

The background image shows a wide, flat landscape under a clear blue sky. In the foreground and middle ground, there are several pools of greenish water, likely geothermal. The water is surrounded by yellow and orange sulfur deposits, which are characteristic of such environments. The ground is rocky and brownish. In the distance, there are low, rolling hills or mountains.

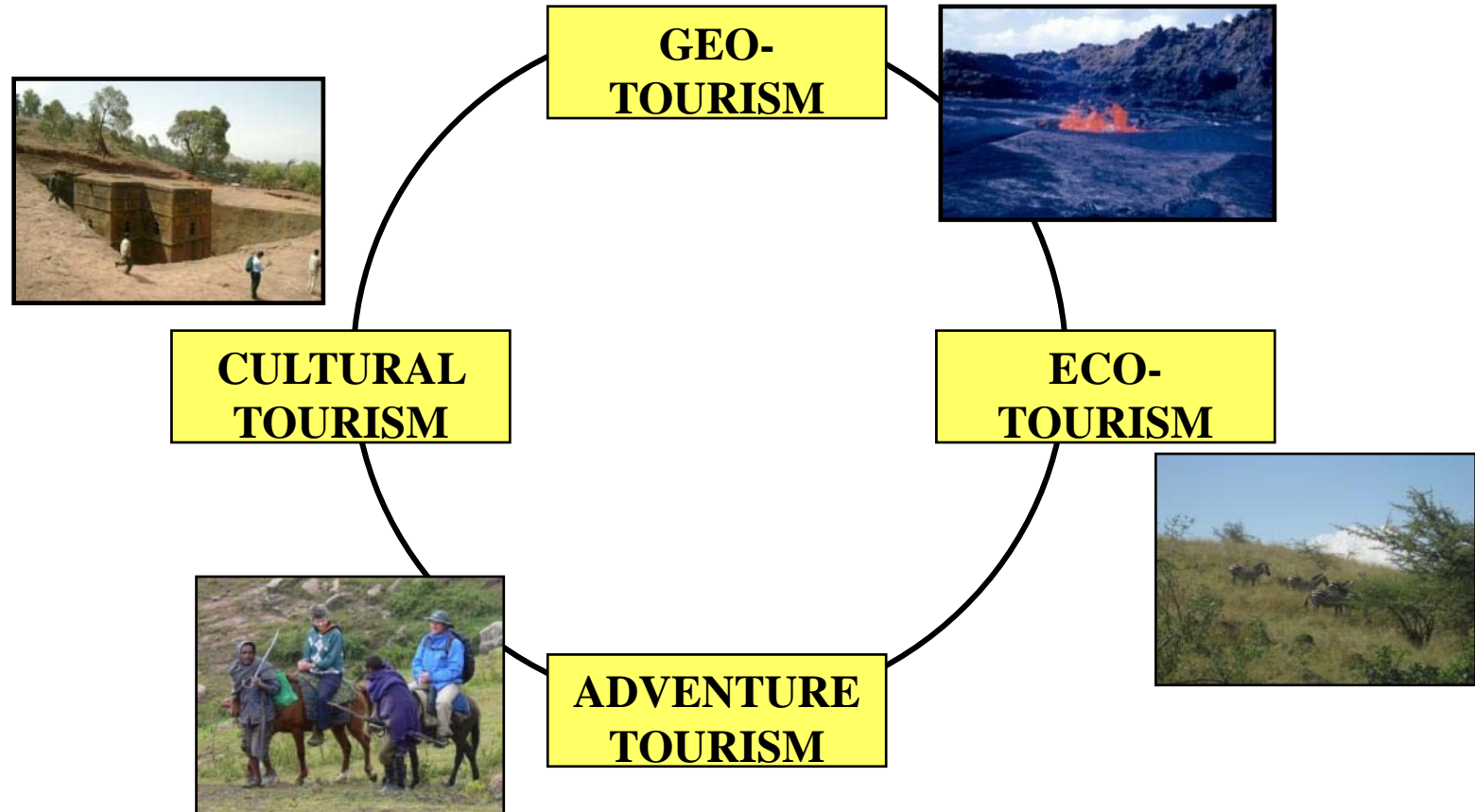
# *Geotourism in Afar and the Ethiopian Rift Valley*

*Frances Williams  
University of Adelaide  
South Australia*

# Geotourism is a form of natural area tourism that specifically focuses on landscape and geology.

*Newsome, D. and Dowling, R.K., 2010*

The aim of geotourism is to make visitors aware of, and to gain some understanding of, the geological features that surround them.



# EVERY TOURIST IS A POTENTIAL GEOTOURIST!



**Professional geologists** (These will generally have pre-arranged their tour and geological guide)

**Tourists with a particular interest in geology;** amateur geologists

**The general tourist with an enquiring mind** who is interested in everything he sees

**Special interest tourists** (other than geology): historical (60-65%), birdwatchers (10%), trekkers (10%), wildlife, coffee tours, cultural tourists (eg Omo region (15%)), etc

**Local vacationers** (eg Addis Ababa residents going to Debre Zeit, Awash, Langano, Wondo Genet for a weekend's relaxation)

**Local Ethiopian visitors**

**Ethiopian “diaspora” visitors**

# WHY DOES ETHIOPIA NEED GEOTOURISTS?



**Tourism: an increasingly important contribution to the economy**

**Creation of jobs for local people: tour companies, drivers, guides, accommodation providers, food outlets**

**Although Ethiopia has beautiful and interesting wildlife, it cannot compete with the game parks of other East African countries**

**However, it has two big advantages over them: unique historical sites and unique and spectacular geology**

**Therefore promotion of Ethiopia's geological attractions is important**

**Ensures that tourists appreciate fully ALL the attractions Ethiopia has to offer!**

**Conservation of important geological sites**

# WHAT DO GEOTOURISTS NEED?

Sites of geological interest: these abound in Ethiopia!

