



# Ifa lemvelo



*The newsletter of the Natural History Museum of Zimbabwe*

*Volume 3, Issue 2: Apr 2022*

*Some of the stories in this issue*

## MAPELA HILLS

*Mapela Hill is a prominent isolated Kopje situated 2 kilometres east of the confluence of the Shashe and Shashane Rivers.*

*Excavations done in 1967 on the site indicated that the inhabitants of Mapela were into trading with the Indians and other West countries.*

## Know your Monuments

**Monument No 2 & World Heritage Site Great Zimbabwe**  
**Having been declared a National Monument in 1950 and a World Heritage Site in 1986, GZ is one of the largest stone wall settlements in Southern Africa**

## Save these dates

*City Nature Challenge*  
*April 29- 2 May*

## Did you know about the herbarium at the museum



The Natural History Museum has a herbarium that started in 1909 with a collection of only 800 specimens. The collection has grown and now has about 6000 specimens. making part of the collection is the Baobab *Adansonia digitata*.



Natural History Museum of Zimbabwe is home to valuable research collections and is the best museum in Southern Africa, ranked fourth in size among the museums in Africa.

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## OPENING HOURS

*Open  
everyday from  
9am-5pm*

## Entrance fees

### Locals

Adults \$3

Children (5-14 years)\$1

### SADC Countries

Adults \$7

Children \$5

### International

Adults \$10

Children \$5

**All prices in US\$, local currency accepted, calculated at prevailing official rate.**

## Message from the Regional Director

Hello and welcome to this issue!

Finally schools and society has reopened after the pandemic and the museum is once again filled with the sound of school children. Financial recovery will take longer but we are confident that with your support and visitor-ship we will do so quickly.

In this issue of our newsletter we take you through the museum to see the amazing teaching resource we are when we take you through the galleries investigating the topic of animal migration. We hope this will inspire many to take a closer look at the details and information in our wonderful displays and plan your own educational outings. Have a wonderful time exploring our heritage.



