Reflections on 30 seasons of Harris's hawking

by Toby Bradshaw
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Now that the sun is setting, the back yard is in the shade. From the cabin window in Christmas Valley I can see two cottontails and a jackrabbit nuzzling the cool, damp lawn – a little oasis in the high desert. A covey of ten quail, shepherded by the ever-vigilant cock bird, is picking its way through the sagebrush to find water before going to roost. Neither the rabbits nor the quail seem to notice the four Harris's hawks on their bow perches. For that matter, the hawks aren't paying much attention to their "quarry," either.

The hawks are relaxing, putting over the crops they earned by hammering 11 jackrabbits during this morning's hunt. The 11th jack was especially memorable – it

made the mistake of bolting from the sagebrush, trying to outrun Una and Whiskey across a cut hayfield. The hawks rarely get an open shot like this in Christmas Valley, and they made the most of it. Una is perhaps not the fastest Harris's hawk ever born, but she does concentrate every ounce of her energy into pursuit. Her deep, powerful wingbeats left no doubt as to her intentions. The jack dug in for a hard turn just as Una overtook it, but Una snaked out one of her well-armed feet and sliced the jackrabbit behind the rib cage. Una's iron grip wasn't enough to handle the difference in speed and direction. Her foot tore loose when the jack spun from the impact. As the jack got its legs under it again, Una leapt off the ground and snagged the jackrabbit, again with just one of her feet. The jack took off, dragging Una for several yards until Whiskey's well-aimed head shot brought it to a stop. When I reached the gasping hawks, I quickly covered the yawning hole in the jackrabbit's side with my gloved hand, to keep the hawks from making a mess of the intestines spilling from the gash produced by Una's initial strike.

This evening, looking at Una on her bow perch, one foot pulled up, head turned upside down to watch the two cottontails chasing each other around the back yard, it is hard to believe that she is the same hawk who eviscerated the jackrabbit in the hayfield. In the past six weeks these four hawks have made more than 400 kills. Yet in the back yard there seems to be a truce with the rabbits. Apparently, like me, the hawks enjoy watching rabbits almost as much as hunting them. Almost.

My 2011 hawking season produced several personal milestones. Una, the product of five generations and 30 years of selective breeding, is the first hawk from my own breeding program to surpass 300 career kills. On the bow perch next to Una is her mother, Shadow, a truly phenomenal game hawk who, in the seven short seasons since she came to me as an eyas from Tom and Jenn Coulson, has made more than 700 kills, including more than 500 jackrabbits. This season, Tom and Jenn sent me Shadow's nephew, Xenon (an eyas out of Isis and Zippy). True to his breeding, Xenon has proven to be a joy to fly, and poison on jackrabbits. With his cousin Una flying as his cast partner, Xenon caught the jackrabbit that represented my 4000th kill with Harris's hawks. Finally, with the adoption of the new falconry regulations allowing Master

Falconers to fly as many captive-bred hawks as we wish, my two casts of Harris's hawks made more than 500 kills in a single season, including more than 350 jackrabbits.

As these milestones were recorded in my quarry book, I could not help but reflect on the past 30 seasons I have spent catching game with 32 captive-bred Harris's hawks. Those hawks have brought to bag ten different species of rabbits and hares, in addition to a wide assortment of upland game, waterfowl, squirrels, and miscellaneous quarry of every size, shape, and taxonomic affinity. The jungles of Florida and Louisiana, the high plains of Texas and Colorado, the sagebrush steppe of Washington, Oregon, Nevada, Utah, and Wyoming, the ice plant beaches and star thistle fields of California, the blackberry thickets and volcanic islands of Washington, and the saguaro/cholla deserts of Arizona have all been scoured in search of rabbits and hares for my hawks.

The following is the essence of what I have learned about hunting rabbits and hares with Harris's hawks, distilled from 30 seasons of experience across the length and breadth of the USA. I even learned something the one season (1996-7) that I didn't go hawking – I learned that I can't be happy without a cast of Harris's hawks to fly.

> "There are some who can live without wild things, and some who cannot. These essays are the delights and dilemmas of one who cannot." Aldo Leopold, *A Sand County Almanac*

1. Almost any problem with a falconer, a hawk, or a dog can be solved (or at least made a lot better) by a solid month of hawking. And, for a newly-trained eyas Harris's hawk, its first month is the most important. The truth is that it is just as easy for a hawk to acquire good habits as bad ones. But instilling good habits requires the falconer to do the hard work up front. This window of opportunity will not come again – the hawk must learn her purpose in life at the outset, when she is most malleable.

Since bad habits are much easier to prevent than to cure, my newly-trained eyas spends at least an hour or two in the field every day of her first month. She comes home from the hunt too tired to bate, too full of fresh rabbit to scream, and thinking about nothing except chasing rabbits with her cast partner the next morning. She does a lot of

"growing up" in that month. Most of the problems with captive-bred Harris's hawks are due to arrested development – too much "manning" and "training" (and the highly undesirable food association that causes the eyas to view the falconer as a surrogate parent), but not nearly enough hunting. At this stage of her life (3-5 months of age), normal Harris's hawk development requires daily exposure to game, and to the routine of hunting with other Harris's hawks, so that she becomes food-independent and well integrated into the hawking team.