**INFORMATION! What the sites are, where they are, how to reach them, and information about their geology.**

As well as general tourist amenities:

Access (roads, tracks, walking trails)

Transport

Accommodation

Food and drink

Guidance

Safety



***THE RIFT VALLEY LAKE DISTRICT:  
Continental rifting in action  
Four lake basins, each geologically distinct,  
Dormant volcanoes, hotsprings, faults  
Lacustrine sediments including diatomites  
Pumice tuff and ignimbrites***



***AWASH NATIONAL PARK: Junction of the  
Rift Valley and Afar  
Dormant caldera volcano  
Hot springs  
Tectonic fissures and fresh lava flow  
Volcanic blisters in ignimbrite (unique)  
Mysteriously rising lake***



# ***NORTHERN AFAR: the birth of an ocean***

***Fresh lava forms***

***Sulphur hotsprings***

***Salt plains and lakes***

***Permanently active lava lake***





# GEOTOURIST FACILITIES IN THE RIFT VALLEY LAKES REGION, AWASH AND NORTHERN AFAR

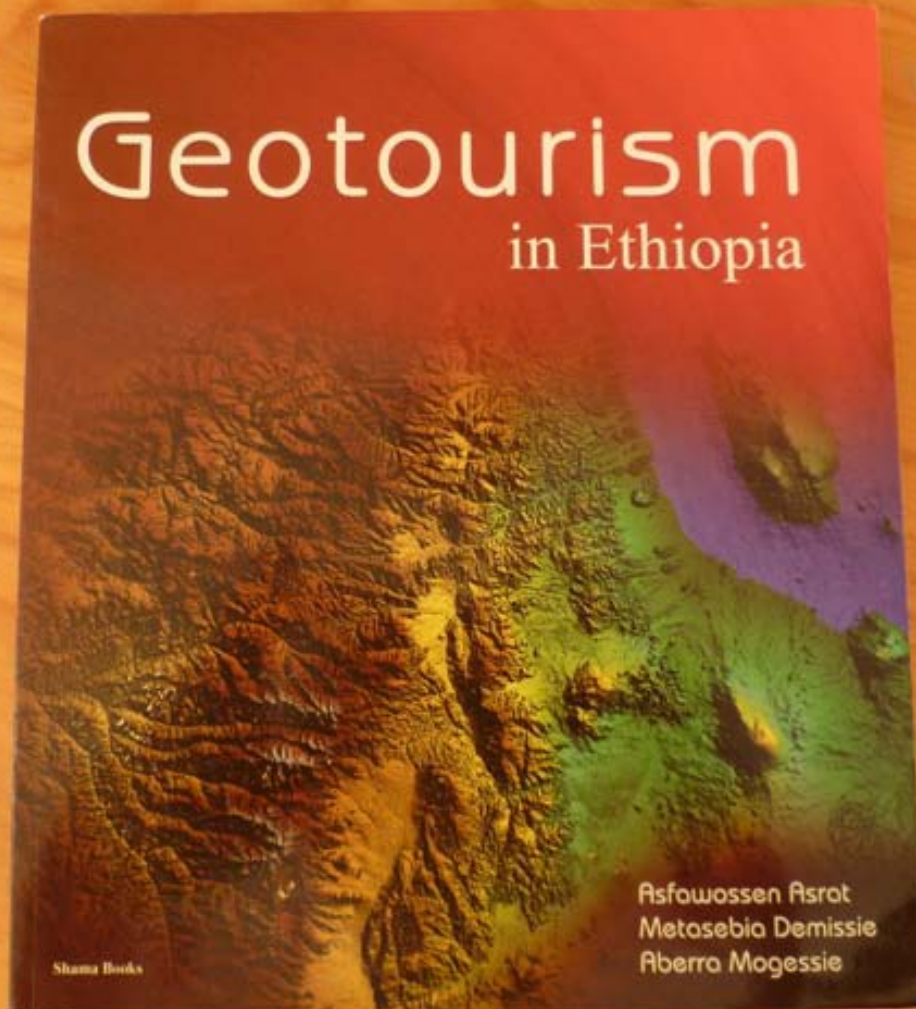
	Access	Transport	Accommodation	Food and drink	Security/safety	Information	
						Guide available	General Geo
<b>Rift Valley lakes region</b>	Easy / Moderate	2WD / 4WD	Lodges, resorts, camping	Yes	Good/ good	Yes: local guides or from Addis	No (No)
<b>Awash NP</b>	Moderate	2WD / 4WD	Lodge/ camping	Yes/ BYO	Moderate/ moderate	Yes	Some (No)
<b>Northern Afar</b>	Difficult but improving greatly	4WD and foot/camel	Camping	BYO	Moderate/ moderate	Yes: from Addis or Mekele	No Some

# **Lack of information is the first problem facing a potential geotourist in Ethiopia**



**“This all looks very interesting – but what is it?”**

# Geotourism in Ethiopia



Shama Books

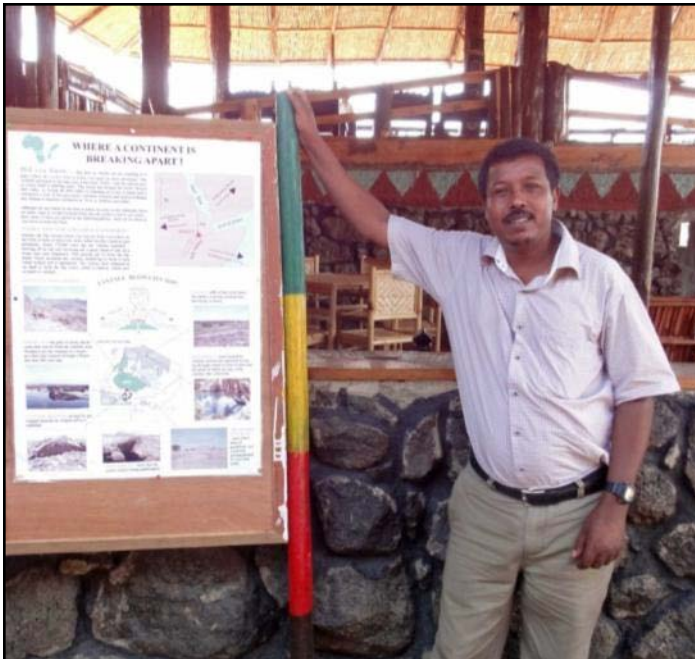
Asfawossen Asrat  
Metasebia Demissie  
Aberro Mogessie