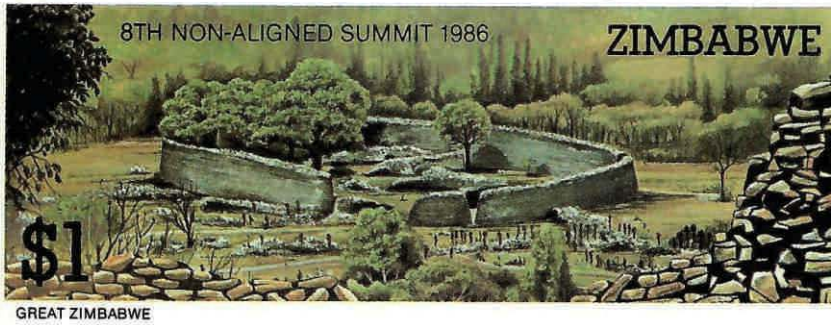
# Get to know your monuments

## Monument No.2

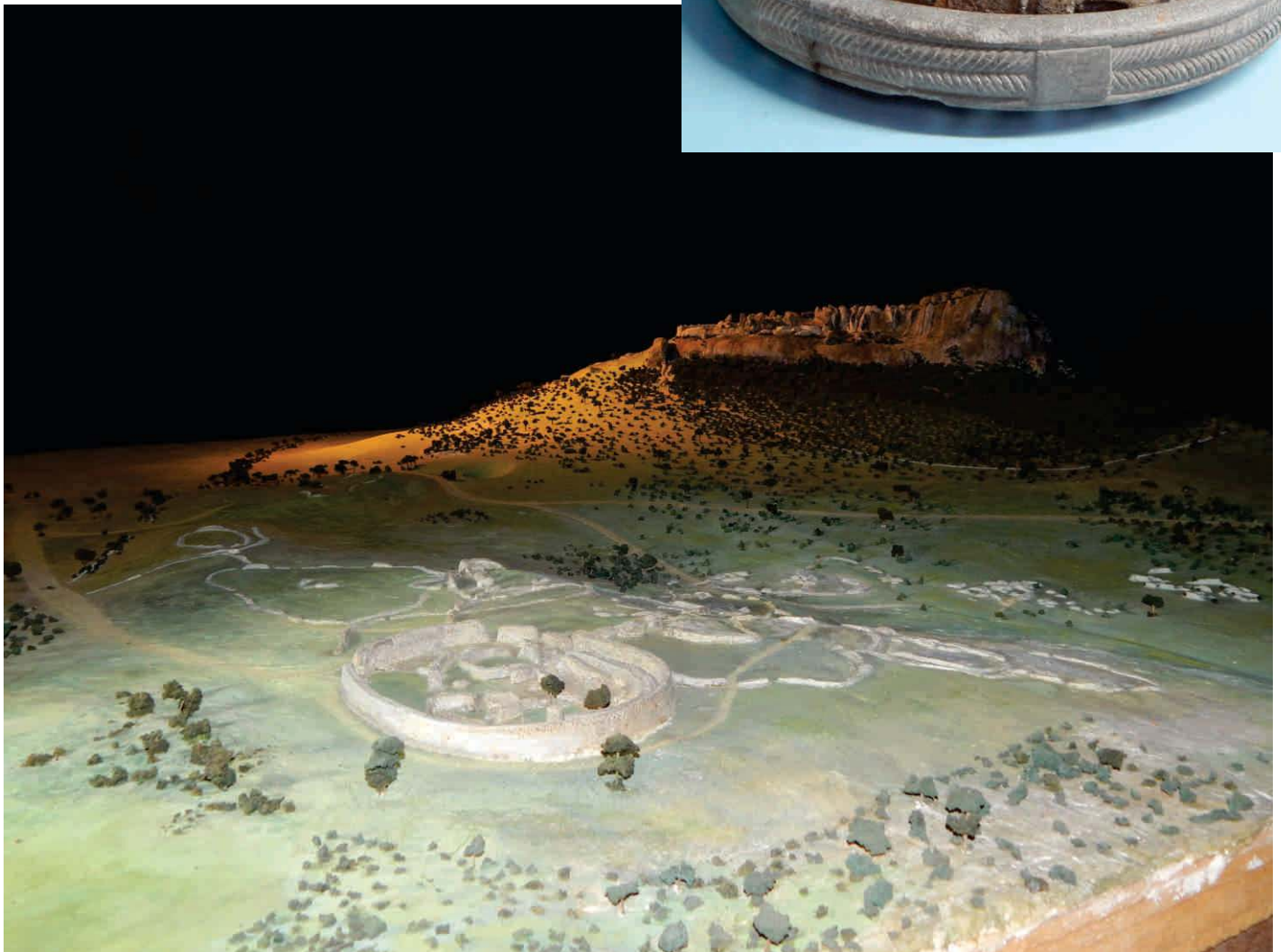
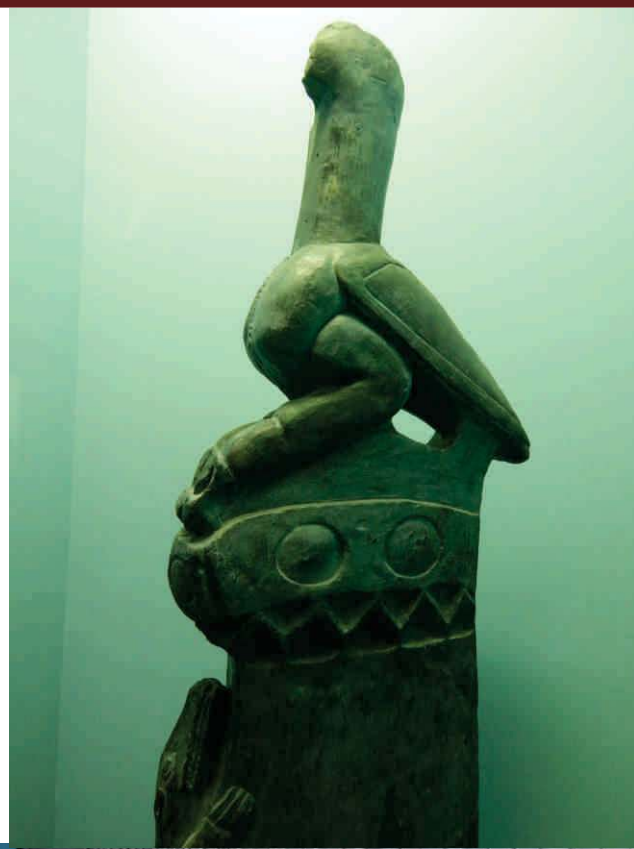
### Great Zimbabwe - World Heritage Site

