

# TAYF

## the Soqatra Newsletter

Issued by **FRIENDS OF SOQOTRA**



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but**

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# NEWS

## Cyclones Batter Soqatra

In the first days of November 2015 Cyclone Chapala (a category 4 hurricane) was moving through the Indian Ocean causing widespread damage in the Middle East. It was the strongest tropical system recorded so far in the Arabian Sea, with winds up to 160 kph.

When the storm hit Socotra damage was widespread.

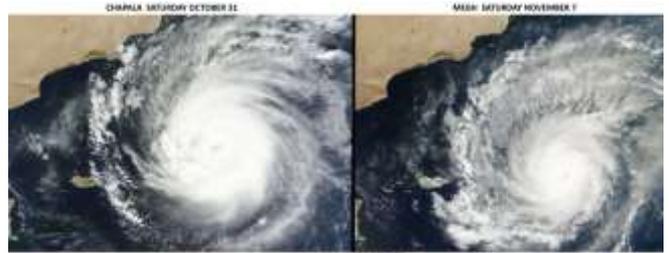
Luckily loss of life was relatively small, with three confirmed dead (our thoughts and sympathy are with the families) and thousands displaced. At least 100 homes were destroyed and some 200 people were injured. Many people fled their homes and took shelter in schools and mosques, but other residents refused to leave. Dozens of houses and villages were damaged by flood waters or waves.

Unfortunately, a second Cyclone, Megh, also hit the island just a week later. While Cyclone Megh was less intense than Chapala (Category 2) and much smaller, it did hit the island directly causing additional damage to already strained islanders and their homes and infrastructure. Islanders felt that the storm was 'much stronger' than Chapala, leaving ruined houses, destroyed walls and many destroyed fishing boats in its wake. One child died and at least two people were injured, and several more families lost their homes.

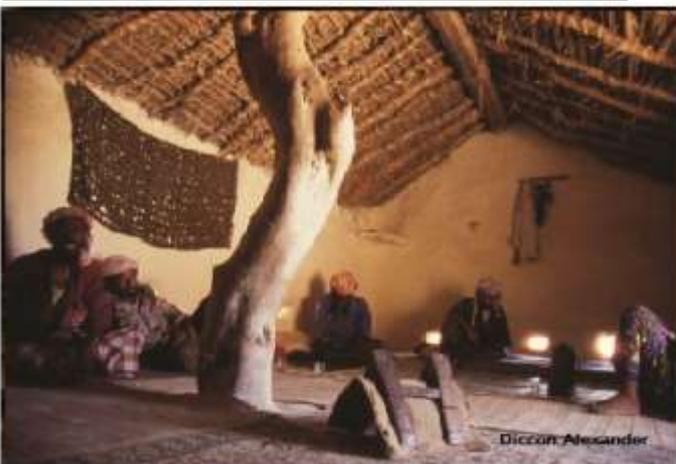
Damage from the two storms has been extensive to both human settlements and the natural environment, and was even more severe than initially thought, and reached far beyond the coastal areas. Thousands of people are homeless or displaced, over a thousand fishing boats have been destroyed, and many people's livelihoods have been lost. Large relief aid came rapidly from UAE, Oman and KSA, bringing food, medicines, blankets and mattresses in widespread operations.

Initial reports from Homhil were of half or more of the Frankincense trees and 100 dragon trees blown down. More detailed reports several months after the storms are of 11.5% of Dragon trees damaged (10% uprooted, 1.5% damaged but surviving) in Firmihin and 50% of the Frankincense trees broken or uprooted and an additional 25% with crown damage in Homhil. Trees of many species have been destroyed throughout the island.

The situation was so bad on Abd-al-Kuri that all families had to abandon the island and move to Soqatra—129 families with 656 people. All houses have been destroyed with none suitable to live in. They are being aided with food, cooking equipment and alternative housing in Qusay'ir on the Yemen mainland.



Photos by Ahmad Suleiman, Ismael Mohamed, Reuters. More photos on the back page.



## FoS Aid for Cyclone Relief

In response to the damage on the island caused by cyclones Chapala and Megh the Friends of Soqatra organised an appeal to raise funds to help those worst affected by the storms. A rapid response yielded nearly \$4,000 in the first few weeks.

As of July the Cyclone Appeal had raised £11,080 of which £9662 has been sent to the island. A number of projects have been supported, including repairing water supplies and mending kareefs, helping a family in Haggeher towards the loss of their house and livestock and running the boat repair workshops on Samha. Longer term projects, including replanting and extending boat repair workshops to Soqatra, are also being supported and will be reported upon when information becomes available.

## FoS Aid for Samha Fishing Communities

One of the first projects supported by the FoS Cyclone Aid Appeal was a donation of £1000 to organise and run a 'Boat Repair Workshop' on Samha. This was decided because it was a clearly defined area with identifiable needs which had received no other cyclone aid.

14 boats with engines, belonging to approximately that many households, were completely restored to seaworthiness. In addition two fishermen received small donations and one man was given funding to repair his damaged home. In all 17 'causes' were aided, benefiting far more people and households, indeed nearly the entire Samha community.

Since the donation involved training in boat and engine repair rather than just doing the repair, it is hoped that the benefits will remain with the islanders for many years to come as those attending the workshop will be able to repair future boat damage themselves.

Ismail Mohamed, who delivered the aid on FoS's behalf and took the photos here, reported: "One man cried after he received a FoS donation to pay the mechanic. Tears of happiness and gratitude. Everyone was happy: me, the mechanic and the people of Samha."



Photos  
this page  
Ismael  
Mohamed  
Cover  
Photo:  
Ahmed  
Suleiman



# NEWS

## A Letter From Soqotra Vladimir Melnik, March 2016

In the middle of February I visited Socotra. Unfortunately, I had only couple of days – it was short stopover on a sailing route from the Red Sea to the Seychelles. It is great that the Socotri people are as usual optimistic and overcoming difficulties.

There are no shortages of food supplies in the market and shops in Hadibo. I would say there is a better and bigger choice than during my last visit in April 2015. Prices are nearly the same. I was glad to see that these season in the market there are more locally grown vegetables and fruits of perfect quality.