# VISITOR INFORMATION CENTRE


## Geological displays (eg local rock types, posters explaining the geology)



Awash National Park Visitor Centre



## Poster designed for Awash National Park



### WHERE A CONTINENT IS BREAKING APART!


**Did you know.....** that here at Awash you are standing at a place where the earth's crust is being torn apart in three directions? The Arabian peninsula is moving away from away Africa – and the eastern part of Africa itself is splitting apart. This break has formed the Great African Rift Valley. At Awash the Rift Valley is widening at a rate of about half a centimetre a year. If this movement continues western and eastern Ethiopia may belong to separate continents in 20 or so million years time!

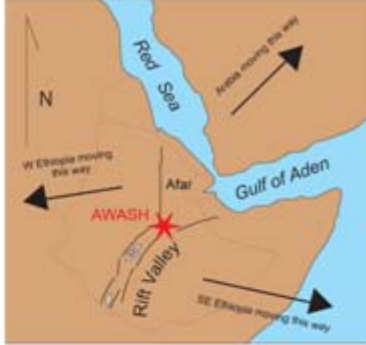
Although the movement is too slow to notice on a day to day timescale, there are many signs in Awash National Park that the earth's crust is very active here. Some of these are shown in the following photos – look out for them as you travel around the Park.

**A VOLCANO AND A MASSIVE EXPLOSION!**


Fantale, the big volcano which you can see from everywhere in the Park, is built of silica-rich rocks called rhyolite, trachyte and pitchstone. About 170,000 years ago the volcano exploded – blowing off its top and throwing out a great cloud of ash, lava drops and rock fragments. This poured out to form the flat plains which surround the volcano, solidifying to form a rock called welded tuff or ignimbrite. The volcano then collapsed in on itself to form the big crater, called a caldera, which now occupies its summit.

**FANTALE SUMMIT CALDERA**







**FRESH LAVA** -the piles of black, blocky rocks that you see from the roadside near Metakara are the remnant of a basalt lava flow that erupted through a fissure less than 200 years ago.




**FANTALE BLOWS ITS TOP!**




**Faults** - cliffs of bare rock where the earth's crust has cracked and moved up, or down.




**VOLCANIC BLISTERS** -formed by gas trapped beneath the welded tuff as it solidified.




**OPEN FISSURES** -show that the earth's crust is being pulled apart.




**HOTSPRINGS** -water heated by volcanic activity has squeezed its way up through a fault to form rivulets and hot pools in which one may, with caution, take a hot bath.



**THE WELDED TUFF PLAIN** - once a fiery mass of ignimbrite, now a peaceful grazing ground for oryx and kudu.

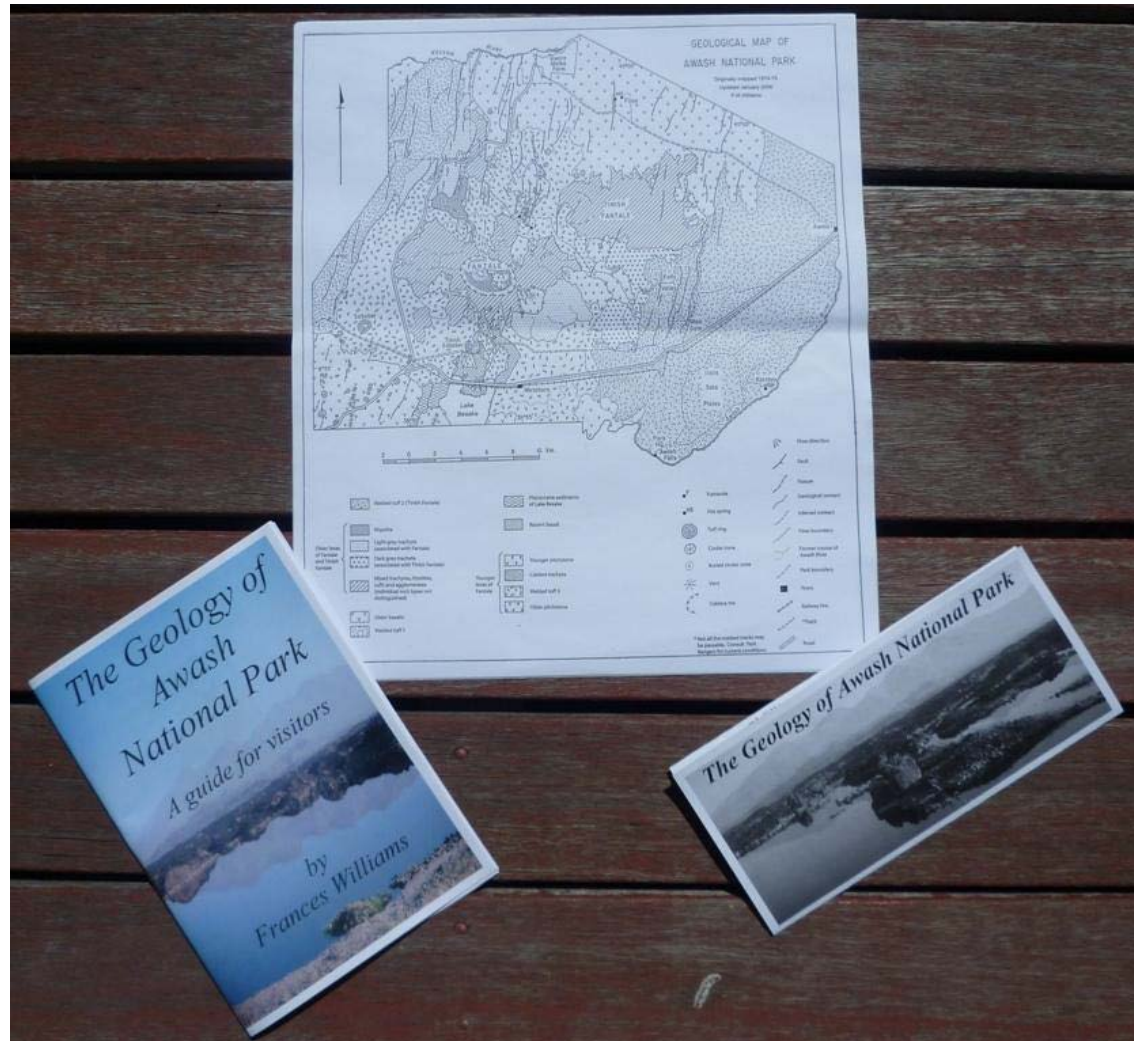
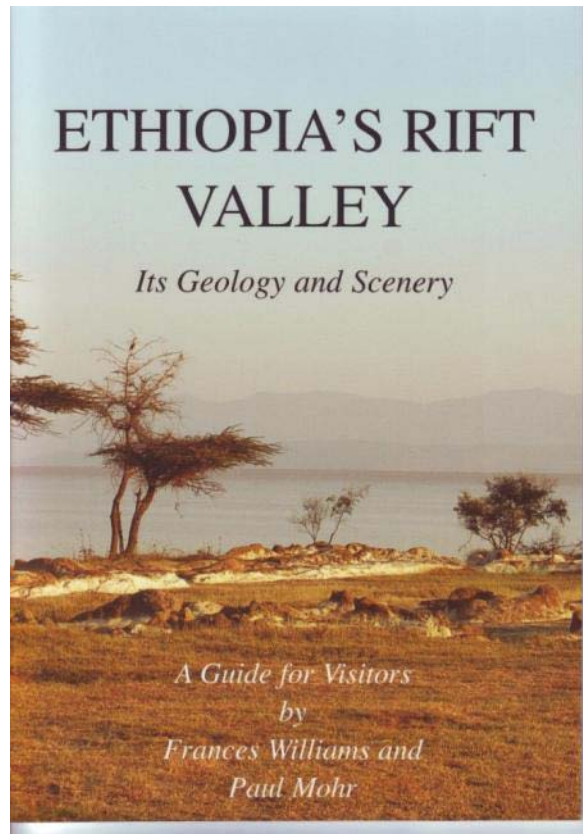


