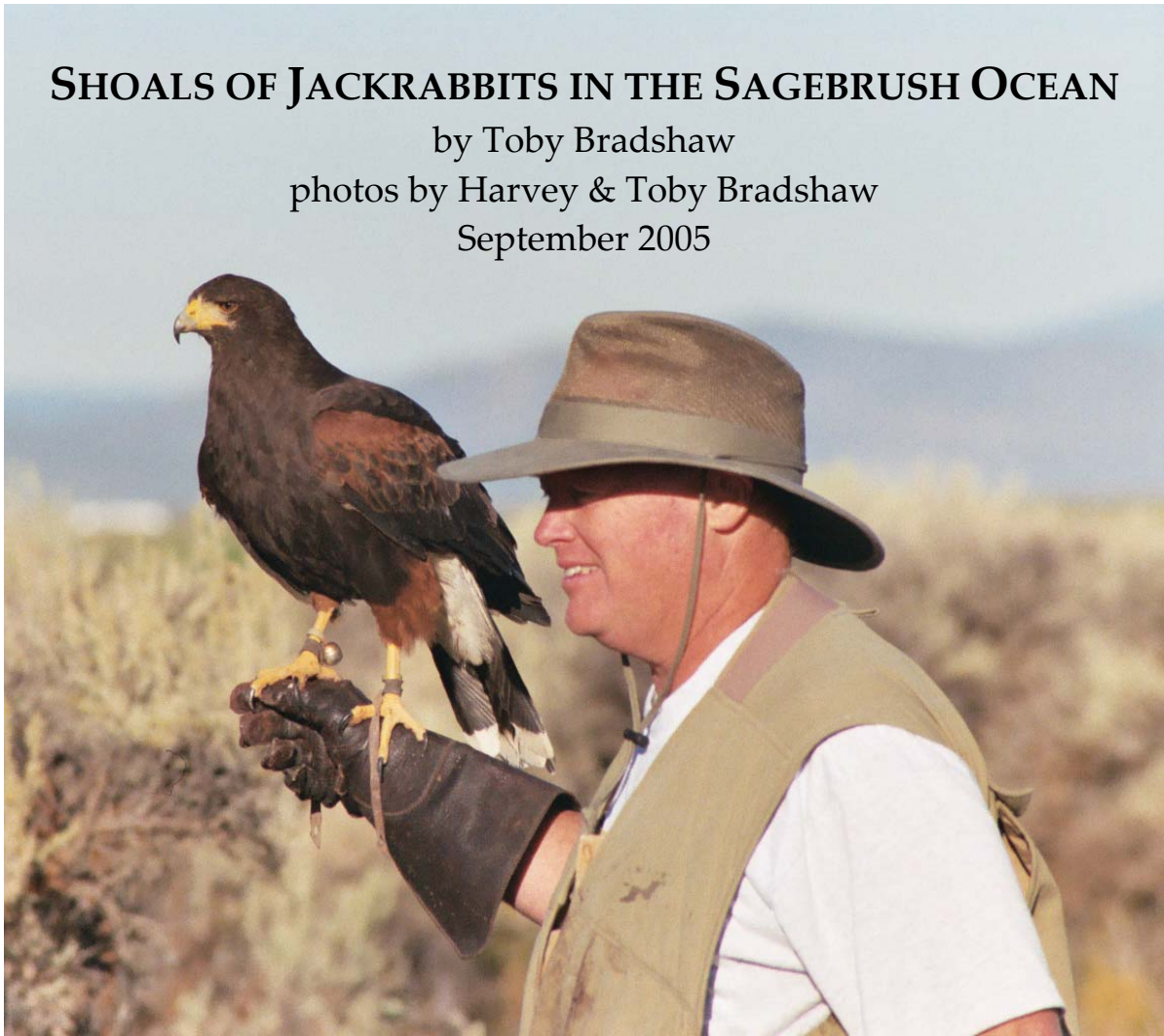


SHOALS OF JACKRABBITS IN THE SAGEBRUSH OCEAN

by Toby Bradshaw

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The Phenomenon

Some of the most awe-inspiring spectacles of nature involve overwhelming numbers of animals – the spawning migration of salmon that fills a river with fish from bank to bank, swarms of locusts that darken the sky and leave a denuded landscape in their wake, and immense swirling clouds of broad-winged hawks over Hawk Mountain riding the thermals south for the winter. Such a spectacle of animal excess is occurring right now in the northwestern Great Basin. In south-central Oregon populations of black-tailed jackrabbits have risen to numbers that would qualify as a biblical plague. Of course, one man's plague is another's once-in-a-



decade hawking opportunity. What better way for a die-hard rabbit hawker to spend six weeks of the summer than to wade waist deep in the sagebrush ocean, plundering the shoals of jackrabbits with an eager trio of female Harris's hawks?



The Place

Ground Zero for the jackrabbit population explosion is Christmas Valley, Oregon. Grab your road atlas and look at the map of Oregon. Head south and east out of LaPine on Highway 31 and you are in the Oregon Outback, the one place in the Lower 48 that is farthest from an interstate highway. Christmas Valley (human population *ca.* 250) is more or less in the middle of nowhere: roughly 100 miles from Lakeview to the south, Burns to the east, and Bend to the northwest. Christmas Valley is so remote that the Sunday newspaper doesn't arrive until Monday (from Bend). The Chevron station sells the most expensive gasoline in Oregon. There are only two paved roads in town, and this summer they are positively greasy with



jacksplat. It is nearly impossible to drive more than a couple of miles at night without flattening a jackrabbit as they cross the road in herds, running from their evening banquet in the alfalfa fields to the security of the sagebrush. The ravens and magpies find dozens of fresh jackrabbit carcasses on their morning road patrol, and definitely are living large.

Cyclically high jackrabbit populations in Christmas Valley are nothing new. This part of the Great Basin, from Ft. Rock to Paisley, has been continuously inhabited by people for at least 13,000 years – as long as humans have lived in North America (<http://darkwing.uoregon.edu/~ftrock/>). Even as the post-Pleistocene climate became warmer about 10,000 years ago, eventually drying up the lakes and marshes that became today's valleys and alkali flats, jackrabbits formed a major part of the diet of the earliest residents. Giant piles of charred jackrabbit bones suggest that rabbit drives were organized, killing hundreds of jackrabbits at once for a prehistoric feast (<http://www.ncn.com/~gilsen/webdoc7.htm>). Walking in Christmas Valley today it is common to find obsidian flakes from the manufacture of arrowheads, dart points, and other cutting tools by ancient hunters. These bits of black volcanic glass, shaped by human hands thousands



of years ago, provide a sense of continuity for me, engaged in the same activity as the first people to live in Christmas Valley.