She learns to work harmoniously with her cast mates (and my dogs, when I use them) because she gets to know them well – she sees them constantly in the field and the weathering yard. She expects to make multiple kills every day, having known nothing else. Proper socialization during rearing, training, and hunting leads her to respect the other hawks on the kill. Never having been fed directly on a kill, she is not possessive of the dead rabbit, and comes off every kill cleanly for a modest reward. She has shared dozens (perhaps hundreds) of kills with her cast partner and me – we are part of her routine at the site of every kill.

She flies with the power, cunning, teamwork, and style that can only come from hard-won experience hunting day after day in all weather and many types of terrain, learning from experienced cast partners. Once properly made, a Harris's hawk lives for the hunt, and provides high-quality sport for the next decade or two. A month of effort (although I don't think of it as work!) on my part is a small investment with a large payoff.

Any problem with falconers, hawks, or dogs that can't be solved by a month of hunting generally requires medical attention, or a bullet.

2. Blood will tell. When obtaining a new Harris's hawk for falconry, there is no substitute for good breeding. While I can appreciate that some falconers enjoy the challenge of getting the best performance from whatever hawk they happen to be flying, I have a much different strategy. I want to start with the very best "raw material" available, and then make the most of *that* hawk. My favorite part of this strategy is that selectively-bred Harris's hawks are easier to train *and* more capable in the field, so I get better results with less effort than a falconer who is not choosy about the hawks s/he flies.

The best eyas Harris's hawks come from deliberate, thoughtful selective breeding for traits that really matter for falconry – tameness, hunting desire, athleticism, sociability, and intelligence. Selective breeding is a numbers game. One must fly a lot of hawks to find the best, and try a lot of breeding pairs to find those that produce the highest quality offspring. There is only one Harris's hawk breeding program on the planet that has tested enough Harris's hawks and breeding pairs over multiple generations to make a legitimate claim to selective breeding – Tom and Jennifer Coulson's. I won't fly any Harris's hawk unless it is descended from Tom's and Jenn's cream of the crop. Life is too short, and days in the field too precious, to start with anything but the best.

Anyone who believes that selective breeding doesn't work simply has not seen or flown enough Harris's hawks. If I wanted a dog capable of winning a retriever field trial, I wouldn't get a random puppy from my next-door neighbor just because it's convenient, I'd go to the top trial-winning Labrador retriever breeder in the country. If I wanted a winning racehorse, I wouldn't throw a rope around a wild mustang, I'd find thoroughbred breeder whose horses had a proven track record over many years. And when I want to catch rabbits – a *lot* of rabbits, in great style – with Harris's hawks, I don't go to my local back yard hobby breeder, or to Arizona with a bal-chatri. I call

Tom and Jenn, who have spent three decades flying, evaluating, and breeding the finest Harris's hawks that a falconer can fly. To date they have produced 948 offspring from 47 different pairings of 31 female parents and 29 male parents, across 5 generations. This is *by far* the most advanced falconry breeding program in history. Nothing else is even close.

I have had the privilege of hunting with all four generations of Harris's hawk descended from White Wing and Malcolm, and each generation has been better than the one before. How do I know? Because I have flown at least one first round draft choice from every generation head-to-head against their relatives from the previous generation.

Malcolm himself was a first-generation (Gen1) captive-bred Harris's hawk. In 1986 I flew Alpha, a Gen2 female out of White Wing and Malcolm. I had flown five Harris's hawks before Alpha, and caught more than 400 head of quarry with them, so I had some standard by which to judge her. I knew right away that Alpha was something special – super tame, incredibly persistent on quarry, a wonderful cast partner. A permanent wing injury ended her flying career in her first season, but I was solidly hooked on the White Wing (WW) bloodline. In selecting a Harris's hawk for myself, I look for these WWGen2 hawks in their pedigree: Lola, WD-40, Fleetwood, or Zeke.

For the past 12 seasons (and more than 3000 kills) every Harris's hawk I have flown has had White Wing in its pedigree, and for the past 10 breeding seasons every Harris's hawk that I've produced from my own breeding program has had White Wing on *both* sides of its pedigree. The WWGen3 Harris's hawks whose descendants have really impressed me in the field: Ten, Q, Neon, Chaco, and Rooster.