Great Zimbabwe was declared a National Monument in 1950 and a World Heritage Site in 1986. It is the largest of several stone walled settlements scattered across central Southern Africa. These were the elite residents of the Shona states that once dominated the area. The Great Zimbabwe settlement flourished from AD1250-1550.

Adam Renders has the credit for being the first white man in modern times to see the ruins, and this is depicted in one of the National Tapestries in the Hall of Kings at the Museum. Artefacts from the site are also on display at the Museum and many stamps over the years have depicted this historical site.



Great Zimbabwe is located  
25 km North-East of Masvingo Town  
20.2675°S, 30.9338°E





# Take the City Nature Challenge 2022

29 April–2 May



Having started in 2016 as a competition between San Francisco and Los Angeles, the City Nature Challenge (CNC) has grown into an international event, motivating people around the world to find and document wildlife in and around their cities using biodiversity recording Apps and platforms like iNaturalist. Run by the Community Science teams at the California Academy of Sciences and the Natural History Museum of Los Angeles County, the CNC is an annual four-day global urban bioblitz at the end of April, where cities are in a collaboration-meets-friendly-competition to see not only what can be accomplished when we all work toward a common goal, but also which city can gather the most observations of nature, find the most species, and engage the most people in the event. In 2021, over 400 cities participated, with more than 52 000 people making over 1.2 million observations of nature in the four days of the challenge. The 2022 City Nature Challenge (April 29-May 2) is gearing up to be the biggest one yet!

## Goals of the City Nature Challenge

- Connect people in urban/metro areas to their local nature
- Connect people to each other: build community in person and online around local nature
- Collect urban biodiversity data available to use for science, management and conservation
- Grow volunteer biodiversity documentation globally
- Have fun through some friendly competition and global collaboration!

This year, Bulawayo will be participating in the CNC for the first time, see picture below and visit

<https://www.inaturalist.org/projects/city-nature-challenge-2022-bulawayo>

## Did you know???

....that the museum has a herbarium that started in 1909 with a collection of 800 botanical specimens donated by Mr Claude F. H. Munro. To date the collection has about 6000 specimens and making part of the collection is the Baobab, *Adansonia digitata*. This is a deciduous tree with a hugely swollen trunk that can reach up to 28 metres in circumference and is a common trees occurring in hot dry areas at low altitudes. Rope and floor mats can be made from the bark, while the leaves contain sodium chloride, tannin and potassium and are cooked as a green vegetable. The seeds are edible and can be used as a coffee substitute when roasted. The white powdery pulp around the seeds is rich in vitamin C and makes a refreshing drink when mixed with water or milk. You can also find a baobab tree in the museum grounds.





**Picture on the right:** Baobab tree planted at the Museum by Matshobana John Khumalo (Curatorial Assistant in Archaeology) in 1988 at the National Tree Planting Day

**Picture on the left:** Plaque next to the baobab tree

**Join us as we record the biodiversity in our grounds and gardens.  
See poster below for more information.**

Help us record the biodiversity of the Museum Grounds and the City of Bulawayo

# Museum Biodiversity Project

## Getting involved in Citizen Science

Citizen Science is a powerful tool for  
Biodiversity Conservation and Environmental  
Education.