I was introduced to Christmas Valley almost 20 years ago by longtime falconers Larry and Karen Cottrell of Klamath Falls, Oregon. The Cottrells invited Jerry Fraulini, Lee Mann, a teenage Dan Pike, and me to the high desert in Paisley (65 miles south of Christmas Valley) to hunt jackrabbits in the dead of winter. We camped in the Cottrell's teepee, fended off the single-digit temperatures with a cheery fire in the center of the floor, and warmed our insides with Larry's justifiably famous elk stew. One afternoon Larry led an expedition to Christmas Valley to show us the pygmy rabbits that burrow into the deep valley soils. We saw several of the little chocolate-brown bunnies darting through the tall sage,

located their burrows, and learned to distinguish their tiny BB-sized droppings from the cottontail and jackrabbit pellets that festooned the ground.

In addition to pygmy rabbits and black-tailed jackrabbits, Christmas Valley is home to many other iconic animals of the Great Basin – pronghorn, sage grouse, sage thrasher, and sage sparrow. Falconers will enjoy watching the red-tailed hawks, Swainson’s hawks, ferruginous hawks, Northern harriers, prairie falcons, kestrels, and ospreys. There are so many golden eagles in Christmas Valley (mainly in winter) that the power poles are equipped with inverted V’s on the crossarms, to prevent eagles from landing on the crossarm and being electrocuted by spanning the wires with their wings. Harris’s hawkers will be especially interested in some of the other wildlife in the valley, which add variety to the bag: Nuttall’s

cottontails and California quail. (As an aside, I have never seen so many quail in one place. A Cooper’s hawk would need to pull a wagon to haul away the kills.)



Since that first journey to Christmas Valley two decades ago, Dan Pike and I have made several return trips to Christmas Valley, usually enroute to other hawking locations. In most years the jackrabbit hawking is good, but last summer when I swung through Christmas Valley on a family vacation I was astonished at the number of jackrabbits. Chatting with local farmers and hunters confirmed my suspicion that the jackrabbit population had been climbing for the past several years, and was as high as anyone could remember. Then and there I promised myself that I would return to Christmas Valley in the summer of 2005 to hawk the crest of the jackrabbit wave.

Because my “day job” is as a Professor of Biology at the University of Washington, most of my long stretches of free time occur in the summer and early autumn. Christmas Valley is among the best summer hawking locales in the country, and not just because it is crawling with jackrabbits. The valley floor stands at 4400 feet of elevation, so mornings are pleasantly cool – average lows are in the 40s (Fahrenheit) and average highs are a very tolerable 80s or low 90s. On about half the mornings in late summer it is cold enough to see your breath. This year we got our first frost on 24 August. By early September, morning frosts are the norm. And, even though the wind comes up every afternoon with the rising temperature, mornings are almost always dead calm. In fact, this summer

we had 33 consecutive days of windless mornings for hawking. Anyone who hunts jackrabbits with Harris's hawks will appreciate how delightful a spell of calm, cool weather can be! After cutting my teeth hawking swamp rabbits in the suffocating heat and humidity of Louisiana in the summertime, Christmas Valley summers seem like a slice of heaven.



Christmas Valley has only one real economic engine: alfalfa hay production in circular fields irrigated by center pivots. Known for its exceptional quality, Christmas Valley hay is trucked to dairy operations throughout Oregon and Washington. The dairies in Lynden, Washington, less than a mile from Dan Pike's house on the Canadian border, send a steady stream of 18-wheelers on



the 1100-mile round trip to Christmas Valley. If you live in Washington, your milk shake is the product of Christmas Valley alfalfa.

These quarter-section (160 acre) center pivot alfalfa fields, adjacent to BLM land vegetated with sagebrush, rabbitbrush, and (on alkali flats) greasewood, are essentially high-production jackrabbit nurseries. The alfalfa fields provide unlimited protein-rich food, as well as water that is otherwise scarce in the high desert, while the sagebrush provides natural cover for protection from winter weather and escape from predators. The alfalfa closest to the sagebrush is mowed right to the ground by jackrabbits. Needless to say, alfalfa farmers roll out the red carpet for jack hawks!



Note the heavy grazing damage done by jackrabbits around the perimeter of this center pivot alfalfa field.

Jackrabbit populations can grow almost unchecked in circumstances like those found in Christmas Valley. On the “supply side,” a doe jackrabbit produces 2-6 young every six weeks during the breeding season, from February to June. The young born in February become sexually mature by early summer. You can do the arithmetic, if you’re good at logarithms. On the “demand side,” jackrabbit mortality was low this year because the winter of 2004-2005 was extremely mild, and canine parvovirus seems to have hammered the valley’s coyote population. The jackrabbit’s other predators – golden eagles, ferruginous hawks, bobcats, foxes – apparently could not keep up with the burgeoning jackrabbit numbers.

“Jackrabbit stories” can become like “fish stories,” so I will just say that in 25 years of hawking, from coast to coast and border to border, I have never seen anything quite like the jackrabbit population in Christmas Valley this year. In mid-July, it was ordinary to see many hundreds of jackrabbits in a one-



hour evening drive around Christmas Valley. The jackrabbit eyeshine reflected from spotlighting the edge of an alfalfa field looked like a sky full of orange stars. (And, in case you’re wondering, spotlighting jackrabbits is legal on private land in Oregon.) Waves of jackrabbits were frightened from the alfalfa fields by the sound of the truck driving past. The fleeing jackrabbits literally raised a cloud of dust as they ran. Dan Pike and I counted more than 30 jackrabbits crossing a two-track road in less than 15 seconds. Beyond that, counting the jackrabbits we saw would be as hopeless, and as pointless, as counting the hairs on a dog.

Every square inch of ground is pebbly with fresh jackrabbit droppings. The dusty roads are intersected by jackrabbit trails so wide that they look like a superhighway. In five short evenings of shooting jackrabbits as hawk food for Dan’s breeding project, “Deadeye” Andy



Scheffer shotgunned more than 200 jacks, packing a chest freezer six feet long from top to bottom. While hawking every morning there is nearly constant action, with hawks in pursuit until they are gasping for breath. Frequently the hawks have several jacks in sight at once. You can practically watch the hawks deciding, “Which one to chase?” It is a target-rich environment, to say the very least.

