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INTERNATIONAL ROCHA

Conservation and Hope



Research & Conservation

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PROTECTING ATEWA RANGE FOREST IN GHANA

by Dr Jeremy Lindsell, Conservation Science Manager, A Rocha International

The sharp crack of a shotgun alerted me to a hunter near our camp. It was the middle of the night and I was in my tent, so not very inclined to go and investigate. It was already clear that we were not alone in Atewa Forest. The whine of distant chainsaws had accompanied much of our day's work. We had driven through farmland laid bare by illegal gold miners, and could hear their diggers working through the night in the valleys below. Climbing up into the reserve we had walked through cocoa and banana plantations far inside the boundaries. So, even within a few hours of arriving in Atewa, the range of pressures was apparent.

A Rocha Ghana has been working in the communities around Atewa for two years, building their support for the protection of the forest and finding alternatives to its unsustainable use. Numerous events have been held with school children, women's groups and whole districts, encouraging them to show leadership. Christian pastors and Muslim imams participated in workshops exploring how creation is valued within their respective traditions. People are being trained and equipped in new ways to make a living, such as rearing Grasscutters (a large rodent) and snails.

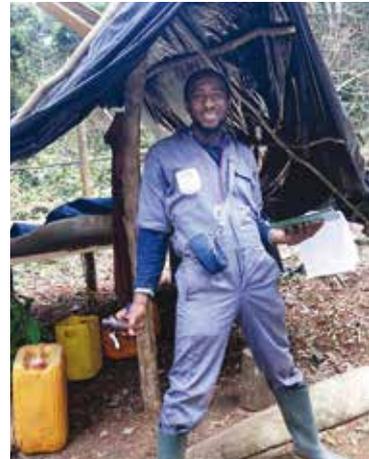
I travelled out to Accra to attend an international summit, organized by A Rocha Ghana and other concerned NGOs, to highlight the importance of Atewa and face off a grave threat from industrial bauxite mining. The game-changing nature of an open cast mine had rather eclipsed the suite of lesser threats, so I was keen to understand better their impact on Atewa's great biological value.

Emmanuel Akom, who leads A Rocha's Atewa project, picked one of their bright young interns, Jeffrey Opoku, to undertake fieldwork. I gladly joined them to test the planned methods and ensure Jeff was trained for the work. We started with a systematic survey to measure the prevalence and distribution of key threats across the forest and this will also enable us to track future changes.

During our initial forays, the commonest sightings were of hunting activity, mostly of snares set for ground-dwelling mammals and spent shot-gun cartridges used for hunting duikers (forest antelopes) and primates. Hunters' trails criss-crossed the forest and were noticeably prevalent in more intact areas. These are the easiest to hunt in, as closed canopy suppresses the bushy understorey that impedes access – and line of fire – in more degraded places.

But all is far from lost. Jeff reports that most signs of logging are old selective felling from which the forest can recover and impressive stands remain.

I enjoyed some of the best birding I've had in the region, recording many of the forest's 228 species. By the time you read this,



Jeffrey Opoku, a recent graduate in Natural Resources, is researching the threats from human impacts to Atewa Range Forest.

Jeff's survey will be completed. His work will help focus our activities on the most pressing issues first, to safeguard this wonderful forest for Ghana's future generations.



Nine species of cuckoo have been recorded in Atewa, including the African Emerald Cuckoo *Chrysococcyx cupreus* (John Caddick / johncaddick.co.uk)

CORAL REEF RESEARCH IN KENYA

(Melissa Ong)

(A Rocha Ghana)



(Matt Brandon)

by Dr Robert Sluka, Lead Scientist, Marine and Coastal Conservation Programme, A Rocha International

A Rocha Kenya began marine research in 2010, focusing on the impacts of snorkellers on the coral reefs of Watamu Marine National Park¹. Current research focuses on coral reef resilience, tropical rocky intertidal biodiversity and community conservation. I asked Peter Musembi, a Kenyan marine biologist and member of the research team, a few questions:

Why are the coral reefs of Watamu Marine National Park so important?

The reef is the most diverse ecosystem in the park. It's located within a relatively shallow lagoon, inhabited by corals, fishes, molluscs, sea turtles and echinoderms. It's a nursery ground for many organisms including threatened sharks and guitarfish that help repopulate adjacent areas open to fishing. It also protects the shore against strong oceanic waves. Because of the rich marine life and natural beauty it's a tourist attraction, providing income for local boat operators.

What are the conservation issues?

The main challenge is to find the balance between resource use and resource protection, as the sea is the sole source of livelihood for many people on the coast.