In 2004, Tom and Jenn produced a phenomenal set of WWGen4 offspring out Jenn's female, Ten. I have seen four of these nestmates fly. They are astonishing. Isis, flown by Bob Armbruster, has phenomenal talent. The family resemblance between Isis and my own Shadow (7 seasons, 713 kills, 535 jackrabbits), is unmistakable. Two males from this same clutch, ShadowJH and Hannibal, are hands down the two best jack hawking male Harris's hawks I ever seen – and that is really saying something. When Kenny Jennings was flying ShadowJH in Wyoming in 2007, he pounded monster white-tailed

jackrabbits like they were cottontails. I've never seen his equal. As Bob noted, neither ShadowJH nor Hannibal "measure" their quarry – they slam into every rabbit or hare with the same ferocity, regardless of size. That kind of reckless courage is a rare and valuable commodity. The whole falconry community is fortunate that Tom and Jenn now have Isis, ShadowJH, and Hannibal in their breeding program.

WWGen5 is shaping up as the best yet. Vici (Shadow x Chaco) is the finest jackrabbit hawk I have ever flown – even better than her mother, something I would have sworn was impossible. Vici is a very stylish flyer with a hammering stoop that has killed so many jacks on impact that I have lost count. She doesn't just *catch* jacks, she *crushes* them. Other WWGen5 names I will be looking for in the pedigrees of my WWGen6 hunting hawks: Liza, Ramona, Rita, and Xenon. And if Tom and Jenn produce offspring from ShadowJH or Hannibal, with either Jenn's Sky or Tom's Storm, get in line behind me for one of those WWGen5s! The best days of Harris's hawking are ahead of us.

To take advantage of the constant genetic improvement in each generation of selectively-bred Harris's hawks, I use a "rotation" system to upgrade my team of four hunting hawks (flown in two casts). Every year or two I train a new Harris's hawk from a promising White Wing bloodline – one whose parents I know, or whose offspring I have seen fly. If, by the end of the new hawk's first season, it is clear that she will never be as good as the other three hawks, I give away (or sell) the young hawk and start another one the following season. If, on the other hand, the new hawk shows real potential in her first season, I fly her a second season to get a read on her performance as an adult, since normally there is a substantial improvement between the

first and second seasons. At the end of her second season I decide which of my four hawks is contributing the least to the team, and give away that hawk to make room for a new eyas the following season.

In this way, the average quality of my hawks rises continually, and I get to scout a lot of top talent from which to choose my future breeders. As a by-product of my system, some lucky falconers get my "surplus," which are outstanding game hawks – miles better than the average Harris's hawk – but not quite at the absolute pinnacle of performance that I am seeking. It is a lot of work, both in breeding and in hawking, to test so many hawks. But the reward is a view from the top of the pyramid, and the view is spectacular.

3. Harris's hawks are true social animals, and cannot realize their potential in falconry, or be psychologically normal, if isolated from other Harris's hawks. Many falconers consider the sociality of Harris's hawks as a benefit to the sport, primarily because Harris's hawks instinctively understand how to cooperate with humans and dogs during the hunt. Some falconers enjoy gang hawking with other hawkers and their Harris's hawks.

Very few falconers seem to consider the ramifications of sociality for the Harris's hawks themselves. After 30 years of flying Harris's hawks, I now realize that it is not just undesirable, but actually cruel to keep a Harris's hawk isolated from others of its kind. Like all social animals, Harris's hawks have a deep-seated need for the companionship of conspecifics. If a Harris's hawk is denied the opportunity to interact socially with other Harris's hawks on a continuous basis, the need for companionship is so strong that the hawk will form an improper attachment to humans (usually the falconer) – evoking unwanted imprint-like behaviors (*e.g.*, aggression) even in a Harris's hawk that was correctly reared by its own parents.

The desired relationship between the falconer and his/her Harris's hawks is a pack bond, formed and strengthened by cooperative hunting. A Harris's hawk that has been well-bred and correctly reared knows that it is a Harris's hawk, but also accepts the falconer (and dogs, if used) as members of the hunting party.

There are plenty of good reasons to provide captive Harris's hawks with the company of their own species. From a falconry perspective, the quality of cast (or group) flying is vastly superior in style and effectiveness to flying a Harris's hawk solo. Additionally, a properly-socialized Harris's hawk can be taken to falconry meets and flown with other falconers and their hawks. Socialization is an ongoing process, and requires constant reinforcement produced by the interaction among Harris's hawks. *But by far the best reason for every Harris's hawker to have two or more Harris's hawks is that it is good – **necessary** – for the mental well-being of the hawks.*

It is worth noting that sociality is a recent evolutionary novelty in Harris's hawks, and there is some variation in this trait among individual Harris's hawks. Since sociality is more highly developed in some Harris's hawks than in others, I am careful to choose an eyas that shows good social skills, and I put a lot of effort into maintaining those skills during training, hunting, and the molt.

4. Get inside the hawk's head. The most successful falconers can think like a Harris's hawk. They understand what motivates a Harris's hawk to put forth her best effort in the field. A good falconer anticipates and avoids circumstances that make the hawk uncomfortable, or otherwise distract her from hunting.

Some falconers seem to have an innate ability to understand the hawk's perspective. When a skilled falconer walks through a crowded weathering yard, none of the hawks or falcons will bate, because the falconer is observing each hawk and adjusting his/her path through the yard to go around the nervous, fidgeting birds. At a glance the falconer recognizes the comfort zone of every hawk.

