

Protecting the Greater One-Horned Rhinoceros

Starting today, *Discover* is posting its first-ever diary on the Web. Over the next week, you will be able to read daily dispatches written in the jungles of Nepal by writer and Asia hand Broughton Coburn as he reports on the translocation of ten greater one-horned rhinoceros.

Nepal's Department of National Parks and Wildlife Conservation, with support from a Nepalese agency called the King Mahendra Trust and with funding from the World Wildlife Fund, is capturing and transporting ten rhinos from Royal Chitwan National Park, a World Heritage Site near the Indian border, to Royal Bardia National Park, 250 miles to the east. The move will help to bring the number of successful breeding colonies in the world to three, which will bolster attempts to preserve the species.

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Photo by Didi Thunder.

Dateline: (March 31, 2003) Royal Chitwan National Park, Nepal—

Peacocks and Indian cuckoos call out in the distance. Vines and branches swish as ten Asian elephants tread on them. They lumber through the fog, carrying a team of trackers, veterinarians, conservationists and government experts into the heart of the lowland, riverine habitat favored by the greater one-horned rhinoceros. One tracker stands on his elephant's rump, holding a rope connected to the saddle as if he were water-skiing, using his eyes and ears—and years



Click on the image to enlarge (40k)

Trackers on elephant back approach Split Necklace, a greater one-horned rhinoceros. They are trying to guide the animal toward a game scout who will shoot him with a tranquilizer dart. Later that day he was moved to a protected area 250 miles away.

Photo by Lee Poston/WWF.

of experience—as his antenna.

The elephants fan out through an open forest, walking abreast a hundred feet apart. They bypass a rhino mother and calf. Today they are seeking a sub-dominant male, 10 or 11 years old, that the elephant drivers saw while they were cutting grass yesterday. One tracker spots a tiger relaxing in the shade—an unusual sighting of this nocturnal animal. It rises calmly, then bounds into the forest.

A circular pool, a wallow, appears in a clearing. Something seems to float on the surface. In fact, it's the rounded back of a rhino and a forehead, a pair of ears, and a pair of eyes. The elephants approach quietly from two sides. The rhino watches calmly, perhaps planning its escape route. For several minutes, elephants and translocation team watch back.

Then the rhino fairly explodes from the pool, water dripping from its dimpled, armored hide. It trots up the bank and into the margin of the forest, the thudding vibration of its massive, three-toed footfalls palpable, transmitted right up through the elephants to the humans. "Ah, yes," says Shanta Raj Jnawali, the wildlife biologist heading this year's rhino translocation task force, "It's Mala-katuwa." In English, that's Split Necklace, named for the peculiar scar in the thick folds of his neck.

Jnawali and Kamal Prasad Gaire, a veterinarian, dismount to prepare the rhino tranquilizer darts—a delicate task undertaken in the field after they have seen their quarry and can gauge the dosage accordingly. They don masks and gloves, as even skin contact with M-99 (etorphine hydrochloride) can be debilitating or fatal.

A handful of the team's elephants move off to the north to herd the beast toward the broad plain of the Rapti River, only a few hundred yards away. If the rhino were darted near the pool, it might re-enter as the sedative took effect and drown.

Today, for the the first darting of the year, many ambassadors, government ministers and other VIPs have been invited to attend. More than 40 additional elephants have been recruited to carry these 120 visitors, ensconced in howdahs, and they move in obedient single file across the river plain toward the translocation team. As the drivers of the VIPs approach, Jnawali shouts as quietly as he can so as not to agitate Split Necklace: "Bring that flank out and encircle the rhino."

Harkhe, one of seven game scouts, releases a dart that jabs the rhino perfectly in the shoulder. The rhino flinches and starts, then jogs several paces until it dead ends in a phalanx of elephants. The pachyderms move slowly forward, narrowing the circle to 300 yards across.

After the rhino spends 20 minutes searching for exits, with pauses to consider the elephantine barrier, it becomes clear that the drug hasn't taken effect, most likely because



the secondary charge, triggered by the penetration of the needle, failed to inject the sedative. Game scout Bishnu Lama shoots another dart that sticks in the torso, forward of the rump. Within 15 minutes, the animal begins to hesitate and falter. He spends another eight minutes standing stationary; his rear legs nearly buckle; then he catches himself.

Click on the image to enlarge (44k)

Split Necklace lies on a pallet, post-sedation, waiting to be crated and trucked 250 miles to a new home in Bardia National Park, Nepal. Photo by Lee Poston/WWF.

Bishnu turns to Gaire, the veterinarian, and points to the dart: it bent as it entered the rhino's armor. As they watch, some of the M-99 leaks from the end of the dart (flagged with feathers to make it readily visible). Gaire dives into his fishing tackle box and measures out another syringe—a half-dose—to top up the one the rhino has already received. He hands the Cap-chur™ gun to Bishnu, who shoots the rhino again.

Finally, more than forty minutes after the first dart, the rhino lowers its rump and settles on its front legs. The VIPs clap. It's rather hot, after all, and many have pressing business back in Kathmandu, the capital.

The scientists quickly dismount, cover the rhino's eyes to protect them from sunlight and begin monitoring the rhino's vital signs. They check gender, temperature, and dentition. A beefy radio collar is attached, to track the beast after it is released.