There is local water purification station in Hadibo. Good quality water, and at a reasonable price (300 real for 20 liters).

The only the problem – absence of cooking gas. There is diesel fuel and petrol, but no cooking gas. People are using wood, but I did not notice this does affecting trees. There were many trees destroyed by the cyclone and hurricane winds. You will notice thousands of croton and other trees uprooted. People collect them for their cooking needs.

The most popular news on Soqotra – allegedly signed agreement with UAE for 99 years where Emirates will invest in sea-port, new airport, road construction/repair and other projects. (*Editor: I could not independently confirm this, but it has been elsewhere reported*). People are happy to accept this assistance. A lot of military transport aircrafts from UAE with different supplies and officials are landing in Muri these days. The most expected humanitarian supplies – boats and motors. People expect about 200 boats from UAE. Very sad picture when you see hundreds of damaged and destroyed boats along the coast. The major roads are mostly passable, but in some places require urgent repair. For instance, asphalt road to Steroh is seriously damaged (about 10 km after Eriosh when climbing uphill). It is passable, but can be easily destroyed after next serious rain if not repaired and communication with south side of the island could stop.

There is expectation that flights from the mainland will be resumed soon. Most probably - from Dubai by one of the Emirati airlines (not Yemenia).

Socotra is beautiful, hospitable and safe as usual, but waters near the Yemen mainland can be unpredictable and dangerous these days.

Best,

Vladimir Melnik



**A major conference was held in Bahrain on 3 February 2016 concerning Soqotra. Friends of Soqotra was represented and many issues were discussed, including the recent storm damage and impacts of the civil war.**



## The Socotra Rock Art Project: Recording Eriosh

The petroglyph site of Eriosh is one of the largest and most well-known archaeological sites on the island of Socotra. Despite having suffered substantial damage during road works, it still has one of the richest collections of petroglyphs on the island. Unfortunately, very little of this site has ever been recorded. This has to change!

With your help this can happen. All we need are your photographs of Eriosh.

Sending us any photographs you have taken of Eriosh will allow us to begin the documentation of this truly unique site. How will we do this? Firstly, we will gather together all the images of the petroglyphs and put them into a database that will include your details, copyright is important to us. Once we have gathered as many photographs as possible we will begin the process of looking for similarities with other photographs. The photographs will then be sorted into groups, according to the motifs that can be seen. The motifs that have been identified will then be sketched, allowing us to begin our research into Socotra's past.

To be part of this important research project contact Julian Jansen van Rensburg at:

rabbobi@zedat.fu-berlin.de



Photo of Eriosh by D. C. M. Britton

### The English School Update from Len and Wendy Pearce

We are now in Australia, supposedly retired. We had to evacuate our teaching team of 10 adults and 6 children from the island early in 2015. After the Charlie Hebdo incident the AQ leader in Yemen claimed responsibility and threatened to target western workers in Arab lands "wherever we can find them". Our team on Socotra were sitting ducks, and with three families we were no longer able to take responsibility. Matt Byrne, an unattached bachelor, returned and now helps Mamoun, one of our better students, to set up his own English School which is going very well. We basically gave all our suitable educational plant to him, and some further financial help. We are still seeking suitable projects in order to use up some still available finance. Ali Maqaddam took our Hilux as a gift. We gave all to the island in one way or another and as far as we can see, with Matt reporting and checking, all is being faithfully used, which we are delighted about!

All the best for your Conference. Your work for the island is special. Sincerely, Len and Wendy Pearce

### Support to the Integrated Programme for the Conservation and Development of Socotra Archipelago (UNEP-GEF #5347)

#### Senckenberg

National Project Team Recruitment

This project is seeking to prevent the irreversible loss of the unique ecosystems, biodiversity and natural resources of the Socotra Archipelago World Heritage Site.

The Senckenberg Society of Nature Research (SGN) is a leading biodiversity and conservation research institution, globally active and with a long tradition of working in Yemen. The project is a partnership among the SGN, UNEP, Ministry of Water and the Environment Yemen and the Environmental Protection Authority (Yemen).

A project team is being recruited to be based on Socotra to match a team at headquarters in Frankfurt am Main, Germany. Recruitment for the team of five began in June 2016 and will continue until all posts are filled. For further information contact Uwe Zajonz (Project Coordinator), [uzajonz@senckenberg.de](mailto:uzajonz@senckenberg.de).

### FoS Leaflets Redesigned

The series of leaflets on flora, fauna and culture on Socotra announced in the last Tayf is being professionally designed to make them even more attractive to visitors and residents of the island.

### Political Changes on Socotra

A new governor has been appointed for Socotra. His name is Salem Abdullah Al Socotri and he was formerly the general director of security in Socotra. The second change was the appointment of new deputy position for environmental affairs. Our colleague Abdul Jamel from EPA has been assigned as the deputy governor for the environmental affairs.

#### Malek Abdulaziz

Program on Conservation & Sustainable Use of Biodiversity in Yemen

Component Manager

# NEWS

## Friends of Socotra helps Disabled Children

Judith Arcus

My name is Judith Arcus and I have been working in Yemen for a number of years. In February 2014 I moved to Socotra to begin working with young children who have special needs – any sort of special needs. Since arriving in February, I have also been studying both Arabic and Socotri part-time at the Socotra Training Centre.

On Socotra there is a Disabled Society, and they used to have a centre, but this closed down just before I arrived due to a lack of funds. They have been struggling to get funding from the government to re-open their centre. Other than this, there is no other group or society here for anyone with any form of disability.

Any child who has any form of special needs – whether it be that they are deaf, have cerebral palsy, or Down's syndrome – is mostly kept at home, and does not attend school. If any do attend school, they usually are left to their own devices – which usually means they don't actually do anything – and they are not given any specific help to learn. If they cannot do what the other children do, then the teachers do not have the resources or knowledge to help these children.

Seeing that the Disabled Society has been closed, I have been doing home visits – I go to one child's home and other children with their mothers come there, where I then teach them together (usually alongside their siblings as well who are also there). I take with me a bag of toys – books, puzzles etc. – which I use to teach these children.