**Taking part is easy**

Download and create an **iNaturalist** account on your phone, tablet  
or computer via IOS, Google Playstore or website

**Find nature anywhere!**

Plants, Animals, Fungi, Insects, Arachnids or evidence (scat, fur,  
tracks, feathers etc)

**Take a picture of what you find**

Be sure to note the location of the nature using the location  
services on your phone

**Share your observation**

By uploading your findings to **iNaturalist** on your phone or computer

<https://www.inaturalist.org/projects/natural-history-museum-of-zimbabwe-bulawayo-grounds-and-gardens>





# Mapela Hills

by Sithembiso Ncube

Mapela (Tswana for Hyrax) Hills is a prominent isolated kopje, over 700m in circumference and over 300ft high, situated two kilometres east of the confluence of the Shashe and Shashane rivers. The summit is an extensive flat-topped treeless plateau, and largely free of boulders. It is surrounded on all sides by vertical rock faces with access possible only up three narrow breaks in the face. On the plateau low revetment walls 60-70cm high form a series of terraces. The blocks of the walls are larger than those found at Great Zimbabwe and Khami, and the walls are rough and uncoursed, the stone carefully packed and close fitting. The plateau was intensively settled resulting in depositing averaging over 1 metre in depth.

In 1967 Peter Garlake undertook an excavation of the these deposits and found many artifacts such as pottery, metal, beads and shell beads as well as figurines. Pottery was mostly blacks, browns and greys and resembled that of the Leopard Kopje Culture. A large number of glass beads were also found indicating that the inhabitants of Mapela were into trading with Indians or other West countries. Ostrich shell beads were also discovered. The metal finds were of short lengths, corroded coiled wire and were found to be common throughout the Mapela Hill deposits.

Due to its sheer size and historical significance, this site needs to be declared a National Monument.



*The Mapela Hills*



*Mapela Summit*



*Mapela terranced walls*



*Mapela terranced walls*

For more information see:

Arnoldia Rhodesia (now Arnoldia Zimbabwe) **3(34)**  
P. S Garlake (1968). Test excavations at Mapela Hill, near the Shashi River, Rhodesia

