

THE

TALON

THE RAPTOR TAG
NEWSLETTER

**FOOT AND
BEAK CARE**



**VOLUME II, ISSUE I
MAY 2019**



Cape vulture chick. Photo by LouAnne Brickhouse.

ABOUT THIS ISSUE

Cover photo by Lyndsay Newton
Issue edited by Taylor Rubin

This issue of The Talon is dedicated to foot & beak care in raptors. We hope you enjoy!

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We always welcome your ideas and feedback. Got a comment or question? E-mail us at raptortagroup@gmail.com.

TAG UPDATES

SECRETARYBIRD SSP

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As of today San Diego Zoo Safari Park as one chick, Miami has 1 egg and Fort Worth's pair has started building. I am working on some creative management of the population right now with moving some birds around for holding and better pairings, which will include having some new institutions joining the SSP and looking forward to future success.

St. Augustine produced two fertile eggs this season one chick was hatched at their facility the other egg was brought to LA Zoo where another successful hatch took place. San Diego Safari Park's new cape vulture pair successfully hatched a chick, this chick was also brought down to the LA Zoo. Both the chicks will be integrated in the LA Zoo's flock, eventually giving us an exhibit flock of 10 birds. The LA Zoo will be breaking ground on a new cape vulture/mixed species exhibit this summer.



CAPE VULTURE SSP

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Cape vulture chicks. Photos by LouAnne Brickhouse.

STELLER'S SEA-EAGLE SSP

John Azua

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interesting story behind this successful breeding.

A pair of Steller's sea eagles successfully hatched a chick on March 10, 2019 at Denver Zoo. The juvenile is a male determined by DNA sexing and we are expecting him to fledge the nest any day. This 2019 chick is the third eaglet produced by this pair since their pairing in 2012. There is a very

The adult female hatched at the Cincinnati Zoo in 2005, the adult male hatched at Vogelpark Avifauna in 2007, and both were transferred to Denver Zoo in February 2006 and October 2008, respectively. The eagles were introduced to each other in October 2012. The female laid two eggs in 2013 and one chick hatched on March 27 after a 37-day incubation period. Unfortunately, the chick died the same day and the adult female was observed on camera video eating the deceased chick at the nest.

The pair nested the next year and the female laid two eggs. The first chick hatched on March 4 and the second chick hatched on March 6, 2014 with respective 37 and 36 day incubation periods. Video footage recorded the older chick outcompeting the younger chick for food over the initial four days and the younger chick was found dead on March 10. In addition, significant aggression between the parents was observed during the chick-rearing period and this behavior increased significantly over several days to the extent that the male was transferred out of the exhibit on March 22 to a holding enclosure. The female reared the lone eaglet successfully during the male's absence. He was successfully re-introduced to the exhibit and the family was re-united in late April 2014. The juvenile eagle was DNA sexed as a female and she fledged on May 27. The juvenile was transferred from the exhibit to our zoo hospital holding in October 2014 because the adult pair was observed nest building. Eventually the 2014 juvenile was transferred Fort Worth Zoo in April 2015.

In 2015, the adult female laid two eggs and they hatched on March 7 and 10 after 37-day incubation periods. Unfortunately, the first chick was observed on video on March 8 to have died from unknown reasons and consumed by the adult female. Aggression between the adults was again observed during chick rearing, but regardless they went on to successfully rear and fledge the second juvenile. The

juvenile eagle was DNA sexed as a male and he fledged on June 12. The adults were observed being aggressive to the juvenile in October and he was transferred to a Zoo hospital holding enclosure. The juvenile eagle was transferred to the Columbus Zoo in December 2015.

The next year in 2016, the adult Steller's sea eagles nested again and the female laid eggs in February. Chicks hatched on March 8 and 11 after 36-day incubation periods. There was significant aggression observed on March 12 between adults with the female apparently fighting off the male in order to solely care for the chicks. The male remained away from the nest for several days allowing the female to perform parental duties. During the course of the first 3-4 days, the second chick was being out competed for food and attention by the older chick and subsequently disappeared on March 15. Unfortunately, on March 18 the second chick also disappeared with no determined reasons.

In 2017, the female laid two eggs in late January and early February and only one chick hatched on March 12 after a 35-day incubation period. Video recordings showed a hatched chick in the early morning, but later in the day both parents ate what appeared to be a deceased chick. The second egg never hatched and the staff removed it from the nest on March 22 and the embryo appeared to be dead early in development.



Steller's sea-eagle chick. Photo by Mark Rinker.

In 2018, similar to the previous years, the female laid two eggs in late January. Similar to 2017 only one chick hatched on March 8 and it disappeared 4 days later. A review of the video footage provided important information on the sequence of events. During the early evening of March 11, the female consumed the unhatched egg. Later in the evening, the eagle pair was observed on video in a significant fight at the nest, which continued out of the nest and onto the ground. This altercation lasted approximately two and half hours in which the chick was not brooded during a very cold evening. The adults did not appear seriously injured during the fight. The female returned to the nest and appeared to brood the chick for the remainder of the evening. The next morning on March 12 the female was observed on video picking up the chick and consuming it.