Jnawali has already radioed for the scoop loader. As the vet and the wildlife technicians wrap up their work, it arrives, towing a massive wooden sledge. It takes 15 people to roll and muscle the beast onto the sledge. This evening, when it cools down, the beast will take an all-night truck ride to Bardia National Park.

While tracking the translocations over the next several days, Broughton Coburn will also explore the biology, ecology and management issues—including threats from poaching—that affect the future of this prehistoric animal, the greater one-horned rhinoceros.

How the Rhinos Got a Home

Nepal's Royal Chitwan National Park owes the integrity of its relatively pristine grasslands and forest to autocratic rule—and malaria. Until 1950, Chitwan's 500-plus square miles were the private hunting reserve of the sprawling Rana family, Nepal's ruling oligarchy. All rhinoceros and tigers were the property of the rulers, who alone were allowed to hunt them. Poaching was punishable by death. Then a half century ago the Rana regime was overthrown. In the 1950s the threat of malaria receded as eradication programs, financed primarily by foreign aid agencies, brought it under control. Now the fertile plains of the southern Terai belt beckoned migrants who began moving down from the hills. The human population of the Chitwan Valley rose from 36,000 in 1950

to 100,000 in 1960—and humans became a far greater threat to the large mammals who had so long roamed there.

The population of greater one-horned rhinoceros, estimated at more than 800 in 1950, plummeted to fewer than 100 by the early 1970s. Poachers killed the beasts for their horns, which sell for as much as \$14,000 per pound today. Rhinos also destroy crops so villagers hunted them. The need to conserve these rare beasts was apparent, but could it be done without locking up all the resources of their fertile habitat—mainly firewood and fodder grass—that villagers needed to survive? Private hunting reserves had grown unpopular in a country that had become first a constitutional monarchy and then, in 1990, a democracy. But conservationists and politicians alike saw that a solution to the problem had to be found, and in 1973, Chitwan was designated as the country's first national park. The recovery of Chitwan's historic rhino—and much of its tiger—population required imagination, a great deal of hard work and enormous patience. Richer nations could learn much by studying how this small country, with limited financial resources, under attack by Maoist insurgents, managed to find a way to protect these extraordinarily rugged and yet vulnerable creatures.

If you would like to learn more about efforts around the world to save this endangered creature, please log on to www.worldwildlife.org/areas/

Other entries:

[March 31, 2003](#) | [April 1, 2003](#) | [April 2, 2003](#) | [April 3, 2003](#) | [April 4, 2003](#)
[April 7, 2003](#) | [April 9, 2003](#)

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Photo by Didi Thunder.

Dateline: (April 1, 2003) Royal Chitwan National Park, Nepal—

Today, the second day of the translocation, was a twofer: Both a mother rhino and her calf were darted and crated, to be dispatched by truck to Royal Bardia National Park later this evening. As soon as the pair were crated, Kamal Prasad Gaire, the vet, came back into play. A quiet, professional fellow, he carefully filled a syringe with blue fluid—M-50/50, the antidote to the tranquilizer M-99—and injected it into a vein of the sleeping mother rhino's ear. Just in time, too—the beast was darted over an hour ago, and her



Click on the image to enlarge (36k)

Translocation team leader Shanta Raj Jnawali (center) guides the sledge bearing a mother rhino. After the rhino is dragged into this wood crate,

temperature had risen to 104° Fahrenheit, which meant she was at risk of overheating.

the crate will be loaded onto a truck and driven overnight to the rhino's new home.
Photo by Lee Poston/WWF.

This maneuver must be executed swiftly. *The Great One-Horned Rhinoceros Translocation Manual* (a publication of the Nepal Forum of Environmental Journalists) admonishes: "To prevent the vet getting trapped inside the cage, care must be taken to check the sliding ability of the door prior to administering the antidote." They aren't joking: A rhino can be up and moving two minutes after the M-50/50 shot—within that narrow window the vet must exit the crate and close the door and the technical crew must bolt two metal cross-braces in place. The thrashing of a grumpy, disoriented rhino can smash the crate if it isn't secured from every angle.

Bishnu Lama, one of the technicians, told me the story of a rhino that gnawed and butted its way right through its crate. At midnight when the crew pulled over for a tea break, they saw a rhino head and neck sticking out of the truck, the creature on the verge of making its break for freedom. Bishnu was shocked, then he burst out laughing. Since then, he says, "we've redesigned the crates so that there are no parts large enough for a rhino's mouth to get a purchase on." That night Bishnu climbed back into the truck, prepared a dose of M-99, and darted the rhino again. Once he and his team had repaired the crate, they administered the antidote and continued on down the road without further mishap.

While tracking the translocations over the next several days, Broughton Coburn will also explore the biology, ecology and management issues—including threats from poaching—that affect the future of this prehistoric animal, the greater one-horned rhinoceros. A feature story based on his experiences will appear in the magazine later this year.

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Other entries:

[March 31, 2003](#) | [April 1, 2003](#) | [April 2, 2003](#) | [April 3, 2003](#) | [April 4, 2003](#)
[April 7, 2003](#) | [April 9, 2003](#)

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Photo by Didi Thunder.