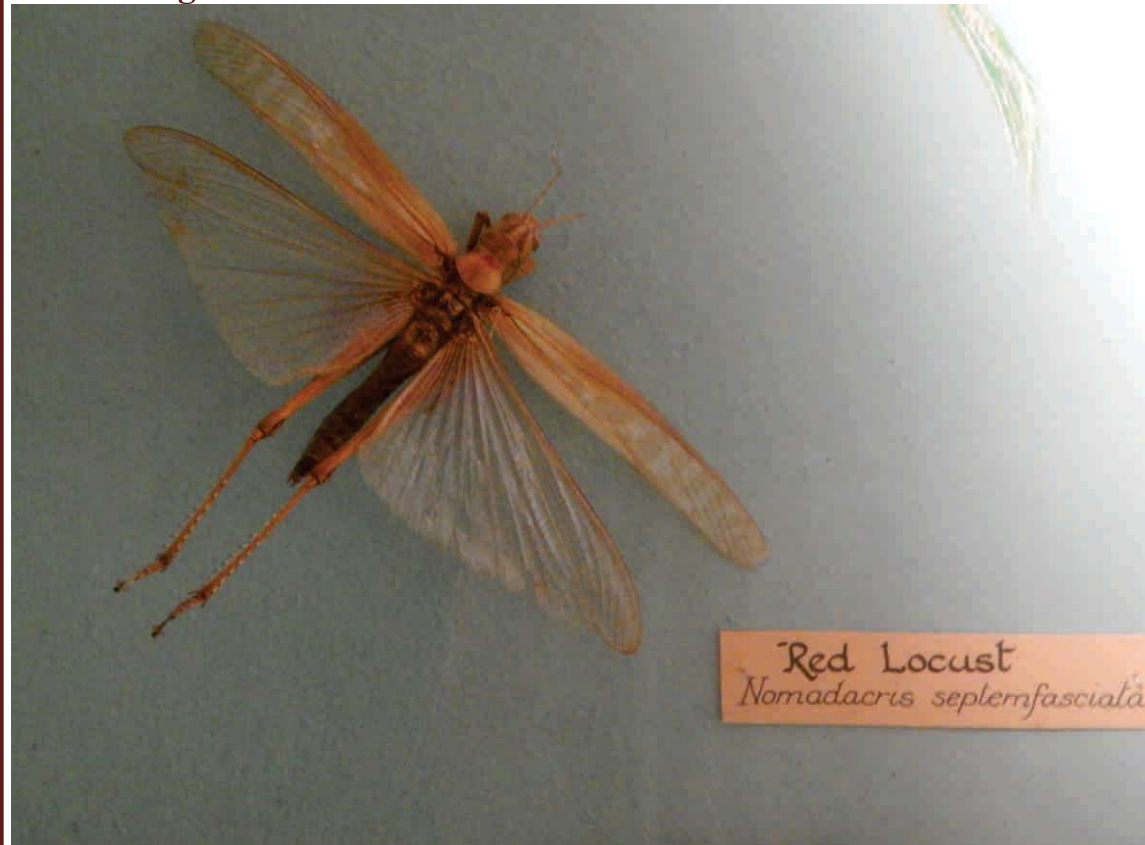


# Phenomenal Animal Migration Strategies

by Viola Makuva

Migration may be defined as those movements between two or more separate habitats, and occur with regular periodicity and involve a large proportion of the population. The numbers of individuals in a single movement may range from a few hundred up to thousands. In some groups of animals the word migration has been considered to apply only when there is a regular to and fro movement of the population between two areas at different seasons of the year. Migratory species do not show any morphological adaptations for migration in comparison to closely related resident species. Migration is perceived as a life history strategy for animals and much of migratory behaviour is inherited genetically.

## Insects Migration



Migration occurs regularly in locusts, dragonflies, butterflies (such as African Migrant) and moths. Although the earliest reference to migration of locusts goes back to Biblical times, it was not until the first half of the nineteenth century that anything in the nature of a scientific study developed. Locusts are grasshoppers that have the potential to form a swarm of thousands to hundreds of thousands of individuals. They undergo phase polymorphism, which means that they can change from a solitary form to a gregarious form - meaning they congregate in large numbers. There are localised swarms of the African migratory locust in Southern Africa. Two other locust species - the red locust and the brown locust

are known to have swarmed and caused agricultural damage in Southern Africa. The gregarious form arises from an increase in population density which causes the locusts to aggregate. Locusts need to multiply, concentrate and aggregate for swarms to form. The gregarious form undergo a colour change which makes them more conspicuous, and a behaviour change which makes them band together. These individuals form hopper bands in which they march together as a group, eating as they move, and adult swarms which can fly over large distances to invade new areas for food. These flying swarms are swept along by the prevailing winds into agricultural areas. These locusts have the potential to cause damage to cereal crops.





