TC FIELD GRANTS

NO REFUGE AT THE END OF THE EARTH

by Andrea Currylow

BEATING HUSTLERS, POVERTY AND DISEASE TO SAVE PLOUGHSHARES

The Restaurant Baobab was the local outpost in Mahajanga used by dealers to sell Ploughshare Tortoises. This photo was taken at 7:30 a.m. before opening.

JONATHAN TORGOVNIK

The port of Mahajanga where our boat embarks to Baly Bay — a five hour boat ride on a good day.

JONATHAN TORGOVNIK

Bing! I received a text message from my husband back home in the USA: “Bubonic Plague is spreading through Madagascar :-/ Watch out for rats and fleas! Stay safe, love.” Rats and fleas? I don’t know if a day had gone by yet since I arrived that I hadn’t seen evidence of rats or fleas in or near my living quarters. Luckily, I had been sleeping in a tent for several weeks and had only recently extracted myself from the forest and entered a populated area. I had been out of contact in a remote area of northwest Madagascar, searching for the famed Ploughshare Tortoise (*Astrochelys yniphora*), the most endangered tortoise on the planet.

Presently, I was on my way from our isolated field sites to one of Madagascar’s larger “cities,” Mahajanga, for a short respite to resupply and transfer scientific samples to a safer location. Mahajanga is a fairly typical African large village/small city with degrading 1950s French colonial architecture, a holdover from the colonization, and no real signs of recent progress. Madagascar gained its independence in 1960, but political turmoil and widespread corruption is constantly crippling development.

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Taxis are either pieced together car parts, all much older than myself, or rickshaws drawn by foot or bicycle. The streets and beaches are littered with plastic wrappers, bags, discarded produce, and, unfortunately but commonplace, human excrement. At least the dirt at my field sites in the forest is “clean.”

Mahajanga is becoming increasingly known as the port city village for export of baby Ploughshares on their way to Asian markets. Wealthy wildlife buyers want the prized tortoise as a pet to represent their affluence and power; for who else has the capacity to own the rarest tortoise in the world, endemic only to a tiny, extremely isolated, and wild corner of an exotic land known for unique wildlife?

I met some of the poachers once. I was unimpressed. On my very first trip to Madagascar with the Turtle Conservancy and The New Yorker reporter William Finnegan, we visited Mahajanga. The TC brought cameras and microphones to interview locals on their views of the Ploughshare and the tortoise trade, when the idea was floated that we “go undercover” and pretend to be exotic collectors. We hid the microphones in our clothes and set out, tailed by a video camera. It didn’t take long to find poachers willing to meet with us and, after just a few hours, they produced two wild-caught baby Ploughshares for purchase. At that level, that close to the ground where the animals hadn’t even been smuggled across the country yet (much less, out of it), the price was still low at only $200 each. The poachers and smugglers with whom we met were trying to be real cool and casually confident, but to me, they looked and acted like total scrubs — I mean, one was even wearing sweatpants! I took this as evidence that the real money comes into play up the chain a bit. Once the smugglers find a mule, pay off multiple baggage handlers at the airports, and then get the “product” to an Asian market (if the Ploughshares survive the long, cramped trips), they can fetch more than $10,000!

Oh, but I don’t actually encounter any of that in the field; it’s too remote for “real people.” Where I do my research, and where the Ploughshares are found in the wild, is a collection of disjoint habitat patches consisting of thick bamboo scrub, palm tree savannas, and forests with dense understory scrub. To get to these patches, I must make the 36 hours of flights from California, through South Africa, and into Antananarivo, Madagascar, to catch a hot and dangerously overcrowded taxi-bus for a 12-hour drive across the country on … er … “thrilling” winding cliff-side roads to a port village where I either catch a half-sinking barge across the bay and hire a rickety 4x4 truck for another day of driving, or a small, cracking fiberglass boat for an open-ocean (and usually terrifying) 5-hour ride to the village of Soalala. Soalala is a rat-infested port village that our research team uses as a home base while in the field. We then have to gather supplies and load the small boat with sacks of rice and beans, my sampling supplies, field equipment, camping gear, and a few live chickens before heading across the bay and unloading on the beach. Then we find and hire several villagers or an ox-drawn cart to assist with all the supplies and make the multi-hour hike into the forest where we’ll set up camp. In the morning we can start surveys after another hike to the Ploughshare’s habitat. After finally “settling in,” our routine consists of early mornings, long surveys in tropical midday swelters, mounds of plain