Due to the lack of rearing success for three years in a row, the staff discussed several potential changes to the Steller's sea eagle exhibit and management to improve chances for a successful breeding season in 2019. A plan was formulated to remove the male from the exhibit after copulation, egg lay and 25-30 days of incubation. The Cheyenne Mountain Zoo, a facility 74 miles south of Denver Zoo, agreed to temporarily house the male for several months until the chick was several months old. The Steller's sea eagle pair began with their normal nesting behaviors and the female laid two eggs on February 1 and 5. On March 1, keepers entered the exhibit, captured both adults, candled the eggs, and found both eggs to be fertile. A veterinarian performed a physical examination on the male and he subsequently was transported to the Cheyenne Mountain Zoo. Thankfully, one eaglet hatched on March 10 after a typical 37-day incubation period and the female brooded and fed the eaglet successfully without disruption. The second egg did not hatch and was observed broken in the nest on April 5. On April 23, keepers caught up the female and juvenile for physical examinations and West Nile Virus vaccinations by a veterinarian and all went well. As previously mentioned, all is well as of this writing. The Cheyenne Mountain Zoo and staff were important contributors to the successful hatching and rearing of this third Steller's sea eaglet with the use of a temporary holding enclosure for our male. We are thankful for their very willing participation.

STEERING COMMITTEE VACANCY

There is a vacant position on the Raptor TAG steering committee! If you are interested in joining the team, please contact Scott Tidmus (Scott.A.Tidmus@disney.com) and Steve Sarro (SarroS@si.edu).

Are you an artist who loves vultures? We've got the job for you! The African vulture SAFE program will be selling t-shirts again in advance of International Vulture Awareness Day on September 7, 2019 and we need artwork to be featured on the shirts. The artwork should include one or more of the six SAFE focus species (Cape vultures, African white-backed vultures, Lappet-faced vultures, Ruppells griffon vultures, White-headed vultures, and Hooded vultures) and should coordinate well with the African vulture SAFE logo. Beyond that, anything goes! Please send submissions to Jacque Williamson (jacque.williamson@delaware.gov) by **June 1, 2019**. Thanks in advance!

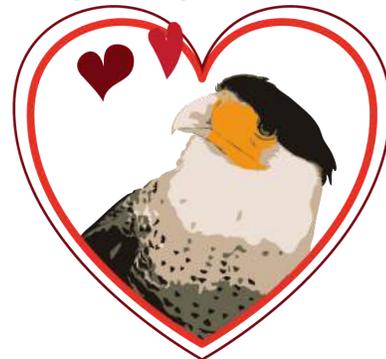
CALLING ALL ARTISTS!



FUNDRAISING UPDATE

We raised \$556 in the caracara t-shirt fundraiser from February, which will be used to start a professional development fund. Stay tuned for more information!

I Caracara Lot



ABOUT YOU

AFRICAN VULTURE SAFE FUNDRAISE FOR VULTURES

Support the African Vulture SAFE action plan by raising awareness and fundraising. Pick what works for you!

VENTURE OUT FOR VULTURES HIKE | WALK | RUN | HUNT | FLY

Organize a 1/3/5K hike, walk, or run.

Get teams together for a city "Scavenger Hunt for Scavengers"

Pair your event with extra vulture fun:

free flight vulture program | meet a live vulture
lecture | education tables | vulture program
bake sale | sell vulture art

We recommend this event occurs in September, which is not only the same month as IVAD, but also the beginning of fall raptor migration season and a great time to watch for vultures!

EAT OR DRINK FOR SCAVENGERS ICE CREAM | RESTAURANTS COFFEE | BREWS | WINE

Partner with a local restaurant, ice cream parlor, coffee shop, bar, brewery, or vineyard. Many businesses allow fundraisers with "takeovers" (such as guest bartenders or ice cream scoopers) to raise funds, or will donate a portion of the check if diners mention the fundraiser on a given day.

RECREATE FOR A CAUSE BOWLING | ROCK GYMS | MOVIES PUTT-PUTT | AXE-THROW | ESCAPE PAINT OR PLANT NIGHTS

Organize a special group night at a local business where a portion of funds goes to your cause. Many will allow silent auction tables during the event, too! At plant or paint nights, guests all go home with something they created. Don't forget new or local trends and crazes, like escape rooms or axe-throwing gyms!

SMALL SALES BAKE | ART | CRAFTS | DECALS

Vulture Vomit Bake Sales

Make vulture cookies or "vulture vomit" for a bake sale. Buy a vulture-shaped cookie cutter off Amazon or Etsy. Search for "White Trash," "Puppy Chow" (Chex cereal recipe), or similar type cookie/sweet trail mix recipes.



Above L to R: vulture decorated cookies; "Funfetti" style Puppy Chow; Alton Brown's "White Trash"



Vulture Art Sales

Make vulture art a centerpiece of your event.

Paintings BY vultures

Art OF vultures

Paint FROM vultures, such as the feather prints on the right.

Vulture Decals

Vinyl cut vulture logos go great on any accessory! Make and cut yourself or work with an Etsy shop for a custom bulk order!

HOW TO DONATE FUNDS

Contact Taylor Rubin, Zoo Atlanta, for information on how to send funds directly to the African Vulture SAFE account OR for information on donating directly to any of the four SAFE-supported programs.