Other, less skilled, falconers seem oblivious to the hawk's state of mind. When an oblivious falconer walks through the same weathering yard, hawks are bating right and left, because the falconer doesn't understand the hawks's body language.

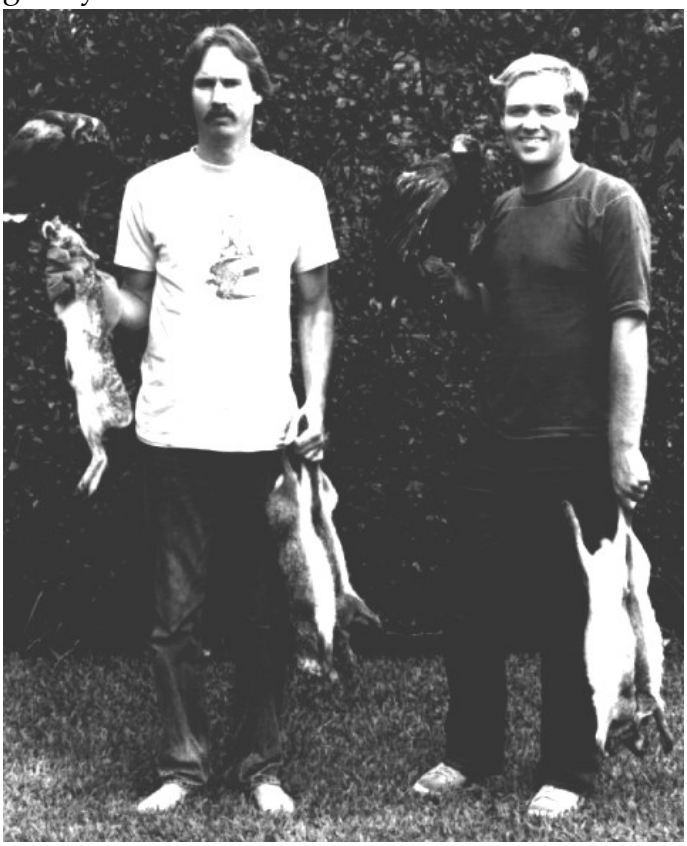
Whereas the unskilled falconer may obsess about the flying weight of the hawk, the talented falconer realizes that the hawk's body weight is just one of many influences on her desire to hunt, and her willingness to operate under the falconer's control in the field. Harris's hawks are especially complicated in this regard, because of their social nature. For instance, Harris's hawks flown in casts or groups can always been flown successfully at higher body weights than when flown solo. The competition between the cast partners produces more intense pursuits on quarry, and the hawks follow the falconer (and dogs) much better when they are a team, rather than hunting as individuals. In addition, the falconer flying Harris's hawks must also learn the language that Harris's hawks use to communicate among one another.

Even falconers without a natural gift for "reading" hawks can learn this valuable skill by carefully observing their hawk's behavior (*e.g.*, body position, vocalizations, eye and head movements, feather tightness), and by thinking constantly about how the world looks through the hawk's eyes. I take the opportunity to learn from other falconers, whose hawks and whose actions clearly demonstrate their knowledge of the finer points of the sport. Note that "years of experience" is not a good indicator of expertise. There are many "experienced" falconers who have been doing things the same *wrong* way for decades, and some relatively new falconers who have a profound grasp of hawk psychology. I've always found it interesting that falconers who come from a dog training background seem to pick up the subtleties of Harris's hawk behavior very quickly.

5. No matter how well your hawks are flying today, everything can go to hell in an instant. These disasters take two forms: those that are the falconer's fault, and those that reflect the dangers inherent in our sport. Unfortunately, I have plenty of direct experience with both types. I hope that I have learned from my mistakes, and perhaps you can take advantage of my failures and avoid them yourself.

Space limitations will not permit a full recounting of my many screwups, but I'll share a few to illustrate the point.

In 1982 I was living in Louisiana, allegedly going to grad school, but in reality spending most of my time hawking with Tom Coulson. Tom was flying a superb imprint female Cooper's hawk with many hundreds of kills in her first season, and I was flying a gamey but ill-mannered crèche-reared Harris's hawk known as the Egret Hawk (for legal reasons I won't explain how she got that name, but I'm sure that you can guess). We planned to hunt the big landfill within walking distance of Tom's house. It was a long walk, though, so rather than hunt one hawk and walk back to the house to exchange her for the other hawk, we each brought our own hawk. [I'm sure that many of you can see what is about to happen.] We agreed that Tom would slip his Coops on any sparrows that flushed, and I would slip the Egret Hawk at swamp rabbits. After catching a bushel of sparrows and a couple of swamp rabbits we were feeling pretty smug about our time-saving strategy. Cue the *Psycho* shower scene music.