I have been working with a 12yr old girl who is deaf. She does attend school, and is good at copying down what is written on the board, but she has no idea of what the written words are as her mother does not know how to read and write so cannot help her, and the teachers are not able to give her specific help. So I give her single words with the picture and we also try to find a sign for it, so as to help her understand what the written word is.

Another boy, who also is deaf, is 10yr old and has never attended school as he found it too frustrating and so his family never enforced it. He doesn't know any signs or any of the basic concepts such as 'big and small'.

Another child, who has an intellectual disability, is 6yrs old and is allowed to attend a preschool and does play outside with other children. Since he cannot sit still for long in a school environment here where the children have to sit still and listen and repeat what the teacher says, this boy mainly just wanders around the preschool without any specific instruction. This boy's mother is very keen on learning how to help her son learn, and she does some activities with her son that I have shown her when I am not around.

Ideally I would love to be able to set up a centre where any child and their mother can then come. Here I would have all the toys and equipment available, instead of being only able to take with me what I am able to carry. This centre would be a place where any child with any disability is able to come and able to learn at their own pace. Also, it would be a place where the mothers can learn how they can help teach their child, as well as meeting with other mothers and therefore getting support from each other. Until I am able to open a centre, I would love to be able to purchase more books and educational puzzles and toys. Some of these I would give to the families I'm already working with so that they don't always have to rely on what I bring with me – this way the children can keep learning at home even while I'm not there.

Thank you for the money you sent which has bought various puzzles (Arabic alphabet and numbers) plus another simple puzzle, early children's story books, activity books for learning to write and read, as well as some simple matching nesting blocks. Each of the three families who I've been working with has received a set of all these items and are enjoying being able to use them at home, instead of waiting for me to visit them. Thank you for helping to brighten these children and their families' lives.



### Photos from top:

Apraa - she really enjoys the blocks - she has Down's Syndrome.

Waseem - who has an intellectual learning disability - he loves puzzles most of all and is learning how to fit each piece into its place.

Basha'eer (who is deaf) loves looking at books – especially if they are colourful! She has become excellent at completing puzzles, and enjoys learning to write.

One of Waseem's sisters who also enjoys learning with all activities given. Including siblings in my sessions encourages peer teaching, therefore enhancing the learning opportunities outside of classroom time.

# NEWS

## Friends of Soqotra 15th AGM & Symposium 2016

Friday 2nd - Sunday 4th September 2016

Room H602 Third Floor Eberhard Karls University of Tübingen Research Area Geography  
Rümelinstraße 19-23 D-72070  
Tübingen, Germany

The 2016 Friends of Soqotra AGM and Symposium will be held in Tübingen, hosted and organised by Research Area Geography at Eberhard Karls Universität Tübingen with the scientific content coordinated by the Centre for Middle Eastern Plants, part of the Royal Botanic Garden Edinburgh.

This year, the Friends of Socotra AGM will take the format of reviewing the past, reporting on the present, and looking to the future. Invited speakers will present themed sessions, with time allowed for discussion after each session. In addition, in order to allow participants to present and discuss their ideas, images and research, there will be an extended poster session. Each poster will be displayed throughout the symposium and the presenter will be allowed 1-2 minutes to introduce their poster within an informal discussion forum on Friday afternoon. Posters can be formal research or development project reports, or discussions, ideas and images. The intention is to have an interesting and varied display to discuss and enjoy during a relaxed and informal session.

### Symposium Programme

The symposium will begin on Friday at 2:00 with a welcome and introduction session followed by discussions on History & Archaeology and People & Language. The poster session will follow and the day will conclude with an informal BBQ. On Saturday there will be themed sessions starting from 9:00 on Physical & Environmental aspects around the Natural History of Plants, Animals and Marine. Presentations on the GIZ and GEF programmes will conclude the symposium. The FoS AGM will be at 4:00 and the day will conclude with the conference dinner (cost €30). The Friends of Soqotra AGM (Annual General Meeting) is an open discussion forum where the organisation presents its main activities in the previous year and plans the activities and projects for the next. The AGM is open to all FoS members and non-members are invited to join and participate in the discussion and suggestions on past, present and future projects. On Sunday there will be an excursion (cost €20) to the UNESCO Global Geopark Swabian Alb site. This gorgeous location is rich in geological, archaeological and natural interest, with a range of cave systems, fossil-hunting sites and beautiful walks. The cost of the excursion is EUR 20 including a lunch box & requires registration to allow buses to be booked. Please indicate during registration for the conference if you wish to attend the excursion.

### Registration

Registration for the Friends of Socotra Symposium and AGM is € 30. This covers the cost of coffees, BBQ on Friday evening, and lunch on Saturday.

Please email [cmep@rbge.org.uk](mailto:cmep@rbge.org.uk) or visit <http://www.friendsofsoqotra2016.cmep.org.uk/contact-us/> to register, with the subject "FoS Registration", with your full name and any dietary requirements (ie halal, vegetarian, gluten free). Please indicate if you wish to attend the conference dinner and the tour to the Swabian Alb, and if you require a receipt for your registration costs.

For more information visit: <http://www.friendsofsoqotra2016.cmep.org.uk/>. If you have any additional questions, please contact [cmep@rbge.org.uk](mailto:cmep@rbge.org.uk) with "FoS" in the subject line.



# LIFE ON THE ISLAND

## Tahrir - Myth or Reality?

Vladimir Agafonov\*

There have long been rumours of a gazelle or mountain goat living in the highlands of Soqotra; is it a real gazelle, wild goat, or figment of the imagination? While there is limited scientific evidence of its existence, there are tantalizing cultural and linguistic references to a 'tahrir' or gazelle, including in a Soqotri-French dictionary published in 1938. However, attempts to capture one for analysis tended to result in irate Soqotris demanding compensation for the killing of their goats. The extremely low level of endemic mammals (two species of bats and one of shrews) is startling compared to the diversity of other taxa. This paucity is often blamed on human action; all other existing mammals have arrived due to intentional or accidental human activity and loss of other animals (crocodiles, turtles) has been blamed on human activity.