Dateline: (April 2, 2003) en route to Royal Bardia National Park, Nepal—

As the sun begins to set in the late afternoon, I am jolting along rutted roads in an outsized Tata truck, along with the driver, his youthful assistant and a 4,000-pound mother rhino. We are rushing to deliver this extraordinary creature and her daughter to their new home.

Today's rhino roundup was completed by late morning, and the two trucks bearing the crated



Click on the image to enlarge (52k)

Villagers from settlements that surround the park are encouraged to watch the translocations. Their cooperation is vital to the long-term protection of these unique creatures, and seeing one up close, especially under these conditions, helps human beings to understand how vulnerable rhinoceros can be.

Photo by Lee Poston/WWF.

mother rhino and her calf sat in the shade of Chitwan Park's Biodiversity Conservation Center for most of the afternoon. Translocation task force leader Shanta Raj Jnawali figured that by 4:00 p.m. it would be cool enough (around 85 degrees Fahrenheit) for the trucks to depart on their 14-hour journey to Bardia.

"How would you like to ride in one of the trucks?" Shanta Raj asked. "We could use an additional check on the drivers to see that they stay awake." I looked over at the trucks just as they broke into comical spasms of jerking and swaying. I could hear rhinos banging into wood. I could hear rhinos banging into wood and asked myself whether I really wanted to spend the night riding with one of these irritable animals. For the sake of the story, I said yes.

Shortly after four o'clock, our driver lit several sticks of incense and chanted a prayer to the elephant-headed image of the Hindu god Ganesh, framed behind glass and secured above him in the vaulted dome of the cab. Then I climbed in and we pulled away from Chitwan, our mother load rocking and swaying, the calf following dutifully in the truck behind. Crowds of children parted before the truck and scampered onto fallen logs and fence stiles, their eyes straining to see through the slats of the trucks and the rhino crates. Delighted shouts of "*Gaida! Gaida!*" (Rhinoceros! Rhinoceros!) are relayed to villagers further up the track.

The driver's helper climbed out the window and across the cab to attach red flags to the wing mirrors—a pre-arranged signal for the police and military check posts, which had been alerted by the national park staff that we would be transporting these very large live loads.

With the laptop tightly secured between my knees, I try to write up my notes on the capture of the precious mother and calf we're carrying.

By this morning most of the diplomats and government VIPs had returned to Kathmandu along with Crown Prince Paras, who had helicoptered in to the elephant camp just for the day yesterday to greet gathered dignitaries and see the first translocation. As a result, today's capture presented fewer distractions for the technical team, which was able to pare the 53 attending elephants down to 22.

Once again the elephants fanned out through the jungle, a hundred feet apart, conducting the same royal sweep used in the hunts of the British Raj. The cordon flushed out a barking deer, or *ratuwa*, no larger than a medium-sized dog; two axis deer, or *chital*; a large elk-like sambar deer, or *jaraiyo*, and a family of four wild boar, *bandyel*. But no rhino. We pricked our ears for alerts from neighboring elephant drivers.

"*Rhino One to Rhino Five*" crackled over game scout Bishnu Lama's radio. In the forest, Shanta Raj had found an adult female—with a female calf old enough to be darted and moved safely along with her mother. He was pleased because two females would make a nice complement to the two males captured yesterday; gender parity is one of

the criteria the biologists are seeking in the animals they select.

One diplomat who had stayed on was Mike Malinowski, U.S. Ambassador to Nepal and a tireless supporter of conservation efforts. He was riding behind Shanta Raj, who handed him the dart gun once the rhinos had reached the river plain. The mother was less than 40 yards away, well within range. The ambassador raised the gun, aimed and shot. The dart struck her perfectly in the rump. The calf appeared more startled than the mother. Game scout Bishnu Lama raised his gun and shot a dart containing a smaller dose of M-99 at the calf.

Good hits. Within fifteen minutes both went down on their haunches. The vet Gaire, Shanta Raj and the team began to work on the mother first, quickly taking measurements and attaching the radio collar, checking to see that it worked. The crew rolled the mother and calf onto their own sledges, and the scoop loader spirited them away to the edge of the river, where two crates and trucks awaited.

"What's impressive," Ambassador Mike told me, "is that this entire operation is being conducted by the Nepalese themselves. I offer moral support and encouragement, but mainly I'm proud to observe and appreciate as they execute this thoroughly efficient, professional operation."

Tomorrow, I will write about the release of the mother and calf at their new home in Bardia National Park, 250 miles west of Royal Chitwan National Park.

If you would like to learn more about the World Wildlife Fund's efforts to conserve elephants and rhinoceros throughout Asia, please go to www.worldwildlife.org/areas/

Other entries:

[March 31, 2003](#) | [April 1, 2003](#) | [April 2, 2003](#) | [April 3, 2003](#) | [April 4, 2003](#)
[April 7, 2003](#) | [April 9, 2003](#)

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Photo by Didi Thunder.

Dateline: (April 3, 2003) Royal Chitwan National Park, Nepal—

I've had a day to relax and rest while I hitched a ride back to Chitwan in a comparatively cushy vehicle, courtesy of the U.S. embassy.

The night before last was a rough ride for rhinos and humans. Our truck carrying the mother rhino and the truck behind us carrying her calf dodged potholes, stray dogs and pedestrians as well as the carcasses of crashed night express buses. Headlights were small help in the pitch dark. The dust, the drone of the



Click on the image to enlarge (32k)

Tata trucks transporting the mother rhino and her calf ford the Babai River in Royal Bardia National Park during the early morning hours. A few minutes later the animals were released to explore their new home.