When I compare the abundant wildlife in the Oregon Outback to my home state of Washington, driving the 450 miles from Seattle to Christmas Valley makes perfect sense. In eastern Washington, most of the sagebrush steppe has been converted to agriculture. Animals that depend on sagebrush are in deep trouble. Pygmy rabbits are extirpated, or nearly so. Sage grouse are listed as endangered. Black-tailed jackrabbits are being considered for listing as threatened or endangered. In Washington there is no open season on jackrabbits. The daily bag limit for cottontails (in season) is five. In eastern Oregon there is no closed season and no bag limit on either black-tailed jackrabbits or cottontails. The \$76.50 I paid for an Oregon nonresident small game license is a real bargain!

Even though it is in the middle of nowhere, Christmas Valley does have two motels with a total of 26 rooms – the only lodging for 60 miles in any direction.

We stay at the Lakeside Terrace Motel, run by Carmen and Kerry Cardwell. The motel staff is very hawk-friendly.

There is a well-watered shady lawn for weathering the hawks. Christmas Valley Lake, just a few yards from all

10 rooms, is the only decent-sized body of water in the vicinity, attracting ospreys,



ducks, geese, coots, grebes, yellow-headed blackbirds, and a remarkable variety of shorebirds including stilts, avocets, phalaropes, yellowlegs, and killdeer. Dozens of quail parade

through the motel grounds every evening on their way to the lake for water.

Several species of swallows collect insects over the lake, with nighthawks taking over at dusk. Mountain bluebirds sit on the electrical wires. I've even seen a few Lewis's woodpeckers flycatching over the lake. More than once we've had the local prairie falcon make a firing run along the lakeshore, scattering the killdeer. It's a fine place to relax after a good morning of hawking.



The Hawks

I brought three female Harris's hawks to Christmas Valley this summer, so I felt well prepared to deal with the expected phalanxes of jackrabbits. My most experienced jack hawk is Q, bred by Tom and Jennifer Coulson in 2003. Q is out



of the Coulsons's famous female Lola, and a granddaughter of White Wing. Q's older sister, Killer, is the best jackrabbit hawk I've ever had or ever seen. Lola's offspring are renowned for their tameness and hunting desire. Q is an excellent example of this. She jumped to my glove the same day she was pulled from the breeding chamber and air-freighted across the continent, then made her first free flight and first kill 10 days later. Q is a stylish flyer, almost like an oversized tiercel, who uses a variety of attack modes on jackrabbits. The most fun to watch is a

hard climbing attack, with Q keeping the jack in sight until she is directly overhead, still gaining altitude. She folds into a slashing stoop when the jack pauses, or digs in for a hard turn. When she hits the jack from her 20-foot pitch it sounds like a sledgehammer on a watermelon. Like Killer, Q has an uncanny ability to spot jacks far ahead in the thick sage. Q is able to track several different jacks at once, weighing her options before choosing a prospective victim. When she decides to attack, sometimes Q will whip into a low, high-speed run to stay out of the jack's vision, then pop over the sage at the last second to make a short twisting stoop, hoping to catch the jack by surprise. She rarely uses the very high pitch-up and teardrop wingover that made Killer so deadly on jacks in the heavy sage. On the other hand, Q is a much better cottontail hawk than Killer ever was, always in good position, and constantly looking for a high perch in just the right spot. Q, just like Killer, is very independent in the field, perfectly capable of finding, flushing, catching, and killing her own jackrabbits. She often takes stand a hundred yards in front of me, knowing that most jacks are sneaking ahead. She is happy to ride on my glove as long as I provide a good perch. As soon as I turn back in the direction of the truck, even if the truck is a mile away, Q hops off the glove, not wanting to hunt to end. She is too clever for her own good, and certainly too clever for me! The resemblance in personality between Q and Killer is a testament to the power of genetics and the Coulsons's selective

breeding program. Killer was “a natural” on jackrabbits, but jacks have been an acquired taste for Q. Still, I can always count on Q to put in a good effort on jacks. In her first two seasons Q accumulated 43 jackrabbits in her total bag of 183.

Shadow is Q’s niece, bred by the Coulsons out of Lola’s daughter Ten in 2004. Shadow doesn’t quite have Q’s flair for the dramatic, but what Shadow may lack in artistry she makes up for with unbridled enthusiasm and a child-like faith that I can find rabbits for her to chase. She thinks my glove is the magic place from which jackrabbits materialize in the distance. Shadow will fly hundreds of yards to be with me. She employs one attack style almost exclusively, uncomplicated but effective – a full-afterburner, deep-wingbeat pursuit ending with a crunch into the sagebrush sounding like an anvil thrown into a tub of corn flakes. She has a bone-crushing grip and almost never loses a jack once she touches it, even if she can only get one foot on it. Perhaps her greatest asset is a hyperactive blast-furnace metabolism that enables her to eat a big crop of jackrabbit and still produce a casting, as predictable as Old Faithful, before sunrise every morning. Her appetite is insatiable. She comes off kills easily, greedy for even a small food reward. Shadow hunts with intensity almost regardless of weight. She is physically tough. Because of these traits, Shadow is like Lou Gehrig – ready to play every game. She had 15 jackrabbits among her 53 total kills in her first season.



In anticipation of my summer safari to Christmas Valley, I decided to add a third Harris’s hawk to my cast from last season. Cam Griffin gave me an older sister to Q, a nine-year-old female called Delta, originally trained and flown by Jenn Coulson. Delta is an ace cottontail hawk, but has a few personality quirks. She eats her jesses. She rips her castings apart. She won’t ride on the glove. However, these peccadilloes don’t have much practical effect on my hawking because Delta follows well on the sagebrush, and rides on a T-perch if the cover is very low. Since she hoods like a statue she is very manageable. It took some time in Christmas Valley for Delta to grasp the need to hit the jacks hard and quick, before they could use the cover to their advantage. At first she was

reluctant to tackle full-grown jacks, but by the end of the summer she was pulling her weight (and more). Delta is a dedicated team player and often catches jacks that one of the other hawks has turned, or forced from cover. I



frequently fly her solo to get the most effort from her. Delta has a fabulous climbing attack, from which she usually slants downward at a slight angle to attempt the grab. Occasionally, however, she will make a classic vertical wingover from the apex of her climb. She is death on bunnies, clearly preferring them to jacks. Her most annoying talent is finding and eating buried rabbit guts. I've spent a good deal of time hosing partially-digested alfalfa off her face. Fortunately she loves to bathe as much as any peregrine.