MAURICE RODRIGUES

I'm a fair-skinned redhead, not French, and female. The trifecta. It's strange enough in Madagascar to see someone (outside the capital city) with light skin, but I'm also an unaccompanied woman (scandalous, I know!). In the remotest areas I visit, I'm gawked at.

rice for sustenance, and trying to find the time and some (inevitably) muddy water to have a sponge bath every few days while trying to avoid the malaria-ridden mosquitos. It's paradise.

I work with a hodgepodge of players from non-governmental organizations, Madagascar national parks, and local villagers, but I am the only obvious oddball. I'm a fair-skinned redhead, not French, and female. The trifecta. It's strange enough in Madagascar to see someone (outside the capital city) with light skin, but I'm also an unaccompanied woman (scandalous, I know!). In the remotest areas I visit, I'm gawked at. My hair is curiously touched and tugged, my clothes carefully inspected, my attempt at friendly conversation in Malagasy evokes only giggles, and my gear is often the source of fearful, untrusting expressions. And then I take it all a step further and intrude into the "sacred forests" that are professed to be protected by Malagasy ancestral spirits, where I do "men's work." This surely is unsettling to most, not the least of whom are my field hands. So, I aim to remain open and respectful, reaching out when possible.

"Salama! Vovo?"— Back at camp, I greet the woman who has begun cooking the morning rice before dawn. She looks up, smiles politely trying not to giggle at the white girl speaking Malagasy, and goes back to tending the fire. I take a seat on the grass mat and begin to lace my boots. Meanwhile, the dozen or so guys, who had slept cramped together in a small palm-thatch hut to escape the diseased mosquitos, were emerging and readying for work. Angelo, the field lead for the project with Durrell Wildlife Conservation Trust, was prepping the men with their daily tasks. We're splitting up into two crews today, one large crew of 10 will accompany Angelo to the far west and will continue transect surveys looking for new Ploughshares. He has been estimating tortoise populations since 2006 but it hasn't gotten any easier. The other group of only two guys will come with me to track the tortoises and sample them for my research.

I have the smaller group, but I also took the only two literate men, aside from Angelo, to do this technical work. I have been training the pair, Fidy and Fada, to use the GPSs and the radio-telemetry equipment so that they can continue to track the Ploughshares year-round while I am away, back home in the U.S. We need these skilled guys out there to keep an eye on the tortoises; watch were they go, what they do, and keep the poachers at bay.

Watching Fidy and Fada work together, using what they have learned and knowing how far they have come, provides insight to a grander perspective regarding my research and the Ploughshare poaching problem in this country. These men were open sea fisherman, some of the most difficult work I can imagine. Besides the physical challenges and mortal risk of that job, unstable fisheries, an insecure future, and only a pittance of income, often less than one dollar a day, surely results in a disturbingly stressful life. Is it really so difficult to believe that villagers would, without a moment's hesitation, kill or poach their Critically Endangered national treasures right out of their own backyards if it meant food for their families? The Ploughshare Tortoise is the animal that has me returning to an underdeveloped, incredibly remote, and increasingly desolate part of the earth to study

(top) During a investigatory mission early in 2012, the Turtle Conservancy and Durrell crew had to seek shelter at a forest village to wait out a downpour. Pictured: three local guides, Paul Gibbons, Angelo Mandimbihasana. Ryan Walker, and Eric Goode.

(middle) Affixing a temperature logger and radio-transmitter to a wild Ploughshare Tortoise.

(bottom) A Ploughshare Tortoise with our radiotransmitter hacked off by poachers.

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for months at a time, away from my friends, family, and comforts. Why? Why should anyone care about the fate of this species, particularly those peoples with such intimate and banal familiarity with Darwin's struggle for existence?

