

Both the marine and the pelvic reduced population have a Pitx1 locus. The coding region of the gene is still intact in both populations. This gene we think is surrounded by a series of these regulatory switches that cause it to turn on in specific body parts like the jaw, the pituitary or the hind limb. In both populations some of those switches are still present and function normally. So the gene's expressed normally in the mouth parts, you still build normal mouths and jaws in both populations. Still expressed in the pituitary, you still form a normal pituitary in both organisms. In the marine population it turns on in the hind limb and you build a pelvis. In the reduced population, the hind limb control switch has been inactivated. You no longer express the Pitx1 gene at that location and as a result the hind limb fails to form in the fish.