When a sora rail flushed, Tom and I both threw our hawks. I guess that since we had hawked rails in the past with the Coops and the Harris's hawk (separately), and since we had talked about sparrows and rabbits but had not discussed what to do if a rail flushed …

Of course, Tom's Cooper's hawk got to the rail first, but the Egret Hawk had no intention of robbing the Coops – she went for a two-fer. When Tom and I got to the

scene the Egret Hawk was squeezing the Cooper's hawk by the head. But even an accipiter's brain isn't impervious to damage, and Tom's Coops died the next day.

Tom and I are still good friends. I hope that I would have been so magnanimous if our roles were reversed.

[The Egret Hawk met her end a few years later. Tom was flying her at a NAFA meet in Amarillo. The Egret Hawk caught a barn owl, and one of the owl's needle-sharp talons hooked her in the abdomen. She died from the infection. Live by the sword, die by the sword.]

Another lapse in judgment almost cost me the friendliest game hawk I've ever had, Killer (WWGen3 out of Lola). And I was dumb enough to make the same mistake twice in the same week. In 2002 I was flying Killer and Milo (WWGen3 out of Wo). Back then I didn't use telemetry on my Harris's hawks. How far could a Harris's hawk go, anyway?

I took Killer and Milo up to Whidbey Island to hawk cottontails over my dogs, Tip and Gator. Typical of western Washington, the cottontails on Whidbey use Himalayan blackberry as their principal cover. A friend of mine on the island said he had seen a lot of bunnies near a gravel pit, so we tried that first. The blackberry bushes were enormous, surrounded by towering Douglas-fir. The hawks and dogs were out of sight most of the time – the dogs were pushing rabbits through the blackberries, with the hawks high overhead, invisible in the dark foliage of the tall trees.

After an hour of this I was ready to try a better spot, so I called the hawks and dogs in. Tip and Gator showed up, bleeding from thorn cuts, and Milo appeared after a short time. But no Killer.

We had a search party of at least a dozen people, but Killer was nowhere to be found. From 8AM until almost dark we looked for her. I thought I heard bells a couple of times, but could never locate the source precisely. Right at dark I caught the sound of bells again. I found Killer climbing through a blackberry bush the size of a school bus. When she finally got to the top I could see that she had a mammoth crop. She had spent all day eating the rabbit she had caught first thing in the morning. But Killer loves people, and flew right down to my ungarnished glove. What a relief!

When I got home I scrabbled around in my falconry equipment drawer until I found my one and only transmitter, an old leg-mounted LF-2. [I didn't have a receiver – I planned to borrow one if I needed it.] I ordered another transmitter so I could wire both hawks, and a receiver so I would be self-sufficient if I lost another hawk. I swore that I'd never fly Killer – my top-scoring game hawk at the time, and still my sentimental favorite after all these years – without a transmitter again.

It didn't take me long to break my vow. The next weekend I was hawking in eastern Washington sagebrush. My new transmitter hadn't arrived, so I put the one transmitter on Milo and flew him alone. He caught a few cottontails, and I headed back to the truck to swap him for Killer. Then I got the bright idea of flying Milo *with* Killer. I'd just leave the one transmitter on Milo, since anywhere Killer went, Milo would surely follow, right? Apparently I wasn't even able to remember that Killer had spent the past Saturday eating a rabbit that Milo never saw.

Within a half hour Killer had disappeared again. The wind was strong, and I couldn't hear bells. Milo, of course, stayed right with me the whole time. I looked for Killer until dark without success. It was Sunday, and I had a class to teach in Seattle the next day. So, reluctantly, I had to leave Killer, lost, and drive home. I richly deserved every bit of the misery I had brought upon myself.

Miraculously, on the drive home I got a call from Taffy Mercer, a falconer who lives near where I was hawking. She had Killer! Here's how it happened:

Two kids had been looking for lizards by flipping sheets of metal and plywood in the sagebrush field behind the Lowe's in Kennewick. When they flushed a cottontail from under a piece of plywood, they were astonished when a hawk thundered past them and slammed the bunny. The kids ran home to get their mother. The mother recognized that the bell on Killer's leg meant that she was a trained hawk. When Killer finished gorging on her cottontail, she hopped up to the mother's arm, and feaked on her hand. [I wasn't kidding when I said that Killer is friendly.] Even though Killer wasn't wearing jesses, she rode the mother's

arm all the way to their minivan and back to her apartment. Through a series of phone calls they located Taffy, and Taffy looked up Killer's band number on BaywingDB.

No Harris's hawk of mine has flown without a transmitter since. I figure that I've used up my allotment of good luck. Twice.

But even if falconer error could be eliminated as a source of tragedy, there are risks inherent to hawking. I've written about *Neon's journey to the center of the earth*, in which Killer and Neon (WWGen3 out of WD-40) both vanished in the space of a few minutes while hawking in Wyoming. This one has a happy ending.

Unfortunately, not all such stories end well. And, because the best hawks are those who take the most chances in their flying, they are most at risk.