The Hunting

I have many times hawked jackrabbits in open country, such as grasslands, star thistle, or plowed fields, in Colorado, Texas, California, and Arizona. In such thin (or nonexistent) cover, close slips are common, which excites even an inexperienced hawk. The jack is fearful of the falconer, and runs when flushed underfoot. A jack running at full speed is quite vulnerable to a hawk, which can fly considerably faster than the jack can run (at least in the absence of a strong wind). These flights are nearly always concluded within 50-100 yards when the hawk(s) "bulldog" the jack, or when the jack makes an evasive move that leaves the hawk(s) grounded. I greatly enjoy open country jack hawking, where everything occurs in plain sight.

Jack hawking is much different, and more complex, in the relatively thick waist-high sagebrush of Christmas Valley. Close slips are unusual. Most jackrabbits are sneaking 100 or more yards ahead of the hunting party, putting clumps of

sage between themselves and the hunters to conceal their escape. It takes an experienced hawk even to know where to look for the jackrabbits. On many mornings the hawks will catch three or four jacks before I have seen so much as a rabbit ear.

For the hawk, initiating an attack on a long-distance sneaking jack is a calculated decision, not the reflexive pursuit triggered by a jack bolting from its form at the falconer's feet. Once the attack is launched, the better flights bear a strong resemblance to coursing hares with sighthounds. The hawk attempts to keep the jackrabbit in view, waiting for an opportunity to stoop. Since the falconer is far behind, the jack does not run in panic. Instead the jackrabbit keeps its wits about it, using its intimate knowledge of the cover and perfectly timed high-g turns to prevent the hawk from getting a clean, hard shot. The most common escape tactic is for the jackrabbit to buttonhook behind a sagebrush as the hawk approaches, forcing the hawk to hover, stall in a tight turn, or land. When the jack stops to hide inside a thick piece of sage, a really clever Harris's hawk will use her speed to pitch up, looking over her shoulder so that she can reverse her course if the jack runs in the opposite direction, or wing over and let gravity smash her through the sage and into the jack. If the jack has nerves of steel it will stay parked under the sage even if the hawk pitches up. When this happens, a savvy Harris's hawk goes on point, taking stand on the tallest nearby object (usually sagebrush) waiting for the reflush to renew the pursuit. Impatient hawks, like Q, do their own reflushing. This cycle of pursuit-stop-reflush can cover several minutes and many hundreds of yards before concluding with the jackrabbit's escape (the usual outcome) or a successful stoop by the hawk(s). It is

a chess match played by two Grand Masters – both the Harris's hawk and the jackrabbit are descendants of ancestors who played the game expertly.



Such coursing flights require that the Harris's hawks be in top physical condition. The frequent starts and stops, hovering, stooping, rebounding, and episodic sprinting are extremely demanding. At 4400 feet of elevation it takes a fit hawk to put on a good show for the 3-4 hours I hunt every morning. Catches often are made 200 yards from the beginning of the flight, and sometimes go over a quarter-mile (which leaves *me* gasping!). Even though the quarry is seldom in my sight, I find these contests between well-matched opponents absolutely riveting to watch. From the hawk's behavior I can tell what the jackrabbit is doing, just as if I had an overhead view of the hunt. With a cast of Harris's hawks the action is even better, since the jackrabbit rarely gets any respite from the relentless, leapfrogging, yo-yo stooping of an experienced duo.



Inexperienced Harris's hawks can have a tough time in Christmas Valley, as I discovered when I trained Shadow here last season. Fortunately, I was able to fly Shadow in a cast with the veteran Q last summer, and there are hundreds of naïve young jackrabbits that are the natural prey base for an equally young hawk.

As much as I love jackrabbit hawking, I never forget that they are dangerous game for a Harris's hawk. The best hawk I have ever had, Killer, was nearly killed by a jackrabbit in Nevada two years ago. She caught a fast-moving jack as

it blasted through a hole in the sage. With her talons locked on to the jack, she was bent in half, backwards, when the jack snatched her through the small opening. Her head was snapped back violently. She was unconscious for 10 minutes, and could not even stand for a week afterwards. She has never fully recovered from the neck injury she received, but fortunately is now well enough to breed. A jackrabbit grabbed in the back or side can drag a hawk through brutal cover, or through a barbed wire fence. Even a jackrabbit secured by the head is a threat to the hawk. The jack will ball up with its hind feet against the hawk's chest, stretching the hawk's legs to the breaking point while mercilessly kicking the hawk with powerful blows and razor-sharp toenails. More than one Harris's hawk has had the tables turned on it, and been killed by a jackrabbit.

It is the falconer's responsibility to get to the scene of the catch as quickly as possible, to provide assistance to the hawk. Cast flying can be an asset in this regard, since the second hawk can help hold the jack, and can get to the jack much faster than the falconer. When I arrive at the scene of the catch, I grab the jack's back legs to prevent the hawk from being kicked again. The hawk will transfer her feet to the jack's head if she doesn't have the head in her grasp already. I break the jack's neck by stretching it (this is more strenuous than a BowFlex workout if the jack is a big one), then kneel on the jack's hind feet while it convulses in its death throes. I reward the hawk in proportion to the effort she has expended. If the slip was close and the catch was fairly easy, I give the hawk a shoulder blade or lower front leg to eat. If the slip was long, the flight complicated, the catch made far from me, and the hawk has held the jack for a long time under punishing circumstances, I open the jack's chest cavity and let

her eat the heart and lungs, then trade her off to a lower front leg. I also give a generous feeding on each jack for hawks that are new to jackrabbit hawking – they need to know that their courage will be rewarded.





When feeding jackrabbit legs to a hawk, I crush the big bones completely with a pair of wire cutters. I learned my lesson when my old tiercel Neon swallowed a jack leg joint and punctured his crop with one of the sharp ends of the bone. I'll never forget the look on Cory Rhea's face when I stuck two fingers down Neon's throat and extracted that broken bone. Neon was back out in the field whacking jacks the next day, but I've never fed a Harris's hawk an intact jack leg since.

