What an exciting time as hatching is around the bend! We are just 12-14 days out, give or take a day or so, from a projected hatch or pip. Our job is to wait patiently (if we can), for mother nature to put her finishing touches on those beautiful eggs, it won't be long now!

National average incubation time for an American Bald Eagle Egg is 35 days, give or take a day or two, every nest is as unique as the eagles themselves.

Hatching will be one of the most difficult journeys of endurance an eagle will undergo in it's entire lifespan, and is the chick's first test of survival. The hatch can take anywhere from 24 to 72 hours.

Soon you will be seeing words such as "internal" and "eternal" pip, as well as "starring." Here is what we can expect to happen when the time comes and what the chick has to go through to hatch, it's nothing short of astonishing and no two hatches are the same!

The parents are aware of the hatching when they hear the chick's vocalizations and possibly the pecking from inside the shell. The adults may stand above or to the side of the egg and lean in or cock their head, seeming to listen. Parents may chirp softly to the chick, call, or click their beaks, perhaps in attempt to communicate. M15 and F23 may exhibit restlessness in the egg cup, rising to check the eggs often, circling the cup, and they often pull soft nesting material in toward the nest cup. We may see M15 bringing food to the nest in anticipation of both the chick's and the F23's need for nourishment. This is often referred to as "stocking the pantry."

Eaglets hatch from the eggs without any help from the parents. During hatching, a chick must undergo several physiological adaptations. Before it hatches, a chick absorbs oxygen through the shell by way of the mat of membranes under the shell. The chick must also cut the blood supply to these membranes and trap the blood within its body, and absorb any remaining yolk sack which contains maternal antibodies and nourishment, it will then inflate it's lungs for survival outside the egg.

This is one of the many reasons why in nature, we must not interfere with the hatch process of eggs and disturb those physiological changes the chick must go through by pulling the egg shell away from the hatchling.

When hatching nears, the air cell in the large (blunt) end of the egg quickly expands and spreads partway down along the upper inside of the egg.

As the embryo nears full development it takes up most of the space inside the shell, it's crowded in there! The chick has gradually rolled to curl up tightly, lying on its left side with its legs bent in the smaller end of the shell, its back against the air cell. It's head is tucked forward against its breast near the blunt end of the shell and turned to the right under its right wing. By now the chick has developed an "Egg Tooth" a small hard and sharp calcium spike on the top of the beak, this puts the beak and the egg tooth close to the air cell.

The eggshell is now thinner and weaker than when it was laid since the growing embryo absorbed calcium from the shell for it's bones. About 4 days before hatching, the chick can be heard calling from inside the egg, and we may see F23 and M15 staring at, and actually listening to their eggs! Amazing right?! The chick already has grown to contract the hatching muscle involved in head movements used for hatching. A muscle in the back of the chick's neck (the complexus or hatching muscle) swells in response to the influx of lymphatic fluids. The hatching muscle aids in strength the chick needs to break through the egg shell. This muscle recedes in size after hatching, although it later plays a role in neck extension in grown eagles.

Our babies will take a hatching position and turn so that it's head is at the wide end of the egg next to the air space and uses it's egg tooth to pierce the internal membrane, separating the developing chick from the air bubble above it. With the chick's beak now accessing air in that chamber, the chick has direct access to a continuous supply of oxygen through the porous egg. This event is called the "Internal Pip" (not visible to us), and the chick takes its first breath of air, if we are lucky, we may see the egg move slightly at this time!

The chick then uses its egg tooth to scratch around the inside of the outer shell in a circular path creating cracks and a hole in the egg shell. This hole is called the, "External Pip" (which is now visible to us). This can take from 1 to 3 days. The chick continues further scratching and pipping with the egg tooth weakening the shell as it goes, and taking short periods of rest. The external pip accelerates fluid loss inside the egg as well as in the chick's body, which is ideal as slightly reduced body mass allows the chick more room to maneuver as it pushes against the shell. The pip may begin as a tiny hole that increases in size over the next few hours, or it may begin as a cracking of tiny bits of the shell, possibly taking a star-like appearance ("starring"). As the chick pushes outward, small bits of shell may bulge from the hole.

The chick's legs flex and contract and the egg tooth pokes and scrapes the shell, creating larger holes and cracks. The chick's beak, pipping tooth, and head might be visible through some of the cracks. The enlarged complexus muscle at the nape provides cushioning and support during this shell-breaking process. As the

chick pushes against the shell, it may begin to rotate, usually counterclockwise, perhaps halfway or more around the inside, until a part of the shell forms a crack line. The chick rests in between efforts to break through the shell so don't be alarmed when we can't see movement from inside the egg for short periods. Finally...with this weak line around the shell, the chick gives a few expansive bursts and the shell parts, an eaglet is born! In a few more hours the chick dries off and appears as a fluffy white ball. What an amazing process the chicks go through to hatch, it's an exhausting miracle of life for the chick, and is never tiring for us to witness.

I want to mention here, you may or may not see the chicks being fed right away after hatch, and that is perfectly normal and no cause for concern. The chick absorbed the yolk into it's abdominal cavity before hatch for nourishment and that sustenance will stay with the hatchling for a few days. Trust and have faith in F23 and M15, they know exactly what their babies need and when they need it. M15 and F23 are the ultimate eagle experts!

Interesting fact, when the feedings first start you will see an abundance of saliva from both F23 and M15 combined with the food. This saliva actually contains vital antibodies that our hatchlings need for immunity outside that shell!

Everything about our eagles serves a purpose, and each season they never cease to be amazing. What seems so simple as a hatch through an egg shell, is actually a complex process and a test of strength and survival. There is still so much more to learn from these magnificent raptors!

Exciting times are just ahead for us!

Taken from Facebook Page "Harriet & M15 Eagle Lover's Group." Written by Tracey Reynolds Pinette. Eagle cam courtesy of Pritchett Real Estate.