**Birds Migration**

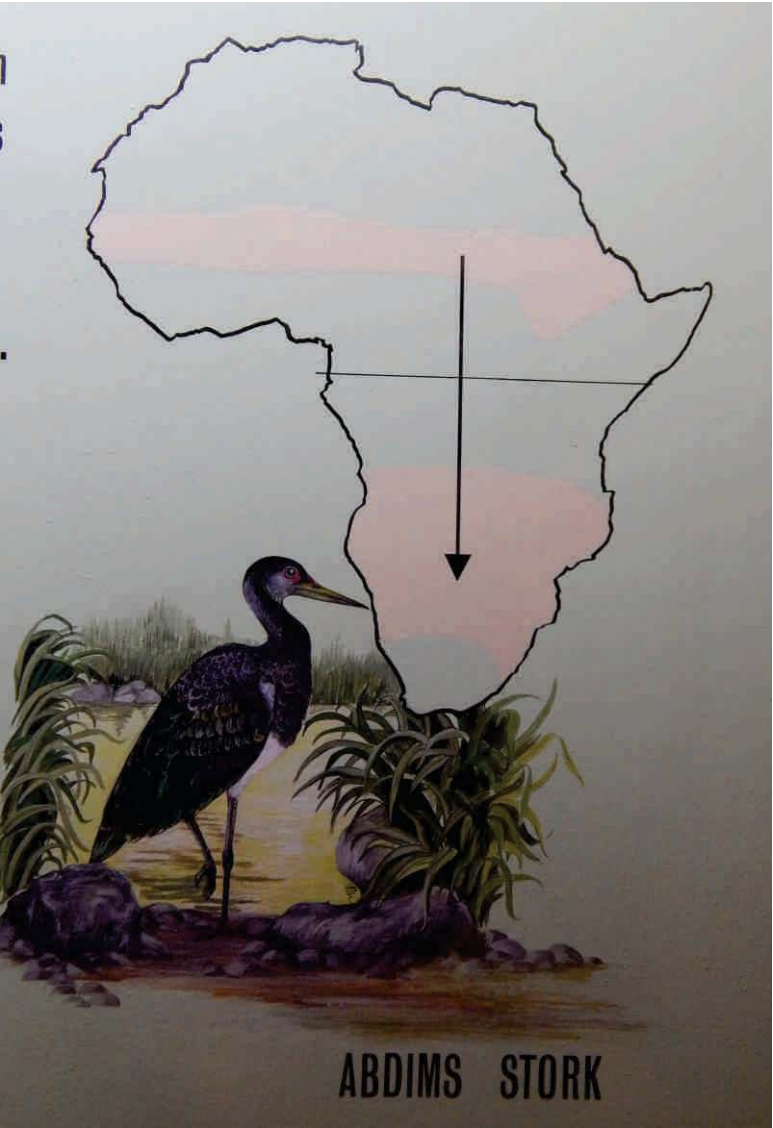
In birds, the majority of newly fledged juveniles set off on migration in family parties or in flocks with adults, the juveniles of many species, particularly those breeding in the Arctic regions, depart without (usually later than) their parents. The youngsters will have inherited a complex programme which guides them through their first migration experience, during which they develop and expand their ‘familiar area’. Experimental evidence suggests that, on the programmed date, birds set off on migration, travelling in a programmed direction for a programmed length of time. The timing of migration is triggered with the aid of the bird’s ‘circadian clock’, linked to changing day length and in some cases, climatic cues. Once the time is right, the other factors (such as the size of the gathering flock, wind speed and time of day) then determine the moment of departure. To maintain their programmed general direction, the young birds are innately able to orientate (as opposed to navigate). Birds have been shown to be able to orientate using several different compasses, including the sun, stars and the earth’s magnetic field. Thus, once a bird has completed its first round trip, it will have learned enough to be able to navigate (rather than simply orientate), to and from the non-breeding grounds in subsequent years.

Trans-equatorial migrants, such as Abdim’s Storks, *Ciconia abdimii* (Shuramorowe/Rain Bird) breeds in the Northern Hemisphere, in the Sahel during their summer, migrating south at the onset of the dry season in the North and remaining in the South till March-April. The arrival and the presence of Abdim storks is believed to be an indicator of a good rainy season.

Although most migrants take advantage of the increased productivity of the wet seasons, where insects are most abundant early in the rains and the emergence of magnificent termite swarms, there are a number of species, notably raptors, that prefer drier conditions and migrate away when the rains come. A large number of intra-African migrants cross the equator to take advantage of seasonal rains and food abundance during both their breeding and non-breeding seasons.