Excerpts From My Hawking Journal

19 July 2005 Q 890g Shadow 880g Delta 870g

Dan Pike and I flew Phoenix (Dan's 20-year-old female Harris's hawk, bred by Jerry Fraulini, out of Dolly) with Q on Hill Lane just north of town where we saw 3 young jacks ("The Three Amigos") while scouting last night. Less than a minute out of the truck Q made a great pursuit on a big jack and caught it, but it pulled free. She rebounded and chased it again, leading me across the road. Several flights later Q caught and held a lactating jackrabbit doe, the first full-grown jack I've seen killed on this trip. I went back to the truck for Delta to join Phoenix and Q. Q added another jack to the bag. On the way back to the truck we really got lucky when Dan herded one of the Three Amigos across the road towards Phoenix, whose missed stoop turned it down the middle of the dirt road. This was a perfect setup for Delta. She sucked up the jack.

23 July 2005 Q 888g Shadow 902g Delta 870g

Another beautiful morning in Christmas Valley. Started Q and Shadow at Candy/Hill. There was no shortage of well-spaced slips. Q took the initiative most of the time, but did not always crash in or commit. She dropped on a cottontail that had the misfortune of hiding at the base of a fence post that Q chose for a perch. Next she caught a medium-sized jack in a really nice twisting

flight. Number 3 was a baby jack. Shadow was shut out, mostly for lack of serious effort at the end of each flight.



25 July 2005 Q 922g Shadow 910g Delta 895g

Q and Shadow are getting in the rhythm now, with a lot of food going through them, lots of energy, good appetite, and casting at dawn. Delta isn't quite there yet, though she clearly feels good at this weight.

Shadow seems to fly better without Q – it could be that Shadow feels subordinate and doesn't try as hard with Q in the field. I flew Shadow with Delta at the Obsidian Ridge. It was cold enough this morning that I could see my breath. Shadow was chasing anything and everything. Delta was only interested in bunnies and birds. Shadow made a super catch on an adult cottontail, followed by two young bunnies. Even with quite a crop she absolutely pummeled a big jack, holding it in a jammed-up death grip until Delta arrived to secure the head.

I took Q to a new spot at the southeast quadrant of Ivy/Mountain. Short, sparse sage next to an alfalfa field, where I saw lots of jacks when scouting last evening. Q was chasing but not closing on every jack. When she did commit she slammed a couple of big jacks. I practically had to beg her to come back to the truck. She reminds me more of Killer all the time.

26 July 2005 Q 935g Shadow 937g Delta 875g

Shadow showed us the ropes at Hill/Rainbow, where *herds* of jacks in the cut alfalfa made it look like a prairie dog town. Even at a record high weight, Shadow flew and followed beautifully. She's muscling up from all this flying – intense, powerful, thundering into cover. She caught a huge jack in a long, hard flight, plus a “medium” in a good flight and a “small” in a short flight after a close flush (which I tried to set up for Delta).

I hesitated to fly Q at this weight. Not surprisingly, she was exceptionally independent, but strong and confident. She didn't commit on every jack, but when she chose her victim she did her own reflushing and caught a big jack so far from me that I couldn't hear it scream! Meanwhile, I saw Delta plunge into the sage somewhere behind us. After returning Q to her box, I got out the telemetry and found Delta on a bunny.

27 July 2005 Q 948g Shadow 935g Delta 875g

Q got the day off, though she wanted to go. I took Shadow and Delta to Blaine Nofziger's, hoping to motivate Delta by finding some cottontails in the abandoned farm equipment. We saw relatively few jacks, but Shadow chased them all. We got into a half dozen or more cottontails. The hawks took excellent perches and got lots of hard chasing, but of course the bunnies used the cover to their best advantage. We strolled back towards the truck, a mile or so away. Shadow worked a bunny in the sage and caught it. Later she drew a bead on a big jack, making a nice catch with no help.

We headed over to the Church Field to look for a denser population of jacks. We weren't disappointed. Shadow flew very well – not crashing in on every jack, but learning to pitch up and wingover (or land to pin the jack). Shadow made a nice catch in cover, then burned down her fourth kill in the wide open with a really fine effort.



28 July 2005 Q 905g Shadow 945g Delta 872g

Q was hot to trot after her day off. I started at Hill between Rainbow and Candy, where I have seen lots of small jacks that might appeal to Delta. Q was better behaved today, though she is quite independent in such a target-rich environment. Within five minutes Q had pounded a big jack in a nice, long flight. Delta got the head well before I arrived on the scene, thank goodness. Q's second jack was a "medium", which of course caused her to expend max effort. Her third was a short flight on a rare close slip on a very large (and fat) jack. On the way back to the truck we all worked a small-ish jack in the thick stuff along the road. The jack busted out down the middle of the road, Delta put in good pursuit, then caught the jack with an excellent pitch-up/wingover move.

Shadow is getting to be quite a load at 950g, but her weight gain seems to be muscle since her jack hawking continues to improve. She made a terrific catch on a very large jack, holding it for a long time even with her fairly short talons. She nailed a second, small-ish jack on the way back to the truck. A bunny gave her a lung-opening workout. The shifty little rabbit escaped untouched.

29 July 2005 Q 935g Shadow 922g Delta 930g

Delta got the day off. I gave her a bite to eat with a little casting material.

The hunting went by in a blur. I flew Shadow solo since she was at weight. In less than two minutes she had caught a “medium” by the hay shed on Candy north of Hill. In short order she whanged another “medium” and a big jack. I still wasn’t a hundred yards from the truck!

I went back for Q. I wanted her to have a short hunt, preferably with Shadow along to provide some remedial instruction in following. Shadow caught #4 after Q flushed and turned it. It wasn’t long before Q caught her first, a “small”. Shadow is so fat that she didn’t even come in on Q’s kill. It’s nice to be flying two adult hawks – no squabbling over food.



I put Shadow away and continued with Q. At this weight Q doesn’t slam too many, but she wasn’t picky about size, catching a “medium” and a large fat jack – #7 for the day – before 8AM (about two hours of hawking)!

[I hawked 13 days in July. The hawks made 57 kills this month.]

4 August 2005 Q 941g Shadow 950g Delta 875g

Only Delta had cast, so I started with her and Q at Hill/Buckskin. Q was on a mission. I practically had to run to keep up with her. Delta mostly followed me or Q, though occasionally she crunched in on a jack. I flushed a small jack close. Q wasted no time weaving through the sage to catch it. On the way back to the truck Q made a fine catch on a “medium” jack. Delta came in to help but accidentally grabbed Q, who was buried deep in the sage. No apparent damage to Q, though.