Photo by Lee Poston/WWF.

engine and the heat left me searching for a mantra, an old song, an image of the natural beauty of the jungle and grasslands we had beheld only a few hours earlier to keep me going.

Mercifully, the rhino trucks were flagged through the police and military check posts as soon as they saw the oversize crates—even at sensitive posts where until recently passengers had to disembark and run the gauntlet of security checks. Since 1996, a rebel Maoist insurgency (not supported by the Chinese) has gained a growing foothold, mainly in west Nepal. Violence began ramping up dramatically after November 2001 when the Royal Nepal Army clashed with young Maoist troops. Seven thousand insurgents have died, more than half of them last year.

The violence has quieted since February when the insurgents and the government of Nepal declared a cease-fire. The Nepalese are cautiously optimistic about forthcoming negotiations, and members of the rhino translocation task force are especially eager for a lasting peace since the security of the country's wildlife is tied to its political fortunes. After the government withdrew many of the soldiers who had been assigned to patrol the park so they could help fight the insurgency, there was a dramatic upsurge in rhinoceros poaching: More than 30 rhinos were killed in the twelve-month period ending February 1. As a result, the protection of greater one-horned rhinoceros has taken on an even greater urgency.

Here are my notes from the actual release of the mother and her calf in Royal Bardia National Park:

Our truck rumbles to a stop in a forest clearing, 15 hours after departing Chitwan. Waking, I look out at the forested hills of Bardia's Babai valley. Tranquil. Lush. I find myself wondering what this mother and daughter are going to think of their new home.

They're fortunate to have this home. Fifteen years ago, 1,550 houses filled this fertile valley. Then the Department of National Parks and Wildlife Conservation made a daring move, designing a resettlement program in order to clear this land. Standing up to sharp criticism of the plan, the department compensated villagers and moved them to a larger parcel of equally rich land to the south—closer to amenities such as electricity, infrastructure and jobs. They never looked back; today the program is accounted a success.

Climbing out of the truck, I greet Mike Malinowski, the U.S. Ambassador to Nepal, and the Chief Warden of Bardia National Park Gopal Prasad Upadhyaya. They are as bleary-eyed as I am, and we nurse cups of black tea cooked over a jungle fire. The familiar call of a peacock breaks into our groggy conversation.

Once staff and observers have convened, we depart for the release site. Both trucks handily ford the Babai River, though it's nearly deep enough to float the handful of SUVs that follow us. As the morning sun peeks through the jungle, the drivers back the trucks up to a shelf that has been hacked out of a sandy chunk of relict river bank.



Click on the image to enlarge (50k)
platforms

Observers and staff watch the mother rhino from on high. After she cautiously backed out of the truck, she huffed off in a cloud of dust.
Photo by Lee Poston/WWF.

observers. Task force leader Shanta Raj Jnawali looks about for vagrant humans still wandering around at ground level—newly-released rhinos are famously cranky. They often turn and ram the truck that carried them with their horns. (It's their incisors, however, that do damage during territorial fights.)

Kamal Gaire, the vet, sprays a final wash of antiseptic through the slats of the crate onto the rhino's fresh wounds—they all seem to have them; then Bardia park staffers standing atop the crate lift the gate. Slowly, the mother backs out. (Rhinos are transported facing forward so that light visible through the rear slats doesn't inspire them to break out, a practice that has been followed since a near-catastrophe several years ago.)

The object of all this effort looks about, smelling the air. Rather than follow the cordon of bamboo and shrubs carefully constructed to direct her into the forest, she takes off in a dusty cloud of thumping footfalls, charging toward the river instead. Not a problem, since we're in the heart of the park.

Next, her daughter is released. The crew repeats the process, but the calf hangs back. One fearless soul (at least this is a calf, weighing in at only 800 pounds, not 4,000), jumps from the crate and throws a stick onto her back. Others pour water through the roof slats in an attempt to get her moving.

Slowly, the calf backs out, wanders and runs and turns, then stops near the other truck. The driver leans from the window, his face frozen in a look of awe and respect. The calf smells the scent of her mother. She lifts her head hopefully and calls—a plaintive bleat.

"The mother will hear that, even though she may be half a kilometer away by now," Shanta Raj reassures me. "They will reconnect."

I compliment him on orchestrating the operation under difficult circumstances, with little sleep. "This is what we do, and love," he says, laughing. "But moving megaherbivores around like this is no joke." Indeed. Especially the jarring truck ride, I think. But then humans aren't built quite as sturdily as Asian rhinoceros.

Another episode of the rhino chronicle will appear here tomorrow.

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[March 31, 2003](#) | [April 1, 2003](#) | [April 2, 2003](#) | [April 3, 2003](#) | [April 4, 2003](#)
[April 7, 2003](#) | [April 9, 2003](#)

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Photo by Didi Thunder.

Dateline: (April 4, 2003) Royal Chitwan National Park, Nepal—

No rhino captures took place on Wednesday and Thursday. The elephants here needed a couple days' rest. They weren't entirely idle, though, because they had to travel some 35 miles to their new staging area in the eastern part of the park for the rest of this year's captures. Averaging less than 5 miles per hour, the trip took them one long afternoon.

