Updated by modern-day economics and science, the “sport of kings” retains its ancient fascination.

Story and photos by Rebecca Kessler

**Talon Hunt**

Male gyrfalcon-peregrine falcon hybrid circles over a field in Long Island, New York.

**Kit-chup! Kit-chup! Kit-chup! Kit-chup! Kit-chup!** Tom Cullen calls, approaching his aviary. The sun warms a March afternoon; raptor breeding season has just begun. Stray feathers and dry leaves litter the entryway to the wood-frame building. A dusty, acrid odor of guano tinges the air.

**Kit-chup! Kit-chup! Kit-chup! Kit-chup! Kit-chup!** Zephyr, a male Barbary falcon (*Falco pelegrinoides*), responds from inside an adjacent room. Cullen keeps up his end of the high-pitched conversation as he grabs a broad hat off a peg and pops it on his head. It’s a hat like few others: black rubber, with a tubular brim, a ripply dome, and a tuft of shag carpet on top. He enters the chamber and approaches Zephyr, who is calling from a shoulder-high shelf covered with pea gravel to mimic a nesting area. **Kit-chup! Kit-chup! Kit-chup! Kit-chup! Kit-chup!** Cullen offers more assurance that he’s ready to mate. With a rush of wings, the falcon flaps over and lands on Cullen’s hat. After repositioning himself a few times, Zephyr lifts his wings, extends his tail, and flies off to his shelf, all in a matter of seconds. “Good boy!”

Exiting the chamber, Cullen doffs the hat and collects a few drops of semen from the brim with a pipette, transferring them into a small plastic vial. Down the hall lives a female Barbary that, like Zephyr, is imprinted on, or sexually oriented toward, Cullen, and so won’t mate naturally. Later on, Cullen will put similar moves on her, sans hat. She’ll turn up her tail feathers for him, exposing the opening to her reproductive tract. He’ll insert a loaded pipette and complete the two birds’ union. Such is the work of a raptor breeder—the ultimate go-between.

A falconer for forty-plus years, Cullen has been breeding raptors since the 1970s. He has nearly six dozen adult exotic birds of prey at his home in rural Goshen, New York. Last year he raised fifty-six baby falcons—Barbaries, lanners, luggers, sakers—mostly for sale to other falconers. And this year is shaping up to be a good one, too. (Some of his other work with birds has gotten him into trouble in the past. Most recently, he served four months in federal prison for illegally importing black sparrowhawks in 2000, a charge he disputes.) Cullen’s operation represents a fairly new development in the ancient sport of falconry. The past four decades have seen advances in captive breeding, tracking technology, and veterinary care, as well as the advent of an extravagant form of falconry practiced in the Middle East. Those developments have changed the sport substantially—and sometimes controversially.

Falconry originated at least 4,000 years ago, probably in Central Asia, and has been practiced for millennia throughout Asia, the Middle East, North Africa, and Europe. Initially a means of hunting, the practice was adopted by aristocrats as a leisure activity. In the United States, the sport took hold in the 1930s. Today there are 4,200 licensed falconers nationwide. In essence, falconry is a hunting partnership between a person and a bird of prey, and it is that cooperative relationship with a wild animal that falconers cherish. The thrill comes as much from the chasing as from the catching.
Peregrine falcons, for instance, hunt their mostly avian prey from staggering heights. Their aerial maneuvers and high-speed dive-bombing attack, and the audible crack when they collide with their target in midair, are candy to a falconer’s sweet tooth.

Falconers use several species of falcon, hawk, and less commonly, buzzard, eagle, and owl. Traditionally, falconers trap young wild birds in summer; mold their hunting and train them to return when called; hunt with them in the fall and winter; and then free them in the spring. Increasingly, however, the birds are bred in facilities like Cullen’s, either naturally or by artificial insemination. Whether wild caught or captive bred, birds may be kept for years. The quarry is usually a game bird or a small mammal, but a big eagle can take down a small deer, even a wolf. A morsel of meat is the bird’s reward.

The sport is demanding: each bird needs hours of training, care, and exercise, plus hundreds of dollars’ worth of housing, gear, and daily meat. Subject to federal and state law, it’s also one of the most heavily regulated sports. It requires a permit, testing, abundant paperwork, a two-year apprenticeship, and, to achieve the rank of master falconer, five more years of experience. State inspectors make home visits to scrutinize raptors’ housing and care. The blood sport inspires passionate dedication. Four centuries ago, England’s King James I described falconry as “an extreme stirrer up of the passions.” Today, Peter Capainolo, a falconer and an ornithologist at the American Museum of Natural History in New York City, explains that “marriages and relationships end over these bloody things. It’s an all-absorbing thing.”

The captive breeding of raptors emerged from a crisis. By the late 1960s, raptor populations across the U.S. had collapsed as a result of exposure to the pesticide DDT, which causes females to lay thin-shelled, easily crushable eggs. Peregrine falcons (Falco peregrinus) vanished from the East Coast. Alarmed, falconers and biologists jumped in to help. In 1970 Tom J. Cade, a falconer and biologist (now emeritus) at the Cornell Lab of Ornithology in Ithaca, New York, established the Peregrine Fund, which has since relocated to Boise, Idaho. The group pioneered artificial-insemination techniques and figured out how to breed raptors in quantity, largely using parent birds donated by falconers. DDT was banned in 1972, and two years later the Peregrine Fund began releasing captive-bred birds into the wild. Thanks in no small measure to falconers, among others, peregrines and other wild raptors have now staged a remarkable comeback.