I flew Shadow solo. Fortunately she had cast in the hour I flew Q and Delta. Shadow was in great form. She caught 3 big jacks, all tough catches, including one that took her for quite a bucking bronco ride. She'll be heavy tomorrow ...

5 August 2005 Q 921g Shadow 970g Delta 875g

Luckily none of my hawks were too overweight after a moron in Room 5 threw them some cold cuts while they were weathering yesterday afternoon. The dumb ass said he thought the hawks were there to be fed like the ducks on the lake!

Dan Pike and Andy Scheffer arrived from Lynden. They brought a 6-foot-long chest freezer in the back of Dan's truck. We're going to need it.

We started with Delta and Romeo (one of Dan's tiercel Harris's hawks, bred by me in 2003, out of WD-40) at Hill/Buckskin. Delta also took a few cracks at jacks, especially on the close slips. Romeo caught a jack, but Delta came up empty.



Even though it was just after 7AM the heat was building. We flew Q with Phoenix and Salem (Dan's 21-year-old tiercel, bred by Len Eisenzimmer, out of Carlie) at the Church Field. Q took stand on a power pole, then launched a high-level 300-yard sortie with multiple reflashes. The jack made its escape. It didn't take long for Q to spot another jack in the open and smoke it in a top-speed tailchase. Even though it was a big jack it never made a sound – head shot. She caught a second big jack, hit so hard that she knocked the transmitter off her tail mount.

Dan wanted to find some cottontails for Salem, so we took him and Shadow to Nofziger's. Even at a whopping 970g, and in serious heat, Shadow flew extremely well. She caught 3 cottontails in excellent full-power pursuits. Cottontails are like candy after being kicked around by all those jacks.

6 August 2005 Q 935g Shadow 945g Delta 870g

We're having some scorching weather. It's bearable in the early morning, sweltering (in the sun) by 9AM. The hawks are panting constantly, but it doesn't seem to dim their enthusiasm.



Dan Pike, Lee

Mann, and I flew Romeo, Sylvester (one of Lee's tiercels, bred by Mike Syring in 2001), and Shadow on Hill between Rainbow and Candy. We didn't see too many jacks, but Shadow caught a small one that Romeo set up. We changed venue to the hay shed on Candy. We got into a lot of jacks. Shadow caught 4 more in good flights.

Even though it was hot, I flew Q and Delta with Tweety (one of Lee's female Harris's hawks, bred by Dan Pike in 1996, out of Phoenix). Q started with a tiny cottontail, then proceeded to mow down 4 jacks, two of them in hard tailchases. She won't be flying tomorrow.

8 August 2005 Q 935g Shadow 949g Delta 875g

Lee left Christmas Valley yesterday, so Dan, Andy, and I carried the fight to the rabbits. We started at Rainbow/Hill in the southwest quadrant, where we saw 50+ jacks in a herd last night. I flew Q with Romeo. Q manhandled a couple of jacks. She didn't come in on the kills Romeo made – more interested in hunting than eating.

Shadow flew the Church Field. We saw a pile of jacks in the field last night. It was getting warm, making Shadow pant after a lot of chasing. She caught a bunny in the sage. Andy and I tried the open field, where a few jacks had hidden in the volunteer alfalfa. Shadow smoked the first one to flush. The second flushed 50 yards out and ran across the bare dirt. Shadow burned it down within 100 yards, but the jack made a Michael Jordan vertical leap at the last second to force Shadow to undershoot, slamming into the ground where she

expected the jack to be. On the way back to the truck Shadow took stand on a trailer. Andy flushed a jack right under her. She rolled it in a drag race.



Delta was feeling spunky. We flew her at Nofziger's, looking for cottontails with Salem. We got flight after flight after flight, until Delta's beak was hanging open. She caught 2 cottontails by pure perseverance.

9 August 2005 Q 928g Shadow 951g Delta 920g

Shadow got first draw at Hill/Buckskin, partnered with Romeo. It took Romeo one slip to catch his jack.

Dan wanted to fly Salem and Phoenix at Nofziger's, so I flew Q there even though I didn't really need her to chase cottontails. Action was continuous, and Q was in top form. She slammed 2 medium jacks and 1 huge lactating doe, then proceeded to drill 3 cottontails in flashy style.

Even though Delta hadn't cast she flew quite well. She made a good thick-cover grab on a late-to-hibernate sage rat (aka Townsend's ground squirrel).

The hawks made their 100th kill of the season in less than 3 weeks of hunting.

18 August 2005 Q 960g Shadow 960g Delta 954g

Nobody but Shadow had cast, so I flew her solo at Candy/Hill. Within two minutes she caught a small jack in a hover/plunge in some rabbitbrush. We didn't see a ton of jacks, but Shadow was on her game and caught 2 more.

Delta is working pretty hard now. She caught 2 jacks before Q could catch one! Delta keys off Q's chases, and Q can spot them in the distance incredibly well. Q caught a jack, then a bunny. Her third kill was brilliant – a one-footed grab to the rib cage of a giant jack. When I got there the jack had all four feet on the ground, churning mightily, while Q was jammed in the sagebrush with her other leg bent backwards, wedged in a V-shaped crotch of two sage branches. How (and why!) she held on to it I'll never know. I love her tenacity, strength, and toughness.

20 August 2005 Q 975g Shadow 964g Delta 924g

I went looking for jacks in thinner cover. I started with Shadow at Ivy/Mountain. She didn't fly as well as she can, but she did catch a jack. Since I didn't see too many jacks we moved operations to Candy/Hill. We walked the lighter rabbitbrush along the pivot. Delta joined us to help with the jacks that Shadow was overtaking but not catching. The strategy paid off on a close slip, when Shadow turned a jack that Delta pounded. Shadow added another solo jack on the way back to the truck.

I put Shadow away with a light feed, including some heart/lungs/liver, bringing Q out to fly with Delta. Q immediately went prospecting for jacks. I had to break into a trot to keep up with her, though she would home to the T-perch when I got close enough. Delta is a good team player. She caught 2 more jacks (including jack #100 for us this season), one in a nice flight and one ground-sluiced in its form.

Q then went on a tear, racking up 5 jacks in long, elaborate flights and great stoops. One jack was hit in the head so hard that its lips were sealed! Even with a bulging crop, Q's wings were a blur every time we flushed a jack. She won't be hunting tomorrow, though! I could hardly run to her fourth kill, more than 100 yards away, because my game vest was so weighed down with jacks. On #5 I had to go to the truck and unload the first 4, then walk back to pick Q up on her fifth kill.