6:00 a.m. Friday—

I join the translocation team for a dugout ride across the Rapti River as egrets and bar-headed geese play in the shallows. I climb into the back of a 6-pack pickup truck waiting on the far bank, and stand in the back with game scouts Bishnu Lama and Harkhe Lama as the truck careens through the jungle on a lonely grassy track. We are moving so fast, hoping for an early start to the day, that we absorb little more than bird

sounds — jungle fowl, Indian cuckoo, the ubiquitous peacock. We halt to let eight *chital* (axis deer) cross the road, but pay scant heed to tiger, sloth bear, deer and rhino nearby.

We pull up to an anti-poaching guard post—a rustic wood structure on stilts—where the translocation team's backup crew and elephant drivers have already gathered and prepared breakfast for 120. The cook shack, sooty black and earthen brown, has an oddly homey appeal. Giant steaming pots of boiled eggs and vegetable curry cook over a clay fireplace as smoke filters lazily through the tile roof. We wash our hands at the hand pump, then hold out plates to receive ladles of curry on rice.

As soon as he gets radio confirmation that the scoop loader is en route to the camp, team leader Shanta Raj Jnawali shouts to the *mahouts* (elephant drivers) to saddle up. Twenty-five of the pachyderms surround the camp, loitering, awaiting further instructions—their presence offers a sense of protection from the tigers and rhinos prowling about in the grass close by. Bishnu Lama starts to tell me about a tiger that walked right into a house near the park last year and dragged out the head of the household. I usually like to get details, but decide to pass this time. America has killer grizzlies, Nepal has Royal Bengal tigers.

I try climbing aboard the elephant the way the *mahouts* do: Stand squarely and confidently in front of the elephant, then reach up and firmly grasp the outer edges of his ears—which come with comfortable handles that seem as if they were built for this purpose. That signals the elephant to bend his trunk into a crook just above the ground. Step into this loop of trunk with one foot, then hang on. (It's like doing a dock start on one water ski.) The elephant politely lifts his head, high, and with luck deposits you neatly on his neck, just fore of the saddle. There's a twist or an inversion that the disembarking passenger should make in there somewhere, but I can't quite describe it. The *mahout* assures me that his elephant knows how to anticipate, and then compensate for, the awkward antics of ignorant foreign humans.

After crossing a broad meadow of reed-like *naranga* grass, a *mahout* at our end of the elephant cordon spots a rhino, and we relay the news down the line. The beast is heading away from us so we take chase with six other elephants. Just before the animal launches into a run, you have to grab the ropes that always seem to hide under the saddle. Fortunately, their lurching is a very slow version of a bucking bronc.

We need a female today, Shanta Raj says, and we strain to make out the gender. She's a female indeed, and a young one—a sub-adult of 8 or 9 years. Perfect.

"Herd her back toward the meadow, and don't let her move toward the water!" Shanta Raj shouts. The rhino turns and thunders toward us—charging. Our elephant trumpets (just like the movies, I think, except that when you're sitting on one, you also feel it vibrating in your chest.) I have the saddle ropes in both hands, but suddenly cameras, binoculars and eyeglasses are thrashing about my neck as the elephant rolls into his seasick-inducing jumbo gait, throwing all of us passengers in every direction at once. Whoa, there. Falling from an elephant would be like

falling from the roof of your house. With additional hazards.

Bishnu Lama climbs from his elephant into the crook of a tree, and readies the dart gun. The cordon cinches tighter. The rhino sneaks past Bishnu's tree, then stops only 15 yards away. She hasn't seen him. Rhinos don't tend to look up since predators don't attack from trees. Bishnu shoots a clean shot in the shoulder. Nice.

Now we have to take special care that this girl doesn't head toward the wallowing hole that's behind us—a comfortable, familiar place that is precisely where she wants to go. The cordon closes up until the elephants are only ten yards apart, but the rhino continues to charge for the gaps. The elephants are as fast as she is—but barely. Hanging on to ours is like riding the back of a mammoth defensive linebacker who's reading and reacting to a running quarterback.

In fifteen minutes, she's down. Shanta Raj and Kamal Gaire, the vet, have the process down to a routine now so the science and the measurements go smoothly. She's been pulled to the edge of the pasture and loaded into the crate a half-hour later. Time for lunch at the cook shack—and then another rhino.

Please return on Monday, April 7, to read more about Brot Coburn's adventures with the greater one-horned rhinoceros. If you would like to learn more about efforts around the world to save this endangered creature, please log on to www.worldwildlife.org/areas/

Other entries:

[March 31, 2003](#) | [April 1, 2003](#) | [April 2, 2003](#) | [April 3, 2003](#) | [April 4, 2003](#)
[April 7, 2003](#) | [April 9, 2003](#)

Protecting the Greater One-Horned Rhinoceros

Last Monday, *Discover* began posting its first diary on the Web. Through this Wednesday, April 9, you will be able to read dispatches written in the jungles of Nepal by writer and Asia hand Broughton Coburn as he reports on the translocation of ten greater one-horned rhinoceros.