**GEOLOGY OF THE PARK**



# READING MATERIAL: BROCHURES, PAMPHLETS, MAPS

*(Comments please!)*



# INTERPRETIVE SIGNS



← These can have problems

But can be very useful if carefully located in a protected site



## AWASH FALLS

Have you noticed how different the Awash River looks upstream and downstream of the waterfall? And.....why is there a waterfall here at all?



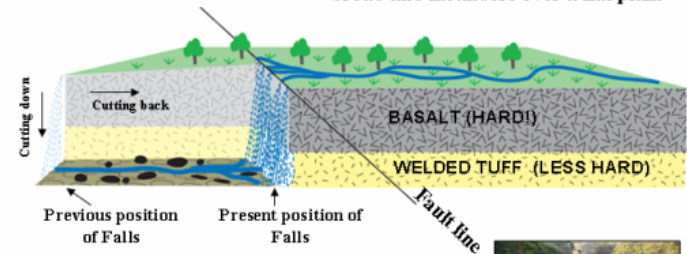
Downstream of the Falls, the river is narrow and flows in a deep gorge.



Upstream of the Falls the river is broad and meanders over a flat plain



The Awash River never reaches the sea but ends in the salt lakes of the Afar lowlands. As it flows it steadily cuts down and back, trying to reach the level of these lakes. Somewhere north of Awash, many thousands of years ago, a hard layer of basalt slowed its backward cutting and formed a step, or nick point. The step and hence the waterfall have since moved gradually upstream as the river slowly continues to eat the rock away.



At Awash Falls the waterfall has also spread sideways along a line of weakness due to a fault, forming a spectacular mini-gorge at right angles to the main gorge.

# GUIDES AND GUIDED TOURS



**Plants, birds, animals:  
BRILLIANT!**

**Geology: ?**



# NORTHERN AFAR





# Descending the escarpment into Northern Afar

1974



2011





**Hamd'illah, gateway to Northern Afar**



*“ The whole guide and escort issue has become a real pain. We spend a lot of money and there are no real receipts, and then we face a battle with Inland Revenue which doesn’t accept it as an expense.*

*We (the Ethiopian Tour Operators Association) have had meetings with the Afar Region Tourism Bureau, but the agreement we reached about limiting the huge number of people we are obliged to hire hasn’t been adhered to by people on the spot. Sometimes we are even forced to pay for people we do not take, for lack of space in our vehicles”.*