22 August 2005 Q 960g Shadow 990g Delta 920g



Shadow was at a record high weight, and for the first time in several days was not kakking in her excitement to get out of the box and go hunting. She was banging on the door, though! I flew her with Delta at Hill/Buckskin. Shadow caught a big jack in a good flight. Delta plunked a small bunny.

I put Shadow away and flew Q with Delta. I expected Q to be anxious to fly. She flew hard, but only managed one (big!) jack. Delta caught 2 jacks

that were herded in her direction. I didn't see her catch the first one and had to find her with telemetry to prevent her from gorging.

23 August 2005 Q 965g Shadow 985g Delta 999g

In two and a half hours Q and Shadow caught 10 jackrabbits in the northwest quadrant of Candy/Hill. After #7 I had so many jack legs and ears flopping out of my vest, and so much weight in the bag, that it was hard to move! Some of the more memorable action:

Walking the edge of a pivot a big jack broke close and ran into the alfalfa(!). Q turned it and Shadow plowed it under.

Crossing some short rabbitbrush Q took a 150-yard slip, flew the jack down, and caught it in a knifing stoop.

Carrying 9 jacks, my shoulders pleasantly uncomfortable under the weight, I was relieved to finally cross the last fence line just 20 yards from the truck. Q was riding my glove. A monster jack flushed from the roadside ditch, ran across Candy Rd., and got hammered by Q as it sprinted through the gravel by the hay shed! Q got a pretty good gorge today. I left a monumental jackrabbit gut pile for the ravens and coyotes.



29 August 2005 Q 1000g Shadow 1002g Delta 950g

After 33 straight days of calm mornings, today dawned breezy, and turned windy by 8:30AM. It didn't help that the hawks were fat. Nevertheless, Q and Shadow put on a good performance at Candy/Hill. Shadow has taken a real shine to quail. In the best flight of the day she made a 300-yard pursuit on a quail, losing ground in the first 100, staying even in the second 100, and gaining in the last 100. Shadow not only put the quail in, but almost caught it in a slamming stoop. Sometimes the one that got away is the most memorable!

Q caught today's biggest jack. How she held on to it, with just one foot locked on to its side, is a mystery to me. Of the 3 jacks Q caught, the third was kill #200 for the team this season.

Shadow caught her jack in a beautiful display of cast flying. The two hawks alternated stoops 180 degrees out of phase, keeping the jack moving until Shadow could plaster it. Shadow also caught our first bunny in several days.

By the time I got back to the truck the wind was howling, so Delta got the day off. I shouldn't complain about the wind – Hurricane Katrina went through New Orleans today.

[I hawked 23 days in August. The hawks made 152 kills this month.]

2 September 2005 Q 982g Shadow 1000g Delta 927g

Dad drove down to spend a few days hawking. We started with Shadow and Delta on Hill west of Candy. We concentrated on open field flying so Dad could get some photos. The first jack flight was amazing. The jack bolted about 50



yards out in short rabbitbrush. Shadow and Delta were in hot pursuit. The jack avoided Shadow by running under a junked Jeep in the middle of the field. Shadow pitched up very high, then teardropped to make a knockout head shot on the jack coming out from under the other side of the Jeep. A huge jack.

Shadow caught 2 more jacks, including a lactating doe that she managed to hold with one foot.

Swapped Shadow for Q. Q caught an easy jack in light cover on a close slip. Her second was a beautiful flight across the open. Q poured on the coals and speared the jack with a high-speed burst as it crossed the road, rolling to a stop in a cloud of dust at Dad's feet.

4 September 2005 Q 995g Shadow 990g Delta 985g

Dad and I drove to Ft. Rock to give the Christmas Valley jacks a break. The day started off well when Shadow caught a jack within a couple of minutes.

Afterwards she seemed spooked, slicked down on the glove and staring into the distance. I thought she was looking at an eagle, though it was too early for eagles to be soaring. I put Shadow away to fly Q and Delta. Delta made a fabulous catch off the top of a hay shed, thumping a jack with a perfectly vertical stoop from about 35 feet up in thin cover next to the pivot. Then Q started to spook and I could finally see why – four motorized paragliders were headed our way from Ft. Rock. The pathetically slow S.O.B.'s droned right over us, around us, etc., making a damned nuisance of themselves. Q hid under a sagebrush. What a pain in the ass! We ended up having to dig out the telemetry to find Delta, who had gone hunting on her own after the paragliders had finally disappeared.

Although it was getting warm and windy, we drove the 30 miles back to Christmas Valley, hawking just north of Jim Walker's place. Jacks everywhere. We had very long flights, mostly into the wind (since jacks always try to run upwind when pursued). The hawks are in such great shape that they would chase anything, anywhere. They rowed into the wind seemingly without effort. Q ambushed a jack in its form, but her other 2 jacks were taken in gorgeous long flights. Shadow is learning to use the wind to pitch up higher, and caught her second jack with a classic wingover.

7 September 2005 Q 972g Shadow 982g Delta 985g

Q and Shadow on Langdon Springs Rd. west of Ivy. Q's first catch was the day's headliner – an intricate multiple reflush pursuit. After sneaking and dodging for a hundred yards, the jack finally decided to shift into high gear for departure. Q put on her best speed and T-boned the running jack, raking it down the side and slitting it open behind the rib cage. When I arrived on the scene there were jackrabbit intestines draped in the sagebrush like tinsel on a Christmas tree. Q had the jack by the head. The jack's liver was hanging completely out of its body. I gave Q a few bites of the bloody liver, but we were short on fava beans and a nice Chianti.



Q caught 2 more jacks, one in good style and one in its form. Shadow tackled her first jack in her typical reckless, headlong way. Shortly thereafter, Jim Walker and his son Pete drove out to meet us. Shadow was returning from a flight behind us, cruising toward us about 10 feet off the ground. Q chased a jack back in Shadow's direction. Shadow saw the jack coming, folded her wings, and smashed the jack in a difficult head-on catch. Newton's Third Law illustrated.