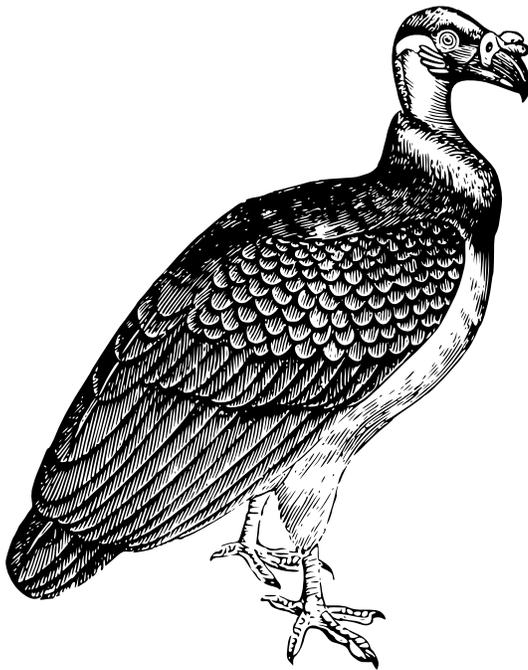
TRubin@zooatlanta.org



Can't get enough of the Raptor TAG? Follow us on facebook!

We're always looking for photos of raptors and enrichment, so please send photos, videos, or ideas for novel enrichment to Jacque Williamson (Jacque.Williamson@delaware.gov) or post them on facebook and TAG us (pun very much intended).

FACEBOOK PAGE CONTENT



I'm talon you to
follow us on
facebook!

CALL FOR ARTICLES

For more details, please
visit the Raptor TAG
website:
raptortag.com/newsletter

Calling all vulture lovers! The Talon will be publishing an All Vulture edition ahead of International Vulture Awareness Day (IVAD) on September 7, 2019.

- We're looking for [articles](#) about any aspect of working with vultures, in-situ or ex-situ.
- [Any IVAD-related material](#) such as activities you love, fundraising ideas, or ways to connect with guests about vultures.
- [Photos!](#) We want to celebrate your vultures! Send us photos of vultures (with the file name including species, facility, and photographer name) or of your vulture activities, lessons, fundraisers, etc.!

Send all submissions to Taylor Rubin
(trubin@zooatlanta.org).

[Deadline for submissions is June 20, 2019.](#)



INTERNATIONAL VULTURE
AWARENESS DAY

SATURDAY
SEPTEMBER
7
2019

Let us know you're celebrating!

<https://forms.gle/66P6A2FqKtWiyasL7>

**SAVE
THE
DATE**

TRAINING & ENRICHMENT

TRAINING AMBASSADOR RAPTORS FOR VOLUNTARY NAIL TRIMS

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Milky eagle owl on nail trimming apparatus. Photo by Lyndsay Newton.

As animal caretakers in the AZA community we believe it is our responsibility to give our animals the best lives possible given their situation. This generally includes providing them with the concept of free choice or at least as much as we can safely give them. Allowing them to voluntarily participate in their own maintenance care is one of the ways we can do this. For ambassador birds, voluntary nail trim behaviors are one of these options.

At Zoo Atlanta we have modified a nail trim apparatus designed by Natural Encounters Inc. This platform is permanently installed in our wood slat mews but hinged so we can remove the birds' ability to access it when not in use. The concept can be modified to fit most situations which makes it especially useful. Once the bird is trained to stand on the apparatus we Dremel the nails from the underside of the platform while the bird stands on the mesh dome. We chose to use a Dremel over a file simply because it was faster for us. While on the dome, it is also easy to visually inspect the foot from the top and bottom. The behavior is simple to train and usually goes pretty quickly in our experience. Each bird is an individual which requires small modifications to each training plan, but for the most part they are the same. One thing that has helped us with training nail trims on raptors is training them on parrots. By working through some of the challenges with the parrots, we were able to apply new techniques to raptor training.



Nail trimming apparatus can be removed. Photos by Lyndsay Newton.

One example comes from our work with our yellow crested cockatoo. She was unreliable at doing nail trims while in her enclosure. She frequently shifted position, making it difficult to Dremel her nails. To remedy this, we stopped working her in her enclosure and placed her on the nail trim apparatus. We also added verbal cues to provide additional information to her. One cue (“ready?”) let her know that keepers were about to touch her toes to hold them in place for Dremeling. The second cue (“touch”) let her know that her nail was about to be Dremeled. These cues both provided information to her as well as let her know that she needed to stay still until bridged. With this change, she has become very reliable at performing nail trims. When training another parrot, our blue and gold macaw, we eliminated the first cue and just cued the “touch” behavior. This was also successful. When our Harris hawk had problems remaining still during nail trims, we began using the “touch” cue with him. Initially he responded as if he were receiving the verbal bridge “good,” but once he differentiated the two, it appeared helpful.

In training a nail trim, there are some helpful things to consider. First, be aware of your bird’s body language. If there is a position where they seem less comfortable, do not attempt nail trims in that position to set them up for success. For example, with our Harris hawk, we noticed he was much more likely to shift his feet if a foot was on the side of the apparatus instead of in the center. Now we require him to have his feet in

the center before we turn on the Dremel. As discussed above, providing information to your animal in the form of a cue (like “touch”) can be helpful in developing cooperation for the nail trim. Finally, be aware of when you are bridging for successful behavior.

As keepers, our goal is to get the nail trimmed, but as trainers, we need to hold our animals to the criteria of holding still until bridged. When an animal breaks position after the nail is trimmed but before we have bridged, it is important to not reinforce to avoid breakdown of the nail trim behavior. Birds can sometimes respond to keeper body language that indicates that the Dremel is about to be removed, so it can be helpful to have a brief pause (about ½ a second) after removing the Dremel to ensure the bird is still before bridging and reinforcing.