*An Ethiopian Tour Operator*



**Dallol volcano and hotsprings: endangered by potash mining**





**Fragile hotspring formations at Dallol**



**Endangered by the feet of tourists**





**Erta Ale –centrepiece of a Crater National Park?**

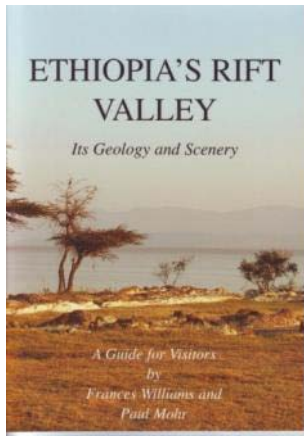




**Ignimbrite blisters at Awash: endangered by quarrying**



# PROMOTION OF GEOTOURISM



**INFORMATION**

**AMENITIES**

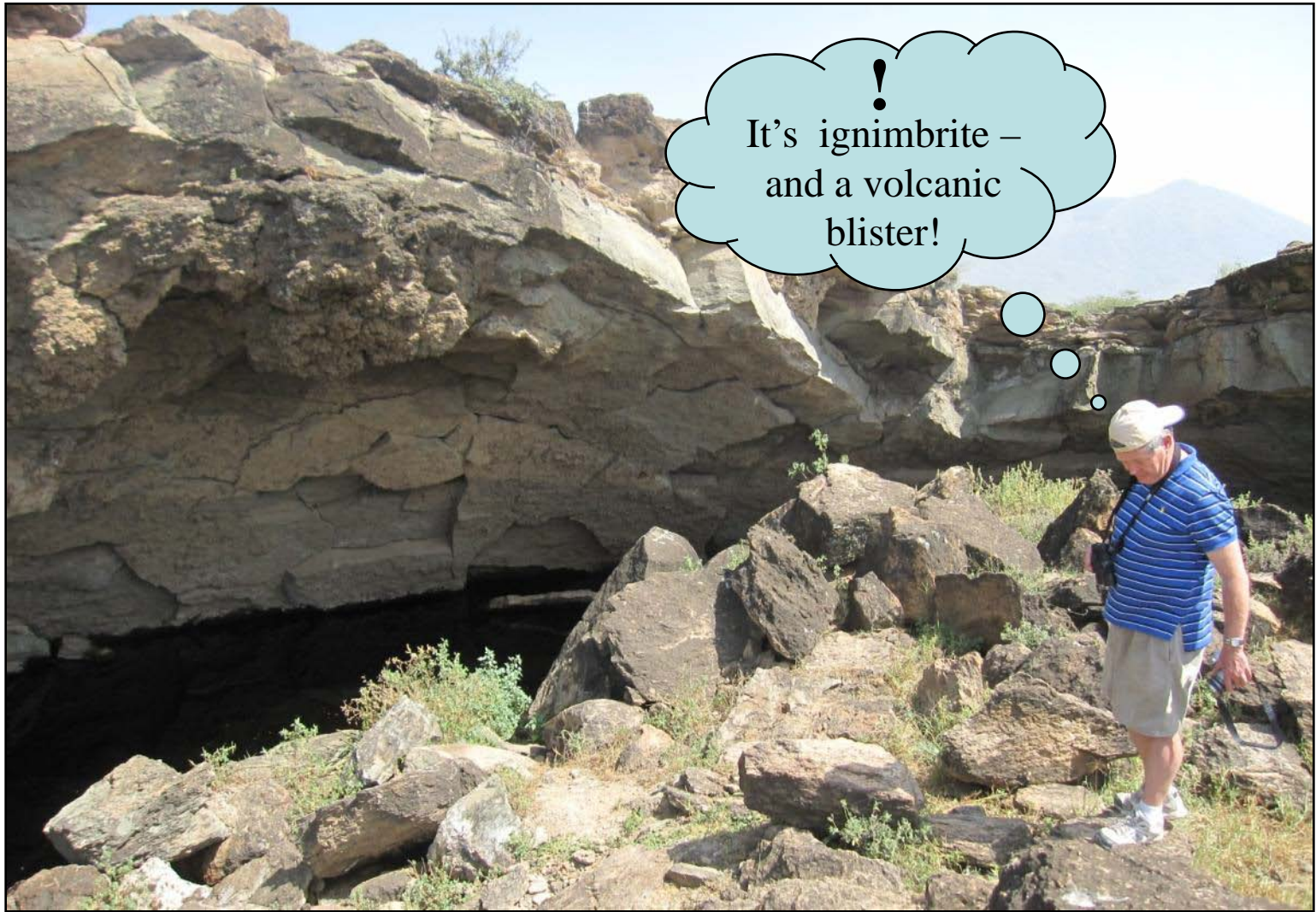


**REGULATED INVOLVEMENT OF LOCAL COMMUNITIES**



**PROTECTION OF GEOLOGICAL SITES!!!**





!  
It's ignimbrite –  
and a volcanic  
blister!



# AWASH FALLS LODGE

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**Bed & Camping Services**



**Restaurant Service**



**Conference Room**



[www.elephanttour.com.e](http://www.elephanttour.com.e)



... Ethiopia  
... 0911...  
... Email: ethio@ethio...

# INTERNET

**Awash National Park - Microsoft Internet Explorer**

Address: [http://www.selanta.net/awash\\_national\\_park.htm](http://www.selanta.net/awash_national_park.htm)

**History**

**Religion**

**Culture**

**Economy**

**Politic**

**Travel**

**Selanta Music**

**Downloads**

**Contact**

**Guestbook**



[Cheap Airfare Ticket to Addis Ababa](#)

**GUIDE**

**AddisMap.com**

**Awash National Park**

Awash National Park is located 225 km east of Addis Ababa, the Park stretches 30km east to west and a little less from north to south. The terrain is mainly acacia woodland and grassland



**Wildlife**

At all places and all times it is possible to see game. Oryx, Soemmerring's gazelle and wild pig are common. Slightly less frequent are the furry waterbuck which tend to appear near the river in the late afternoon. The tiny dik-dik, not easy to spot in the speckled shade of the acacia thorn, zebra grazing the plains to the west of Fantale, cheetah, serval and leopard are also there but it is not easy to spot them, baboons, both anubis and hamadryas, kudus, lesser and greater, the giant tortoise, hippo, reedbuck, aardvark and caracal are also represented. Kippinger inhabit the higher slopes of the mountain and curious hyrax peer at you curiously from behind their rocks. In the bottom of the gorge you can spot the black and white colobus monkey

**Birdlife**

Over four hundred species are recorded for the park. (The check list is available at the museum at park Head quarters). They range from the great ostrich, frequently and easily observed, and the less common Secretary Bird and Abyssinian Ground Hornbill, to the flashes of brilliant pink which are the Carmine Bee-eaters, and the Abyssinian Roller with turquoise and purple wings. And between these two extremes, birds of the riverine forest, Coucal, Turaco, Go-away Birds, birds of prey, and birds of the savannah

**Attraction**

The park itself is traversed by a series of well-maintained tracks, which take in the most spectacular of the many scenic attractions. It is possible, and perhaps advisable, to hire a park guide. To the north at Filwola lies the hot springs oasis in its groves of palm trees. It is reached by either one of two scenic trails which start opposite the picnic area on the far side of the road and branch