We flew Delta solo just north of Jim's. After six weeks of hard flying, and many warm crops of jackrabbit, Delta is now an accomplished and enthusiastic jack hawk. She is very entertaining to watch. The first jack she saw today was about

75 yards out. She started her usual climbing attack, then leveled out at max speed when the jack started running. The jack stopped, Delta snapped into a hard banking stoop, and snagged the jack in a crunching hit. On the way back to the truck Jim and Pete pushed a jack across an open alkali flat. Delta launched off the T-perch, smoking along right on the deck, and pulled the jack down from behind in a high-speed curving pursuit. We got a great view of the whole flight. It doesn't get any better!

9 September 2005 Q 998g Shadow 1008g Delta 954g

For just the second time in 45 days of hawking we had serious wind in the morning. Dan Pike's gyr/peregrine Gypsy had no problem mounting over 5 boomers in an alfalfa field at dawn. Gypsy hit the first grouse to flush, knocking a cloud of feathers from behind the grouse's wing. A wild prairie falcon joined the ensuing tailchase. The grouse bailed into a fence line, and Gypsy came right back to the truck.

Dan and I were back in the field with the Harris's hawks by 7:30AM. Dan had returned Salem and Phoenix to their breeding chamber, but brought Romeo and Rusty (a tiercel bred in 2000 by Brad Wood, out of Rosie). We tried a new spot at Crack-in-the-Ground and Langdon Springs. I flew Shadow with Romeo and Rusty. As usual, Romeo axed the first jack to show its face. Romeo hits them with everything he has, every time. Rusty spotted the next jack, missed with his first stoop, and rebounded. Shadow was coming from the other direction and slammed straight down, barely missing the jack and turning it right back into Rusty, who anchored it.

After Dan put away his deadly tiercels to give my clumsy females a chance, I took Delta out to fly with Shadow. Delta loves to soar, and immediately climbed high into the wind, then raked off downwind to sit on a hay shed. Shadow joined her. They spent several minutes playing in the wind over the hay shed, mixing it up with a pair of ravens. Once they got the aerobatics out of their systems, Shadow got down to business by catching a thin jackrabbit that certainly wouldn't have made it through the winter.



Delta and Shadow played leapfrog with a bunny in the thick sage. Shadow got the last leap when the rabbit tried to run across open ground. Delta finished the day with 2 beautiful catches. The first of her jacks was caught in a long crosswind flight. Her second jackrabbit turned straight downwind after Delta's initial stoop missed. Delta rebounded, caught the wind in her wings, and rocketed across the road in hot pursuit. She hit the jack so hard that we could hear the impact and see the dust cloud from 100 yards upwind. Dan and I were sure that we would find Delta injured, or at least shaken up. But all the damage was done to the jack, whose blood was sprayed over Delta's feet.

Even in flag-shredding wind these hawks are in such good shape that no jack is safe! In fact, the wind provided some really great flying and circus catches.

The Numbers

In a typical hawking season I spend about 90 days in the field, and bring home a little over 200 rabbits. But this is not a typical hawking season, and Christmas Valley is not a typical hawking location. In 45 hawking days between 18 July and 9 September my 3 Harris's hawks made 267 kills, an average of almost 6 kills per day. More than two hundred of the kills were jackrabbits. The hawks had some incredible streaks, racking up 102 kills in 14 consecutive days. One day they made 12 kills, and twice they caught 10 jacks in a single day. I may never have another hawking season like this. They say that you only live once, but that if you do it right, once is enough.

| | Days hunted | Jackrabbits | Bunnies | Misc | Total |
|---------------|--------------------|--------------------|----------------|-------------|--------------|
| Q | 34 | 81 | 9 | 5 | 95 |
| Shadow | 43 | 92 | 22 | 12 | 126 |
| Delta | 38 | 30 | 12 | 4 | 46 |
| | | | | | |
| Total | 45 | 203 | 43 | 21 | 267 |

Epilogue

The summer of 2005 in Christmas Valley has been the greatest hawking adventure of my life. I am so fortunate to have had the free time and the fabulous Harris's hawks to exploit this decadal peak in the jackrabbit population



cycle. My wife Moira and daughter Bridget have been very understanding about my long absences. Although I hawked alone much of the time (something I enjoy greatly), several of my favorite hunting companions were able to come to Christmas Valley to join me for awhile.



Tom Coulson (left) and me (right) with a couple of Harris's hawks and their catch of swamp rabbits in the early 1980s.

But the summer of 2005 brought tragedy as well as triumph. All three of the Harris's hawks I flew this summer were bred by my longtime friends Tom and Jennifer Coulson. On Monday 29 August, while I was taking pleasure in the fruits of their pioneering Harris's hawk breeding program, Tom and Jenn lost almost everything, including 33 of their 34 breeding and hunting Harris's hawks, when Hurricane Katrina caused their one-story house in Arabi, Louisiana to vanish under 25 feet of flood water. Tom and Jenn barely escaped with their own lives. When Kenny Jennings called me from Illinois with the good (and bad) news, I was genuflecting over a jackrabbit kill in Christmas Valley. I talked to Tom (at Matt

Mullenix's house in Baton Rouge) the day after they were rescued. Tom and Jenn have an amazing story to tell.

The loss of the Coulsons's Harris's hawk breeding program is incalculable. Over the past 23 years, Tom and Jenn produced more than 700 captive-bred Harris's hawks, spanning four generations, making theirs the most advanced selective breeding program in the history of raptor propagation. It is now up to the falconry community to assemble and propagate the best available progeny from the



Coulsons's breeding program, thereby saving the cream of the crop and assuring that the Coulsons's genetic legacy for Harris's hawks continues uninterrupted. For my part, to help in this effort I retired Q at the end of the 2005 Christmas Valley expedition. She will be paired with Neon (bred by Dan Pike in 1999), the best jack hawking tiercel Harris's hawk that I have ever seen, courtesy of Cory Rhea. Q and Neon will be my new breeding pair, while my current breeders, Killer and Milo, will form part of the nucleus of the Coulsons's resurrected breeding project at their new home. All four of these hawks were the "pick of the litter" from the best pairs of Harris's hawks I know

<<http://home.comcast.net/~baywingdb/baywinghome.htm>>. I've given Delta to Cory, so that his generous loan of Neon's stud service will be a little less painful.

When next summer rolls around, I will be back in Christmas Valley. I hope to be training a young female Harris's hawk out of Q and Neon, or Killer and Milo. I know that these rookies won't be catching 6 or 7 or 10 jacks a day. It will probably be frustrating – a "rebuilding year". But when I think about the summer of 2007 ...

Good hawking!

Toby Bradshaw

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Killer, Milo, and me in 2001.