There are three major possibilities: the animal existed but is now extinct, the animal still exists in remote areas, or it is a creature of folklore.

When living on the island of Socotra in 1976-1980 (as an interpreter for various groups of technical specialists from Russia) and doing independent research of the local language - recording the old Soqotri folklore texts as well as word materials for the dictionary - I was absolutely convinced that "gazelle tahrir" was there on Socotra as a real animal. First, because I, regardless of previous researchers and visitors, soon learned from my Socotran informants not only about an inconsistency in the Socotri word "tahrir", but also about its nominal paradigm: the forms of dual and plural masculine and feminine forms. Moreover, it was found that a diminutive form from "tahrir" - "tahrarero" - was used by old Soqotrans as a name of motor car! Second, in 1978 the Soqotrans showed me a female specimen. It was in Muri area, at the foot of the low mountain of Mauna. I saw a small, obviously young, greyish short-haired goat with sharp horns and a neat and narrow dark stripe on the back along the spine. It stood alone some distance away from us and was also watching us. Since that time, the existence, if not a "gazelle" but at least a "wild goat" on the island seemed to me common knowledge.



# LIFE ON THE ISLAND

So, having received a message from Vladimir Melnik that he took photographs of an unknown artiodactyl mammal in the western mountain area of Socotra, I assumed it must be the well-known "ṭahrir" - a Socotran wild goat that Socotrans call in Arabic "ghazaal" - "gazelle". But when we tried to read the description of this animal we found that such an animal simply does not exist in books. However, when Socotrans were shown Vladimir Melnik's photos they readily identified the animal as the Tahrir.

There are a number of references to the Tahrir in Socotran songs and poetry. Boxhall refers to them in his article in 1966 as being 'nearly extinct'; interestingly he identified two gazelle species, one grey and one red! This is now thought to be sexual dimorphism, with grey females and reddish-brown males; this is borne out in V. Melnik's photos. In the 1970s Socotrans seemed to meet often with the Tahrir, but by the early 2000s they have been almost forgotten.

Today the question remains as to whether this animal still exists, and that question can only be answered by a qualified research study. What is critical is that the photos not remain the first and only proof of the existence of the gazelle Tahrir on Socotra once upon a time.



Abridged by Sue Christie from:  
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2012  
<http://sciam.ru/journal/catalog/article/neizvestnayasokotrijskaya-gazel> (WMN is a Russian edition of the Scientific American  
[https://de.wikipedia.org/wiki/W\\_mire\\_nauki](https://de.wikipedia.org/wiki/W_mire_nauki))

Photos by Vladimir Melnik 2016

## Wild Goat Poem

Translated by Miranda Morris

Laugh at me as you will, pale wild goat, and tell the others the story.

(That) Qarqahor<sup>1</sup> is no longer able to run you down; his left hand<sup>2</sup> is no longer able to hold you fast.

Not as in the old days, when he was skilled at running down and catching the goat with the black dorsal stripe<sup>3</sup>; when he came at the pale wild goat from the other side and took hold of her.

On that day your path to freedom was barred by the wing of the net, and you were forced back (into the body of the net), and all was up with you!

<sup>1</sup> The name of the man singing the song

<sup>2</sup> The strongest men were known to be as capable with their left hand as with their right

<sup>3</sup> i.e. the wild goat

# CONFERENCES

## 14TH FRIENDS OF SOQOTRA AGM AND SYMPOSIUM

### SUPPLY CRISIS THREATENS BIODIVERSITY IN THE SOCOTRA ARCHIPELAGO

At the 14th annual meeting of Friends of Soqotra (FoS), which took place on September 13, 2015 at CIBIO-InBIO in Portugal, national and international experts called attention to the current and potential future impact that the political unrest in Yemen is having on the biodiversity of Socotra. The archipelago has been classified as a UNESCO World Heritage Site due to its exceptional biological and cultural value, which is now at risk.

Large amounts of wood for fuel are being collected and transported as a result of a months-long shortage of cooking gas on Socotra. Photograph by Ahmed Saeed Suleiman (August 2015)

Located in the Western Indian Ocean, the Socotra Archipelago was designated a Natural World Heritage Site (WHS) in 2008, because of its rich biodiversity and high number of threatened species, and is globally recognized for its outstanding cultural and biological value. As a Yemen Governorate, the future of its ca. 80,000 human inhabitants, as well as of hundreds of unique animal and plant species, is strongly and inevitably linked to events that take place on the mainland.

Consequences of the current political upheaval in Yemen, which is having devastating impacts on livelihoods on the mainland, have now reached Socotra, and are directly threatening the integrity of Arabia's largest insular WHS.

During the 14th Annual General Meeting of FoS, which was organized at CIBIO-InBIO (<http://cibio.up.pt/conferences/details/annual-general-meeting-of-the-fos>), a group of national and international experts gathered to discuss current and future impacts on the Socotra WHS, particularly concerning its unique biodiversity. The meeting concluded with the specialists unanimously expressing grave concerns about the short- and long-term impacts of the current situation on the Archipelago, and pointing out the need to raise international attention to the subject.

In particular, the reduced fuel and gas supply from the mainland during the last few months, as well as the absence of regular flights, have not only resulted in greater isolation of Socotra, and brought about severe consequences to its economy and human welfare, but have also threatened the conservation of biodiversity. In addition to the loss of income from ecotourism, an important source of revenue for the islanders, and reduced access to health services on the mainland, the current situation is leading to a direct increase of unsustainable use of local resources.

According to Abdulraqeb Al-Okaishi & Ahmed Saeed Suleiman, from the United Nations Development Programme and the Socotra Environmental Protection Authority (EPA), respectively, "because of gas shortage, live trees are being increasingly cut, posing serious threats to important species unique to the island (e.g., *Croton socotranus* and the Vulnerable *Cephalocroton socotranus*)". EPA estimates that each person can consume up to 60 trees/year, which is above the carrying capacity of the current ecosystem. Such impacts are well known to lead to soil erosion, land degradation and habitat decline, with a direct loss of insular biodiversity as a result. International awareness and consequent help is needed to minimise the shortage of fuel and gas and to thereby help avoid an imminent ecological disaster. The long-term environmental effects, as well as the impacts on human livelihoods through a loss of ecosystem services, are considered as direct threats to the integrity of an Archipelago situated in a globally recognized biodiversity hotspot.