Killer's (and my) luck finally ran out on 3 September 2003, when my dad and I were on a hawking road trip through the sagebrush country of Washington, Oregon, Idaho, Nevada, Utah, and Wyoming. I was flying Killer, Milo, and Q (WWGen3 out of Lola). The hawks were in top form. The wide open spaces of the wild west were crawling with black-tailed and white-tailed jacks, as well as cottontails and the occasional pygmy rabbit. We had some fabulous flying, and our ice chests were packed with rabbits to feed my breeding pairs the next spring.

It was the last day of our trip, hawking the short sage just south of Elko, Nevada. I had all three hawks out for the final hunt. After a couple of hours my game vest was cutting into my shoulders under the weight of the morning's catch. We headed back to the truck, ready for the long drive back to Seattle.

Even though Killer's crop was bulging, when the jackrabbit flushed far ahead of us she was off like a rocket. The jack was in high gear, but Killer flew it down and snagged the jack's hindquarters just as the rabbit smoked through a tunnel in the sage. I didn't hear the jack scream, and Killer didn't rebound, so I thought that maybe she had secured the jack's head before it make a sound. But when I got to the last place I'd seen them, Killer

was lying motionless, limp, eyes closed. She didn't regain consciousness until we were back in the truck.

The damage to Killer's neck prevented her from standing up for more than a week. She never flew again. No doubt she sustained other internal injuries, because even as a breeder she has difficulty laying eggs.

Every longtime falconer knows that euphoria and despair can be – and often are – separated by a just a few seconds. I was with Tom Coulson when his new young female Harris's hawk caught her first swamp rabbit. A hawk's first kill is always a cause for celebration, especially when we were sweating and gasping in the sweltering heat of a Louisiana summer after working the obscenely thick cover like madmen to flush rabbits for the inexperienced eyas.

We plopped down on the ground next to the victorious hawk and her vanquished swamp rabbit. Tom opened up the rabbit's chest cavity to reward the hawk. The hawk tore off a sliver of the rabbit's lung, and right before our eyes she suffocated in a matter of seconds when the chunk of lung expanded and blocked her trachea. Dan Pike lost his outstanding male Harris's hawk, Deion (Neon's brother), the same way, when Deion choked on the front leg of a rabbit he had just caught. The tragedy is magnified when the hawk's death follows immediately on the heels of success in the field.

Falconry disasters don't come any bigger than Hurricane Katrina. On 28 August 2005, Tom and Jenn Coulson had the best Harris's hawk breeding program in the world, and nearly 50 of the best hunting hawks ever flown. By the next day all but one of those hawks were drowned.

The moral of this story? Enjoy it while you can. And if you have a low tolerance for disaster, falconry is not for you.

6. No matter how terrible your hawking seems now, if you are willing to put in the effort and the thought, you can develop a team of Harris's hawks that will make (almost) every day in the field an absolute pleasure. After Alpha's wing injury sidelined her, at my request Tom and Jenn sent me an eyas male Harris's hawk whose mother was exceptionally fast on the wing. [I didn't have the good sense to ask for

another White Wing offspring until the following year.] I named the new male Bravo, and have named my Harris's hawks in alphabetical order ever since Alpha.

Bravo was, without a doubt, the most worthless Harris's hawk I've ever flown. It wasn't that he was tiny (460g). The problem was that he had very little desire to chase anything. Bravo was, as expected from his breeding, very quick and fast, but it didn't serve much purpose since he never used his speed to catch anything. In addition, he refused to take a high perch where he might have some chance of seeing a rabbit. I well remember "hunting" with him along some railroad tracks in western Washington. Bravo did not sit on top of the train cars. He didn't even sit on the tracks. He stood in the gravel between the railroad ties – the lowest possible place he could find. Jerry Fraulini nicknamed him "Brav-low."

The NAFA meet was in Lamar, Colorado that year. At a local farm there was a big, shallow pit full of the usual farm junk, and absolutely overrun with cottontails. A bunch of us from Louisiana and Washington hawked this pit one afternoon with our Harris's hawks. I don't recall the total number of cottontails caught (probably because I am trying to blot out this memory), but it was many dozens. Bravo's share of this bounty? Zero. ***ZERO.*** I would have done better to hunt the rabbits with my bare hands.

I sent Bravo to England the following week. I never wanted to encounter him or his genes again. Could a more dedicated falconer have made something out of Bravo by investing a lot of time and effort? Perhaps. But I have no patience for trying to make rhinestones look like diamonds, when there are plenty of real diamonds to be polished.

Jerry Fraulini saved my hawking season by finding me a hand-me-down intermewed female Harris's hawk that I named Charlie. A polar opposite to Bravo, Charlie was not satisfied until she was standing atop the highest available structure. She was an absolute riot to fly on both sides of the Cascades in Washington. Within a few weeks Charlie had caught 37 cottontails, and I felt that I had finally turned my season around. Persistence does pay off.