With raptors, another important factor to consider is footing behavior. This is a safety issue for both handler and bird. Footing is a normal part of natural raptor behavior; therefore, if it is inadvertently reinforced, it is much harder to extinguish than many behaviors. Before training for nail trims, have a plan for how to deal with footing behavior. Consider if you want to feed by hand or tongs, if footing something other than the food is acceptable, and how you will respond if unacceptable footing behavior is seen. With our set up, there is a bar that helps hold up the platform when not in use and interferes with (but does not prevent) a bird’s ability to foot during nail trims. Our Harris hawk often grabs the bar with his foot when reaching for food, and since this behavior does not seem to increase footing at the food, we accept it. Time outs and ending sessions have been used in response to an attempt to foot at the food.

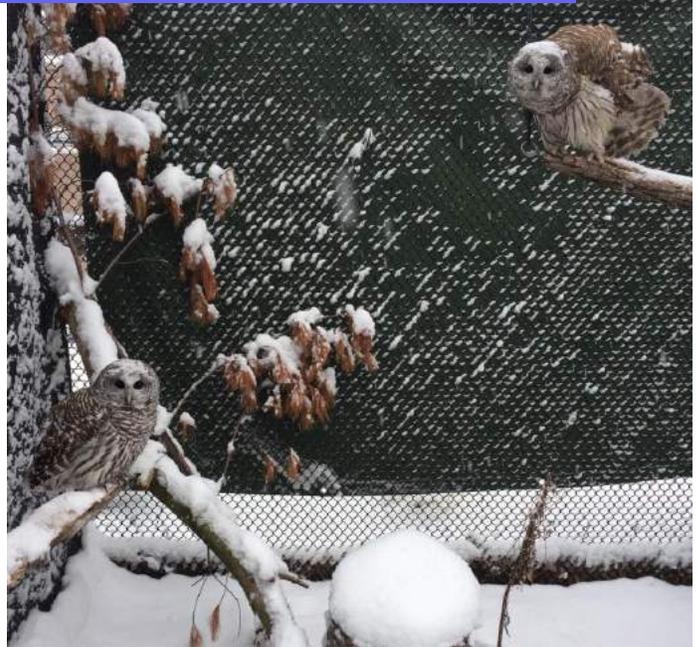
As the AZA animal care world moves more strongly toward providing free choice and empowered lives for our animals, we are constantly challenged to find new and creative methods to provide such environments. Fortunately, when workable solutions come to the surface many times they can be modified to fit diverse situations. If you have any questions, feel free to reach out.

TRENDING TOPICS

BARRED OWL FOOT ISSUE

Tori Spinoso
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Guinevere is a female adult Barred owl. Her exact age is unknown as she was brought into a rehabilitation facility, in the summer of 2013, as an adult injured bird. Due to her injury, her left wing was amputated at the elbow. She has been housed in our zoo since 2016. Since she has been in captivity, Guinevere has been housed with Evelyn, another adult female Barred owl. Guinevere was being glove trained to use for education programs.



Guinevere and Evelyn in their exhibit. Photo by Tori Spinoso.

On June 3rd, Guinevere presented with a foot problem. She was found on the ground in her exhibit with contracted toes on her left foot. Since her wing had been amputated she was unable to balance and was lying on her side, unable to right herself. Hoping Guinevere had a temporary injury, she was held in a small crate for the evening. The next morning the toes still had not extended so a veterinarian visit was necessary.



Guinevere was crated for 6 weeks with daily exercise. Photo by Tori Spinoso.

With no visible injuries and without an expensive MRI procedure our veterinarian could not make an exact diagnosis. She did have leg strength and her toes would clench tightly when forced to open. The options at the time were euthanasia or steroids assuming there might be an inflammatory issue affecting a nerve or a minor stroke.



Vet tech with Guinevere. Photo by Tori Spinoso.

Guinevere was taken back to the zoo with a 14-day prescription of prednisolone. During these first two weeks she was kept in the small cloth crate. Rolled towels and blankets were placed inside to help position her appropriately. She received 0.25 ml twice daily and hand fed small weanling mice, as she wasn't eating on her own.

After week one, Guinevere received physical therapy two to three times daily. She was removed from the crate and her leg and each toe were fully extended 10 times during each session. This therapy took only minutes but seemed to be very beneficial. After two weeks, her toes started to extend occasionally and she began eating mice on her own. At that point, we knew it was not a permanent injury and there was a reason to keep working with her, daily.

Our veterinarian placed her on another two weeks of prednisolone, daily therapy, and crate confinement. At the end of the four weeks she was eating on her own and standing with open toes. The final two weeks of prednisolone were to slowly wean her off the medication. She was given 0.25 ml every day for a week then every other day for the final week..

After 6 weeks of therapy and steroids, she was ready to be back on exhibit with her enclosure mate, Evelyn. Guinevere still is not back to the way she was before this episode but she's eating, her weight has increased slightly, and she is generally doing well. Even though her toes sometimes do not constrict, she can still balance well enough to perch near the top of her enclosure.