Falconers in the U.S. and Europe took up the new captive-breeding methods with gusto. Over time, they’ve selectively bred specialized lineages. A few breeders advertise nearly pure white or pure black gyrfalcons (Falco rusticolus), for example. In nature those color morphs are extremely rare at best, and falconers, particularly in Persian Gulf states, will pay a premium for them. Less sensational captive-bred lines may also be subtly diverging from their wild brethren, as breeders—sometimes deliberately, sometimes inadvertently—select for such traits as athleticism, willingness to breed in captivity, ease with people, trainability, and disease resistance. “We haven’t got to the point yet where we have breeds of raptors, but I think we will,” says Capainolo. Raptors, so emblematic of wildness, may be on the road to domestication.

Most crosses are within the genus Falco; some carry genes from three or more distinct species. Rarely, breeders cross eagle species within the genus Aquila. Adding to the hybrid menagerie are occasional crosses between different genera, such as Cooper’s hawk (Accipiter cooperi) or the red-tailed hawk (Buteo jamaicensis) with Harris’s hawk (Parabuteo unicinctus). With a decent hybrid fetching between $1,500 and $4,000 domestically—and add a zero for
what wealthy Arab buyers might pay for a spectacular bird—some breeders, particularly European ones, have done a lucrative business.

Not everyone loves hybrids. Some biologists and falconers worry that escaped hybrids could change the genetic makeup of their wild, full-blooded cousins through interbreeding—a phenomenon called genetic introgression. In artificially reuniting bloodlines separated for millennia by geography, biology, and behavior, people could unleash a new predator into the landscape. “Once you’ve added the genes, natural selection can take hold,” says Jim Bednarz, an avian ecologist at Arkansas State University and the conservation committee chair of the Raptor Research Foundation. “That would definitely change the trajectory of evolution of a species, and I don’t think that would be a good thing.”

One striking case came to light a decade ago. A juvenile female falcon nested in 1997 with her peregrine mate on the Rachel Carson State Office Building in Harrisburg, Pennsylvania. The state game commission set up a Webcam for the public, but no raptor babies were born that year. The following year, the female developed her adult plumage, and it became obvious that she was a part-peregrine hybrid, evidence of an artificial crossing. That put the kibosh on the planned hoopla, says ecologist Dan Brauning of the Pennsylvania Game Commission. Brauning had the hybrid removed to an education facility, typical protocol in such cases.

But that wasn’t the end of it. The hybrid had a band on her leg, and following that lead, wildlife managers soon learned she was the wild-born daughter of a falconry escapee—a male peregrine–prairie falcon cross—and a wild peregrine. Managers suspect her father sired a few broods in Washington, D.C., before being recognized as a hybrid and captured. His daughter appeared to be sterile, and perhaps any sisters she may have are, too—many female hybrids are. But there’s a decent chance that any brothers are fertile.

Cases of hybrids breeding in the wild are rare: perhaps two dozen have been documented worldwide. Still, notes Alastair Franke, a biologist and falconer at Alberta University in Canada, “The ones we know of in North America are urban sites. What about all of the wild sites that nobody’s looking at?” And even if hybrids don’t breed, some biologists argue, they could compete with wild raptors for food, habitat, nesting sites, or fertile mates.

But fans of hybrids argue that all those worries are exaggerated. Escapees may not survive long in the wild, and those that do are likely to be rejected as mates because of their foreign looks, calls, and behavior. Many captive-bred birds are sexually imprinted on people rather than birds, and many hybrids are sterile. And, defenders say, introduced genes are more likely to disappear after a few generations than to spread. Their strongest argument, Franke and Bednarz agree, is that there may just be too few hybrids to pose a substantial risk, especially in North America. A few thousand may be bred worldwide each year, the bulk for falconers in the Middle East.

Finally, falconers will go to great lengths to prevent escapes. One falconer spent four days tracking his lost peregrine around suburban Long Island. He and a friend would follow the bird until dusk, when it would settle into a tree for the night; then they’d return at 4 a.m. to resume the chase. Finally, weary and covered with poison ivy, they managed to capture her.

Mindful of the hybrid debate’s potential to reflect badly on their sport and the possibility for “over-restriction,” the North American Falconers Association, a nonprofit fraternal and advocacy group, convened an international committee on hybrids. The committee—cochaired by two biologists, both successful hybrid breeders—issued a report in 1999, updated in 2004. The document largely dismisses the potential for harm, but acknowledges that concerns are “not totally unfounded” and recommends precautions to prevent escapes.