**Elephants Migration**

African elephants use areas of grassland, bushland and woodland, but water becomes a seasonally scarce resource forcing them to move through different vegetation types in different seasons searching for water. Hwange elephants are part of the world’s largest elephant metapopulation, which stretches across five Southern African countries in the Kavango-Zambezi Transfrontier Conservation Area (KAZA). The elephants share a general dry season home range but follow three different wet-season migration strategies: residency, short-distance migration and long-distance migration. The seasonal movement of elephants in Hwange National Park can be qualified as a partial migration, where only some animals migrate. Rainfall decreases as one travels





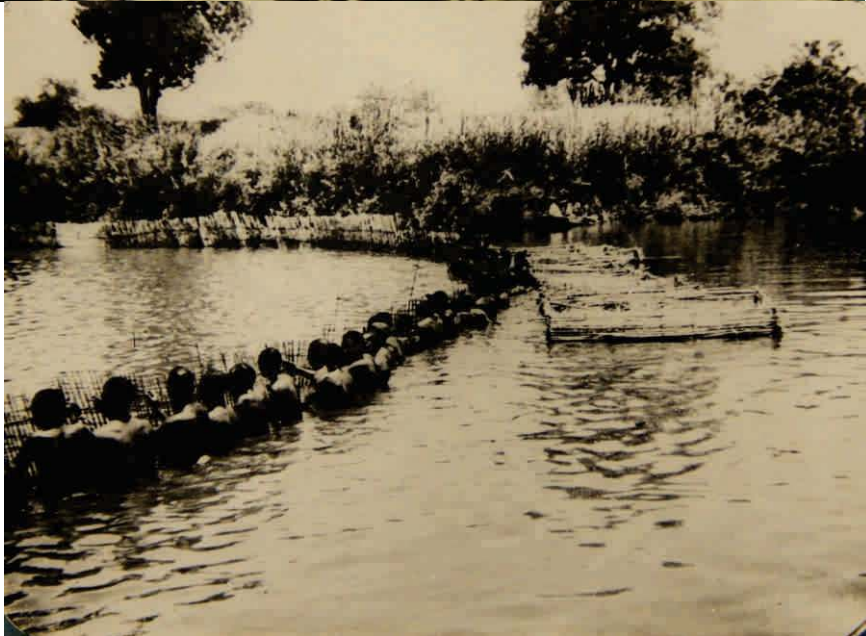
west from Zimbabwe to Botswana, so the elephants that migrate do so at the onset of the wet season and migrate into Botswana, as far as the Nxai Pan, some 260 kilometres from the Hwange National Park. Nxai Pan known to be a normally dry salt pan, is said to become grassy in the wet season, attracting elephants and thousands of there large herbivores, including zebra and wildebeest. Surface water is also driving migrations in other African herbivores: for instance, Plains zebra migrate from the Nxai Pan area (wet-season range, Botswana) to the Chobe River (Botswana and Namibia); in Tanzania, blue wildebeest and Plains zebra migrate from grassy plains surrounding Tarangire National Park to the permanent river that crosses the park.

