

Night Watchman

Story by David Forster

Since his first trip to Ghana six years ago, Phil Allman had been searching for a way to return and do research in a region where very little is known about sea turtles. A Fulbright seemed like the answer, especially given Ohio University students' strong record of landing them. Now, as his 10-month stint concludes, he is working to ensure his research and conservation efforts are carried on.



ALL PHOTOS PROVIDED BY PHIL ALLMAN

A story handed down through generations tells of how giant sea turtles helped a West African tribe survive a war by coming to the rescue at a pivotal moment. Now the turtles need the tribe to return the favor.

The seven species of sea turtles worldwide are in trouble. Six are considered endangered; the other is threatened. The chief threats to their survival are man-made: fishing, hunting, pollution and habitat loss.

Little was known about sea turtles until an American researcher took an interest in the 1950s and devoted his life's work to advocating for their protection. In the decades since, researchers have fanned out to locations around the globe where sea turtles feed or breed. The west coast of northcentral Africa, however, remains what one expert called a black hole in sea turtle research.

Phil Allman is changing that. Allman, who earned his doctorate in biological sciences at Ohio University last year, won a Fulbright grant to spend 10 months in Ghana studying sea turtles along a stretch of beach in Ada Foah, about an hour-and-a-half drive east of the capital city of Accra. He is among the first researchers to study sea turtle populations in this region, and his work is considered an important first step in developing a conservation plan.

Allman chose Ghana over the more popular locations for turtle research specifically because it has been overlooked.

"I felt like getting into West Africa and getting some of this information would make more of an impact than if I chose another part of the world," he says. "I felt like I could come in and, in a short amount of time, really make a difference."

LEFT: Phil Allman examines a female leatherback turtle, which can measure up to six feet long and weigh 1,500 pounds.

A national leader

Ohio University is among the top 25 research schools in the nation for the number of Fulbright awards earned by students. Nine awards in both 2004–05 and 2005–06 earned rankings of 21st and 24th, respectively, while this year's 13 awards produced a tie for 14th place with Boston College, Penn State, Princeton, UCLA and University of Texas at Austin. More than 40 percent of Fulbright applications submitted by Ohio University students have been approved in the past three years, producing the best success ratio among research universities one of those years and the second-best ratio twice.

Yet Allman knows the long-term survival of sea turtles here and elsewhere on the planet depends not on the work of outsiders like him, but on whether research and conservation efforts are embraced locally. He has been working on that, too.

"If Phil can get the people educated and informed early on, he has a strong conservation role he can play," says Dave

Owens, a professor and sea turtle researcher at the College of Charleston (S.C.) and past president of the International Sea Turtle Society.

This is Allman's second trip to Ghana; he first heard about sea turtles' prevalence there while on a vacation in 2001. Yet his interest in these creatures began years earlier with an undergraduate internship spent tagging loggerheads on Bald Head Island, off the coast of North Carolina. He later worked for a state agency monitoring sea turtles in southwest Florida and tagged leatherbacks in Costa Rica during an internship with a leading sea turtle research center.

All of this fieldwork made Allman a strong candidate for a Fulbright, a highly competitive grant that finances U.S. students' research, study or teaching in other countries.

The Fulbright selection committee also may have been impressed by Allman's passion for wildlife conservation. It certainly stood out to his Ph.D. adviser.

"Of all the graduate students I've had, he has the most sincere conviction with regard to the importance of conservation, not just for turtles but in a very broad sense," says Willem Roosenburg, an associate professor of biological sciences.

Roosenburg recalls that while Allman was a doctoral student in Athens, he heard that salamanders in nearby Zaleski State Forest were being run over on the highway while crossing between the uplands where they live and the wetlands where they breed.

My year in Ghana

Excerpts from Phil Allman's blog

August

Karyn's cooking lesson was a success; she came back within a few hours with a large pot of ground-nut soup (with chicken). We had enough for three meals.

...

We went bike shopping because each of us quickly recognized how useful a bike would be in Ada Foah. After sitting (on one particular bike), I realized it was probably the closest thing I was going to find to the size that I need. However, the

interesting thing is that it is a woman's cruiser-style bike with a basket in the front and a cargo rack over the back tire.

As I was making some adjustments to the bike, Karyn noticed what was written on the bike's main frame. On each side of the bike, "Big Mamma" is printed. After a few laughs, I jumped on and rode Big Mamma to the market.

As Karyn and I rode through town, we realized that we were attracting more attention on the bikes (than we had on foot). We saw a lot of people laughing, and I am convinced that some locals are now going to call me "white man on girly bike."



Allman labels a vial containing a tissue sample that will be sent for DNA analysis.