Large amounts of wood for fuel are being collected and transported as a result of a months-long shortage of cooking gas on Socotra. Photograph by Ahmed Saeed Suleiman (August 2015)

# CONFERENCES

FoS, representing more than 12 nationalities at the meeting, hereby raises the issue to the attention of the international community and give voice to a concern of local inhabitants for the survival of their cultural and natural heritage in the Socotra Archipelago ([www.friendsofsoqotra.org](http://www.friendsofsoqotra.org)).

Socotra's inhabitants and its unique biodiversity are silent victims of an ongoing conflict, indirectly affected by events that are more devastating on the mainland. FoS aims to speak for those easily forgotten and to press for the early resumption of flights and services to the Archipelago so that the integrity of the WHS can be safeguarded.

In addition to the formal sessions there were also tours of the local area.

**Field trip to Peneda-Gerês National Park.** This is the only National Park in Portugal. The park was created on 8 May 1971 due to its national and international scientific interest and classified by UNESCO as a Biosphere Reserve in 2009. Its aim is to protect the soil, water, flora, fauna, and landscape, while preserving its value to the existing human and natural resources. Education and tourism are also goals of the park.

The park is a vast amphitheatre-shaped space sculpted during the Variscan orogeny by geological forces, wind and water, and extends from the Castro Laboreiro to the Mourela plateaus, encompassing the Serra da Peneda, Serra do Soajo, Serra Amarela and the Serra do Gerês. Biomass coverage is dominated by four distinct biomes: oak forest (dominated by *Quercus pyrenaica* and *Quercus robur*), shrubbery (dominated by *Ulex* sp. and *Erica* sp.) marshes and riparian vegetation.

Approximately 235 vertebrate species were identified within the boundaries of the park, of which 204 are threatened or under protection, such as the grey wolf (*Canis lupus signatus*) whose populations have collapsed with human encroachment. Threatened species include bat species of the genus *Rhinolophus*, the Iberian shrew (*Sorex granarius*), the European pine marten (*Martes martes*), the wildcat (*Felis sylvestris*), the snub-nosed viper (*Vipera latastei*) and the gold-striped salamander (*Chioglossa lusitanica*).

**Oporto Cultural Heritage Tour.** The city of Oporto, built along the hillsides overlooking the mouth of the Douro river, is an outstanding urban landscape with a 2,000-year history. Its continuous growth, linked to the sea (the Romans gave it the name Portus, or port), can be seen in the many and varied monuments, from the cathedral with its Romanesque choir, to the neoclassical Stock Exchange and the typically Portuguese Manueline-style Church of Santa Clara. One of the most relevant aspects of Oporto is its scenic character, resulting from the complexity of the landform, the harmonious articulation of its roads, and the dialogue with the river. The area enclosed within the 14th century city walls was classified as World Heritage Site in 1996.



Experts belonging to over 12 different nationalities, engaged in research on the Socotra Archipelago, at the FoS meeting, Porto. Image credit: CIBIO-InBIO, 2015

# RESEARCH

## FORGOTTEN IN THE OCEAN: SYSTEMATICS, BIOGEOGRAPHY AND EVOLUTION OF THE REPTILES OF THE SOCOTRA ARCHIPELAGO

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<sup>3</sup> CIBIO, Centro de Investigação em Biodiversidade e Recursos Genéticos, InBIO Laboratório Associado, Universidade do Porto, Vairão, Portugal

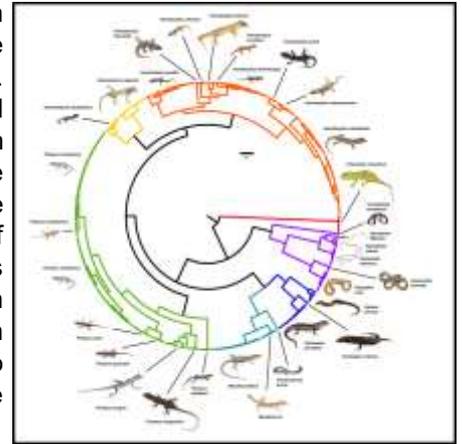
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Continental islands are very important hotspots of biodiversity and provide premier settings for studying the evolutionary and ecological processes that have resulted in such unique biotas. The Socotra Archipelago, in the western Indian Ocean, is a case example of an ancient continental fragment with a long biogeographic history. Its ancient origin, long period of isolation from mainland, orographic diversity and unique climate affected by the monsoons have probably played important roles in the assemblage of its biota. However, a few studies have examined the congruence between these causal factors and the cladogenesis in the molecular phylogenies of various taxa. With 93.5% of the 31 species and 41% of the 12 genera being found nowhere else in the world, reptiles constitute the most relevant vertebrate group of the Socotra Archipelago and an excellent model to study in depth the role of historical and contemporary factors in the origin and diversification of this faunal assemblage. In this talk we will review the work that we have been carrying on for the past years on the reptiles of the Socotra Archipelago in order to assess the real diversity and origin of the Socotran reptile fauna, to test and improve their current taxonomy and to test the relative role of adaptive processes in their diversification.



## THE CONSERVATION OF BIODIVERSITY IN SOQOTRA, A STUDY CASE ON REPTILES

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We completed the analysis of the habitat preferences and distribution for the whole terrestrial reptiles of the archipelago, that includes 25 species of geckos, lizards, skinks, snakes and the chameleon; only the subterranean worm lizards and blind snakes could not be adequately sampled. The database was collected from 2007 to 2013, within the program on sustainable development by the Italian Cooperation and by the Environment Protection Authority. Each reptile species showed defined preferences for sites of certain elevation, substrate, and vegetation. Particularly suggestive are the cases of strong habitat segregation of some species pairs with morphological similarity, such as the geckos *Pristurus insignis* / *P. insignoides* and *Pristurus obsti* / *P. guichardi*. Within the geckos of the geckos *Hemidactylus*, ecological similarity parallels phylogenesis albeit not statistically significant so, thus providing an indications of sympatric speciation, but such pattern does not occur within the *Pristurus* geckos. The presence of each species was also shaped using Species Distribution Models. Hotspots of diversity and vulnerability were identified, that would constitute the information base for conservation planning.