I was hunting with Charlie along I-405 near Renton, Washington. She mounted up to the tallest power pole in the vicinity, and when the dogs flushed a cottontail across the

open, Charlie pulverized it. After eating her reward in the damp grass, she headed back for the power pole. Her wet feathers hampered her climb, and she was killed instantly when she landed short of the top, on a transformer. See "everything can go to hell in an instant," above.

My next hawk, Delta, was another daughter of White Wing and Malcolm. On her first day in the field she caught a cat that Gator had treed (after he killed a couple of the kittens that didn't make it to the tree in time). The cat chewed up Delta's leg, and she died from the infection.

So, in the span of less than two seasons, I had a great hawk permanently injured (Alpha), a terrible hawk (Bravo), a fine hawk electrocuted (Charlie), and a hawk with a lot of potential killed by a cat (Delta).

But despite these setbacks (and quite a few others since then), I have kept working to improve the quality of my hawking, and it has been successful. Tom and Jenn Coulson, Jerry Fraulini, and Dan Pike bailed me out several times along the way.

But the award for the greatest comeback in Harris's hawking history must go to Tom and Jenn Coulson, after Hurricane Katrina. Within a couple of years after having their falconry and breeding programs wiped out (and having been nearly killed themselves), Tom and Jenn are producing the best Harris's hawks that have ever been flown. They were able to rebuild because they had sent excellent hawks to so many falconers around the U.S. (and the world, for that matter), and those falconers were honored to help Tom and Jenn re-populate their Harris's hawk breeding chambers in Louisiana.

So, no matter how bad things may be at some point in your falconry career, remember that Tom and Jenn have come back from infinitely worse.

7. Learn the natural history of the hawks you hunt with, the quarry they pursue, and the land you hunt over. I'm amazed at how many Harris's hawkers have never seen a Harris's hawk in the wild. It is much easier to understand Harris's hawks in falconry if you are familiar with their natural history. My wife, Moira, and I were in Baja California in February of this year, and saw a group of nine adult Harris's hawks leapfrogging through the cardón forest (cardón is a large cactus, similar to a saguaro) on a search and destroy mission. I half expected to hear bells – they looked just like a typical group hawking expedition.

I have had wild Harris's hawks join the flight in Arizona, and have seen family groups of Harris's hawks on jackrabbit kills in west Texas. On those rare occasions when I have seen a wild Harris's hawk by itself, usually on a power pole, it is only because the rest of family is perched unobtrusively in the mesquite or palo verde below. If you doubt this, throw out a bal-chatri and the family will come out of the woodwork.

Wild Harris's hawks live and hunt in groups. So do my captive-bred hawks.

An understanding of natural history makes me a better hawker. Climate and geology determine the native vegetation. Vegetation provides food (and, often, cover) for herbivores like rabbits and hares. With the online availability of weather/climate information, vegetation maps, and landform images (*e.g.*, Google Earth), it is possible to do considerable scouting for rabbits by computer. This is no substitute for on-the-ground scouting, but it does help me identify areas that are worth scouting in person.

I know that I am more likely to find jackrabbits in sagebrush than in the alkali flats dominated by greasewood. Pygmy rabbit burrows give away the location of these highly specialized lagomorphs. If I need to find a cottontail to enter a new eyas Harris's hawk, I know where to find the junk car out in the sagebrush, or the abandoned prairie dog town, or the low briars.

The prevalence of botfly larvae and tapeworm cysts in jackrabbit carcasses, and the number of coyotes I hear at night, help me predict next year's jackrabbit population numbers. In high latitudes I avoid hunting during the rabbit breeding season, so that I don't kill next year's rabbits before they are born.

In addition to its practical value for finding hunting spots, an interest in natural history makes the hunt itself more rewarding. On the day that Xenon made the 4000th kill of my Harris's hawking career, I found an obsidian arrowhead, a beautiful piece of craftsmanship from the Archaic period, between 1500 and 4500 years old. Hunting has a 14,000 year tradition in the Great Basin, and I help keep that tradition alive.

I try to learn the natural history of every plant, bird, snake, lizard, and mammal in the areas that I hunt. I spend some time studying the landforms and current land use, both as a matter of historical interest and as a clue to where game may be found.

Aldo Leopold, the father of modern conservation biology, called falconry "the perfect hobby." His son, Carl, was an avid falconer. Tom Cade wrote that falconry is "basically a special form of bird-watching" – the participatory nature of hunting with Harris's hawks is the aspect that I enjoy most. Falconers have left a remarkable natural history legacy since the time of Frederick II – I want to be a part of that.

8. Keep a detailed falconry journal and take photos. My hunting day is not complete until I have made a few detailed notes in my falconry journal. I comment on the weather, the hawking locale, and memorable flights – not all of which end in victory for

the hawks. The hawks's body weights and quarry taken are recorded. At the end of the season I like to write more extensively about my impressions of each hawk, while the memories of their comparative performances are still fresh in my mind.