Although we are a very small zoo of just 3 acres with very limited staff (2 FT/1 PT), the treatment and therapy were possible and we still have Guinevere to act as an ambassador for her wild counterparts.



Top: Guinevere now (foot shot). Photo by Tori Spinoso. Right: Guinevere today. Photo by Joe Garza Photography.

THE BATTLE AGAINST BUMBLEFOOT

Eran Brusilow

Disney's Animal Kingdom

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Bumblefoot has been a serious threat to captive raptors for hundreds, and likely thousands of years. The condition, generally defined as infection and inflammation within the foot, is debilitating, progressive, and degenerative. Advanced stages of bumblefoot often necessitate surgical intervention and frequent restraint of afflicted birds for various reasons: medical evaluation, debridement, bandage replacement, application of topical treatments, cold laser

therapy, and others. Even with such intensive care, treatment failure is still common. What is that old adage? An ounce of prevention is worth a pound of cure? I would argue that, with regard to bumblefoot, an ounce of prevention is worth a million pounds of cure!

For many raptor enthusiasts, birds of prey are the ultimate combination of poise, power, speed, and agility – Olympic athletes of the avian world. How often would you assume an Olympic athlete trains? Once or twice weekly? Every other day? I think we would all agree that Olympic athletes emerge after many years of honing their craft on a near-daily schedule. Now view our avian Olympians in the same light. Should captive raptors be managed to maintain peak physical form like their wild counterparts? Is this feasible in most instances? From my perspective, a strong commitment to training and conditioning every day is not only feasible – it is essential for captive raptors in order to promote a healthy lifestyle and significantly decrease the risk of bumblefoot. Consistent exercise in the form of jump-ups, A-to-B flights, luring and running can all have a profound impact on a bird's cardiovascular fitness when performed regularly. This, in turn, improves cardiac function and circulation throughout the body. Poor perfusion to the feet at the onset of



Lappet-faced vulture in mid-gallop while sprinting. Photo by Eran Brusilow.

infection and the fibrotic walling-off of lesions as a physiological response to tissue damage are two major reasons why systemic antibiotic treatments may not necessarily be effective against bumblefoot in raptors. Additionally, reducing the body weight of over-conditioned birds as a result of exercise will undoubtedly relieve pressure on the feet. The erosion of plantar skin in the form of pressure sores can open the door to a litany of pathogenic organisms.



Mirrored foot box for visualizing foot pads. Photo by Eran Brusilow.

Providing fast-drying perches of various widths and textures is a cornerstone of successful raptor husbandry. Varied conditioning strategies may afford opportunities for raptors to spend more time on different perches or substrates throughout an exhibit, mews or weathering yard. This increased mobility also translates to more frequent deep-cleaning of facilities or refurbishing of favored roosting spots without disturbing birds. Making daily engagement a

recurring part of any raptor conditioning program is a great way to merge exercise with top-notch hygiene and preventive care. For example, encouraging raptors to voluntarily stand in foot baths could decrease the prevalence of bacteria, fungi, and yeast on the feet while simultaneously softening the talons for better wear. Transparent shelves or “look boxes” may also be designed to allow for the passive visualization of plantar surfaces so that problem areas can be identified and managed early.

Daily conditioning can also help to maintain appropriate talon length, which is important because excessively long talons can seed infection, which may ultimately lead to bumblefoot, by puncturing plantar skin when toes are flexed. Some raptors might benefit from walking or running through dry sand to help abrade talons without damaging foot pads. Concrete block perches are a personal favorite for long-toed falcons that are naturally comfortable perching on flat surfaces. Providing a tiring, or tough piece of food, on this type of perch can promote foot health and talon wear by increasing a bird’s activity level and causing digit flexion against the rough surface as it manipulates and pulls at the stubborn snack.

Raptors in ambassador animal programs or bird shows that have been sufficiently manned can spend extended amounts of time on the glove. Standing on the soft leather provides a break from hard perches and occasional gentle rotation of the human hand can stimulate the raptor to fidget for a better position on the fist. This fidgeting will change pressure points

and/or the orientation of toes, which again, adds variety and helps to preserve the integrity of the plantar skin.

When it comes to raptors, bumblefoot will always be a trending topic. The consequences of severe cases of infection can be overwhelming for birds as well as animal care specialists. Aside from the veterinary hurdles that ailing birds face, frequent negative interactions with people during post-surgical recovery can cause inappetance, aggression and many other unintended problems. Improving the physical fitness of captive raptors will go a long way, directly and indirectly, toward combatting bumblefoot. But in order to be effective, the application of an appropriate conditioning program should absolutely be measured in days; not weeks, months or seasons.

I have always been passionate about beaks. Shape, size, function, color... anyone who looks at a toucan, a pelican, a flamingo, or a woodpecker can't help but notice the wonderful variability and amazing adaptations that allow these animals to function so efficiently within their diverse ecological niches. A beak is

incredibly important to the health and welfare of the animal it belongs to, and damage to the beak of a wild bird may result in significantly lowered life-expectancy. A healthy beak is required for proper feather care, efficient feeding, and—in some cases—protection and/or breeding success. You get it: they're important. And so is their maintenance.