The recent conversion of the Ploughshare habitat to a national park has brought some protection for the animal. Fines for trespassing (entering the park without a permit) are outrageous for rural Malagasies, perhaps more than they could dream to earn in wages over several years or decades. And, if you are caught and brought to jail, you will need to arrange for family or friends to bring you food and clothing while you serve time. The conditions in Malagasy jails are certainly nothing to sneeze at. The outbreak of bubonic plague that my husband texted me about began in a Malagasy jail. You'd think the fear of all this would certainly keep poachers out of work. However, there are far too few park rangers to patrol or enforce the law, and it is not difficult to enter, move through, even camp for several weeks in the park without much fear of being discovered. And corruption is rampant at all levels of government.

This is where I come in to muck things up. I need to access the remotest areas of the forest to find new Ploughshares for sampling and marking. And since my gear is … well … let's just say, I don't pack light; and we need boots on the ground to help with our surveys, so I arrive with a crew of a dozen villagers at a time. This is not good news for any residents or intruders looking for young Ploughshares to smuggle. On top of this, the Turtle Conservancy teamed up with Durrell Wildlife Conservation Trust and, with grants from the U.S.

RYAN WALKER

ANDREA CURRYLOW

Fish and Wildlife Service and the Andrew Sabin Family Foundation, and has organized, hired, and trained a team of patrolmen to more consistently monitor the park. These are the dedicated guys I chose from when picking Fidy and Fada to train in radio tracking.

I'll say it again: It is a different world in Madagascar. Westerns can only begin to understand what seems to be utter disregard for animal life when they come to appreciate the incredible level of mortality that's simply mundane in Madagascar. Death of youthful and active friends is not uncommon, or even surprising, really. Any hospital one encounters is likely to be only a small cluster of 1950s concrete buildings, not unlike the size of a few of those portable office trailers we might see in a parking lot or construction site in the U.S.

While traveling back to "civilization" from one of our field sites to resupply, I experienced this appalling mortality of vigor firsthand — something that most Americans who are fortunate enough never to have seen the hells of war seldom experience in an entire lifetime. We had packed up camp the night before and were waiting for the boat to arrive before dawn. One of the Malagasy fieldworkers approached me in the dark twilight with a solemn look on his face. He said that the young man who had accompanied us on our boat across the bay to a field site the week prior had fallen ill and would it be OK if he were to share our boat during the 5-hour, choppy trip to the larger village town, Mahajanga. I agreed without hesitation, and moments later an ox-drawn cart arrived at the bay. Upon the oxcart was a mattress, and upon the mattress was a frail body mostly covered with a blanket. In the predawn light, I could not quite make out the expression on the man's face, but I did recognize him as the acquaintance I made only two weeks prior. He was swaying his head occasionally as though watching a wandering bird in flight. Otherwise unable to move, he was carried by several men on the mattress and placed in the hull of our small motorboat.

I thought back to that text message my husband sent. Could this man, who had acted as a Sherpa for me with all my scientific monitoring and sampling equipment only a week earlier have since contracted the deadly disease? If not, what was it that thrust him into that moribund state? And … could it be … was it contagious?

I didn't even want to think about it. As I approached the little boat to board, the sun had risen just enough for me to see the young man's face clearly. It was devoid of emotion. His eyes were glazed over, but open and adrift. His mouth was slightly parted with crusty white saliva at its corners. As we boarded and loaded the boat, the man didn't move. I feared he had passed right there in front of us, but then he would inhale a sudden, long breath. I've never hunted, but I imagine the look in his eyes was the look you see as "the fire dies" in the eyes of a white-tailed deer struck through by an arrow just moments before. I couldn't look; I steadied my gaze to over the bow of the boat for the next four and a half hours.

When we finally arrived on shore, the Malagasy men on our boat called out to the men on the shore who were jockeying to assist arriving passengers with their bags. The men yelled back and forth in Malagasy for a minute (no doubt negotiating a price for service) and then several of them rushed down and boarded the tiny boat to grab an edge of the mattress. They unsteadily left the boat carrying the mattress as another man arrived with a standard small and rickety taxi (likely a 1948-ish Citroen Dolly). The man on the mattress was rushed away. The following evening I heard that they weren't sure what was wrong with him but that he had later died in the hospital.