# RESEARCH

## HOW MANY SPECIES OF *BOSWELLIA* ARE THERE ON SOCOTRA: A COMPARISON OF GENE POOLS AND MORPHOLOGICAL TRAITS

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Socotra is a centre of diversity for *Boswellia* species (frankincense), with 8 taxa currently recognised from a total of ca. 19 taxa in the genus occurring there and nowhere else. However, despite being a flagship genus displaying adaptive radiation, the taxonomy of the species on Socotra is not 100% clear. Standard phylogenetic methods have established monophyly of the Socotran clade indicating a single dispersal and radiation event, but resolution among the proposed taxa is lacking. Coupled with this, variation in morphological characters makes species delimitation somewhat challenging. Here, we present a detailed analysis of both morphological and molecular data to identify distinct genepools and the characters that define them. By using AFLP fingerprinting techniques, resolution among *Boswellia* species from Socotra is presented giving a framework for a stable taxonomy that will allow better planning for conservation and sustainable use.

## POPULATION STRUCTURE AND REGENERATIONS OF *BOSWELLIA ELONGATA* AT HOMHIL, SOCOTRA ISLAND, YEMEN

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Socotra has the highest diversity of Burseraceae species in the world, with seven or eight species of frankincense trees (*Boswellia*), all endemic. *Boswellia elongata* is a ground rooted species, so it is more threatened by grazing than other cliff rooted species. It has a high socio-economic and cultural value since ancient times due to the harvesting of olibanum. Socotris also use them to feed cattle and honey bees, and in traditional medicine.

This study was conducted in Homhil Protected area where is the largest population of *Boswellia elongata*. The trees were measured and compared to planted trees in the same area (ca. 75 ha). In total, 940 trees and 71 seedlings were measured for: tree and stem height, diameter of perpendicular crown, and at breast height (trees), and height and density (seedlings). Population structure was measured using field survey and satellite imagery. Total tree and stem heights and diameters were measured in both living and dead trees. Number of seedling in fenced and non-fenced areas were compared. No seedlings were found out of non-fenced area. Result showed that natural regeneration of *Boswellia elongata* is absent in the study area and this situation is caused mainly by overgrazing.

## IDENTIFYING “HOTSPOTS” OF DIVERSITY FOR CONSERVATION: TAXONOMY, PHYLOGENY AND ETHNOBOTANY IN THE FLORA OF SOCOTRA

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Protected Areas represent one of the pre-eminent methods for the conservation of biodiversity *in situ*. Various mechanisms (IPAs, KBAs, hotspots and other national, regional and global approaches) have been proposed to identify and prioritise areas for conservation, based mostly upon endemism, rarity and threat to species. This taxonomic approach to conservation has rarely been compared to different facets of diversity, especially the potential of biodiversity to evolve, or those factors that have a direct impact on the communities which live within Protected Areas. Here, we present an initial comparison of species richness, conservation status, phylogenetic diversity and ethnobotanical diversity in a spatial context from the island of Socotra, a World Heritage Site renowned for its botanical diversity and remarkable endemic plant species. A preliminary discussion of how differences between facets of biodiversity might influence conservation strategy is presented.

## CURRENT STATUS AND POSSIBILITY OF ARTIFICIAL REGENERATION OF DRAGON'S BLOOD TREE HIGHLAND POPULATIONS

**Petr Maděra<sup>1,\*</sup>, Hana Habrová<sup>1</sup>, Martin Šenfeldr<sup>1</sup>, Irena Hubálková<sup>1</sup>, Petr Vahalík<sup>1</sup>, Radim Adolt<sup>2</sup>, Lenka Ehrenbergerová<sup>1</sup>, Matěj Roth<sup>1</sup>, Naděžda Naděždina<sup>1</sup>, Petr Němec<sup>1</sup>, Daniel Volařík<sup>1</sup>, Kamil Král<sup>3</sup>, Jindřich Pavliš<sup>1</sup>**

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Several studies were published regarding to Dragon's blood tree current distribution, age estimation, last development evaluation, future development prediction.

Our study, using satellite imagery with high resolution, accompanied and precised by field measurement, evaluates current status of whole highland Dragon's blood tree population. It reveals the number and size of remnant subpopulations, trees abundance and canopy closure. The abundance of trees in tree diameter and age classes were expressed for each remnant subpopulation using allometric relationships based on crown diameters, respectively crown areas detected on satellite imagery.

The degrees of subpopulations decline were described using above mentioned parameters and threat degrees and necessity of regeneration for each remnant subpopulation were expressed.

We evaluated also possibility of artificial support of Dragon's blood tree population on the island comparing the nine-year development of its artificial regeneration in two – irrigated and unwatered – plantations.

This study is focused on complex evaluation of endemic Dragon's blood tree population in Socotra Island and it brings a new point of view to the loss of this population and possibilities how to prevent it.

## SOCOTRA CONSERVATION STATUS AS WORLD HERITAGE SITE

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The Yemeni government nominated Socotra Island to the World Heritage List in 2008 for its Biodiversity value. Socotra has very unique biodiversity values considered to be of Outstanding and Universal value (OUV).

At the same time IUCN found the importance to be proactive to support Natural Heritage conservation. This means to provide state party with all needed technical support for state party to enhance conservation of the OUV sites and to provide all possible guidance.

IUCN moves steps forward by developing a new monitoring tool called IUCN Conservation Outlook assessment. This assessment collects all available information about conservation and management of the targeted site and studies them to come out with conclusions that assess management and conservation. It also suggests solutions to enhance management.