For plenty of birds, life in human care involves few particular requirements when it comes to beak health. Many species found in zoological or institutional settings require little or no direct intervention or provision to ensure that their beaks—along with the rest of them—have good welfare, so long as the environmental and nutritional needs of those birds are being met. Ideally, our goal as caretakers should be to ensure that this is the case for all of our birds, but there are some species which demonstrate a higher need for human-assisted beak care than others. The reasons for this are many and varied, and outside the scope of this article, but birds of prey often sit squarely at the top of this list. The act of trimming a bird's overgrown beak back to its natural shape is referred to as 'coping', and for many in the animal care field, it is an intimidating task to undertake. For the unprepared novice, coping can be a terrifying experience, and the results of poor coping can damage bird and handler both.

Before we get started: this article focuses only on coping birds of prey. While other species

COPING – A BEGINNER'S PRIMER

Amy Fennell, CPBT-KA

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may also require beak care, and some of the methods may be similar to those described within this writing, it is not meant to be applied to non-raptors without additional discussion. Parrots, in particular, rarely need coping unless they have a permanent malocclusion or other deformity, and should self-maintain their beaks if provided with good nutrition and a constant supply of materials to bite, chew, and manipulate. Once you begin coping a parrot, it often leads to the need for further human intervention in the future.

Additionally, this article contains only my own preferences, experiences, and suggestions. My goals are to save others from experiencing the mistakes I made earlier in my coping career and to help ensure your raptors receive the best and safest cope possible, when and if they require it. If you currently cope birds and have tools or methods which you use successfully but which I have not discussed, please continue to do what you find successful – it is imperative when coping a bird that the individual is practiced and confident with their tools and methods. One of the most skillful coping jobs I have ever witnessed was a veterinary pathologist with a great-horned owl tucked under his arm using a sharp pen-knife to whittle away the overgrowth; while I would never promote this method or use it myself, his skillful speed and accuracy were undeniable. My advice: know your tools, know your bird. For those of you who are just starting out or are hoping to increase their skills in this area, I hope the following information is of some assistance to you.

TRAINING YOUR EYE

In my opinion, this is by far the most important piece of advice I can give to anyone learning to cope a bird of prey: before you attempt to work on any live raptor, you must know what a healthy and properly-shaped beak should look like.

While this seems a no-brainer, it is surprisingly difficult to do. It takes time and effort to specifically study what a healthy beak should look like. On the other hand, it is surprisingly easy to look at a bird you work with frequently and still have difficulty noticing any overgrowth, since the growth process is gradual, and your eye adapts to their daily appearance. Additionally (and for much the same reason that some of us may not notice the haircuts of our spouses or co-workers), it takes a particular level of observational awareness to see changing physical details in those we spend a lot of time with... but it is good practice to keep that observational awareness sharp and to make a point of looking closely at your bird (or spouse) to make sure you can catch those changes as early as possible. Not noticing a new chip or crack in a peregrine's beak may lead to severe consequences for the bird if left long enough.

So how do you learn what a beak should look like, and how your own bird compares? The 'ideal beak', of course, varies by species; the best source of information on what a beak should look like are good, clear photos of a variety of wild birds matching the species of the

bird you want to cope. While it is possible for a wild bird to have an overgrown beak, most wild raptors keep their beaks in excellent shape, and they are a much better source of information than any captive bird. Of course, specificity matters: looking at a bald eagle's beak will not give you a particularly good example of how to shape a red-tailed hawk's beak, just as a peregrine falcon's beak does not look like a great-horned owl's. Get to know what your bird's natural beak should look like, how it compares to other species, and ways in which it tends to overgrow. Having an innate knowledge of that ideal shape will not only be your guide to shaping an overgrown or damaged beak, it will also help you recognize more quickly when your bird is in need of attention in the future.



A selection of beaks that need attention.

Once you are thoroughly familiar with the healthy shape of, say, a red-tailed hawk's beak, then you can spend time comparing it to your bird's individual beak and identifying the areas which should be shaped or removed. Every bird is an individual, and every bird's beak—even within the same sex and species—will have different requirements.



Healthy tomium.

Note that falcons large and small have an extra notch on their beaks (called the 'tomial tooth' or 'tomium') that introduces an extra challenge when coping these birds. The tomium is easy for a novice to accidentally remove, or to improperly shape or shorten. Overgrown tomials are prime candidates for chips, cracks, and flakes that may undermine the stability of the rest of the maxilla. Because of this, and because smaller beaks require more precision and steadier work, the most difficult species to cope properly in my opinion are small

falcons such as kestrels, merlin, Aplomados, and the like. If at all possible, spend time working on larger and 'simpler' beaks and honing your stability and skill before working on falcons, if you are new to coping.

TOOLS

Coping can be done with several different tools and in several different ways. The tools needed for my preferred method are as follows:

- Dremel (tip dependent on size/shape of beak – conical or cylindrical grinding or sanding bits can be used)
- Guillotine-style clippers
- Side shears
- Scalpel
- Quick-stop/cautery/styptic pencil
- Natural oil (jess grease, vitamin E oil, etc)
- Small clean cloth
- Towel
- Scalex or other anti-insecticidal spray (optional)



You may also find other tools useful if they fit your specific circumstances. These may involve hoods, small wooden dowels or other padded rods to hold open the beak, small precision files, etc. I do not usually use these, but others have and do with great success, so I encourage you to outfit yourself with the tools you find most suitable and the ones that are safest to use with your bird.