Nepal's Department of National Parks and Wildlife Conservation, with support from a Nepalese agency called the King Mahendra Trust and with funding from the World Wildlife Fund, is capturing and transporting ten rhinos from Royal Chitwan National Park, a World Heritage Site near the Indian border, to Royal Bardia National Park, 250 miles to the east. The move will help to bring the number of successful breeding colonies in the world to three, which will bolster attempts to preserve the species.

Broughton Coburn has worked in rural development and protected area management in the Himalaya for two of the past three decades, and is the author of the bestsellers *Everest: Mountain Without Mercy* (National Geographic Books, published in paperback in May) and *Touching My Father's Soul: A Sherpa's Journey to the Top of Everest* (HarperSanFrancisco) with Jamling Tenzing Norgay, son of Tenzing Norgay, who reached the summit of Everest with Edmund Hillary 50 years ago this May. Jamling climbed the mountain in 1996 by the same route his father had taken.



Photo by Didi Thunder.

Dateline: (April 7, 2003) Royal Chitwan National Park, Nepal—

On Friday afternoon, game scouts Bishnu Lama and his brother Harke finish their super-sized lunch of rice, goat and curried vegetables, then crawl into the shade under the Sukhibhar check post to nap on the *mahouts'* straw mats. They call me to join them, and I collapse on a nearby mat.

Minutes later, translocation team leader Shanta Raj shouts to the technical team to prepare for the afternoon's captures. Several rhinos have been spotted in the adjacent meadow, and the elephants have been lined up. The temperature has reached an uncomfortable 90 degrees, but the team hopes to catch three more rhinos before dark. Four crates have been delivered to the site (the female rhino we caught this morning is already waiting in one of them). A four-rhino day would mean we had made our goal of ten rhinos and the translocation could end a day early.

One less day of mobilizing this mass of men and elephants would be a blessing for this exhausted crew.

Shanta Raj directs the elephants to encircle the meadow. One flank heads around to the east, another to the west, and they connect to form a line on the south side. This line pushes north in the direction of the waiting crates—reducing the distance that both the loader and the sedated rhino need to travel.

A female, 10 to 12 years old, appears out of the grass. She wanders slowly back and forth, searching for a path through the elephant cordon. The team can see she's very large around the middle—clearly pregnant and, therefore, highly desirable. She will carry her fetus with her and give birth in Bardia, so we know she's fertile and we're getting two for the price of one.

"From all our experience," says Shanta Raj in answer to my query, "transporting a pregnant female has never resulted in undue stress or a miscarriage—though I can't imagine that banging around in a box in a truck all night is an enjoyable experience for a rhino."

Seven females to three males is the target gender ratio for this year. "For effective breeding with the Bardia Park females, you only need a few males," Shanta Raj explains. "We've determined that the genetic diversity of this population is quite robust. Males fight and injure and even kill each other, and they don't give birth—so females are best for establishing a new colony."

Harke Lama is perched in a tree at most 200 yards from the crates. He neatly darts her, and the elephants slowly herd her even closer to the crates. She resists, but not aggressively, and goes down on her haunches less than 80 yards away.

The loader goes to work digging a 2-foot-deep depression for the sledge immediately next to her quiet body; the padded platform must be somewhat lower than the rhino so we can roll her onto it. Dr. Gaire notes some large scars, fully healed, probably the result of fending off unwanted suitors. A team member records them on the data sheet.

As soon as the sledge is pulled away, the elephants turn and follow the escape route of another female that had been flushed out along with the last one. She, too, is 10 to 12 years old, possibly pregnant, and offers little resistance. A smaller flank of elephants is able to herd her back to the trees where Harke and Bishnu are perched. Another one goes down.

Dusk threatens. A light rain is falling from a sky that was hazy but cloudless a few hours earlier. Shanta Raj genially deflects some mild grumbling from the team, and sends the elephants off in search of the day's fourth rhino. Just beyond the eastern edge of the meadow they find a sub-adult male, about 9 years old, basking in a large wallow, mostly submerged. To motivate the rhino, a *mahout* gets his elephant to trumpet. (He does this by twitching his feet in a particular way that the elephant understands. Elephants are controlled largely by hard protrusions located conveniently behind their ears, which the *mahouts* work vigorously like

the brake pad and accelerator on a jalopy).

We've disturbed the male's bath, and he emerges from the wallow, mostly annoyed. As he gets more aggressive, Shanta Raj hails a flank of ten elephants to form a defensive line along the wallow. The rhino must not return to the water.

Our quarry bursts through the trees and into the meadow very close to the crates and trucks, then stops and stares in surprise. He's only a few yards from Bishnu's tree. Pop.

Fortunately, the loader has finished crating the last female. The team measures the male and rolls him onto the sledge, less than 70 yards from the crate. The mood is exuberant. Someone jokes that if we had another crate, we might be able to coax a fifth one to walk right in. Eight of the this year's ten rhinos have now been captured and crated. There's just enough light to make it back to the camp.

Rhino mania. For me, the team's organization, precision and dispatch evoke the era when Chitwan was still a royal hunting preserve. Royal court photographs, which now grace tourist hotels, picture Nepalese rulers, Indian maharajahs and British viceroys standing triumphantly beside scores of tiger skins and rows of severed rhino heads—romantic but disturbing documents of a time when it was assumed that the jungle offered an endless supply of game. The sahibs stood atop their elephants in special shooting howdahs ornately woven of bamboo. They let loose, it seems, at any movement in the grass.