This presentation will show this study and a comparison between the 2011 and 2015 outputs of this assessment. It also will present the World Heritage Committee recommendations and how this is connected to the conservation and management of the site's values.



# RESEARCH

## PROMOTING, ENHANCING AND SAFEGUARDING SOCOTRA'S CULTURAL HERITAGE

Miranda Morris<sup>1,\*</sup>

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When talking about 'the cultural heritage of Soqotra' it is common to refer to its rich poetic tradition, and to focus on the more formal, public pieces, such as those which are sung at weddings and poetry competitions and which are recorded and sent to relatives in the Gulf. However this type of poetry does not adequately represent the huge variety of the oral material available. Old people on Soqotra describe a time when women could always be heard singing around the settlement as they worked: mucking out byres, settling children or singing as they churned butter. They sang as they ground grain, tanned skins and hides, kneaded clay, spun wool and wove the sheeps-wool cloth. Men and women called to their animals as they rounded them up for milking or took them off to pasture or to water; they sang to them as they watched over them grazing and when they brought them back home in the evening. Indeed I was told by an old man that if you went past a settlement and did *not* hear singing, this was often a sign that some misfortune had befallen the household, and you would turn aside to go and see what had happened. But now, he said: "the homesteads have fallen silent", and indeed, as you move around the island, it is rare to hear singing other than in the privacy of the home, as women pat their babies to sleep.

I intend to present a sample of this more private and everyday aspect of the island's cultural heritage today, playing a selection of recordings made on the island. A transliterated version will be available for those who want to try and follow the words, and an English translation.



## THE ERIOSH INSCRIPTIONS - INITIAL DISCOVERY AND SUBSEQUENT RECORDS

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The graffiti at Eriosh, which comprise inscriptions alongside representations of animals, humans and various geometric shapes, were first recorded in 1834. Several visitors to Socotra throughout the 19th and 20th centuries have subsequently recorded them and sometimes offered interpretations as to their origin and significance.

In this presentation, the circumstances surrounding the initial discovery and recording will be outlined and considered in the context of other epigraphic and archeological discoveries made on the adjacent Arabian mainland by the same early explorers. Subsequent records of the Eriosh inscriptions will also be compared and the significance of them considered in relation to more recent discoveries in Socotra and elsewhere in Arabia. In conclusion, it will be suggested that the Eriosh graffiti/inscriptions are, in a number of ways, an important part of Socotra's cultural heritage.

# RESEARCH

## MILLET: FIELD CULTIVATION IN SOCOTRA

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In the frame of the programme “Conservation and sustainable use of biodiversity in Yemen” the German Development Cooperation (GIZ), together with local partners (Local Council, Environment Protection Authority, Agriculture Department and Socotra Women Association), has been supporting farmers in Socotra since 2014 to rehabilitate millet fields.

Even if cultivation of finger millet has the potential to contribute to food security and provide income for farmers the cultivated area in Socotra declined in the course of the last years.

Obstacles to cultivation of millet field are discussed with farmers in order to develop solutions. Villagers elect Community Development Committees (CDC) and decide in a participatory, transparent manner which farmers shall directly benefit from the support. Afterwards the community receives a budget to pay material and labour according to jointly developed working- and procurement plans. The CDCs manage the budget and ensure women participation during the whole process.

As a result, terraces and fences of 3817 m<sup>2</sup> of fields were restored. From the total harvest of 530 kg in the first season farmers sold approximately half and received in average about 150\$ revenue. In 2015 another 4 villages will be supported.

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## DIET AND STABLE ISOTOPES UNCOVER TROPHIC DIVERSIFICATION PROCESSES AMONG SOCOTRAN ENDEMIC REPTILES

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Evolutionary diversification in confined systems like islands typically results in a general divergence of ecological niches. Diet is a major component of species niches, and therefore we hypothesize that sister species from isolated monophyletic groups should diversify in their dietary preferences. We examined this hypothesis using six endemic reptiles belonging to two different monophyletic groups from Socotra Island (Yemen). We assessed trophic niches studying both faecal samples and data on stable isotopes ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ ). We collected pellets and tail tips for these analyses during two visits (spring of 2013 and spring of 2014) to Socotra. Using the isotopic data, we tested interspecific differences in (1) trophic niche widths -using ellipse-based metrics- and (2) mean isotopic values -fitting linear mixed models which included lithology, altitude and microhabitat as environmental predictors. Within our array of species, we detected both trophic niche divergences (differentiation between sister species) and ecological convergence (diet similarity between species of distant lineages). Interestingly, we found very similar patterns in faecal samples and isotopes. In a phylogenetic context, trophic niche data helps to understand the mechanisms (microhabitat, altitude, body-size) driving evolutionary diversification in Socotra.



Raquel Vasconcelos

# RESEARCH

## ERADICATION OF THE INTRODUCED AND POTENTIALLY INVASIVE SPECIES OF *CALOTROPIS PROCERA* FROM SOCOTRA

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*Calotropis procera*, was introduced to Socotra more than a century ago and is one of the 87 non-native flora species. Although the species may have an invasive character, on Socotra it has not. However, it is abundant in home gardens and can have an impact on local vegetation, especially in the north of the island near Hadiboh. Therefore, it was proposed to consider its eradication.

After rainfall in areas with adult fruiting trees, a large number of seedlings germinate, but during fieldwork, it has been found that as long as vegetation is under intensive pressure of livestock, *Calotropis procera* will not have an invasive character outside fenced gardens. Although the species is considered unsuitable for grazing, in the vicinity of larger towns where pressure on food sources is enormous, animals feed on it.

To eradicate the species in home gardens, workshops and training of locals, motivated by the offering of native trees for cultivation, will be the first step. Mature individuals will be reduced mechanically because shoots will be eliminated by grazing. Or tree ringing will be implemented, i.e. mechanical interruption of the phloem, which leads to the death of the tree.



*Calotropis procera* at De Hamri and above flower.  
Photos by Tony Miller.