METHODOLOGY

Disclaimer: The process described below is not meant to be used as a 'how-to' guide, since coping is a complex and inherently visual process. For more information, access the IAATE-produced "Bird Grooming Tips - Coping, Nail Trims and Bathing Options" Webinar, which includes video and verbal explanation of the process. It can be found at <https://iaate.org/resources/webinar/webinar-recordings>

Coping requires that the bird be in the hand and safely restrained, and so generally (my tale about the veterinarian whittling the great-horned owl notwithstanding) involves at least two people: one to restrain, and one to cope. A third person on standby to fetch any needed tools or act as another pair of hands whenever required is often useful but isn't usually mandatory so long as you're prepared and have all of your tools within easy reach. Your first concern should always be the safety and comfort of the bird being worked on, as well as the safety of all individuals involved. Be prepared.

A note: training a bird to accept voluntary coping is not recommended, especially when it involves power tools, as the close proximity of the eyes to the beak and possibility of damaging the bird due to its unexpected or involuntary movement makes the risk too high to support. A standard chest restraint is best, as the bird is upright in a mostly natural position and can breathe as freely as possible. This should be done in an area that is relatively quiet, with good lighting and temperature control. It is easy for a restrained bird to overheat, and if you are working on a beak the bird may not be free to thermoregulate through gular fluttering. Ensure a fan or an air conditioner is nearby so that the bird's temperature does not climb too high.



Once the bird is comfortably in hand with all supplies in close proximity, the first step should always be to trim the talons—this ensures that if the bird struggles and/or balls

their feet at any point, it is less likely to self-puncture. Once complete, the person in charge of coping can control the bird's head with their non-dominant hand, leaving their dominant hand free to use tools as necessary. Take care not to touch or brush against the bird's eyes or to allow dust or debris to contact them. Avoid covering the nares. Some prefer to use a hood; personally, I find it difficult to fully access the beak when the bird is hooded and have found greater success without it, but it is certainly a useful tool to have at hand. Instead of using a dowel or other foreign objects to hold a bird's mouth open, I prefer to use the tip of my index finger in the very corner of the commissure (the 'corner of the mouth', where the hard beak transitions into soft skin). Doing so ensures that the bird's mouth isn't forced open any further than is necessary, and that no rough or hard surface causes scraping or bruising on sensitive skin. Some use their thumbs; unless I am working on an eagle I still prefer to use the tip of a finger, since a thumb often forces the beak to open excessively, especially in birds of red-tailed hawk size or smaller.

Look at the beak thoroughly and from all angles—check for symmetry, for cracks and chips, for overall shape and the amount of material that needs to be removed. Is the tip of the beak long and thin? Is it heavy and thick with a lot of excess material? Are the sides of the maxilla completely occluding the mandible? Are there flakes or signs of cracks that need to be addressed first so that further damage isn't done? Is it a falcon with overgrown tomials or who has chipped off a single tomium? Each bird is an individual, and there is no single method to approach every overgrown or damaged beak.



Bald eagle before and after.

That said, my general method is to remove tip length with trimmers first. As with talons, the beak has a blood supply or 'quick' that will bleed if disturbed, and a beak that is particularly overgrown may need several coping sessions to be worked back to its ideal length in order to avoid cutting through the quick. I have heard that some individuals intentionally cut the beak to the point of drawing blood, to 'help the quick recede'. This should be avoided. The blood supply will recede naturally without the need to directly damage it, and the pain it causes the animal is unnecessary. Regardless of their apparent stoicism, a bird who has had their beak 'tipped' in this manner will be in discomfort until the injury heals.

Tools, as noted, should be extremely sharp and in good repair. Dull tools will crush the beak instead of cutting it cleanly and may cause cracks or damage nerves within the live portions of the beak. I do not try to remove all excess tip length with the trimmers, instead trimming it about 2/3rds of the way to my intended length. Trimming all the way risks hitting the blood supply, while using the Dremel solely to remove large portions of overgrowth may heat the beak up through friction, and it introduces a significant amount of dust that can get in the bird's eyes and mouth. Hence my preference: use the trimmers for the majority of the length, then remove the rest with the Dremel.

When using the Dremel, I work first on one side, then the other, and checking for symmetry frequently as I follow the natural shape of the beak whenever possible and use short, steady strokes. Never 'freehand' a rotary tool—always brace your hand and maintain at least two points of contact at all times. This may involve you getting quite 'close' to the teammate who is restraining the bird. To achieve the correct angle and bracing, it is not uncommon for me to position myself, the bird, and my coping partner like a collection of elaborate mannequins! While you should have full control of your bird's head and the tool you're using, always expect the bird to flinch or move at any time and be ready to back off whenever needed. Take care not to press too hard with the Dremel or allow it to contact the beak for long periods of time to avoid excessive heat transfer. The gentle curve (or 'festoon') found on the sides of the maxilla in most hawks and eagles should be preserved if at all possible, but often needs to be raised on both sides. Take care not to abrade the roof of the mouth or hit the tongue with the tip of the Dremel or any other tools.

The maxilla generally requires the most work. In most cases, the mandible requires less or no attention, though the sides may begin to curl inwards (anecdotally, this seems particularly prevalent in great-horned owls) and the tip may need to be shortened or lightly smoothed.

Take care not to leave the tip of the beak excessively thick. Trimming the tip of the beak without further shaping leaves a blunt surface that will not grow out properly; the thick

material behind the tip needs to be removed as well, and the tip of the beak should be returned to its previous taper and thickness.