What is A Rocha doing to assist Kenya Wildlife Service manage the park?

Our marine researchers record species and collect data to help us understand factors affecting the different habitats and we document human impacts. Our programmes reflect KWS's conservation objectives.

Does your faith influence your research?

As a Christian, I believe our research aims at a deeper understanding of God's creation, not just within the scientific community or the A Rocha community, but so that everybody is better informed about the creation and our responsibility to care for it.

Marine research is supported by visiting interns such as Cambridge student Tim Gordon. Reflecting on 11 weeks at Mwamba, our field study centre, he wrote, 'I designed, implemented and wrote up an experiment investigating the effect of the territorial behaviour of jewel damselfish on the growth rate of juvenile corals and learnt a huge amount by working alongside a team of ecologists. The logistics were very different to a UK lab! I learnt about teamwork, efficient planning, predicting and overcoming obstacles and the need to set realistic and achievable goals.'

The Conservation and Science team is integrating its findings into the educational programme at Mwamba, beginning with rockpool resources for primary school children.

1 Cowburn, B., Sluka R., Smith J. and Mohamed M.O.S. (2013). 'Tourism, Reef Condition and Visitor Satisfaction in Watamu Marine National Park, Kenya'. Western Indian Ocean Journal of Marine Science, Vol 12, No 1: 57-70.



Peter Musembi diving. (B Cowburn)



A ROCHA'S



RESEARCH & CONSERVATION PROJECTS

RESIDENTIAL



FIELD STUDY & ENVIRONMENTAL EDUCATION CENTRES



CZECH REPUBLIC
Krupárna, East Bohemia

CZECH REPUBLIC
Orlické Záhorí SPA
Working with farmers to protect
breeding Corn Crake *Crex crex*

CZECH REPUBLIC
SWITZERLAND

Josefov Meadows
Managing wet grasslands for breeding birds

SWITZERLAND
Canton of Vaud
Managing dry meadows for
lepidoptera & orthoptera

INDIA

INDIA
Bannerghatta
National Park
Research on Asian Elephant
Elephas maximus
& their habitats

INDIA
A Rocha Centre, Bangalore

KENYA

KENYA
Watamu Marine
National Park
Coral reef research

Arabuko-Sokoke Forest
Reserve IBA
Threatened species
monitoring & community
conservation through
school eco-bursaries

Dakatcha Woodlands IBA
Land purchase to create
Kirosa Scott Reserve
& conservation farming

KENYA
Mwamba, Watamu

INDIAN OCEAN

NEW ZEALAND
Mt Karioi
Predator control
to restore breeding
seabird populations

NEW ZEALAND



SOUTHERN OCEAN

LONG-TERM RESEARCH AT RIA DE ALVOR

An interview with Paula Banza, Director of Science & Conservation, A Rocha Portugal

Paula, tell us about Cruzinha, A Rocha Portugal's field study centre.

It's on the south coast, which has been heavily developed for tourism, so we've always worked hard to protect Ria de Alvor, the nearby Natura 2000 site. When we got involved in a legal campaign to protect the estuary from damage done by neighbouring landowners, our long-term data played a big part in our success. We're a small team but we welcome a constant flow of volunteers and holiday guests.

And what's your own role?

It's very varied: I'm a biology teacher, seconded by the Education Authority for A Rocha's environmental education with local school children. I'm also the Science Director and I help to lead the team and run the house. My husband, Marcial, is Operations Director. We live in a flat upstairs, so we're rarely off-duty. Life is especially busy just now, as I'm working towards a PhD.

What's your line of research?

I'm studying pollination networks in the context of fire recovery, as fires have become increasingly common in southern Europe. My sample plots are at three fire-damaged and three control sites. We collect insects there, mostly moths. Then, in the lab, we remove pollen grains from their bodies and store the pollen on microscope slides. We identify all the moths and pollen to species level, so it's a lot of work! Fortunately, a graduate from Cardiff University, keen to pick up fieldwork and identification skills, is working with me for nine months. Finally, I explore the recovery rate of relationships within the plant and insect communities by using statistical indices.

Are many A Rocha scientists combining academic study with their other tasks?

Yes, Marcial is also doing PhD research, examining how land use change has impacted wintering bird populations in the western Algarve, using data gathered by A Rocha during the winter of 1986-87 and more recently. A Rocha Kenya's Science Director is basing his PhD research on their bird ringing data.

How many long-term research programmes are being run at Cruzinha?