U.S. federal falconry regulations reflect that perspective—though a few states are more restrictive. In 2008, the Fish and Wildlife Service updated the regulations to prohibit the permanent release of hybrids to the wild. (Young birds may be freed for several weeks to learn to hunt on their own.) Hybrids must now wear two radio transmitters when they’re flown, to aid recapture. In Europe, hybrids are more controversial than in the U.S. Six nations have banned hybrids altogether, and last year BirdLife International, a U.K.-based conservation group, called for a European Union ban on their breeding and flying.
Patrick Redig, a falconer for four decades, is a pioneering raptor veterinarian and cofounder of the Raptor Center at the University of Minnesota in St. Paul. He observes that falconry has undergone a rapid modernization in two areas, in addition to captive breeding: radio telemetry and veterinary medicine. Telemetry has been used since the 1970s, augmenting ankle bells that jingle brightly as a bird flies. A falconer can attach a small transmitter to a raptor’s body and track the bird from miles away using a radio receiver. Traditional falconers motivate a bird to hunt by carefully managing its body weight. A hungry bird—by no means a starving one—will return to its master for a meal. Although it’s not foolproof, telemetry has shifted the focus off weight control. “Because people don’t fear losing their birds, birds are flown at a lot higher condition, higher body weights, and they’re stronger. And because of that, they tend to fly higher and wider and you get more spectacular flights,” says Redig.

As a result, falconry raptors are healthier than ever. Advances in avian medicine have helped, too. Since time immemorial, falconers’ birds have been plagued by two lethal diseases: frounce, or trichomoniasis, in which a protozoan induces cankers in the mouth, throat, and crop that disrupt eating; and aspergillosis, a fungal infection of the respiratory system. New drugs developed within the past two decades have largely controlled both. Since 1999, however, another threat has emerged in North America: West Nile virus. The disease has not only killed hundreds of thousands of wild birds in the U.S., but dozens of falconry birds as well. It has tapered off lately, and Redig and his team are working on a raptor vaccine.

A dozen or so raptor hospitals have sprung up in the Persian Gulf states, specializing in the birds’ veterinary care and disease research. That’s testament to falconry’s intense regional popularity. Traditionally, it was a source of sustenance among Bedouins, who trapped and hunted with migratory sakers (F. cherrug) and peregrines. Fueled by the surge of oil wealth in the late 1970s, falconry grew extremely popular among royals, who make luxurious, multimillion-dollar hunting pilgrimages abroad and may acquire hundreds of birds annually. (Ordinary people have since taken up the sport, too.) “Falconry is our form of golf, a place to relax and conduct business,” the Saudi emir Prince Fahd bin Sultan has said.
With demand for migratory falcons outstripping the local supply, thousands of raptors, particularly sakers, have been imported to the Gulf states from throughout Eurasia. International trade is restricted under the Convention on International Trade in Endangered Species (CITES) and illegal in several nations, so smuggling is common. Often bound in fabric, drugged, their eyes stitched shut (to keep them docile), falcons have been discovered concealed under clothing, in luggage, and stuffed into TVs and thermoses. Needless to say, many die en route, or arrive at their destinations in terrible shape. Locals who trap them stand to gain hundreds or even thousands of dollars per bird—a king’s ransom in some places. And wealthy buyers at the end of the line have paid astonishing sums: $20,000 to $40,000, even more than $100,000 for particularly desirable falcons.

Consequently, ornithologists are keeping an eye on the saker. Since 2004, the bird has been listed as endangered by the International Union for Conservation of Nature (IUCN). The listing was prompted by a sharp global population decline blamed largely on capture for the falconry trade. (New evidence suggests, however, that current populations may actually be much bigger, and the listing is under review.) Captive breeding of purebreds and hybrids may be easing the pressure on wild sakers. There’s a catch to that, however—the risk of genetic introgression from hybrids.

Another conservation concern is a decline in the houbara bustard, *Chlamydotis undulata*, the ultimate quarry for many Arab falconers. In addition to hunting the birds outright, falconers trap live houbara to use in training their falcons. Several Arab captive-breeding and reintroduction projects are helping, but the houbara has a long path to recovery.

The unprecedented wealth, technology, and globalization of the twenty-first century have extended the reach of falconry into the natural world. Where the saker, the houbara, and hybrids are concerned, it may have gone a measure too far. Yet in many ways falconers are proven and committed stewards of nature. They made possible the recovery of the peregrine and other species, and they participate avidly in conservation projects, wildlife rehabilitation, science, and public education. Falconry techniques have even gained new relevance in the deployment of raptors to shoo nuisance birds away from airports, parks, and agricultural fields.

At a time when most Americans’ lives are increasingly divorced from the out-of-doors, falconers sustain an age-old bond with wildlife. The sport, says one young falconer, probably speaking for most, is "the best way to see what wildness really is. You can actually have this relationship with a wild animal. . . and it’s amazing.”

Web links related to this article:

- The Raptor Center, University of Minnesota College of Veterinary Medicine
- North American Falconers Association
- International Association for Falconry and Conservation of Birds of Prey
- Video of Dubai’s Falcon Hospital
- “Ancient Falconry,” by Keith Dobney (FirstScience.com)
- The Peregrine Fund
- Cornell Lab of Ornithology

An interview of Rebecca Kessler by Editor in Chief Vittorio Maestro will be online soon.

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