Overgrown versus normal.

Once the shape of the beak is as desired, any surface flaking or ridging can be addressed using a small back-angled razor or scalpel to scrape (not cut) the excess material off from cere to tip. Using a Dremel for this step instead may remove excess material too quickly, causing bleeding, and is not recommended. Once complete, check the beak a final time for symmetry, shape, and length. Use a very small amount of a natural oil to condition the beak—I generally use jess grease or another natural oil that is solid at room temperature, but vitamin E oil or other options will work just as well. Whatever you use, make sure to wipe off excess oil carefully with a light clean cloth so that it does not get accidentally get preened into feathers by the bird later on. The surface of the beak should feel smooth to the touch when complete, and you should not have residual oil on your skin.



A juvenile African fish eagle, before and after coping

Once your beak is complete, continue with whatever other tasks you'd like to accomplish with the bird in hand—we generally spray with a preventative insecticidal liquid any time we have a bird in hand, do a quick physical exam, and a thorough check of any equipment the bird may be wearing. Now is the time to address those issues so that the bird does not need to be in hand any more frequently than is absolutely necessary. For working or ambassador birds, you may choose to have individuals not normally involved with their training be the 'bad guys' who have to restrain and/or cope your bird. That said, I am frequently involved in coping birds that I train daily and find that the

relationship—if affected at all—is quickly repaired if you have a high trust account with the animal.

CONCERNS AND POTENTIAL PITFALLS

Here are some miscellaneous things to consider when coping birds of prey using the method described above:

- Tie long hair back!
- When using corded Dremels, be aware of the cord so that it does not get caught or jostled during work. For battery-powered Dremels, make certain the Dremel is charged or you have a backup nearby.
- If a solid Dremel tip is dropped, do not use it. Replace it, as it may have fractured and could fragment during use.
- Tie long hair back! (It's worth repeating!)
- As mentioned, rotary tools produce heat through friction. Be very cautious not to press too hard or too long. If unsure, test on your own fingernail.
- Be very cautious about using a Dremel around feathers; brush rictal bristles and other feathers that may be close to the beak out of the way and always be aware of their movement and positioning. As with human hair(!), feathers can get caught in a Dremel and a clump can be ripped out in an instant—the skin beneath is fragile and the resulting damage to your bird could be severe.
- If you accidentally tip the beak and it begins to bleed, stop coping and control the bleeding. Slight bleeds can be stopped with styptic powder, severe bleeds may require cauterization. Do not continue to shorten a beak that has been tipped. If the bleeding is minor and stops quickly, you can continue to shape the rest of the beak. Otherwise, seek veterinary care if you cannot control the bleeding.
- Tie long hair back! (Seriously. Learn from my mistakes.)
- Take good care of all your tools. Replace them when they break, so that they're present when you need them.
- If you have trouble guiding or using the Dremel, practice different grips and styles of rotary tool until you find one you are comfortable with. I use a small battery-powered Dremel that I can hold like a fat pencil, which gives me the control I need. One of my mentors is most comfortable with a larger corded Dremel and is capable of wielding it with the same dexterity. Experiment with wood or other (non-avian) materials until you find something you like. If you have access to them, practice on cadavers.
- If in doubt, do some further research. When working on a new species or a species I haven't coped in a few years, I will always take another look at wild beaks and make sure I know what I'm aiming to accomplish. An African fish eagle has a very long tip that looks overgrown if you're accustomed to bald eagles. Gyrfalcons have longer tomials than peregrines. Know your species.



This Aplomado falcon's beak flaked, leaving a raw area beneath. With careful attention, it healed over a few months.

PARTING THOUGHTS

I have been privileged throughout my career to have had the opportunity to cope species ranging all the way from kestrels and gyrfalcons to eagle owls and harpy eagles, and each bird and beak present a unique problem to solve. Overgrown beaks are like broken tail feathers—a warning sign that something isn't quite right in that bird's situation, and whatever that 'something' is, it needs to be addressed. From that perspective, I cannot deny a certain satisfaction in seeing a bird with a nicely shaped, healthy beak—regardless of whether its shape is due to expert coping or to natural management. To that end, coping is a skill that anyone working closely with birds of prey should consider developing, as the closer a bird can physiologically be to their wild counterparts—arguably, at least—the better.

While the ideal situation would be for birds of prey under human care to always have their nutritional and environmental needs perfectly fulfilled in a way would allow them to self-maintain their beak health, the reality is that many birds require regular coping, and many birds—when coped—are coped by individuals who are not always confident in their skill level. This is not ideal for the bird, certainly, but it is also immensely stressful for the person who finds themselves doing the coping! As someone who learned the hard way and made many of the errors I outlined above (and now keep my hair quite short, as a side note), I empathize with those of you who need to cope a bird but don't always have the luxury of being directly taught by an expert. If you are one of those individuals, I encourage you to take the time to practice those skills whenever possible without a bird in hand. As noted above, use the Dremel on wood or other materials until you can produce smooth gradients and your hand is steady and stable. Play with it. Get comfortable with it. Spend time looking through raptor photos online until you can identify beaks that are overgrown or otherwise in need of attention from beaks that are in good shape. Educate your hand and your eye, so that the next time you get a bird in hand, it is significantly less stressful for you, and an easier experience for your bird.

Keep an eye on those amazing beaks, and happy coping!