Just before I had seen the man on the boat, my husband had updated me on our close friend back home in the U.S. who had begun experiencing complications after what was supposed to be routine surgery. She was in and out of consciousness, losing blood, and too frail to move. We were all extremely worried about her, but she was still young, in her mid-30s, and a marathon runner; she would HAVE to be OK — a comforting thought I know I couldn't have dreamed to have for her if she were getting medical care from my current location in the world. And I, regrettably but justly, didn't have a similar thought for the man on the boat.

Back in Baly Bay, in addition to getting more troops on the ground, the Turtle Conservancy and Durrell have implemented a somewhat controversial technique for effectively defacing the Ploughshares and making them undesirable in the international wildlife trade. While we survey and find new Ploughshares, we use a Dremel tool to engrave a unique number into their shells, branding them "property of the Malagasy Government." In doing so, we make a prized and pristine animal into sort of a diamond with a flaw. We hope that it reduces their desirability and value, perhaps enough to save them from poaching.

Is it really so difficult to believe that villagers would, without a moment's hesitation, kill or poach their Critically Endangered national treasures right out of their own backyards if it meant food for their families?

It is hard to escape the conclusion that we are slowly but steadily losing the race. While on survey, our teams discovered signs of recent poacher activity. The evidence mounted as we discovered one of our radio-tracked animals had its transmitter hacked off! It is almost certain that the poachers had no idea what the instrument was or how it worked, but they must have realized that the transmitter was something that could potentially harm business. Yet the discovery wasn't all bad. Obviously the poachers appreciated the value of an unharmed large adult as the source of more young tortoises and therefore income. As we continued to survey, we found a campsite, a cooking fire, a raided honey hive, and even smashed equipment (so that's where our missing camera traps and transmitters went!) All were only days old; they must have been alerted to our presence in the area. At one site, we discovered a small prayer monument the poachers constructed to appease the forests' ancestral spirits in atonement for their intrusion, and surely to help protect them from being discovered. It was simple, constructed of a

ERIC GOODE

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(far left) The crew taking a hard-earned break after days hiking miles in the heat and humidity in search of Ploughshare Tortoises.

Poachers create small shrines with offerrings to the forest spirits. Our team distroyed this shrine, turned over the offerring bowl and wrote 'Back Off!' on the bowl with a skull and cross bones to discourage their efforts.

few small trees bound together with a white cloth, an unusually round stone, a nice porcelain bowl, and a bit of money. Disappointed for again just missing the poachers and feeling the need to send a message, we destroyed the prayer site, leaving a skull and crossbones-adorned message: "back off!"

The poachers must have villagers willing to help them out near our sites. Who else would have the ability to warn them of our presence? How could we get through to the villagers that we are on their side? The incidents made me wonder: Aside from the patrolmen and our temporary field staff, are we making an impact at all? Well to be fair, I shouldn't undercut what we have accomplished. Our patrolmen and telemetry technicians are great stewards of the environment, often reaching out to their communities on their own — showing them how successful they can be working for conservation and the resources they share in their communal "backyards." We need to empower them in those pursuits. We need to continue our efforts, but set our sights a little broader.

The population of Madagascar is exploding, tripling from seven million in 1970 to 22 million in 2010. Nearly half of Madagascar's population is under the age of 15. The population is growing in an unsustainable way. Yet, this demographic and socioeconomic situation does offer us opportunity. There is opportunity to impart a conservation message and sense of personal pride in their natural heritage within the entire next generation. To this end, we must do more in education and outreach. The advantage we have in Madagascar is that children have to grow up fast. In rural villages, Malagasy children are considered adults and become resource users at only 15 years old. This means that if we are able to connect with children, even as old as 10 years, they will become influential adults in only five more years. This timeframe is tractable even for short-term projects, and will effectively become long-term awareness strategies. Surveying, studying, and involving communities in the conservation of Ploughshare Tortoises will be enriched with our dual efforts in the forests and in the villages. It will be these integrated conservation strategies that will make us successful in tackling the Ploughshare problem.