**Amharic Bible**

**Amharic Literature**

**Ark of the Covenant**

**National Parks**

**Historical Places**

**Ethiopia travel facts**

**Addis Ababa City Map**

**Addis Ababa hotels**

**Books about Ethiopia**

**Ethiopian Recipes**

**Ethiopian Calendar**

**Ethiopian Coffee**

**Ethiopian festivals**

**Wildlife**

**Ethiopian Alphabet**

**Amharic dictionary**

**Some funny Pictures**

**አገር ግለት**

Start | Awash National Park | Microsoft PowerPoint - [E... | 1:23 PM

# Means of providing information

Information centre / Visitors' Centre

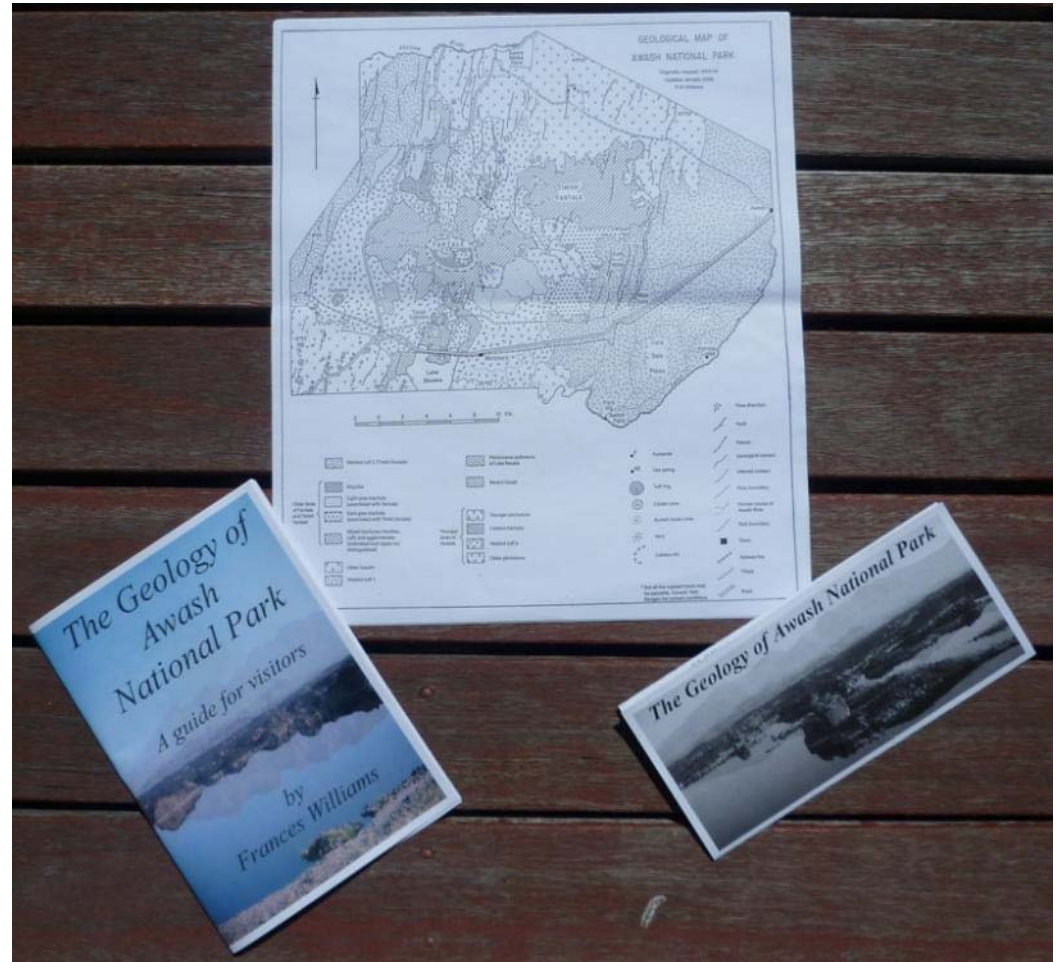
Brochures / Pamphlets

Map

Interpretative signs

Personal Guide/  
guided tour

Internet



# A SELECTION OF ETHIOPIA'S GEOLOGICAL ATTRACTIONS

**Semien  
Mts**