Allman rounded up a group of students to stand roadside and document the numbers of salamanders trying to cross. He then contacted the Ohio Department of Transportation and lobbied for construction of a tunnel under the road to give the salamanders safe passage.

"He's not just an armchair conservation biologist. He goes and finds out the solution and works as hard as he can to accomplish that goal," Roosenburg says. "Phil's going to make a huge contribution wherever he goes or whatever he does."

Since that first trip to Ghana six years ago, Allman had been thinking about a way to return and conduct research in a region where so little is known about the sea turtle population. A Fulbright seemed like the ticket, especially given Ohio University's track record.

Allman's proposal was an "exquisite intersection" of his already strong background in sea turtle research and the obvious need for study in Ghana, says Beth Clodfelter, who helps shepherd Ohio University students' Fulbright applications through the process. Plus, he had the support of key officials in Ghana, which was critical because host countries have the final say on Fulbright applications. "It was something that people in Ghana wanted to see happen," she says.

Allman and his wife, Karyn, arrived in Ada Foah last August. They live in a small house a short walk from the beach. Transitioning from the abundance and convenience of life in America to a simple existence in an isolated African fishing village required some adjustments. Allman says their mornings often begin with a bicycle ride to the village markets to buy the

day's food, mostly fresh fruits and vegetables, rice and beans. They cook their meals over a gas camp stove, and preparing dinner can easily consume the better part of the afternoon.

After sunset, they travel miles of shoreline to scout for turtles. For the first few months this was done on foot, but in January, an all-terrain vehicle Allman had ordered months earlier finally arrived. This dramatically increases the likelihood of being in the right place at the right time to spot a turtle nesting and creates a greater deterrent to the many poachers who often hunt with impunity along the beach. Slow-moving turtles are easy prey.

Sea turtles spend their lives in the water, but lay their eggs on land. Female turtles drag their bodies to the dry sand above the high-tide line, where they dig a hole, deposit a clutch of eggs, cover them with sand and return to the water. They repeat this process every couple of weeks throughout the nesting season.

Allman has found two species of turtles nesting at Ada Foah: the olive ridley and the leatherback. Olive ridleys are the smallest sea turtles, generally topping out at about 30 inches in length and 100 pounds; leatherbacks are the largest, with an adult measuring about 6 feet long and weighing 1,500 pounds. Through early April, Allman had tagged 44 olive ridleys and 100 leatherbacks. In all, he spotted 589 nests.

Other researchers were excited to hear that Allman is finding these two species in particular nesting in Ghana. "The leatherback is the turtle of greatest concern right now globally," Owens says. "The olive ridley has been almost totally eradicated in the **A leatherback sea turtle sports a backpack-like satellite tracker used in a Danish team's research efforts in Ghana.**



Atlantic. ... We didn't even know there were olive ridleys in Africa until just a few years ago."

To monitor the health of a sea turtle population and develop a conservation plan for it, two pieces of information are critical: when and where the turtles go throughout the year. For the turtles nesting along the west coast of Africa, the answers to those questions are largely unknown. And finding them is complicated by the fact that sea turtles are great travelers. It's not unusual for a turtle population's feeding and nesting grounds to be hundreds or even thousands of miles apart — in some cases across an ocean. These long-distance migrations also complicate conservation efforts, which often require forging agreements among multiple governments.

Tagging turtles, as Allman is doing in Ghana, is the least expensive and most widely used method of tracking turtle populations. But it also provides the least return. Its success depends on someone coming across one of the turtles and reporting the number as instructed on the tag. Because turtles spend their lives in water, tagged turtles typically are found only when a female is nesting or when a turtle is caught through fishing or hunting.

The most effective, but also most expensive, way to track turtles throughout their annual migration loop is by satellite. A battery-operated transmitter is glued to a turtle's shell or, for the leatherback, which has no shell, is strapped on like a backpack. The device sends a signal to a satellite, which relays it back to a monitoring station on Earth.

A team of biologists from the National Environmental Research Institute in Denmark has visited Ada Foah a couple of times since Allman's arrival, and he has helped them attach satellite trackers to leatherbacks and olive ridleys. Allman also is collecting tissue samples from the turtles at Ada Foah. These samples, which are sent to labs for DNA analysis, also may help with plotting migration routes and timing.

Allman's work is putting Ada Foah on the map as a nesting

site for olive ridley and leatherback turtles as well as establishing a foundation for future research.

"Getting good baseline data is going to fill an important gap in our knowledge about leatherback nesting beaches," says David Godfrey, executive director of the Caribbean Conservation Corp. and Sea Turtle Survival League, the world's oldest sea turtle research and conservation organization. "Even a good nesting season's worth of data is going to tell us something about what's going on there, and it may very well provide information that someone needs to put funding in place to create a sustained effort there."