Ironically, when hunting and access to the preserve was limited only to royals, the habitat and wildlife populations fared better than they did in later years. After 1950, Chitwan and other areas that had been the province of royals only were handed over to the new, more egalitarian government. Almost simultaneously, malaria was eradicated in the southern lowlands, and so villagers from Nepal's middle hills moved down to these fertile lands, settling in prime rhino and tiger habitat.



Click on the image to enlarge (65k)

These tigers were shot during a royal hunt in Nepal in 1935.

Photo credit: Dirgha Man Chitrakar.

© Kiran Man Chitrakar.

Poaching became a serious problem. By 1970 there were only 100 rhinos left in Chitwan. The preserve was declared a national park in 1973 (and a World Heritage Site in 1977). Armed guards and habitat restoration efforts made a difference, and today there are 602 rhinos in the park.

But the rhinos aren't safe yet. Poverty and demand for the precious horn (each brings \$10,000 to \$20,000 on the international market) combined with the withdrawal of many armed wildlife guards to fight Nepal's Maoist insurgency have resulted in a frightening upsurge in poaching. Between July, 2001 and June, 2002, 38 rhinoceros were poached. Eleven

poachers were killed by armed guards, and 40 were arrested.

Will the remarkable efforts of these dedicated scientists and wildlife technicians be compromised by greed and by a shortage of security, resources and education? No one knows. The scientists who do this work are utterly devoted, but they are able to do only so much in a world that grows in complexity with each passing year. Their achievement is extraordinary, but they will need luck and determination as well as financial support to sustain it.

Brot Coburn will take a day off tomorrow. Please return on Wednesday for a final installment of his diary. If you would like to learn more about the fight to save the greater one-horned rhinoceros, please go to www.worldwildlife.org/areas/ Thanks for reading!

Other entries:

[March 31, 2003](#) | [April 1, 2003](#) | [April 2, 2003](#) | [April 3, 2003](#) | [April 4, 2003](#)

[April 7, 2003](#) | [April 9, 2003](#)

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Protecting the Greater One-Horned Rhinoceros

Today is the last day that you will be able to read a fresh dispatch from Asia hand Broughton Coburn as he finishes his reporting of the translocation of ten greater one-horned rhinoceros in Nepal. His earlier reports are all archived on this site.

Nepal's Department of National Parks and Wildlife Conservation, with support from a Nepalese agency called the King Mahendra Trust and with funding from the World Wildlife Fund, has successfully captured and transported ten rhinos from Royal Chitwan National Park, a World Heritage Site near the Indian border, to Royal Bardia National Park. 250 miles to the east. The move will help to bring the number of successful breeding colonies in the world to three, which will bolster attempts to preserve the species.

Broughton Coburn has worked in rural development and protected area management in the Himalaya for two of the past three decades, and is the author of the bestsellers *Everest: Mountain Without Mercy* (National Geographic Books, published in paperback in May) and *Touching My Father's Soul: A Sherpa's Journey to the Top of Everest* (HarperSanFrancisco) with Jamling Tenzing Norgay, son of Tenzing Norgay, who reached the summit of Everest with Edmund Hillary 50 years ago this May. Jamling climbed the mountain in 1996 by the same route his father had taken.



Photo by Didi Thunder.

Dateline: (April 9, 2003) Royal Chitwan National Park, Nepal—

We need to capture only two more rhinos to finish up this year's operation. At daybreak there is just enough light to see the far shore of the Rapti River as the boatman poles us across in his dugout. We climb into the pickup trucks waiting for us on the other side and take off through the jungle—22 miles to the Sukhibhar meadow in the heart of Chitwan.

At Sukhibhar, Bishnu Lama motions me over to look at his uncle's Tata truck, which has just returned from Bardia after dropping off one of the four rhinos captured two days ago. As his uncle sleeps on the bench behind the driver's seat, Bishnu purses his lips in the direction of the right front fender and headlight.

"Looks like he had a little accident," I say, surveying the bent grill, the battered chrome and a 2-inch hole in the truck body.

"Rhino," he says matter of factly, then looks at me for my response.

"Holy cow. The hole, too?"

"Yes, when they released the female in Bardia on Saturday morning, she turned on the truck and attacked it—as they often do—and she punctured the sheet metal, there, with one of her lower incisors." He gestures toward the smaller dents along the side of the truck, where she butted it with her horn. "My uncle said he leaned out the cab window and watched the whole thing," Bishnu adds. "Now you see what sort of damage these animals can do, especially to each other."

I climb onto an elephant, still a scramble even though the pachyderm is squatting. The elephant stands up, and I promptly drop my lens cap. Embarrassed, I tell the *mahout*. Apparently this happens all the time because the *mahout* simply works the back of the elephant's ears with his feet, and soon the delicate grasping end of the elephant's trunk swings up and hands me the lens cap.

Shanta Raj, the team leader, tells us that scouts report the meadow is alive with rhinos, including two pairs of mothers with calves.

The first clump of elephants file away from camp and quietly spread into a line. Harke and Bishnu Lama climb into trees about 80 yards apart, near the middle of the meadow. Shanta Raj signals for the elephants to push across the meadow, keeping the line as straight as possible. We scare up nearly a dozen peacocks. Then, within five minutes, we see an area of grass twitching. No—two areas of grass. A mother and calf, moving in unison.