**Blue Nile  
Gorge**

**Debre Zeit  
volcanic  
field**

**Rift  
Valley  
lakes**



**Adua  
plugs**

**N Afar:  
Dallol and  
Erta Ale**

**Middle Awash  
archaeological  
sites**

**Awash NP**

**Sof Omar  
caves**

**Bale Mts**

**Dormant volcano with caldera**



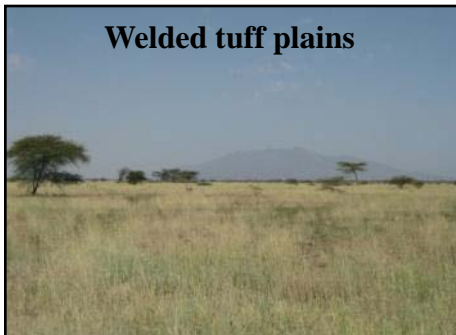
**Volcanic blisters**



**Fresh faults**



**Welded tuff plains**



**Welded tuff (ignimbrite)**



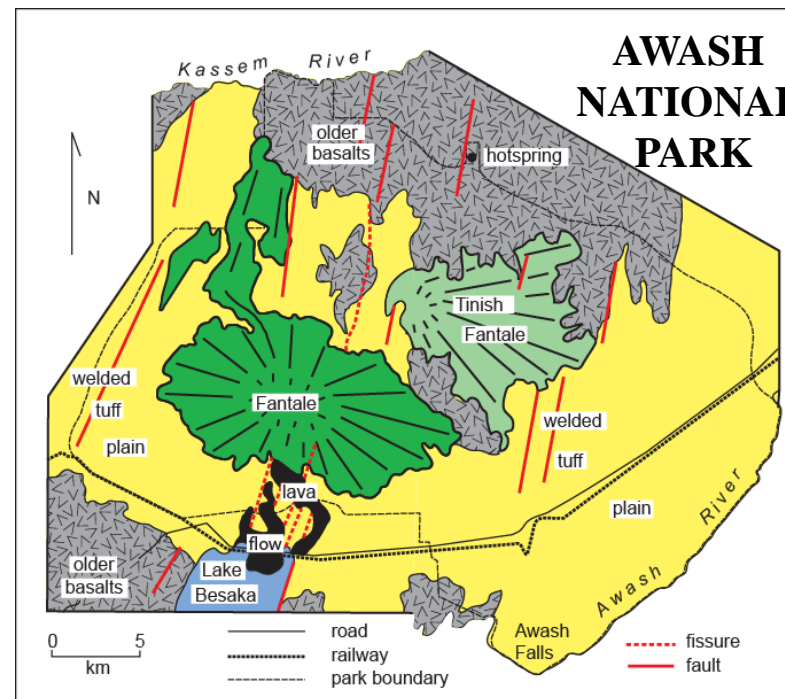
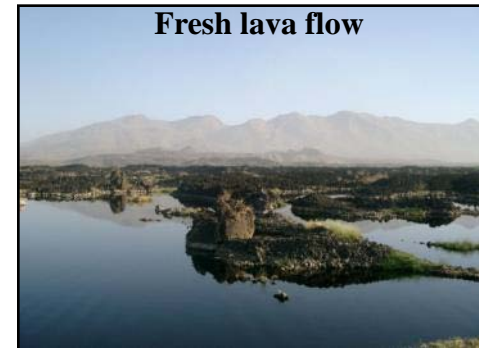
**Mysteriously expanding lake**



**Waterfall**



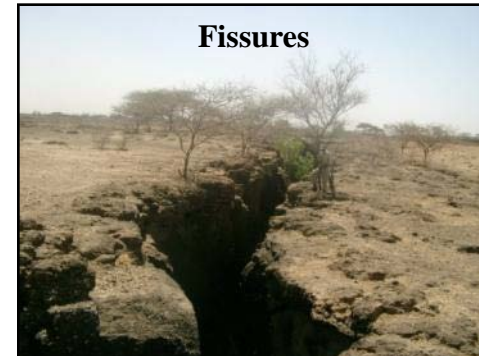
**Fresh lava flow**



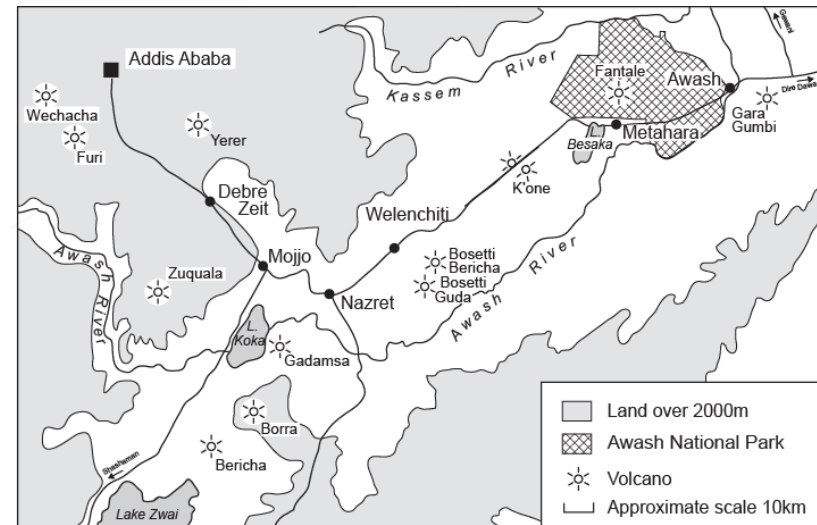
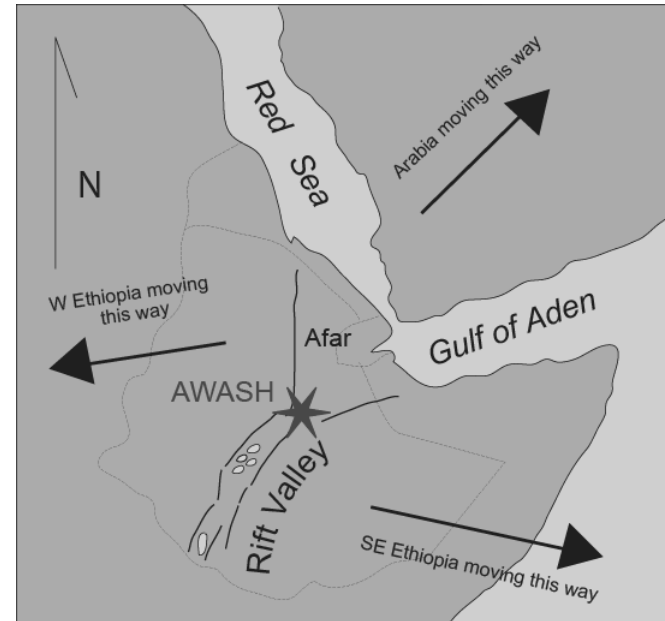
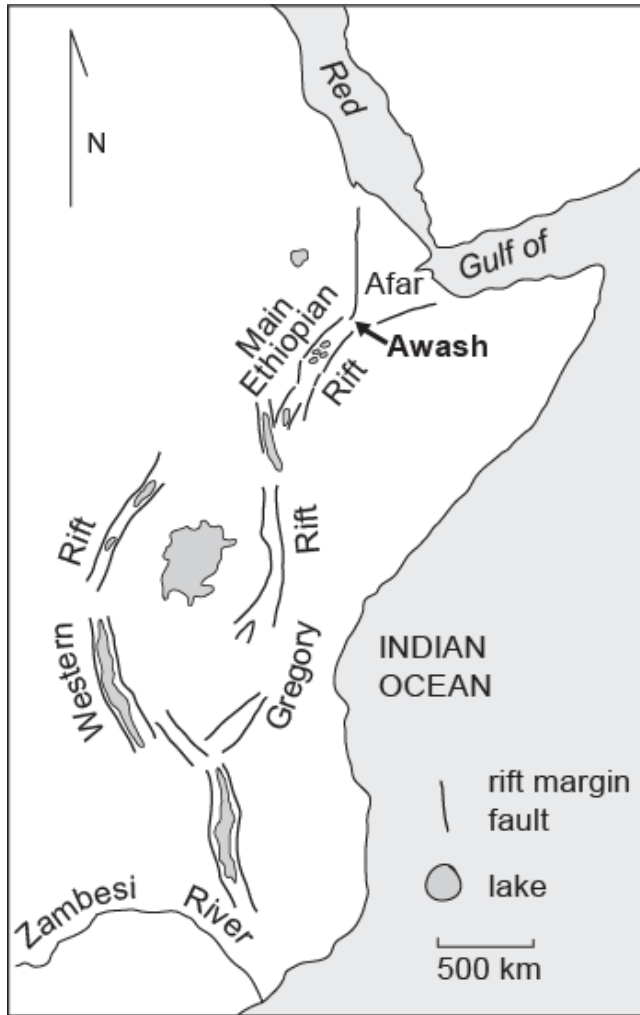
**Hotspring**