It takes years of research in a region — to observe if and when the turtles return each year and in what numbers — to develop a reliable picture and reveal patterns that can help craft a conservation program.

Allman doesn't have that kind of time; he leaves Ghana in late May. With this in mind, he has worked with The Ghana Wildlife Society and a student at the University of Ghana to pick up where he leaves off. He will leave his ATV behind to aid their efforts.

Allman's next stop is Florida Gulf Coast University, where he has accepted a faculty position that should allow him to maintain his involvement in sea turtle conservation in Ghana.

The importance of conservation, at least for leatherbacks, is a fairly easy sell in Ada Foah because of that turtle's heroic stature in tribal mythology. But even there, the olive ridley doesn't enjoy the same cultural benevolence as its larger cousin.

Clearly, there is still much to be done. But with the groundwork Allman has laid in Ada Foah, generations from now the story of the sea turtles that once rescued the tribe may have a new ending, one in which the people repaid their debt.

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Allman is tracking turtles that nest in Ada Foah, east of the capital Accra.

OT Visit Ohio Today Online at www.ohio.edu/ohiotoday for a link to Allman's blog and his insights on the perils sea turtles face.



Karyn Allman records a count of turtle eggs that failed to hatch.

I am happy to announce that during the early morning of Aug. 31, 2006, I tagged the first sea turtle in Ghana. Soon after 1 a.m., we saw an olive ridley ascending the beach. We approached from behind and watched as the turtle selected a nest site, made a primary body pit and dug a nest chamber. Once she began depositing the eggs, we started collecting the data and took some photos. Once the chamber was almost full (indicating she had almost completed laying the eggs), I applied a tag to each of the front flippers. I also took a tissue sample from the left front flipper. Because of the likelihood some-

one was waiting to slaughter this turtle, we stayed with her until she entered the ocean. Just before entering Ada Foah, we observed another track extending over the erosion scarp. There was no questioning that this was a track left from a leatherback ascending the beach. We quickly followed the track up the beach and found a leatherback disguising the nest cavity. As with the olive ridley, we stayed with her until she returned to the sea. We returned home around 4:30 a.m. with the full excitement of knowing that we just tagged the first two sea turtles in Ghana. I celebrated with a cold bottle of Coke before going to sleep.

November

Just after midnight on the evening of Nov. 24, Karyn and I found an olive ridley sea turtle on the beach depositing eggs. Karyn noticed a scar on the right side of the carapace that looked familiar to her. After checking the flippers, Karyn yelled to me, "She has tags." We were very excited because we both knew this was the first turtle that we have seen twice on the beach in Ghana.

December

On Christmas Day, Karyn and I decided that we wanted to celebrate Christmas by doing something that we

would not have the opportunity to do in the United States. Therefore, we spent Christmas night on the beach tagging turtles. Santa Claus was very nice to us: We tagged four leatherback sea turtles and two olive ridley sea turtles. Tagging six turtles was a new one-night record.

February

On March 2, I will start lecturing at the University of Ghana. I am giving lectures to graduate students and undergraduates concerning population ecology and community ecology. I will give eight lectures leading up to a seminar concerning the sea turtle project.



Allman (right) and other researchers pose with a satellite-tracked leatherback.

Going for the gold

By Elizabeth Boyle

Natalie Kruse could be a triathlete. Sort of. For nationally competitive athletes — those devoted to earning the moment they get to climb atop the podium and raise their arms high — qualifying for the Olympic team is confirmation that they're among the nation's elite. Likewise, college students who apply for prestigious awards and scholarships want to compete against the best in the country.

Given that analogy, Ohio University students not only are in the race, increasingly, they're experiencing the view from that top step. Take Kruse, a 2004 civil engineering graduate, for example.

She will complete her doctoral degree in hydrochemical engineering at England's Newcastle University later this year at the age of 23. Supported by a Marshall Scholarship, an award that's comparable to the Rhodes in prestige and competitiveness, she is continuing her study of abandoned coal mine remediation that first piqued her interest in Athens.

"Where I went with my career has a lot to do with the people I knew here," Kruse says of the Ohio University faculty and staff who supported her bid for the Marshall.

Because of tenacious students such as Kruse, there's been a ninefold jump in the number of nationally competitive awards students have won in the past seven years. They've also increased the types of awards they've applied for from seven to 49.

"Our students compete at the very highest level in the country," says Ann Brown, who has led the Office of Nationally Competitive Awards since its inception in 1999.

The awards have placed Ohio University in great company: Last year, Ohio students won as many U.S. Student Fulbright grants as their counterparts at Princeton University, and they led the state for the fourth consecutive year.

While the academic and monetary rewards are extraordinary, to understand the application process for these awards is to

know that simply being in the race brings great value.