We've been ringing birds here and undertaking fortnightly wader counts since 1986. The team has studied the local breeding populations of Little Tern *Sterna albifrons* and Kentish Plover *Charadrius alexandrinus* since 1990. We first looked at the local distribution of Little Owl *Athene noctua* 17 years ago and in 2005 a Dutch volunteer demonstrated a serious decline. Since 1990 we've been studying European Storm-petrel *Hydrobates pelagicus*, catching and releasing the birds at night for several weeks each June as they migrate northwards. Together with Cardiff University, we're investigating the effects of climate change on these tiny seabirds.



Paula at the Cruzinha moth trap.
(Melissa Ong)

Our work on moths began in 1991 when a volunteer built up a moth collection which has been invaluable ever since. We've been fortunate to have many keen young science graduates with us for a few months or a year at a time.

You've mentioned close links with Cardiff University. Would you welcome collaboration with other universities?

Certainly, we'd be happy to suggest various avenues of biological research.

A short video 'A Rocha people: Paula Banza' will be added soon at www.arocha.org/videos.



The Vestal *Rhodometra sacraria* is a common moth in southern Portugal.
(Richard Mearns)

A NEW TRAINING CENTRE IN A MEDITERRANEAN HOTSPOT

Dr Jean-François Mouhot, Programme Director

It is widely agreed that if we are to find our way through our current environmental challenges it will need the efforts of all society, and not just the scientific community. Human decisions lie at the heart of the difficulties which in turn depend on values often religiously determined, whether or not those 'religions' are formalized. Prominent figures such as Nicolas Hulot in France and EO Wilson in the USA have recently made appeals to the churches to 'provoke an uprising of concern in the face of the climate crisis'. The Bible teaches respect for creation and across the major denominations an active care for the environment is a theological preoccupation, so these appeals are falling on fertile ground.

In response, A Rocha France is launching an international environmental education centre. The Association Amiral de Colygn has granted A Rocha a long-term lease on a magnificent estate high above the Côte d'Azur: Les Courmettes, a centre with 90 beds. In the Alpes-Maritimes, but only 45 minutes from Nice Airport and Antibes railway station, this 650 hectare estate seems a world away from the hectic coastal strip.

Les Courmettes is in an area of outstanding natural beauty at the heart of a *Site classé des Baous* and the *Parc Naturel Régional des Préalpes d'Azur*. With its large area, diversity of habitats (pastures, woodlands, cliffs, marshes) and broad altitudinal range (400–1,250 m) it is ideal for both the study and enjoyment of the natural world. The estate is extraordinarily rich in wildlife: over 100 species of birds, more than 70 butterflies, 17 mammals and 14 reptiles have been recorded so far. Research is underway in two woodland plots to record the extent to which different tree species absorb carbon dioxide. Les Courmettes is particularly significant as an excellent representative of a Mediterranean ecosystem, which, due to human pressures, is an ecosystem under threat.



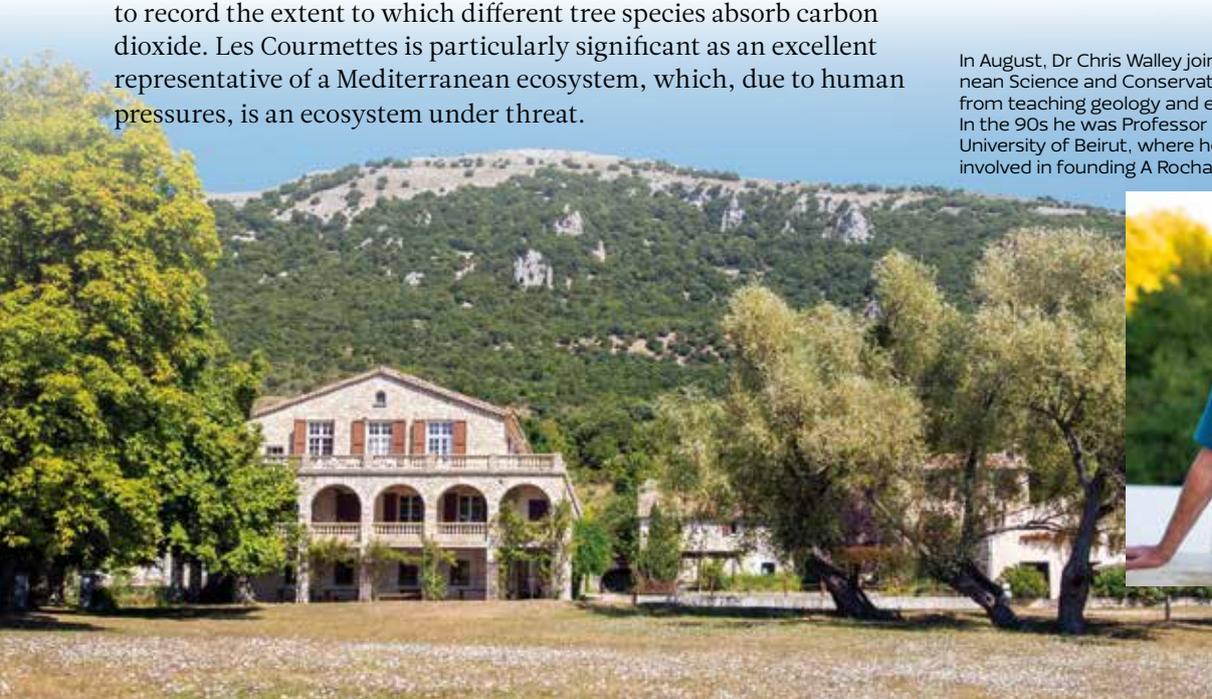
Dr Jean-François Mouhot, environmental historian, leads the expanding team at Les Courmettes. (Chris Walley)