**Fissures**



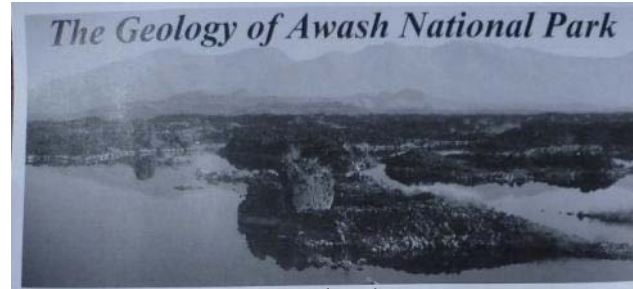
# AWASH NATIONAL PARK





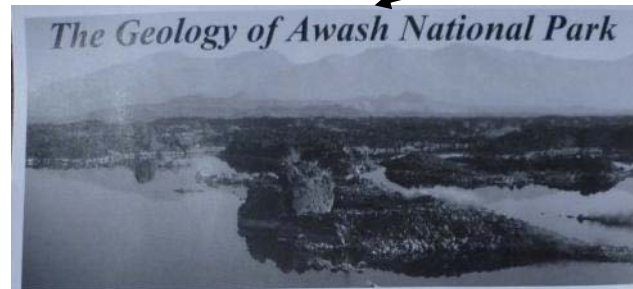
# Means of providing information

Visitor information centre



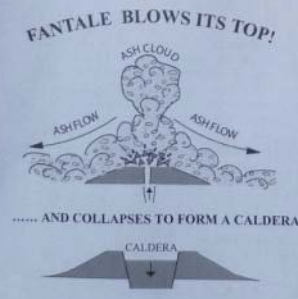
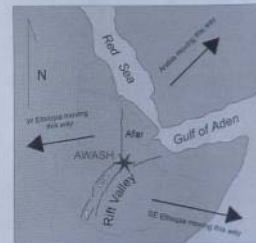
Brochures / Pamphlets/  
Map

Interpretative signs



Awash National Park is located at a place where the earth's crust is splitting apart in three directions. The Arabian peninsula is moving away Africa – and the eastern part of Africa itself is splitting apart. This break has formed the Great African Rift Valley. At Awash the Rift Valley is widening at a rate of about half a centimetre a year. If this movement continues, western and eastern Ethiopia may belong to separate continents in 20 or so million years' time!

Although the movement is too slow to notice on a day-to-day timescale, there are many signs in Awash National Park that the earth's crust is very active here. First of all, there is Mount Fantale itself, the big volcano that dominates the Park. Other signs are shown over the page.



**A VOLCANO AND A MASSIVE EXPLOSION**  
Fantale volcano is built of silica-rich rocks called rhyolite, trachyte and pitchstone. About 170,000 years ago the volcano exploded – blowing off its top and throwing out a great cloud of ash, drops of liquid lava and rock fragments. This cloud poured out over the flat plains surrounding the volcano, solidifying to form a rock called welded tuff or ignimbrite. A picture of this beautiful rock is shown on the back of this leaflet. The volcano then collapsed in on itself to form the big crater, called a caldera, which now occupies its summit.



These are some of the geological features to look out for as you travel around Awash National Park. They indicate that Awash has been a region of violent volcanism and earth movements in the recent past – and may be so again in the future!

**VOLCANIC BLISTERS** – formed by gas trapped beneath the welded tuff as it solidified.

**FRESH LAVA** – the piles of black, blocky rocks that you see from the roadside near Metahara are the remnant of a lava flow that erupted through a fissure less than 200 years ago.

**RISEING LAKE BESAKA** – for the past twenty years at least Lake Besaka has been getting bigger! The reason for this is uncertain – but the main road and railway line have had to be built higher and higher to stay above water!

**OPEN FISSURES** – show that the earth's crust is being pulled apart.

**FAULTS** – sites of bare rock where the earth's crust has cracked and moved up, or down.

**HOTSPRINGS** – water heated by volcanic activity has squeezed up through a fault to form rivulets and hot pools in a palm oasis.

**WELDED TUFF PLAIN** – since a fiery mass of ignimbrite, this is now a peaceful grazing ground for oryx and kudu.

**AWASH FALLS** – the Awash River pours over a layer of hard basalt.

**IGNIMBRITE** – the rock formed in Fantale's explosive eruption. Look out for samples of this beautiful rock as you travel around the Park. The black streaks, called flammé, are formed when liquid lava drops in the ash cloud solidified very quickly. If you look carefully you can also see many rock fragments, crystals and lumps of pumice, all thrown from Fantale when it exploded.

This leaflet gives only a very brief introduction to the geological features of Awash National Park. Further information can be found in the booklet: "The Geology of Awash National Park – a guide for visitors" by Frances Williams

**ENJOY YOUR VISIT TO THE PARK!**

Personal Guide/  
Guided tour

Internet

# THE RIFT VALLEY LAKE DISTRICT