The workload alone, which Brown compares to carrying an extra course, can be a test of will. Applicants can expect multiple-page forms, one or two essays, interviews, letters of recommendation and, in some cases, a foreign-language evaluation.

Both Brown and Beth Clodfelter, who works with Fulbright applicants, help students form ideas about their previous experiences and the work they want to do. They also serve as mentors, arrange mock interviews, and read and re-read essays.

Erica Poff, who researches African development issues, recalls the support Brown provided as she worked on her essay for the Truman, for which she was a finalist this year. "It was constant revision. I think I met with Ann eight times over two months," Poff says.

The self-reflection involved, Kruse says, brings revelations. "I had to draw together a lot of disparate things that have happened through my experiences and say, 'Wow, that's why I am who I am. This is why I want to do what I want to do.'"

To connect those dots, students often reach out to professors, who can provide valuable insight about their focus area.

"They like to help students who dare to seek meaningful goals and compete on the national stage," Clodfelter says of the hundreds of faculty who have stepped up to help in recent years.

Ben Stuart, an associate professor of civil engineering who supported Kruse's applications, agrees the process is rewarding. "That one student that you cultivate, you're giving them back to the world," he says. "There's pride that goes with watching that happen and knowing you were a part of it."

Elizabeth Boyle is a writer for University Communications and Marketing.

RIGHT: A Marshall Scholarship is allowing Natalie Kruse to study acid-mine drainage in England, where the geology permits underground research that is too dangerous to conduct in the States.



"I want to work in Appalachia at the grass-roots level to clean up the environmental legacy the coal mines have left us."

— Marshall winner Natalie Kruse, who as an undergraduate earned Goldwater and Udall awards

Finding my inspiration

Truman hopeful Erica Poff reflects

My passion for international development began 15 minutes south of the Nairobi university where I studied my sophomore year. A friend took me to a slum called Marurui, where he had started a youth group that collects garbage to raise funds for school uniforms and books for children who live there.

Being in that environment was so inspiring. The people do not want to be pitied. Rather, they are people, very much like the rest of us, who have taken



Erica Poff (far right) found her passion for development in a Nairobi cleanup effort.

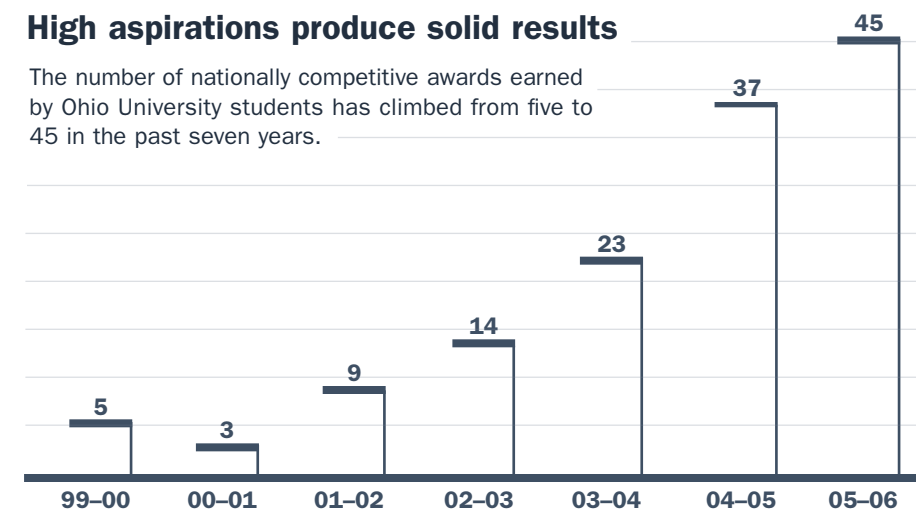
up their own causes and are working hard to have a better livelihood in spite of the tremendous obstacles. They want a better life, and you feel compelled to do something.

I came back the next Saturday. I put my bandana on, and we went to work using this big cart to collect garbage. At the end of the day we pulled out the plastic, which is smelted to make roof shingles to be sold.

When I was there, I said, "How can I be a part of that?" I want to work with people whose direct interest is involved and do something better together.

High aspirations produce solid results

The number of nationally competitive awards earned by Ohio University students has climbed from five to 45 in the past seven years.



Since the inception of the Office of Nationally Competitive Awards in 1999, Ohio University students have claimed honors that previously seemed out of reach. Those include the Marshall, a more than 50-year-old award for which only one student had even received an interview before 2003, and the Mitchell, a grant that draws applications from 170 schools but supports only a dozen students' post-graduate study in Ireland and Northern Ireland. Students also compete for a greater variety of awards than ever before, applying for 42 more awards last year than in '99. Evidence of the increased efforts: the climbing number of award winners, from five to 45 in seven years.