Shanta Raj orders the far end of the line to curve around, and the cordon gradually herds the pair of rhinos (though I still see little more than moving grass) toward the shooting gallery. Harke darts the mother, a clean shot in the shoulder.

Then it got Western. ("Cowboys in flipflops" I write in my notebook.) Elephants trumpet and blast air from trunks; rhinos snort and call back—a cross between a loud grunt and a squeal. Then the rhinos pick out our part of the line ("why us?" I think) and threaten to charge. Our elephant spooks, surprised by the rhino lunging out of the grass, and we jerk back a step. Whoa, hang on.

The calf breaks through our line—the first time this has happened this year—then takes off at a full rhino gallop, heading south toward the trees and the river.

Shanta Raj sends us to find the calf, while he and the team oversee the measurement and loading of the mother onto the sledge.

We fail to locate the calf, but Shanta Raj reassures me. "This 5-year-old will be absolutely fine without the mother. In earlier translocations we have captured and separated mothers from even younger calves." I still feel uneasy about the abruptness of it all—it makes me think of Dr. Seuss's Horton getting hauled off in a crate (and Thidwick the Moose

almost getting thrown in, too).

En route to the final capture, we encounter a pair of rhinos mating. This couple doesn't even seem to notice us, as they snort around in the trees at the edge of the forest. Apparently, genetic impulse supersedes their concern for personal security.

The male dismounts. Our final capture target is his female partner. It takes some clever elephant rodeo to keep the lovesick male from following her. Once the two are separated, the half-circle of elephants surrounding the female has to turn outward to keep the male from trying to break his way *into* the enclosure. Is it attachment or simply male ego, chagrined at coitus interruptus? I ask the rangers, but they aren't sure. Maybe a bit of both.

With the last rhino in the crate, the camp breaks out in jubilation and relief. Some of the crew dunk their heads under the spout of the hand pump to cool off. Bhagi Subba, the King's elderly elephant driver, tells stories of the old days and hunting safaris, but the action he describes was not as exciting as what we have seen. It was all a little too organized in those days.

"Did you get any pictures of the rhinos mating?" Bishnu asks me.

"No, I was changing film—as usual."

"Oh, you almost never see that," he said. "In 27 years as a game scout and wildlife technician, I've only seen rhinos mate three or four times."

I had assumed the sight was more common, judging by all the postcards that show rhinos mating for sale in souvenir shops. Now that I think about it, they all seem to be made from the same grainy image.

Earlier I e-mailed news about this year's successful captures to Hemanta Raj Mishra, the wildlife biologist who in 1986 designed and directed Chitwan's first rhino translocation. The following year he received the Getty Conservation Award for his pioneering work in developing Nepal's protected area system; today he works for the Asian Development Bank in Manila. He replied enthusiastically to my message: "Nepal is clearly on the way to establishing a viable new rhino population in Royal Bardia National Park—a goal that seemed so distant 17 years ago. The remarkable growth of the Chitwan population during these years set the stage, but it was the political will—followed by practical, strategic management decisions—that has made it all possible."

Chitwan has more than 600 rhinos, but Bardia has only something on the order of 90 or 100. This is a comfortable number for a breeding population, but if the frightening surge in poaching continues, the Bardia colony may be wiped out and Mishra's hopes smashed.

Fourteen rhinos were killed in 2001, a figure that leaped to 37 in 2002.

In 2002, 40 poachers were arrested and 11 were killed by army guards, but even the prospect of death has not deterred poor villagers who stand to collect several years' wages when they deliver a single horn to dealers in the international trade.

On March 29, soldiers from the Army protection unit post in Bardia joined park rangers for their first patrol in eight months. The park is located near a Maoist stronghold, and Parks Department officials say that fear of Maoist insurgents had kept them from sending out more frequent patrols. The patrol found four rhino carcasses, three within 200 yards of each other. All their horns had been removed, along with some of the toenails. (It is believed that the latter are used as votive lamps in ceremonies honoring ancestors.) Judging by their state of decomposition, the three had died less than a month earlier. At this rate, all the effort that has been poured into translocation could come to nothing.

For me, having seen the tremendous dedication and teamwork of men and elephants that it takes to move this remarkable animal from one part of its historic range to another, I can't help but share the Nepalese conservationists' frustration and anger. Despite these setbacks, they must continue to forge ahead with long-term strategies for habitat protection, careful management, translocation, control of international trade, and deterrence of poaching. Conservationist must shift gears in order not to squander their successes in boosting populations of greater one-horned rhinoceros. They must confront poaching with the same dedication and efficiency that they brought to translocation, if they are going to save this majestic beast from extinction.

This is the last entry in Brot Coburn's diary. If you would like to learn more about the translocation of the greater-one horned rhinoceros, the World Wildlife Fund, which helps to fund the project, plans extensive coverage on their website at <http://www.worldwildlife.org/expeditions/teraiarc/> starting next week.

Other entries:

[March 31, 2003](#) | [April 1, 2003](#) | [April 2, 2003](#) | [April 3, 2003](#) | [April 4, 2003](#)
[April 7, 2003](#) | [April 9, 2003](#)
