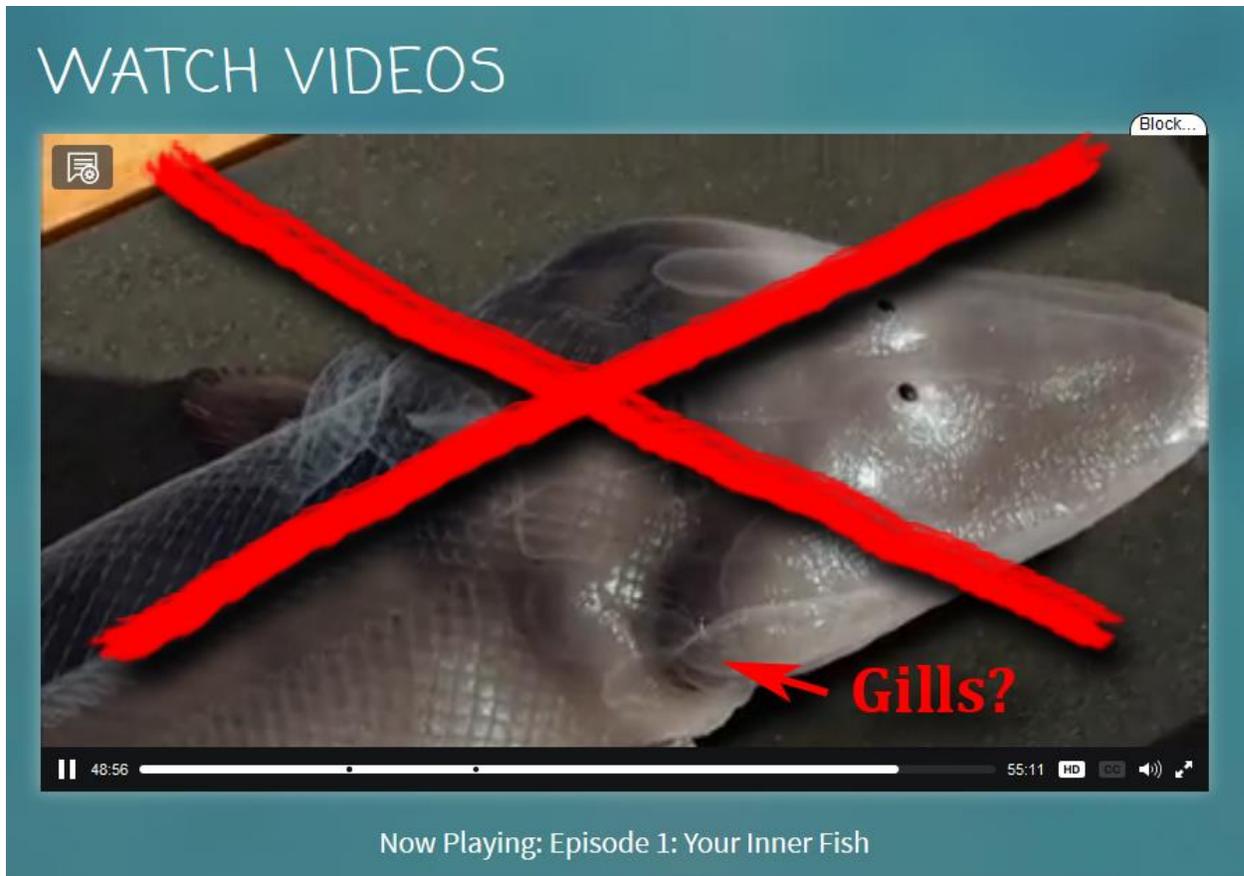


Figure A1: *Tiktaalik* was artistically misrepresented with a highly mobile neck in the PBS video.

2) *Tiktaalik* had gills but they are disguised and are misrepresented to look like skin folds. It is also claimed that the fish had lungs. Dr. Shubin openly acknowledges in his publications that *Tiktaalik* had gills, and admits there is no fossil evidence for lungs. So why does he say in his TV program that the fish had lungs? Why did he allow all the artists to consistently disguise the gills, making them look like skin folds in the “neck” (Figure A1)?

3) *Tiktaalik*'s lobe fins are small and flat (see figure A2), and the fin bones are no different from the fins of other modern lobe-finned fish. All the artistic renditions and animations show *Tiktaalik* as having large and very muscular fins that are distinctly jointed (shoulder joint, elbow joint, wrist joint). This is all artistic license – the fossil fins are obviously small, flat, and show no evidence of joints. The *Tiktaalik* fin bone structure is no different than the fin bones of other lobe-finned fish. Furthermore, the rear fins in the fossils are almost non-existent (figure A3), but the animators show the rear fins are large and muscular – just like they show the front fins. The animations show *Tiktaalik*



Figure A2: Notice the size of the fin the actual fossil remains—significantly smaller than virtually all Tiktaalik cartoons, animations, and museum models which show a greatly enlarged, muscular fins. Image credit: Wikipedia.org



Figure A3: In this picture of the underside of *Tiktaalik* from the PNAS 2013 paper, the rear fin is hardly recognizable and does not appear to be as large as shown in the PBS special. Once again, an exaggeration in size was used to give the impression that *Tiktaalik* was evolving tetrapod limbs. (Note: the word “fin” was added in by these authors for clarity).

walking on land, which completely misrepresents the fossil evidence and the published papers. Dr. Shubin has published that *Tiktaalik* could do “push-ups” while still underwater and at best “flop around on the mudflats”. So why does Dr. Shubin is his program show *Tiktaalik* literally walking on land? Many types of fish might use their basal fins to do push-ups underwater but no one has ever seen a walking fish above water! As discussed in the above article, *Tiktaalik* did not have the biomechanical means to accomplish such a feat.

It is very disturbing that many well-educated people can watch a TV science program where the evidence is mainly sophisticated cartoons – and imagine they are actually seeing evolution. It is even more disturbing that evolutionary zealots are willing to create very dishonest cartoons which clearly misrepresent the fossils that they claim proves evolution. A good part of the program “Your Inner Fish” did not involve fossil evidence, but instead argued that anatomical, embryological, and genetic similarities between vertebrates (including fish and man), proves evolution. That is a separate discussion, but very briefly, 400 million years of mutation accumulation should erase such similarities. Basic similarities found in all living things, and more specifically shared features among vertebrates, can most reasonably be attributed to common designs, which arose from a common designer.

By Christopher Rupe & Dr. John Sanford
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FURTHER READING

[The Greatest Hoax on Earth: Refuting Dawkins on Evolution, Dr. Sarfati.](#)

[Tiktaalik roseae – a fishy ‘missing link’ by Dr. Sarfati.](#)

[It’s all talk, Tiktaalik can’t walk, by Warren Nunn – with a sound response to reader’s comments by Shaun Doyle.](#)

[Did Tiktaalik’s Pelvis Prepare Fish to Walk on Land? by Dr. Elizabeth Mitchel](#)

[Tiktaalik Blown "Out of the Water" by Earlier Tetrapod Fossil Footprints by Casey Luskin.](#)

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<http://www.nature.com/nature/videoarchive/tetrapods/>
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18. Acanthostega was a true tetrapod with four, fully functional limbs. See Creation.com article: Yet another 'missing link' fails to qualify, by Andrew Snelling. <http://creation.com/yet-another-missing-link-fails-to-qualify>