As each new season begins I look back at my journal to help decide starting weights for the hawks, and deal with any special needs that each hawk may have. But the value of my journal to me is not mostly technical. The real reason that I keep a journal is to relive the wonderful (and not-so-wonderful) days in the field. For instance, when training a hawk it always seems to me like it is taking a long time, but when I re-read my journal I find it fascinating how quickly a well-bred Harris's hawk goes from breeding chamber, to first kill, to a full partner in the hunting enterprise.

It only takes a few scribbled words to bring each of those memories back, making it well worth my time to keep a journal. I also keep summary statistics on each hawk – kills by quarry type and year, number of days in the field, and an overall total for my hawking teams across the years. Much of these data are found in BaywingDB.

I should take my own advice and spend a little more time with a camera in the field. Most of the photos of my hawking adventures were taken by others – my dad, Jenn Coulson, or Aaron Smith. Now that my dad is gone I may have to pick up the slack for myself.

As the saying goes, "without pictures it didn't happen."

9. Try new things. U.S. Harris's hawkers are very fortunate – in the Lower 48 we have more than a dozen species of rabbits and hares to hunt, and they are found in an unbelievably wide range of habitat types. Every species and every habitat type is huntable with a good cast of Harris's hawks.

In 1998 I was flying Jupiter (WWGen3 out of Lola) in his first season. Dan Pike and I used the Christmas holiday to go on safari for three species that our hawks had never caught – brush rabbits (*Sylvilagus bachmani*) in coastal California, and desert cottontails (*S. audubonii*) and antelope jackrabbits (*Lepus alleni*) in the Sonoran Desert of Arizona, near Sierra Vista. My daughter, Bridget (7 years old) and my dad came along for the experience. Tom and Jenn Coulson would meet us in Arizona.

Of course, I had investigated the natural history of all these species by reading extensively. Brush rabbits (sometimes known as "blue-bellies" for the steel-blue color of their belly fur) are notorious for living in impenetrable thickets, and for rarely venturing out into the open. So Dan and I brought our Jack Russell-beagle crosses to help flush these elusive rabbits.

Bill Murphy (Watsonville, California), who had caught many brush rabbits with Harris's hawks in years past, generously volunteered to take us to some of his prime hunting spots on the coast. When we arrived at the appointed location, Dan and I were fully geared up for the expected cover – rubber boots, chaps, gloves. We were used to dealing with bloodthirsty Himalayan blackberries at home, after all. Bill, on the other hand, was wearing a T-shirt and flip-flops (those crazy California hawkers!). We assumed that he was planning to watch from some distance, or perhaps not go hawking at all.

Bill was very patient as Dan and I thrashed some car-sized briars with our beating sticks, while we encouraged our dogs to work the cover. There was a bit of cottontail sign around the briars, but not much.

After about a half hour of this frantic (but fruitless) effort, Bill finally said, "Why don't we go over the hill where the brush rabbits are?" The only "hill" was a big sand dune, and beyond the dune line was the Pacific Ocean. Based on what I had read about brush rabbits, we weren't going to find them on the *beach*.

However, since we clearly were not doing very well in the briars, Dan called Dusty (seven times intermewed, out of Phoenix and Salem, from the Harry/Harriet line of Harris's hawks) and I called Jupiter. Off we went, following Bill.

Sure enough, on the other side of the dune there was nothing but ankle-high ice plant and goldenbush, comfortably negotiated in a T-shirt and flip-flops. To say that I was skeptical about finding brush rabbits in this kind of "cover" is the understatement of the century. This whole thing was shaping up to be a wild goose chase, without the goose. The only redeeming feature was the stunning scenery – giant fog banks rolling in off the Pacific, and a sweeping view of a beautiful coastline.

The dogs were certainly happy to be running around in such pleasant surroundings, and we hadn't been there five minutes before they were yipping on trail. This rabbit wasn't alone. It turned out that the benign beach vegetation was absolutely crawling with brush rabbits! Dusty took full advantage of the light, soft cover, and in short order had brought three blue-bellies to bag. Jupiter was outmatched by Dusty's vast experience, but did manage to catch one for himself.

Of the many, many places I have hunted rabbits with Harris's hawks, the brush rabbits on the beach stand out as the most surreal. It was like rabbit hawker's heaven – gorgeous country, wonderful climate, easy cover, great opportunity for slope soaring, plenty of rabbits (and jackrabbits, too!). We thanked Bill profusely, and then decided to leave before we became spoiled. Besides, it's hard to get anyone to trade flip-flops for rubber boots, at least in California.

[We had a great time in Arizona, and caught numerous desert cottontails. But we never saw an antelope jackrabbit. It would be another dozen years before that dream would be realized.]

The sagebrush steppe of western North America is still my favorite hunting grounds, and the spicy smell of wet sagebrush after a thunderstorm is still intoxicating after all these years. But I make regular forays into new habitats, hunting for new species of rabbits and hares, because I like to explore. I think my hawks enjoy it, too.

Good hawking!

Toby Bradshaw
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