### Fish migration

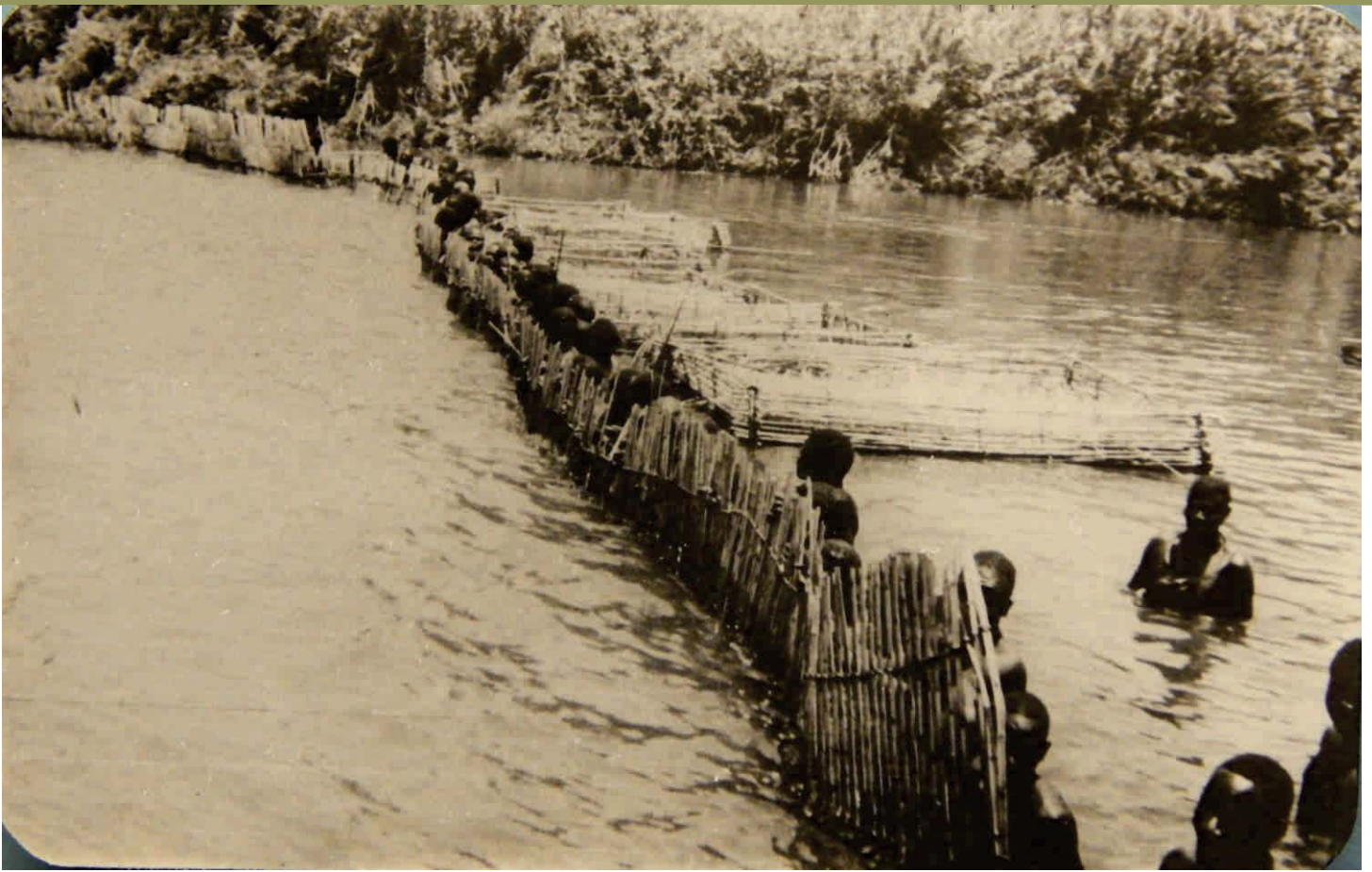
Freshwater migratory fishes have possible benefits of optimising feeding, avoiding unfavourable conditions that may cause physiological stress, recolonising territory lost to seasonally unfavourable conditions such as drought or winter freeze, reducing the risk of predation, and density dependant dispersal to reduce competition and diseases.



Investigations on fish migrations into the streams of seasonally-flooded depressions (or dambos) in Zimbabwe has revealed that, at the beginning of the rainy season *Barbus paludinosus*, *B. lineomaculants*, *Clarias gariepinus* and *Tilapia sparrmanii* moved from the perennial river into the small dambo streams and spawned there, then moved back to the perennial river, leaving their young in the dambo, which acted as a nursery area. Later in the season, larger juveniles of all migratory species that had entered the dambo moved downstream into the perennial river, but smaller juveniles remained in the dambo until next rainy season, demonstrating that downstream movement is ontogenetically cued. Some marine species can migrate up freshwater systems. In Zimbabwe, many of these are caught at the annual Shangaan Fish Drive at the Save-Runde Confluence.







The varied migration patterns known among animals, and differences between patterns are attributable to dietary and breeding requirements, population pressures, and environmental determinants. Seasonal migrants benefit by moving between environments where breeding is successful and environments where survival during the non-breeding season is relatively easy. Species which occupy environmentally stable habitats, with constant year round supply of food and water tend to be sedentary, while those occupying habitats which undergo marked seasonal changes in environmental conditions are more likely to be migratory. Species which migrate generally take advantage of the relatively high summer productivity.