## THE CASE OF HIGH INTRA-SPECIFIC GENETIC DIVERGENCE ON A SMALL ISLAND: IS *PRISTURUS INSIGNIS* A SOUND SPECIES?

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When Arabia moved northward into Eurasia 34-41 million years ago it left a small piece of Gondwanan land in what is currently the Indian Ocean. This piece of land is called the Socotra Archipelago, and it happens to manifest an unprecedented amount of endemism. Reptiles are no exception, exhibiting 93.5% of species endemism on the island, out of a full reptilian diversity of 31 species. In this study we focused on an endemic species of semaphore geckos (*Pristurus insignis*) that happens to sport incredibly high values of intra-specific genetic divergence (7.08% from 12S mtDNA), leading us to doubt its single species status. In order to deal with this uncertainty the full island distribution of the species was covered throughout the sampling procedure. We subsequently sequenced 1 mitochondrial (12S), and 3 nuclear (ACM4, CMOS, and MC1R) loci from 57 sampled individuals.

The age calibrated multi-locus gene tree obtained using BEAST suggests within island diversification processes that gave rise to three genetic lineages that currently display a corresponding well defined geographic structure, with no obvious contact zones.

# RESEARCH

## COMMUNITY-BASED ECO-TOURISM MANAGEMENT - A SUSTAINABLE DEVELOPMENT APPROACH ON SOCOTRA

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Since the 1980s Community-Based Natural Resources Management (CBNRM) as one of the grass-root approaches has been regarded as one of the possible remedy for environmental degradation. Community-Based Eco-tourism Management as part of CBNRM programs has been lately considered as a common tool for biodiversity conservation, providing high financial incentives for communities to conserve their natural resources.

It has been since 2000 that this approach has been applied on Socotra as a tool helping to alleviate poverty and to achieve sustainable development. Communities living within or close some of the newly established protected areas were encouraged and supported to run their own CBNRM programs. Potential lucrative economic revenues from the programs are realized by the communities and thus biodiversity is valued.

Community-based eco-tourism management, if well stimulated and implemented on Socotra, could be a good tool for ensuring the aimed sustainability in resource use. This is because it links high tangible income to improved conservation efforts. To attain this, Community-based eco-tourism management' stumbling blocks should be addressed. Providing safe and easy access to Socotra, improving eco-tourism infrastructure friendly to Socotra's fragile ecosystem and culture, services quality and building business, administrative and environmental management capacity are some factors addressing those impediments.



## FUEL WOOD CONSUMPTION ON SOCOTRA WORLD HERITAGE SITE (CURRENT PROBLEM AND ALTERNATIVES)

**Abdulraqeb Al-Okaishi<sup>1,2</sup>, Ahmed Saeed Suleiman<sup>3,\*</sup>**

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Socotra has 825 vascular plants (37% endemic). This biodiversity is threatened by over-grazing, climate change, uncontrolled development, low regeneration, habitat degradation and over-exploitation. Socotri, especially villagers, highly depend on wood due to pastoralist living, transportation difficulties, and low income. They use wood for cooking, heating, construction, and selling, especially during gas shortages. As the supply of dead wood is insufficient, live trees are being increasingly cut, posing serious threats to important species (i.e. *Maerua angolensis socotrana*, *Zizphus spina-christi*, *Croton socotranus* and *Cephalocroton socotranus*). Wood is also burnt for pastures.

With short interviews to Hadibou residents, local authorities, oil companies and restaurant owners we have estimated the consumptions in urban and rural areas on firewood, oil and gas to predict the impacts of gas shortage. Each family and restaurant consumed 2.04 and 106.8 m<sup>3</sup>/year of wood on average, respectively. Assuming that each tree produces 0.034 m<sup>3</sup> biomass when cut that means that every person consumed 60 trees/year.. The solution is reforestation, not viable considering the political scenario, and providing gas. Most people interviewed use one gas cylinder/month. This means 360000 cylinders/year are needed for the 30000 estimated gas users in Socotra plus 18000 cylinders/year for restaurants. Presently only 115000 cylinders are available in total.



# CONTACTS

## FRIENDS OF SOQOTRA

Friends of Soqotra (UK Charity Number 1097546) was formed in 2001. Its distinctive rationale is to bring together people with backgrounds in scientific research and those with a more general interest and develops the synergies between them in order to:

- Promote the sustainable use and conservation of the natural environment of the Soqotra island group
- Raise awareness of the archipelago's biodiversity and the unique culture and language of the islanders
- Help improve the quality of life of the island communities and support their traditional land management practices.



### Contacting FoS

info@friendsofsoqotra.org  
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## Friends of Soqotra Website

<http://www.friendsofsoqotra.org>

The Friends of Soqotra website is managed by Dana Pietsch. It provides information on completed and ongoing scientific research on the Soqotra archipelago including data, bibliographies and contacts of institutions and research teams. The structure and layout also includes a page in the Arabic language which gives some general information about FOS. If you would like to submit content for the website, please contact Dana:  
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Many thanks to all the contributors, whose contact details are listed with their articles or can be obtained from the Editor. Unattributed 'News' articles come from the Yemeni press; full articles without named authors prepared by the Editor from submitted material.

## WEBSITES

[www.FriendsofSoqotra.org](http://www.FriendsofSoqotra.org)  
[www.Socotraisland.org/fund](http://www.Socotraisland.org/fund)

The following websites also provide information on the island:

<http://rbgesun1.rbge.org.uk/Arabia/Soqotra/home/page01.html> Royal Botanic Garden Edinburgh. Plants, panoramas and ethnobotany.

[www.uni-rostock.de/fakult/manafak/biologie/wranik/socotra](http://www.uni-rostock.de/fakult/manafak/biologie/wranik/socotra). University of Rostock (Animals)

[www.sogotra.info](http://www.sogotra.info) A personal view by John Farrar.

[www.yemen-protectedareas.org](http://www.yemen-protectedareas.org)

[www.socotraproject.org](http://www.socotraproject.org) – SGBP website

<http://www.sogotra.com>; <http://www.sogotra.org/int/>  
<http://www.sogotra.com/vb/showthread.php?p=39668>

<http://socotra.info/socotra-news.php?start=20>



Photo by Ahmed Suleiman



Damage by cyclones Chapala and Megh on Soqotra