The new centre will respond to the needs of four distinct groups:

- **Christians working with environmental issues who are seeking to integrate their faith with their work.** Les Courmettes will be a place where they can think through their motivations and their actions in order to be more effective.
- **Church leaders** who want to understand environmental issues and help their congregations respond to the challenges.
- **Students** on environmental courses or grappling with environmental issues. Les Courmettes is ideal for those who want to carry out research, or who live outside France and want 'a semester abroad'.
- **The wider public** for retreats and special interest holidays.

A Rocha France and A Rocha International are urgently seeking €1m to undertake renovations, equip the buildings and take on the necessary staff so that we can open in the early summer of 2015.

In August, Dr Chris Walley joined the team as Mediterranean Science and Conservation Coordinator, after retiring from teaching geology and environmental studies in Wales. In the 90s he was Professor of Geology at the American University of Beirut, where he and his wife, Alison, were involved in founding A Rocha Lebanon. (Alison Walley)



COMMUNITY CONSERVATION IN ATLANTIC COAST FOREST BRAZIL

by Raquel Arouca, Project Manager

The Atlantic Forests of Brazil, Paraguay and Argentina are amongst the most imperilled in the world.



The bulk of this forest lies in Brazil, where it is the lesser-known cousin to the mighty Amazon. But it is Atlantic Forest that most Brazilians live alongside, as it is the natural forest type along the densely populated eastern seaboard. Atlantic Forest is highly diverse and contains many species found nowhere else, but as it is cleared and fragmented these endemic species are increasingly threatened. There are as many as 55 species of birds restricted to this forest, 42 of which are threatened. In parts of this region the people are chronically deprived, struggling to live off the land, which has led to conflict with protected areas. A Rocha Brazil has been considering what role we can play in bringing reconciliation to these communities for the benefit of the people and their local forests.

The result is a new project for which we are now seeking funding, to work with people living beside one of the largest protected areas in São Paulo State. This community has suffered from a polluted water supply caused by forest clearance along their river and illegal gold mining upstream. There are also tensions over access to the neighbouring State Park. A Rocha is starting to build trust in Bairro da Serra, focusing at first on developing tree nurseries of native species that can bring the community some income and provide stock for restoring the forest along the Betari River.



A Rocha Brazil has started a new conservation project at Bairro da Serra, a small village within the Atlantic Coast Forest. (A Rocha Brazil)



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 A Rocha International is a member of IUCN, the International Union for the Conservation of Nature.



Dr Martin Kaonga, Conservation Science Director, A Rocha International, asks:

Are you planning research programmes?
Why not collaborate with us? Our study centres provide affordable, basic accommodation close to high biodiversity study sites, a supportive community, reference materials and datasets. If interested, contact me at martin.kaonga@arocha.org

Do you need further training?
Check out the programme at Les Courmettes, France: www.courmettes.com from Spring 2015.

Are you interested in volunteering or internships?
See arocha.org/volunteer for opportunities. Skills as varied as building and decorating, fieldwork, IT, mechanical repairs, cooking, childcare, photography and art can help our community conservation projects.

Would you like to know more?
You can sign up at arocha.org/enews for A Rocha International's monthly e-news.

Could you help us financially?
We rely on grants, major donations and the regular support of individuals and churches. Please contact Sarah Young, our Fundraising Manager, at giving@arocha.org or go to arocha.org/donate to make an online gift.

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